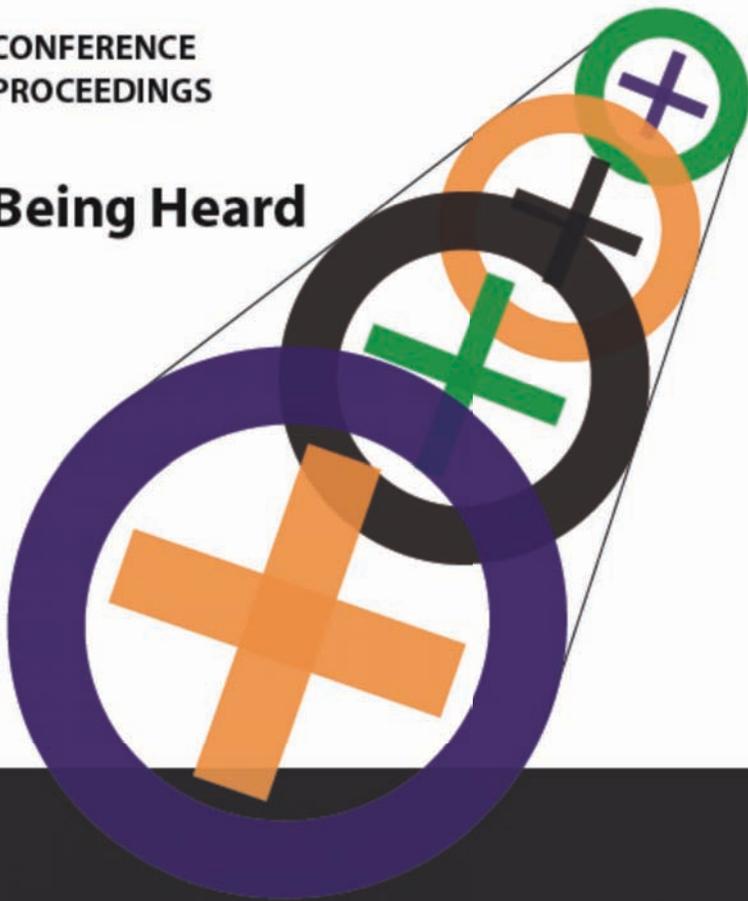


CONFERENCE
PROCEEDINGS

Being Heard



Melissa Cefkin
ken anderson

Organizers

EPIC 2007

Ethnographic Praxis
in Industry Conference

3-6 October, 2007
Keystone, CO
USA



The National Association for the Practice of Anthropology (NAPA) is pleased to welcome you to this third annual *Ethnographic Praxis in Industry Conference*. NAPA is a section of the American Anthropological Association and supports the work of practicing anthropology by helping practitioners refine their skills, develop their careers, and market their services.

Dennis Wiedman, Florida International Univ – *President*

Madelyn Iris, Council of Jewish Elderly – *Past President*

Mary Odell Butler, Battelle Ctrs for Public Hlth Rsrch and Evaluation –*President-Elect*

Inga Treitler, Terra Nova, Inc – *Secretary*

Mark Curchack, Arcadia University – *Treasurer*

ken anderson, Intel Corp

Genevieve Bell, Intel Corp

Tom Greaves, Bucknell University

Tracy Tessman, University of North Texas

The American Anthropological Association, the primary professional society of anthropologists in the United States since its founding in 1902, is the world's largest professional organization of individuals interested in anthropology.

Alan Goodman, Hampshire Coll - *President*

Setha M Low, City Univ New York – *President Elect*

Dan Segal, Pitzer Coll - *Secretary*

Ed Liebow, Battelle - *Treasurer*

Peter Allen, Rhode Island Coll

Theodore Bestor, Harvard Univ

Monica S. Heller, Univ Toronto

Jennifer Jackson, Yale Univ

Thomas L Leatherman, Univ South Carolina

Ellen Lewin, Univ Iowa

Sally Engle Merry, New York Univ

Leith Mullings, City Univ New York

Deborah L. Nichols, Dartmouth Coll

J. Anthony Paredes, National Park Service

Susan Sutton, Indiana / Purdue Univ - Indianapolis

Judy Y. Tso, Aha Solutions Unlimited

American Anthropological Association

2200 Wilson Blvd, Suite 600 • Arlington, VA 22201

phone 703/528-1902; fax 703/528-3546

www.aaanet.org

Introduction to the Proceedings of EPIC 2007: The Third Annual Ethnographic Praxis in Industry Conference

Welcome to the third Ethnographic Praxis in Industry Conference proceedings. EPIC2007 is all about “Being Heard”. From privileged teenagers to vast populations of oppressed peoples, the last decade has seen a tremendous growth in the promise, and often actuality, of the ability to give voice to oneself, one’s people, one’s issues and one’s ideas. “You” may be *Time*’s Person of the Year, the “long tail” may be wagging the “You Tube”, “My Space” may be more your space. This year’s theme explores what it means to have voice, to represent, to be represented, to express, to be heard. It explores the ways this happens and what happens when it doesn’t. It also asks after the absence of voice and representation, and all the grey space in between.

“Being Heard” is a timely concern to the profession; from a decade ago when a few ethnographers were scattered, struggling on their own, or joined with a handful of others here and there in the bowels of a couple of large corporations, ethnographers are now being heard everywhere - in fields as diverse as finance, advertising, technology, health care, education and so on. We play roles ranging from designer to marketer to new product developer to organizational change agent to researcher to administrator. But despite all the roles we play, we must ask, are we seen but not heard? What does it mean to succeed at being heard? And what responsibilities come with being heard?

It is not only ethnographers but the stakeholders and participants of our studies whose ways of being heard are changing. From studies of organizational dynamics where findings and recommendations may be disputed and resisted by management, to design studies where participants are, or are hoped to be, intimately linked in the process from the beginning to end of the research, the participants are being heard.

EPIC aims to promote the integration of social and cultural perspectives, theories and method into business practice. We hope we have assembled papers and workshops that probe on the many aspects of “being heard”, from how to design for giving voice to the politics and ethics of representation, from strategies for effective ethnographic engagements to the exploration of social and cultural manifestations of expression and representation.

In Thanks

First and foremost we would like to thank the attendees and presenters of EPIC 2007 for coming to the conference, adding to the discourse of ethnographic praxis in industry and helping to grow and define our emerging community.

We would like to express our deepest gratitude to the EPIC advisory committee for their support and guidance in making the second EPIC stronger than the first, by creating a more fluid and appropriate program format and insisting on the highest quality in writing,

presentations and workshops. In addition, we'd like to thank all the reviewers for their tireless efforts in evaluating the submissions and providing feedback to authors.

We would like to acknowledge the support of our corporate and institutional sponsors, Intel, Microsoft, ReD, IBM, Bluezebu, Pitney Bowes, Pacific Ethnography, HLB Design, and the American Anthropological Association, for their contributions of people and financial resources, without which EPIC 2007 would not have existed.

We hope that you enjoy and learn from the printed materials, as much you did in person.

Melissa Cefkin
EPIC 2007 Co-Organizer
IBM

ken anderson
EPIC 2007 Co-Organizer
Intel

CONFERENCE ORGANIZATION

Organizers

ken anderson, Intel Research USA
Melissa Cefkin, IBM Research USA

Papers/Panel Chairs

Brinda Dalal, PARC USA
Julia Gluesing, Wayne State University
USA
Rich Radka, NEST - the home lab USA
Alex Taylor, Microsoft Research UK
Elizabeth Anderson-Kempe, Artemis
Research By Design USA

Workshop Chairs

Elizabeth Churchill, Yahoo USA
Roxana Wales, Google USA
Wendy March, Intel USA

Poster Chair

Michele Chang, ReD Denmark
Alie Rose, Copenhagen Institute of
Interaction Design Denmark

Graphics/Webmaster

Anne McClard, Bluezebu USA

Registration Chair

Suzanne Mattingly, American
Anthropological Association USA

Publication Chairs

Oona Schmid, American Anthropological
Association USA
Edward Liebow, Battelle USA

Steering Committee

Jeanette Blomberg, IBM Research USA
Rachel Jones, Instrata UK
Edward Liebow, Battelle USA
Tracey Lovejoy, Microsoft USA
Rick Robinson, Continuum USA
Nina Wakeford, University of Surrey UK

Christina Wasson, University of North
Texas USA

Sponsors

Platinum

Intel Corporation
Microsoft Corporation

Gold

IBM Corporation

Silver

ReD

Bronze

Bluezebu
Pitney Bowes
Pacific Ethnography
HLB Design

Organizational

National Association for the Practice of
Anthropology
American Anthropological Association

Reviewers

Annette Adler
Luis Arnal
Ashwini Asokan
Ray Barnes
Tina Basi
Caroline Beck
Robin Beers
Maria Bezaitis
Jeanette Blomberg
Francoise Bourdonnec
Jenna Burrell
Copeland-Carson
Martha Cotton
Rogerio De Paula
Devesh Desai
Jonathan Donner

Cynthia Duval
Ame Elliott
Ken Erickson
Sue Faulkner
constance fleuriot
Brooke Foucault
Adam Gardels
William Graves III
Natalie Hanson
Jay Hasbrouck
Christopher Keener
Janna Kimmel
Anne Kirah
Kathi Kitner
Nalini P. Kotamraju
Ken Lauer
Christian Licoppe
Ed Liebow
Gerald Lombardi
Tracey Lovejoy
Alexandra Mack
Scott Mainwaring
Eliana Martella
Anne McClard
Crysta J. Metcalf
Mohammed H. Mohammed
Graeme Mott
Dawn Nafus
Gina Neff
Daniel Neyland
Julian Orr
Jo Pierson
Tim Plowman
Frank Ramagosa
Simon Roberts
Rick E. Robinson
Mark Rogers
Valerie Romley
Tony Salvador
Diane Schiano
Natasha Schleich
Ari Shapiro
John Sherry
Susan Squires

Nellie Steele
Laruel Swan
Nina Wakeford
Christina Wasson
Sperschneider Werner
NancyWhite
Todd Wilkens
Alexandra Zafiraglu

CONTENTS

- ii Introduction
- iv Conference Organization
- vi Contents
- 1 Keynote Address: Thoughts on representation TONY SALVADOR
- SESSION 1**
IT'S </ONLINE> COMMUNITIES, ALL OVER AGAIN
ALEX TAYLOR, CURATOR
- 7 Mapping the loss of reflexivity in the age of narcissism BRIDGET WALSH
REGAN and AJAY REVELS
- 21 The cackle of communities and the managed muteness of market JOHN
SHERRY
- 36 Searching for the “You” in “YouTube”: An analysis of online response
ability PATRICIA LANGE
- 51 Getting Noticed, Showing-Off, Being Over-Heard: Amateurs, authors and
artists inventing and reinventing themselves in online communities JAY
MELICAN and SUSAN FAULKNER
- 66 Abstract 2.0: If we are all shouting, is there anyone left to listen? DAWN
NAFUS, ROGERIO DE PAULA, and KEN ANDERSON
- SESSION 2**
VOICES-IN-BETWEEN: BROKERING THE BOUNDARIES
BRINDA DALAL, CURATOR
- 78 When politics in the field meet politics in the corporation: Conflict and
contradiction in the study of PRC iCafes SUZANNE THOMAS and
XUEMING LANG
- 91 Changing diabetes care for good MIKKEL BROK-KRISTENSEN
- 104 The Local Ingenuity: Maximizing livelihood through improvising current
communication technology ANDREW WONG
- 115 Representing the Non-formal: The business of Internet cafés in India

NIMMI RANGASWAMY

- 128 ICT4D => ICT4X: Mitigating the Impact of Cognitive Heuristics and Biases in Ethnographic Business Practice TONY SALVADOR, HSAIN ILAHIANE, and JOHN SHERRY

SESSION 3
DO YOU HEAR THEM WORKING? LISTENING TO,
EXPERIMENTING WITH AND ARCHITECTING WORK PROCESS
JULIA GLUESING, CURATOR

- 138 Introduction JULIA GLUESING
- 140 The Built Environment: Exploration toward a new paradigm DOROTHY DEASY, ERIK LUCKEN, WILLIAM R. DOWELL, GRETCHEN M. GSCHIEDLE, LAURA J. LEENHOUTS
- 146 Ethnography as design provocation JACOB BUUR and LARISA SITORUS
- 158 Ethnographic inspections identifying project risks AKIHIKO OBATA, HIROAKI HARADA, and SHIGERU YAMADA
- 170 Giving voice to print shop workers: Representing actual work practices in the streamlining of a labor intensive production print job NATHANIEL MARTIN MARY ANN SPRAGUE, PATRICIA SWENTON-WALL, and JENNIFER WATTS-PEROTTI
- 188 Numbers may speak louder than words, but is anyone listening? Rhythm and voice in sales pipeline management MELISSA CEFKIN
- 201 Ethnography and music. Disseminating ethnographic research inside organizations LUIS ARNAL and ROBERTO HOLGUIN

210 **PANEL**
ENGAGED CLIENTS: STORIES OF COLLABORATION
ELIZABETH ANDERSON-KEMPE, CURATOR

The Mystery Project MARK DAWSON and PETER WYATT-BRANDENBURG

Stress and trust relationships between suppliers and clients MONICA DIAZ and TOM RIDEOUT

The second coming of Lego CHRISTIAN MADSBJEERG and MARK

WILLIAM HANSEN

SESSION 4
HARMONY: HOW CAN WE BLOCK OUT THE NOISE BUT STILL
HEAR IMPORTANT NEW SOUNDS AROUND US?
RICH RADKA, CURATOR

- 214 Enabling our voices to be heard RICH RADKA
- 220 Harmonizing human eyes with digital sensors HIROSHI TAMURA and TAMAMI SUGASAKA
- 233 Reflective probes, primitive probes, and playful triggers DARIA LOI
- 247 Listening with indifference ALEX S. TAYLOR, LAUREL SWAN, and DAVE RANDALL
- 259 An economy of knowledge: research, architectural practice and knowledge (in) translation ANDREW MAHER and INGER MEWBURN
- 271 Teaching organizational ethnography NOZOMI IKEYA, ERIK VINKHUYZEN, JACK WHALEN and YUTAKA YAMAUCHI
- 284 Research to reality: a business perspective DAJA PHILLIPS
- 296 Not lost in translation: Maximizing impact in marketing ethnography through bivocality AMY MAISH and MAGDA WESOLKOWSKA

BIRDS OF A FEATHER – OPEN SESSION
MARTHA COTTON, CURATOR

- 310 Keynote Address -Design Research: Process and provocations
BRENDA LAUREL

311 **WORKSHOPS**
ELIZABETH CHURCHILL, ROXANA WALES, WENDY MARCH,
CURATORS

- 1 Virtual Ethnography JEFFREY BARDZELL, SHAO WEN BARDZELL, and WILL ODOM
- 2 Giving Voice to our Value MARTHA COTTON and TODD CHERKASKY
- 3 Being Heard--Making the Business Case KEN LAUER, RUSS WARD, and KATLEEN DETHIER

- 4 "I'll Show You Mine" NICK LEON
- 5 Who are you, really? LAURA NUGENT and MIKE GRIFFIN
- 6 When Anticipation of Use Fails MATT RATTO and DAWN NAFUS
- 7 Participatory Design ROBERT SUAREZ, AME ELLIOTT, GABRIEL TRIONFI, SUZANNE GIBBS HOWARD, KEVIN SCHMIDT, PREETHAM KOLARI
- 8 Modeling and conceptual sketching SUSAN TODD, VIKRAM BAPAT, and MONTY HAMMONTREE

317

ARTIFACTS
MICHELE CHANG, CURATOR

- 1 Viral Ethnography TOKE BARTER and Ré DUBHTHAIGH
- 2 Hy-Tech: Getting Cozy with Technology JONATHAN BEAN
- 3 Accelerating The Diffusion Of Innovations: A "Digital Diffusion Dashboard" methodology for global networked organizations TARA EATON and KEN RIOPELLE
- 4 Bright Green: Sustainable living as a lens for technological Innovation JAY HASBROUCK and ALLISON WOODRUFF
- 5 Little Brinkland: A documentary from 2012 ANAB JAIN
- 6 Wanderlust: favorable to you! HECTOR OUILHET
- 7 Hear My Voice: A System to Capture Personal Ethnographies from African Mwethyas S. REVI STERLING and JOHN K. BENNETT
- 8 Small Slice of Life: Documentation Stickers: Understanding Purikura behavior as life documentation by mobile generations AICO SHIMIZU
- 9 The Digital Youth Project CHRISTO SIMS, DAN PERKEL, MICHAEL CARTER, and PATRICIA LANG

325 CONTRIBUTORS

333 PARTICIPANTS

Keynote Address: Thoughts on Representation

Tony Salvador
Intel Corporation

I have a great job! I feel privileged to do it. In fact, my kids think my job is so great they think I go on vacation whenever I travel. Maybe it's because I send home photos like this.



I'd like to start with a rather personal story to which I will return at the end (and, since you're going to wonder why I have told this story, it will provide a handy distraction if what I say in the middle of this talk is not to your interest...)

Five years ago, I had an opportunity to walk a two week portion of the Camino de Santiago. It's an ancient Catholic pilgrimage route starting in southwestern France and ending in Santiago de Compostela, on Spain's western coast.

As I walked, the simple rhythms of each day – rising in the morning, walking through the day, settling in the evening -- immersed me deeper and deeper into the wholeness of the journey. It became less and less about making progress and more and more about being aware and present in that moment. Gradually, the journey took on a “lightness of being”; gradually, the journey was not just about me and what I wanted - it was about something bigger than I could ever be. There was a calmness, a tranquility, a quietude injected with vibrancy and light that grew day to day. It was, I’ve thought since, a glimpse of real peace.

Through one thing and another, through my work, I’ve had the opportunity to visit many living pilgrimage sites around the world. The Chamundiswari Temple in Mysore, in Southern India, the Ahmad al-Badawi Mosque in Tanta, the Swayambhunath Buddhist temple in Nepal, The Shrine to the Virgin of Guadalupe in Mexico, the Bahai’i Lotus temple in New Delhi - and even the sea in Rio de Janeiro, Brazil, the destination for many folks offering to Imanja, the Candomble goddess of the sea. They are Christian, Hindu, Muslim, Bahai’i, Buddhist, Candomble.



In all of these places I’ve felt a little bit of that same tranquil energy, that same feeling of connectedness, of being outside myself; of all of us there outside ourselves. People have love for each other. They’re calm. They are receptive to being blessed. We are calm. We are receptive. For that moment, I feel we are at peace.



And it's a bit scary to tell this story, because, skeptical though I know many of you, and even perhaps a tad embarrassed for me sharing something so personal and perhaps corny, there is it.



Hold this thought. I will return to this at the end.

I've had some occasion of late to consider what I do in my work and why I do it. And, as the hour last night was late, and it is becoming clear that I have nothing particularly useful to say to all of you today, I thought I would share some of these considerations.

I've always said that I've had the best job on the planet. In this, I know I am privileged.

So one question I've had occasion to ask of myself is: what is the responsibility that comes with my privilege? And how does this help me in my work?

I feel that my responsibility is to do exactly what I say I am going to do and try to produce products – in my case, computing products – that are indeed useful – that are as

useful as the cell phones in your pockets, as the computers you use, the Plasma screen TVs on your walls.

Nevertheless, it's very hard work. **VERY HARD WORK.** It's intellectually challenging and emotionally draining. We, the minorities in our companies and consultancies – and for the anthropologists among us, the minorities in our disciplines – we can feel vulnerable.

But we should not feel this way! Our work relies on the work and thought and theory and practice from a myriad of disciplines – not just anthropology. Or work is synthetic, not descriptive – or at least it should be. Our work is generative, creative, expanding.

And not just that, the work we do – when we do it well -- extends those same theories and practices on which we rely -- to create new sciences, new endeavors, new adventures, things, new possibilities, new lives.

The work we do also can and often does change the practice of business. It opens eyes and ears. It shows possibility. It creates the opportunity for fair, meaningful exchange. Again, this is what I think we ought to be doing.

As someone said to me the other day...if there's an elephant in the room, introduce it. The work I do, I do to make a profit. I'm up front about it. I tell the people we work with that this is exactly what we're there to do. I am here to make a product that I hope they will find valuable enough to buy. I hope and strive to ensure that the products we make are relevant and meaningful to all parties in the exchange and that everyone understands the meaning of the exchange.

Lately, we've been working very hard on something called the Classmate PC. It's a small computer for kids in primary school. Now: do I believe computing power, in general, can be helpful, useful, beneficial to kids and teachers? You bet I do. A *prima facie* case could not suggest otherwise. Computing, writ large, has been stunningly beneficial to billions of people. Has it been done right in schools in the past. No. Is it right now, probably not. Do I have hope that we – or someone – can get it right, pretty soon? I do. Do I believe we should make an honorable profit? Yes. Do I believe we are trying to offer a fair exchange? You bet.

I have no qualms about profit, *per se*. Exchange drives societies. Whether it's cash or tenure, it's an exchange. In my work, in my travels, people understand me perfectly when I tell them that I am here to make a product to sell to them that I hope they will like and find useful. We have been nothing if not honest about that. We tell people we work for Intel. We tell them what we're doing. In fact, people have been most suspicious when there's no sense of exchange. When it's all one way.

We do – most of our companies do -- have certain capabilities. We at Intel have an extraordinary capability to make a very complex bit of technology; the technologies we make

have shaped the global economy. The technologies we make *can* help people do good things for themselves, their families and their communities.

I certainly have qualms about unfair advantages. I do have qualms about usurpation of power and privilege. In any institution there is iniquity and malicious intent. I am not wholesale defending business in all its manifestations. I am saying that business is a perfectly honorable way to get things done. Period.

Thus, to answer my first question, for me, the responsibility that comes with my privilege is to make the best possible products I can – those that have the most meaning, the most impact, the most value and that contribute to a fair exchange. It's fun. It's stimulating. It's intellectually challenging. It's fair. And it's profitable. And I am at peace with this.

So, the first issue is resolved:

We are privileged with honorable, if difficult, jobs modulated by a deeply felt sense of responsibility to both our employers and the people we work with. Let us be done with this nonsense. And to those who think otherwise, I would say they can go self-reflect.

The second question then is fantastically practical: How do we live up to our responsibilities.

Let's see what we do have:

We have a lot of tools in the tool shed. We have field work methods. Our interview techniques. Our cameras, our recorders, our notebooks. We know how to be a shadow when we have to. We know how to accept the generosity of others -- even when it's a piece of pig-skin with the hair still on it. We have our ever so dear theories. We have our colleagues. We have comparative projects & multisided projects. We have all this. We're very fond of all this. We're pretty darn good at what we do at this point.

Then why is what we do so hard?

There are probably lots of answers, but here's today's:

We are woefully incapable of representing our work – our experiences, analyses, syntheses, etc., convincingly and understandably to those who are not us. That is, we are unable to translate, transform, transmogrify our work in to frameworks and structures and arguments amenable to inspection, criticism, collaboration and collegiality.

We need to create ways to communicate what we know and transform the reigning arguments from that based on one set of assumptions – e.g., that everyone in the world lives like and wants the same thing that everyone in Los Angeles has – to another set of assumptions that represents an honest and fair basis of mutual shared experience between

our potential customers and our companies or clients. Finally, we must invite everyone – everyone -- to participate in this “space” to create mutually beneficial possibilities.

We almost always fail on all of these. We fail to make arguments. We fail to address the root assumptions in an argument. We don’t recognize them. We don’t strive to create new ones.

We totally fall down on creating a mutual shared experience. I have been immensely fortunate in the last few years with a boss who was our general manager and an Intel vice president, who took the time and energy to experience “the field” for himself. In this case, to schools. In various countries and situations all around the world. He read, he studied, he listened, he inquired. He felt. He also kept his head about him and strove to create that mutual shared experience.

Obviously, not everyone has as boss like this. Not everyone wants a boss like this. None-the-less, this does not absolve us from striving to create the shared experiences.

I argue that it’s in this mutual shared experience that we can invite everyone to participate. If we cannot get fairly representative space, then the only thing people have is what they know. When people understand each other, and each others’ circumstances -- emically – there’s the possibility of transforming what we know, into something else. Something of value we can make and sell honorably.

I would challenge us to continue to extend our tools and techniques, our theories and structures to meet these demands. It is in this way of having mutual shared experiences, that I have glimpsed from my boss, that I believe we are heard.

I opened with a story about a sense of peace that I’ve felt at many pilgrimage sites around the world. You might well have thought it corny, or inadequate. And, in fact, I’ve only told this story once before, in a very different setting, because I’ve never been able to create that mutual sense of shared experience that I feel.

Imagine if I could.
Imagine if we could.
Thank you.

Mapping the Loss of Reflexivity in the Age of Narcissism

BRIDGET WALSH REGAN

AJAY REVELS

Avenue A / Razorfish

PART I: An Explosion of Voices, But Little Sense-Making

With the rise of social networking sites like MySpace and Facebook, as well as YouTube, and the popularity of blogs, there has been no other time where so many voices are being heard on so many topics. Personal blogs, many of which contain writing and photos and video are kept by 12 million Americans and are read by 57 million Americans. (Brown 2007) YouTube is a beacon site on the Web, a much-touted success story since it's \$1.6B acquisition by Google in November 2006. At the time of its acquisition 100 million videos were being watched on the Web every day. A BBC report in June of 2007 stated that "every minute of every day, six hours of fresh video are uploaded."

These numbers point to an explosion of personal stories, in text, pictures and video, available for any and all to digest. The ability to wander from one person's story to another linked story to another and so on is infinite. It is easier than ever before to join in the conversation and add your story to the mix. Consider this colorful entry from a YouTube contributor called "the caster". He's a young man, possibly still in high school, with very decided opinions. His video was a featured video on YouTube one day. He calls his video blogs "the philosophical scientific half-journalal just-add-water video blog...rant...talk show...thinger" and "it's basically some intellectual stuff (science, skepticism, philosophy) with some funny stuff, and my connection to the outside world." Thecaster is very aware that he is in fact connecting to thousands of people. He actively cultivates interaction by inviting video and text reactions from viewers. Other YouTube users video their responses to his argument and upload their clips to his page which increases the visibility of all voices participating in the current topic of discussion.

"This is a video essay conversion on an essay I wrote before on profanity. Tell me what you think, I'd appreciate it, mac.thecast@gmail.com, there's also a comment box down there and stuff. What's wrong with profanity? There's nothing. Fucking shit, this essay is about how profanity is a load of fucking bullshit. You can say god's balderdash humbug. These were once vulgar words and if the wrong person heard it you would have been beheaded. Profanity, as we

see it today, is a remnant of before the Christian religion was reformed and evolved.” (thecaster 2007)

Thecasters’ enthusiasm and indignation animate him as someone who is learning of injustices for the first time and broadcasting his awakening to anyone who will listen. At the point of this paper’s writing, he had 17 video responses and 2502 text comments to his profanity video.

The recognition of all this sharing and networked interactions culminated in You (or us) being named as Time’s Person of the Year for 2006 (Grossman 2006). Our collaborating, sharing, linking and exposing certified as bonafide cultural significance, having weighty impact on the shape and future of world affairs. Technology has become the great enabler for anyone wanting to tell a story. But there’s something missing from this picture. While the act of storytelling may be stimulating and certainly seems to be inspiring, there’s a correlated lack of sense-making accompanying this explosion. Very little time or attention has been applied to understand and make meaning of the myriad voices. With what Linda Stone, a former Microsoft researcher, has called “continuous partial attention” being paid across media and technology spectrums, it is easy to surf onto the next topic, the next news story, the next issue before any kind of resolution or understanding has been reached (Stone, L 2006).

We see the same phenomenon occurring in the design research field because our clients are now seeking individual stories. No longer do business executives need the big sell to undertake a research project for product design, online experience or marketing and advertising strategies. With the growth of user-centered design, and the attention user research has received in the media and business press, clients expect user research to be a part of the business process (Wharton 2004). Industry research analysts such as those from Forrester rate and rank the user experience practices among interactive agencies and advise clients that the user is of utmost importance in design and marketing projects. Similar to You (or us) the User or Customer is now considered the engine of innovation and differentiation. The User/Customer is now looked upon as a co-creator, helping to create commercials, spread marketing messages, and build a community of partner consumers dedicated to particular brands.

“In the Current TV V-Cam campaign, viewers can enter video for any of seven campaigns and get paid \$1000 if their spot is chosen to run on the network. Toyota wants ads for its new Yaris car, L’Oreal Paris is marketing its High-Intensity-Pigments line of cosmetics... L’oreal Paris is also sponsoring a “You Make the Commercial Contest” on the teen entertainment site Varsity World.com.... Nike-owned Converse is asking amateur ad makers for original 24-second videos inspired by the Chuck Taylor AllStar Converse sports shoe... MasterCard is opening up its “Priceless” ad campaign to the public.” (Petrecca 2007; Mills 2007)

In such a climate, the user's voice is not just heard but actively solicited. However, while the demand for the user's voice and perspective is high, thorough and subsequent analysis of the meaning behind that user's experience is severely limited. Clients request user research, but question the time and cost it takes to fulfill a research engagement. Many don't understand the time it takes to actually achieve real insight from the data. Far too many clients expect "insights" in a couple of days to a week after fieldwork phase is complete. What these clients are looking for, are the raw data, the pictures and quotes or "verbatim" that research produces. Subsequently, time allocated to analysis in project plans is questioned and curtailed. On the agency side, opportunities are not taken to educate the client about the differences between data and analysis. Many business development people are in fact not aware of these differences themselves and projects will come back sold, but completely under-scoped in the research phase. The data stemming from the research -- the pictures and video, get baked into deliverables and are used almost as symbols representing the fact that the voice of the consumer is being heard. Far too often the analysis accompanying the data is absent or never given enough time to coalesce into real meaning. What we are left with then, are individual user's stories, not much different from thecaster, with no framework that exposes the experiences in which these stories have context. We have the impact of a story, but no analysis of multiple stories which would create meaning.

PART II: LACK OF SENSE-MAKING TIED TO LACK OF TIME AND ATTENTION

"To pay continuous partial attention is to pay partial attention – continuously. It is motivated by a desire to be a LIVE node on the network. Another way of saying this is that we want to connect and be connected. We want to effectively scan for opportunity and optimize for the best opportunities, activities, and contacts, in any given moment. To be busy, to be connected, is to be alive, to be recognized, and to matter." Linda Stone (2007)

To be a live node, to always be on, emphasizes the need to continually project status, to send out more than is taken in. To recognize someone else's presence in the network is a brief interruption, subtracting time and attention from other tasks. Linda Stone coined the phrase "continuous partial attention" in 1997 but it resonates even more strongly today, as newer technologies siphon our attention spans into ever expanding directions. One of the latest is Twitter – a technology that enables its members to send out blurbs of information via the web, SMS text, or IM. It gives its users the ability to say "what they are doing right now" to others in their networks. With Twitter and the tools supporting it, people can continually project their status, sending short updates throughout their networks. This is an excerpt from "Biz" an employee of Obvious, the company behind Twitter: (Stone, B 2007)

Getting an iced soy latte at joes before heading to a rehearsal

about 4 hrs ago from txt

Ordering sesame medallions at zen palate about 5 hours ago from

txt

Yowza that west village sangria packs a punch about 16 hours ago from txt
In a cab on my way to tapas about 21 hours ago from txt
A quick swim! 01:54 PM July 21, 2007 from txt
Walking through farmers market 07:33 AM July 21, 2007 from txt
Make that angelicas kitchen 06:52 PM July 20, 2007 from txt
Grabbing veggie grub at angelicas lichen 06:51 PM July 20, 2007 from txt
Checking in 03:01 PM July 20, 2007 from txt
Making our way into manhattan 01:46 PM July 20, 2007 from txt
Heading to NYC 07:54 AM July 20, 2007 from txt

To Biz's friends, back in California, he is not away on a trip which they'll hear about when he returns. Biz is on the plane, Biz is in a taxi heading into Manhattan, Biz is eating at Angelica's Kitchen, Biz is tipping back some sangrias in a tapas place in the West Village. When Biz returns to California, they will never need to "catch up", they'll already have markers in their memories for what Biz's trip entailed. But by relying on Twitter, they will never know what it felt like to be a vegetarian in New York, how easy or difficult it was to find veggie-friendly food, or what a quick swim felt like in July heat on the east coast. In short, they will have the outlines of Biz's trip but nothing about what Biz's experiences meant to him.

Frog Design's Ian Curry, on his blog, (2007) relates Twitter to the phatic function, one of Roman Jakobson's (1960) 6 factors that are necessary for communication to occur. The phatic function establishes contact such that communication can begin. Similarly, Twitter is a constant mike-check but nothing of real substance can be passed along due to the medium's constraints. Presumably, Twitter's users use other technologies to establish deeper relationships and convey more meaningful messages.

The effect of continuous partial attention is that active listening and the full attention required to make meaning of what is heard doesn't occur. Our ability to truly listen and focus on the meaning in the messages we hear has been drastically reduced and fragmented (Mark, Gonzalez, & Harris 2005). The technologies we communicate with and use to monitor our networks of people and information further fragments the time we spend on any particular task. To make sense of data – stories, images, people's activities -- time and focus is required to understand what is being communicated and its context. As a node on a network, we are continually projecting our own status, scanning the surface and alighting briefly for short intervals of time.

Qualitative research reduced to a node

The use of qualitative data – a person's words or images – in a deliverable, rather than the analysis of an experience, functions as a node on the network. The images of users and sound-bites of their experiences project a certain status, that this person has been heard, that

they have a story to tell, that that story is relevant to the client in a particular way. The data becomes symbolic of meaning, often times, taking the place of real meaning.

The desire to see representations of people's stories is not blameworthy. Narratives, the foundation of qualitative data, are fundamental and seductive. It's what drives those 57 million US Internet users to read other people's blogs. "The narratives of the world are without number...the narrative is present at all times, in all places, in all societies; the history of the narrative begins with the history of mankind; there does not exist, and never has existed, a people without narratives." (Barthes, 1996)

People understand and enjoy the texture of stories - the words, pictures and video that illustrate them. Stories establish cause and effect. It's one of the main ways in which we interact with the world. In essence, all people establish, negotiate, repair, and terminate relationships with other people through reasons (Tilly, 2006). When people navigate the actions and consequences in their daily lives and interact with others, they give reasons for occurrences. Reason-giving is a social process, it connects people to each other, manages inequities, provides rationales for behavior and resolves emotional conflicts. In Tilly's work there are 4 kinds of reasons, one of which are stories:

- Conventions – socially accepted rules of appropriateness that explain dereliction, deviation and good fortune, e.g., "stuck in traffic" or "caught a lucky break"
- Stories – explanatory narratives that provide cause and effect accounts of unexpected, problematic, dramatic, or exemplary events
- Codes – procedures and rules that govern actions
- Technical accounts – explanations of cause and effect that are grounded in systematic, specialized disciplines rather than everyday knowledge

As researchers, we probe explanatory narratives, looking for cause and effect which in turn renders people's behaviors intelligible. Qualitative methods specifically elicit stories (as well as coded and technical accounts) that best elucidate attitudes, needs, preferences and actions. But our methods typically do not stop at the story-telling level. To fully grasp the significance an experience has in the innovation or evolution of a product or service, there must be multiple examined stories, layered to reveal context, patterns, divergences and opportunities. Either due to the power of story-telling or the symbolic representation of story-telling, many clients and agencies do not fully grasp that the analysis of those stories contains the seeds for decisive action and new ideas. A handful of stories can be interesting, even inspiring, but a few stories are not a fully-functioning representation of an experience. Meaning has to be built up and dissected so as to pinpoint where a business can take action, when it should act and how. Stories without analysis tell us about effect without insight into causes. It tells us about behavior without providing reasons.

There are various representations of meaning that stand-in for analysis. Sometimes it is just a straight transference of high-level insights or top-line themes. Others we've seen include:

- Market research reports - Many clients have done extensive market research and have reams of reports segmenting their customers. While this information is helpful in understanding how they market and interact with their customers, it doesn't take the place of analytic insight into behaviors and goals.
- Web analytics without other methods – Knowing where a user is clicking doesn't take the place of understanding what they're doing and what they need.
- Satisfaction surveys – Data on how a customer feels about a particular product doesn't translate to insights into how they're using it.
- Intuition or hypothesis based on self – sometimes clients already have a path they want to take or an outcome they'd like to see. This is usually backed up with the argument that since they are also customers, "I know what's needed."

In many interactive agencies, the final deliverable from a research engagement is the user persona. Personas are another type of "analysis" that could benefit from better contextual understanding of experiences. User personas can be built from either qualitative or quantitative data, but they represent segments of users who are differentiated by their goals, behaviors, and attitudes (Laural & Lunenfeld 2003). These personas are influential in the design process in that they represent the core audience and their needs for this new or improved product or service. Personas are helpful when based on real data and not just intuited or hypothesized, which can sometimes happen. However, like the node blinking in a network, personas quite often reduce experience to only the dominant characteristic of individuals. Many research processes go straight from qualitative research data to the creation of personas without ever undertaking an analysis of the experience in total. Design personas can be helpful in the short term, and they will cut the time required to complete the overall research process but this stops well short of being able to capitalize on opportunities and mine new approaches. It only serves to replicate someone's story, not evolve or innovate from it.

There are various reasons for the kinds of faux-analysis we've seen:

- The time pressures of projects
- A client wanting to control the outcome of a project
- Lack of history of contextual analysis in traditional marketing research
- Clients assuming that user stories in and of themselves are complete and don't need analysis
- Lack of understanding about what qualitative analysis is and can do

Qualitative is not quantitative

The last point is something that we can address. What makes qualitative data so captivating is often its undoing in being able to serve as the foundation for actionable recommendations and decision-making. While stories bring resonance and identification, they are also considered malleable, subjective, and tainted with emotion. Those who don't do research for a living, and who aren't aware of qualitative analysis processes or methods, question decisive insight from what they consider to be "just stories."

Quantitative data are not as captivating as qualitative data but are believed to be more objective and factual. The results of a quantitative study are often taken to be “the truth”. There are various reasons for this. But in an appreciative assessment of why most clients sign on for a research project, one of the more compelling reasons is that they want an answer and a direction to take. Whether someone is a Senior Brand Manager, the VP of Marketing or the CEO, they will be held accountable for the decisions they make. Numbers confer authority. Quantitative data takes the unknown and renders it comprehensible in discrete chunks – in percentages. Also, there is no debate between quantitative researchers about what it is or who gets to do it. Survey methods and the tools used to “crunch” the data are well-established and used throughout both academia and the business world. The methods for analyzing numerical data are well established and standardized.

Qualitative methods and outcomes are often compared against quantitative research and its outcomes without regard for the different assumptions underlying these two modes of inquiry. Quantitative research is born out of the positivist philosophy that all things are measurable, and that facts have an objective reality. Quantitative results aim to be reliable and generalizable so that predictions can be made. Qualitative inquiries, on the other hand, proceed from an interpretivist philosophy, which asserts that reality is complex, interwoven and difficult to measure because it is constructed from each individual’s unique experiences. Qualitative data must be interpreted in order to establish a context through which behavior can be understood (Siegle 2007).

There are clear instances in which to use one or the other method depending on the research objectives. It’s possible to combine them for an even more robust set of results. The “interplay between descriptive richness and experimental precision can bring accounts of social phenomena to progressively greater levels of clarity” (Cupchik 2001). Yet too often in the business world, the differences in methods are not teased out and applied appropriately to the various types of projects that come our way. For example, we’ve seen “usability research” routinely scoped for all types of projects when it’s most appropriate for product optimizations or evolutions rather than product concepting or ideation. Online surveys continue to be used to ask how many people perform a certain action even when the objective is to understand the steps involved in a process.

In general, qualitative research is viewed as the weaker of the two since its outcomes do not have the singular authority that a statistic can confer (Myers 2000). For one thing, the qualitative method of eliciting stories lends a false assumption that really anyone could do this kind of research. (Forsythe 1999). A second issue is that the analysis of data is in the hands of the researcher to elicit and make sense of patterns. The qualitative researcher is the instrument of both data collection and analysis, whereas with quantitative data, surveys and questionnaires are the instruments of data collection and statistics packages “crunch” the numbers. These differences underlay the perceived fallibility of humans compared against the objective authority of numbers. Combine this with a general lack of understanding about

just how qualitative researchers do analysis and it's no wonder that skittish managers want the clarity and simplicity that numbers offer.

Within our field, the skills and methods for qualitative analysis are not as well defined or touted as the skills and methods for gathering the data. There are now many books and articles devoted to how to do "ethnography" and how qualitative research methods can be applied to understand the "user experience." However, a quick glance through the table of contents for most of these books reveals very little guidance for how to analyze the data once it's been gathered. Many in our community are still focused on redefining ethnography in the business context, who gets to do it and how it should be carried out. There are still online debates over who "owns" ethnography (anthrodesign 2007). This continues to be the dominant thread even as this type of debate ignores the power and opportunity in making sense of the data. Very few debates begin over what it means to do analysis and what it means to make sense of the data – analytic processes are rarely surfaced. The methods used in academic contexts don't translate well to the pace and demands of current business settings. As a result, a client's understanding of qualitative analysis is minimal. They don't understand the process and must take it on the researcher's word that they have transformed data into well-grounded recommendations.

Interpretation and data analysis is where research meets the actionable objectives that businesses have. Ignoring this or minimizing its role leaves the field open to others who would claim the "actionable" part for themselves. There are other disciplines who already take on the mantle of analysis and offer solutions to business questions based on the data gathered by researchers. Companies need analysis so that they can reach the outcomes they want but we're beginning to see that this function is being given to those who are perceived to be "doers & makers", that is visual/product designers, information architects and internet strategists.(Nussbaum 2005). Current job descriptions for designers and strategists include more responsibility for research. Take for example a job description from IDEO for a conceptual designer. "'You bring...a holistic approach to process: Formulating cultural and user insights, mapping opportunity spaces through strategic frameworks, and expressing compelling solutions.'" Ask yourself this: Who in your company at this moment is mapping out opportunity spaces through strategic frameworks?" (Nussbaum 2005) If we, as professional researchers do not take this trend more seriously we may find ourselves left to gather and hand over data to designers and strategists.

We wonder about this lack of focus on analysis. Is it tied to the larger environment in which we live, where the time and appetite for sense-making is in little evidence? Where our news is displayed in tickers scrolling across screens while "experts" yell over one another – neither making any sense but definitely being heard? Are we, in this field, acting as a mirror for US society at large?

Part III: HOW TO ADDRESS LACK OF SENSE-MAKING

While we may not be able to change the larger societal implications of no sense-making, within our own field there are ways to address this.

1. (Re)define research as sense-making

Sense-making, the core activity of research, is inherently an anti-node activity. It is focused on the layers of stories rather than the single, blinking utterance. When we consolidate nodes into a coherent whole we are able to define the entire experience and create a more complete context for the question under investigation. The key feature of sense-making is transforming these layered stories into meanings and reconstructing and abstracting the experience into models that can be used as springboards for discussion and insight. Without meaning, the foundation for actions, needs and priorities is missing.

2. (Re)define us as sense-makers

The responsibility rests with researchers to be sense-makers in the fullest sense of the term. A researchers' work involves more than gathering data, it includes extracting meaning from the data as well as showing how action can be taken from what the data indicates. We are professionals who craft sense-making and meaning. When we make this assertion we focus attention away from our ability to simply ask questions and towards revealing answers in a way that is attractive to both our business sponsors and ourselves.

As a sense-maker we are interested in the whole, therefore we employ complete and continuous attention to all nodes. In addition, we take in or are aware of all communication factors; the emotive, context, poetic, conative and the phatic. Sense-making requires that we cast our net wide in order to place actions in their correct context.

Models of research findings have an additional benefit in that they help to dispel the perception that researchers are not doers, that they do not make anything. Researchers must claim the territory of sense-making and combine it with experience modeling in order to distinguish it from form creation (for designers) or business design (for strategists).

We also need to be more aggressive about promoting sense-making as decision definition, direction and support. What we call ourselves needs to highlight that we are more closely aligned with strategic or analytic functions. When we elevate the importance and usefulness of analysis, we are able to demonstrate to the client that we know what needs to be done.

3. Lead with good protocol design

Sense-making should be applied at the very beginning of research projects when the research plan is being formulated. When, as is often the case, our clients are panicked about a particular problem, they will pressure us to begin work without having a clear idea in mind of what the actual problem may be. Sense-making requires a clearly defined objective and a short list of key questions that need to be answered. It also requires that we learn from past

knowledge; secondary reports, clients' market research studies, surveys, etc. that has been accumulated already. Being free to match the method to the objective is another component of good protocol design. As more clients develop internal research capabilities and become exposed to a variety of research methods, we find them dictating inappropriate methods for their particular question. We should be especially wary of this tendency. Good research planning requires that we be very selective of study subjects and that we work closely with the client to define how to package the research findings.

Good protocol design is the pre-cursor for the sense-making that occurs in analysis. Creating hypothesis and frameworks of an experience to test in the fieldwork phase should be commonplace. As professional researchers we know a good deal about many processes: information-gathering, decision-making, relationship-building, etc. These are the foundations of how people act in the world and accomplish goals. Using these processes to create and guide protocols is good practice and provides a good jump-start on the analysis. In a recent book (Diller, Shedroff & Rhea 2006), researchers at Cheskin lay out 15 "meanings" that they've consistently found in their research into the types of meaningful experiences that people value. That kind of insight going into fieldwork is a huge boon to the analytic process. They also apply an "experience framework" with foundational components appropriate to any type of innovation project. The framework explicitly states the objective and then details the benefits derived from the research according to "functional value" "economic value," "emotional value" and "identity-creation". This is an example of mining practices and outcomes so that sense-making is a smooth and predictable part of the overall process.

4. Choose the most appropriate analytic method

Qualitative researchers are fortunate to have a wide variety of analytic frameworks at their disposal. A quick review of the landscape has revealed 15 - 20 different approaches, which compared to the 1 method of numerical analysis, is a bit daunting. It's no surprise then that the individual qualitative researcher usually specializes in one analytic method, or two at most. These options are in addition to the numerous software programs that we can use as data organizing tools. Fundamentally quantitative analysis involves reducing people (as observed directly or through their texts) to numbers, while qualitative analysis involves reducing people to words.

Mixed types for social scientists - Dr. Russell Bernard believes that "social researchers should be fluent in the full range of methods for collecting and analyzing data. The questions we ask, rather than ideological commitments, drive the choice of one method over another in any particular situation" (Bernard 1996). His assertion is that both qualitative and quant analysis should be applied to data. He points out that coding is just one of the steps in what is often called "qualitative data analysis," or QDA. Deciding on themes or codes is an unmitigated, qualitative act of analysis in the conduct of a particular study, guided by intuition and experience about what is important and what is unimportant. Once data are coded, statistical treatment is a matter of data processing, followed by further acts of data analysis" (Bernard 1996).

Analysis, in his view is an iterative process and it combines both qual and quant methods.

Four types for health care - “Many ethnographers have spent years trying to make sense of her or his field notes. In health care we do not have that luxury or agony” (Stevens 2007). For healthcare researchers, Dr. Stevens advocates four techniques well suited for symptom research; Content Analysis, Grounded Theory, Narrative Summary Analyses and Triangulation. She also suggests protocols for ensuring reliability and validity of results because they need to be compared across cases, institutions, populations, settings and time. In most business settings, we too lack the luxury of years to analyze our field notes.

Custom types for design - In the design research arena social science methods have been further adapted to suit the needs of researchers operating under even tighter deadlines. For example, the “think, do, use” model and analytic frame of AEIOU (Actions, Environment, Interactions, Objects and Users) employed by those at Doblin and E-Lab have since been handed down to others. These tools focus the analysis to construct meaning for design purposes. The Institute of Design offers graduate degrees in design research methods which includes training in analytic frameworks such as Activity Life Cycle Analysis, Value Webs, and Insight Matrix.

5. Make analysis more visible to the client

Analysis gains more value to our clients when they are able to see it as a distinct function offered by a researcher and as a proprietary tool that they pay for. Currently, analysis of research data in the business context is viewed as a bit of a black box. Our clients have likely accompanied us into the field, at the very least attended sessions in a research facility and have seen, perhaps some of our raw interview notes and photos. What they rarely see and what remains a complete mystery to them is researchers putting the data through the analysis that allows us to draw conclusion and come up with the insights that we do. This needs to change. As long as our clients lack the understanding that it is analysis that transforms single narratives and imagery into holistic meaning, we will be fighting an uphill battle to justify the time and cost of our work.

6. Tie research to action outcomes

While we need to highlight the importance of analysis and the activities involved in analyzing our data, the primary and most important outcome of analysis is meaning. The meaning of the data is most effectively illustrated by models, diagrams and maps (McCotter 2001). Meaning visualization is a skill-set not often thought of or talked about in relation to researchers, but this too should change.

Models - When the whole experience has been revealed, illustrative models can satisfy the “urge for story” which is often supplied, in error, by “node” photos and verbatims. Models of experience can also provide the springboard for determining where, how and when to

take action. They can point to solutions that would be most effective for particular audiences and when a need must be met in the context of the experience. When we diagram or model our findings, we are able to show the client how to meet their business objectives. We are also able to show, more clearly how the research they undertook, defines the action they must take, clarifies the priorities they must make and in some cases provides the surprise insights they were hoping for.

7. Visualize meaning to tell better stories

Researchers should become more fluent in analysis or meaning visualization - distinct from data visualization which is usually associated with simply charts and graphs. We should be able to create process maps, decision trees and experience models that are visually pleasing and easy to understand by both our clients and our design teams. Finally, as researchers we should take advantage of the “urge for story” and use it to draw attention to the current experience as a whole as well as to the story of the future context.

The explosion of stories presents us with a challenge, but one we are well equipped to tackle. We have before us the opportunity to show how seemingly disparate stories are indeed connected and how meaning, decisions and actions can be derived from them if only we take the time to conduct adequate analysis. Sense-making as a core competency of research, should be and could be, better storytelling.

NOTES

Acknowledgments – the authors would like to thank Alex Taylor for his review of the early version of this paper and Rachel Lovinger for her assistance and expert guidance with the final drafts of this paper.

REFERENCES

- Barthes, Roland
1996 *Introduction to the Structural Analysis of the Narrative*, Occasional Paper, Centre for Contemporary Cultural Studies, University of Birmingham
- Bernard, Russell
1996 Qualitative Data, Quantitative Analysis, *The Cultural Anthropology Methods Journal*, Vol. 8 no. 1
- Boztepe, Susan
2007 User Value: Competing Theories and Models, *International Journal of Design Vol 1 No.2*
- Cupchik, Gerald

- 2001 “Constructivist Realism: An Ontology that Encompasses Positivist and Constructivist Approaches to the Social Sciences”, *Forum: Qualitative Social Research*, Vol 2, No.1 – February
- Diller, Steve, Shedroff, Nathan and Rhea, Darrel
2006 *Making Meaning: How Successful Businesses Deliver Meaningful Customer Experiences*, New Riders Press
- Forsythe, Diana E.
1999 “It’s Just a Matter of Common Sense”: Ethnography as Invisible Work, *Comput. Supported Coop. Work*, Vol. 8, No. 1-2. pp. 127-145
- Grossman, Lev
Dec 13, 2006 Time’s Person of the Year: You, *Time Magazine*
- Jakobson, R.
1960 Closing Statements: Linguistics and Poetics, in T. A. Sebeok (ed.), *Style in Language*, MIT Press, Cambridge
- Laurel, Brenda and Lunenfeld, Peter
2003 *Design Research. Methods and Perspectives*, MIT Press
- Lenhart, Amanda; Fox, Susannah
July 19, 2006 *Bloggers: A portrait of the internet’s new storytellers*, Pew Internet & American Life Project
- Mark, Gloria; Gonzalez Victor M.; Harris, Justin
April 2-7, 2005 *No Task Left Behind? Examining the Nature of Fragmented Work*. CHI: Take a Number, Stand in Line
- McCotter, Suzanne Schwartz
2001 The Journey of a Beginning Researcher, *The Qualitative Report*, Vol. 6, No. 2
- Myers, Margaret
March 2000 Qualitative Research and the Generalizability Question: Standing Firm with Proteus, *The Qualitative Report*, Vol. 4, No. 3/4
- Rae, Jeneanne
Nov 27, 2006 The Importance of Great Customer Experiences...And the Best Ways to Deliver Them, *BusinessWeek*
- Tilly, Charles
2006 *Why? What happens when people give reasons...and why*, Princeton University Press

Wasson, Christina

WEB RESOURCES

Anthrodesign <http://tech.groups.yahoo.com/group/anthrodesign/>, accessed 20 Sept 2007

Brown, Jeffrey http://www.pbs.org/newshour/bb/business/july-dec06/youtube_10-10.html, accessed 22 July 2007.

Curry, Ian www.frogdesign.com/frogblog/twitter-the-missing-messenger.html, accessed 22 July 2007.

thecaster <http://www.youtube.com/thecaster>, accessed 22, July 2007.

Knowledge@Wharton

<http://knowledge.wharton.upenn.edu/article.cfm?articleid=971&CFID=26271218&CFTO>, accessed 31, August 2007

MasterCard <http://www.priceless.com/us/personal/en/pricelessty/index.html>, accessed 20 September 2007.

Mills, Elinor <http://news.com.com/Advertisers+look+to+grassroots+marketing/2100-1024-6057300.html>, accessed 22 July 2007.

Nussbaum, Bruce http://www.businessweek.com/bwdaily/dnflash/mar2005/nf2005037_4086.htm, accessed 20 September 2007.

Petrecca, Laura http://www.usatoday.com/money/advertising/2007-06-20-cannes-cover-usat_N.htm, accessed 20, September 2007.

Siegle, Del <http://www.gifted.uconn.edu/siegle/research/Qualitative/qualquan.htm>, accessed, 22, July 2007

Stevens, Marguerite M http://symptomresearch.nih.gov/chapter_7/sec4_5/cmss45pg1.htm, accessed 20, September 2007.

Stone, Biz <http://twitter.com/biz>, accessed 22, July 2007.

Stone, Linda <http://www.continuouspartialattention.jot.com/wikihome>, accessed 22, July 2007.

Waters, Darren <http://news.bbc.co.uk/2/hi/technology/6221588.stm>, accessed 20, September 2007.

The Cackle of Communities and the Managed Muteness of Market

JOHN W. SHERRY

Intel Corporation

Researchers at EPIC face something of a trap. Situated in an ethos of twenty first century consumer capitalism, our professional duties overemphasize individual consumers, and the products of our research always diverge towards our respective corporations' interests. As a result we have little basis for collective enterprise as a discipline. However, if we remember that human beings are always part of naturally occurring social systems (communities, work organizations, etc.) we might find we have more to say, both to our corporations and among ourselves. When we shift our perspective this way we find our work is as much about catalyzing human social systems as it is about understanding "the consumer." This paper uses three examples from my own experience at Intel to explain, and highlights some implications of this shift: we must adopt multiple levels of analysis, attend to the fact that structures emerge from human interaction, and account for divergent interests, needs and abilities as these networks form.

INTRODUCTION

It is a common enough scene in our profession. Company X is looking to get into a new line of business or perhaps make some changes to a product, and wants to understand its potential end customers. The ethnography team is mobilized. After (hopefully) conducting some literature research, perhaps talking to a few experts, the team finds themselves out in the field, speaking with the right selection of "ordinary folks" about cream cheese, or getting a cold, or clothing, or the latest digital gadget. The research team comes back and identifies some very interesting patterns in the data, proceeds to tell the suits / engineers / product planners that they were thinking about things all wrong (the obligatory "reframing"), and then proceeds to construct a nifty segmentation model, complete with a manageable number of personas. Perhaps, if they're really good, they'll create an interesting experience model that represents these users' perspectives in a way that is productive for the company. All-in-all, a textbook case of the use of ethnographic research in industry.

And then what? What of true lasting value comes of all this effort? One or two insights might prove useful for whatever is the innovation *du jour*, complete with a pat on the back and a flurry of requests to use some of our pictures, quotes or insights for promotional

materials. And at a conference such as this one, we get to tell our obligatory reframing stories, maybe even get a little chuckle at the suits' expense. Beyond that, what do we retain? How many abiding insights transfer to other projects or add to a general body of knowledge? I think few would disagree that the answer seems to be "very little."

Why is that? Are we doomed to forever being purveyors of knowledge that is mostly disposable? Are the conversations we can have as a community limited to either those "reframing" stories, all-too-familiar hand-wringing about methods or our status as professionals, or debates about who is a "pseudo-ethnographer"? I'd like to suggest that the primary problem is that we have allowed our discipline to be hijacked in a direction that is neither good for corporations nor ourselves. Still, we are hardly doomed.

The trap

Where do the origins of this predicament lie? A generous explanation might point to anthropology's historical emphasis on the particular. This emphasis is evident in workplace-based ethnographic research that has provided at least some of EPIC's ancestry. Suchman (1983; 1995), Sachs (1995), Orr (1996) and a handful of other anthropologists directly critique what might be called the "management consultant fallacy" – the prevailing wisdom that work is best understood from a high (read: management) level, the corporate approximation of the "God's-eye-view." These researchers have taken great pains to point out that the normative / management perspective is at best partial, and have demonstrated how it rendered invisible the real, concrete contributions that actually enable the persistence of the structures that Biz School colleagues hold so dear. As heir to that tradition, it is good that EPIC research emphasizes the individual and the concrete over the remote and abstract. But this is not all that's going on.

A less sanguine assessment might point out that most current corporate-based ethnographic research is conducted in a rather different context, for a different purpose than those studies cited above. Most of us are involved in consumer-oriented research, or perhaps more precisely twenty-first century consumer-capitalist research. In this way of looking at the world, real people, with their messiness and inconsistencies and unpredictable forms of personal agency are too difficult to deal with. Instead, we too are asked to create abstractions, not of work processes, like the management consultants, but rather of people. Thus emerge our beloved *personas*, those schematized representations of the user / consumer whose only dimension of real interest is their relationship to our brand. The *persona*, whose ridiculous cartoonish features constitute the iconography of the corporate "war room."

Personas are always individuals. The hyper-mobile, post-industrial consumer capitalist world is populated, it would seem, only by individuals.¹ The only meaningful collective to

¹ Whether that is a product of three centuries of evolution of the disciplinary power of the state (Foucault), or technological reconfigurations of human society (Wellman), or some other cause I will leave out of this discussion for my own and the reader's sanity.

which the persona can be said to belong is that which he represents: the *market segment*. Individuals within a market segment don't interact with each other, they simply share a set of characteristics. Other types of collectives don't matter. We don't hear much about "communities" in market research. People don't "do stuff" together – most significantly they don't "do stuff" together to produce value for themselves and each other. No, producing value is the job solely of the corporation, which is always just hidden from view behind the mirrored glass of the focus-group room.

Maybe even this is not so hard to understand. It's *hard* to design for more than one person. And, at least for the technology industry where I work, four decades of history seem to suggest that computing is best when it's intensely personal. Who wants a mainframe computer? Give me an iPod! But this obsession with the individual consumer, to the neglect of any broader social systems, limits us in two crucial ways:

It limits the value we add to our corporations. Because this process of (dis)individuation of the consumer, the fascination with the representative individual, tells only half the story. Our actions, values and desires can rarely be interpreted aside from these larger systems that shape them, and are shaped by them. Our participation in broader social systems is inherently productive, if only of meaning. And, as will be discussed, the description of how communities or other collectives function is a different task than describing the practices of individuals within those systems. Unless we do both, we're only telling half the story.

It limits our own abilities to grow and share knowledge. Elsewhere (Sherry, 2006) I have fretted that those of us who attend EPIC do not really form anything approaching a discipline. We have, as Latour (1999) would put it, no texts that circulate through this community, to provide both a sense of focus and revivification. Put more bluntly, we do products, not theory. Despite the repeated injunctions by luminaries at this conference in prior years,² the fact is, for most of us that is not our job. Sure, we might invoke this or that bit of theory as a way of establishing pedigree or to make our assumptions a bit more transparent. But we are members of corporations who demand that we produce not theory but rather "actionable insights" for particular products and services.

Because of that, the drivers of our research activities are always divergent. As our respective brand identities diverge, the translations that occur when we leave the field also diverge. And the hyper-stylized individuals we care about, our beloved personas don't speak to each other. Personas don't really traverse very well across organizations, or even from product to product in the same department for that matter. The obsession with that one-dimensional relationship of "the user to our product", almost by necessity deems irrelevant the unseen people, institutions or communities that exert influence on human practices.

² Recall, for instance, the advice of doctors Bell and Robinson at the EPIC 2006 panel session.

Given all this is it so surprising we have little to talk about together? Yes, there are the “reframing stories.” There are excellent papers and discussions about methods or what we are about, collectively. But beyond that, little else.

A WAY OUT

My prescription is probably painfully obvious at this point. We begin by acknowledging the fact that human beings are more than just randomly distributed individuals. We are also, always, members of clans, work organizations, voluntary associations, communities and other complex, adaptive social systems of all stripes. These are notoriously problematic and contested categories, both in the social sciences and in life more generally. Rather than attempting to nail down some working definition of “a community” or “a human social system”, I would like to focus instead on a few simple implications of this acknowledgment, which seem to apply regardless of any problematic definitions. These implications are readily available in both broader anthropological research, but also in many adjacent domains of research, for instance in the field of computer supported cooperative work, studies of online communities, and even implicit in some prior work at EPIC. The message here is thus nothing particularly new – at least it better not be. My hope is rather to highlight it a bit more explicitly than has been done in the past.

The first implication of this acknowledgment is that we need to attend to multiple levels of analysis. That is, for our work to be whole we must look at both individuals and at the systems they collectively create. This multiple levels issue has been widely recognized and identified in anthropological research and beyond. A very straightforward example comes from Hutchins (1994) ethnographic study of navigation teams. Hutchins distinguishes between the overall, emergent functioning of a system, and the practices incumbent on an individual participant in that system, “[T]he computations performed by the navigation system are not equivalent to the cognitive tasks facing the individual members of the navigation team.” One can’t equate systems with their constituents. We must understand both.

Hutchins’ study of navigation was conducted in the context of a military sea-going vessel, which implies a certain rigidity in terms of social organization. This belies a second implication: that human social systems are mostly constituted through the practice of individual members – they are “self-organizing.” Organizations aren’t just magically “there”, external and separate from the people who comprise them (military experience notwithstanding); they are the results of human interaction. Ethnomethodological research has demonstrated how social structure emerges from the moment-by-moment interactions of individuals. Drawing on the approach, Hughes, Randall and Shapiro (1992) have argued that the very appearance of differentiated individual activities in a collaborative work setting is a fundamentally social accomplishment. They examined an air traffic control room, and noted how workers there provided for each other the kind of mutual intelligibility and

accountability that permit cooperation. The emerging structure, including its identifiable parts, is achieved in the moment. “The *sociality* of work is not a matter of discovering the linkages which connect individual work together, but is rather what permits individuation in the first place.” People are able to work collectively insofar as they understand how their own activities fit with adjacent ones. (p. 117).

A third implication takes into account that, while self-organizing, human social systems can involve quite complex relations of power, disparities in access to resources, and strong divergences in perspective. Social systems coalesce when divergent interests are brought into alignment; when costs, benefits, resources and needs are sustainably balanced. From the early CSCW literature comes a simple illustration of this point: Grudin (1988) found that many collaborative work tools fail due to a “disparity between those who will benefit from an application and those who must do additional work to support it.” More generally, a wealth of social scientific research – most notably, work in cultural or political ecology – has focused on how communities dynamically maintain this alignment of competing interests, particularly in terms of balancing these in situations of scarce ecological resources (Ostrom, 1990; Greenberg and Park, 1994). Some of that work has been applied to on-line communities as well (Smith and Kollock, 1999; Preece, 2002).

More or less explicit in the ecological perspective on communities is the additional insight that such social systems are generally productive. Communities are created not just by people knowing things about each other, as so many online communities seem to focus on. Rather, communities arise as people do things together, whether that means managing a commons, contributing to an online discussion or simply creating meaning. Perhaps most relevantly, the types of things that people do together – the bonds by which they are united – affect the type of community that arises (Sherry et al, 2002).

Along with these simple implications come two simple caveats. First, communities are more than the quotidian products of human self-organization. Communities are also *imagined* (Anderson, 1983; Appadurai, 1991). The ideological construction of affinity and identity not only cross-cuts the practical organization of people and activities, it is broader. In Anderson’s use of the term, the “imagined community” applies to national ethnic and sovereign identity, by definition a larger population than the community of people one might meet in daily life. Real and imagined communities thus interact, creating powerful and layered *subjectivities*. Tensions arise among competing notions of purpose and identity, between ideologies of camaraderie and real inequalities. This reminds us that we as researchers cannot simply take at face value the ways communities are described for us. But it also points out that people are “participants” in communities that lie beyond the immediately observable. To ignore these realities as we focus on the “community” level would be inexcusably naïve.

Second, and related, we can not ignore the yet larger systems in which these networks of human agency are embedded. Two of the cases to follow focus on health care, for instance. Here one can not deny the role of the state, of global circulation of medicines (both

legitimate and counterfeit), capital, and labor (for instance in providing in-home care in the informal sector) as these continue to shape what health means and how it is socially achieved. The same can be said for virtually any other domain of scrutiny. While human social organizations are not simply “out there”, neither are they formed anew each and every time, irrespective of broader social forces that shape what is possible.

CASE STUDIES FROM INTEL

In the following examples I would like to discuss how my own work and that of my closest colleagues has benefited from an approach that incorporates the above insights. Attending to the ways that humans actively create and participate in larger social organizations – however fleeting – and the ways these structures in turn shape human actions, provides us a firmer ground for making claims in our own corporations. A multiple level approach has helped us tell useful, grounded stories about consumers in the present, while also helping us begin to shift the conversation away from this obsession with individuation and consumerism towards a view that enables us to think about our products in terms of social systems. In addition, this shift gives us more to talk about at events such as this. It enables us to construct an approach to research that allows both an accumulation of research results over time and a cross fertilization of results among projects.

The Next Ten Percent project: identifying what “counts” in a community

My first example comes from work started in 2001, while I was still a member of the People and Practices Research Group at Intel. This project was an attempt to explore the possibilities for information technology beyond the wealthiest ten percent or so of the world’s population who enjoyed access to the benefits of computing and the internet at that time. A couple important early themes to emerge in this project included (a) the (somewhat obvious) recognition that in most places people did not have the personal wealth to afford technology, and even when they did, did not always find personal ownership compelling; and (b) most of the really interesting uses of technology were less about consumer behavior and more focused on production. People of limited means are more likely to invest money to enhance their own ability to earn money, rather than on entertainment, consumption or even for delayed earning power represented by education of one’s children.

We harbored no delusions of people, like that adorable little old Italian woman in the commercials, suddenly marketing their olive oil on the global stage. Nonetheless, examples of productive use of technology abounded. Outside Santiago, Chile, a network of telecenters called “*El Encuentro*” had turned a community center and radio station into a resource for entrepreneurial training and youth employment (the kids who worked as network administrators at the community center became outsourced consultants for a government telecoms network). In Hungary, we encountered *telebas* operators actively seeking government grants, via the Internet, for their fellow villagers. In India, a number of social ventures had created a network of what has come to be known “village kiosks”, which are

not kiosks as we know them (ie., not like ATMs) but rather tiny businesses staffed by local entrepreneurs who purchase their own PCs, get access to software and turn around to provide various services to their fellow villagers at an affordable price. These might include access to government services, insurance, banking, farm market quotes, etc..

Most fascinating about these examples were their complex and nuanced approach to entrepreneurship. These organizations were not just about making money, although all of them had that goal, without question. They were, however, just as dedicated to creating and circulating other forms of capital. The director of the Chilean telecenter operation told us explicitly “*El Encuentro* is about creating social capital” – the bonds of community. The use of technology at this telecenter was specifically designed to enable more mutual interdependence within the community. *El Encuentro* became a stage wherein the needs of the imagined community stood in tension with what were some of the more obvious uses of the technology – computer gaming, for instance, was at first ruled out as a legitimate use of the computers at the telecenter. A Chinese i-Café this wasn’t!

Similarly, in rural India, multiple forms of capital were exchanged and accrued around the village kiosks. The firm Drishtee, for example, connected rural Indians to government services via privately operated kiosks. The most obvious was economic: because of proximity, the kiosks saved villagers the expense and time of travel to district seats. Similarly obvious was the economic benefit of access without ownership – that is, community members could benefit from the technology without having to shoulder the burden of ownership themselves. The local kiosk operator, conversely, took on that burden in exchange for modest recurrent fees for use.

Less obviously, this mediated form of access also enabled citizens to benefit from technology’s presence without having to learn how to use it – a barrier that is easy to overlook in places such as Silicon Valley, where everyone seems to know how to use a PC. For kiosk operators, mastery of this skill was a source not just of financial capital. Many of the local kiosk operators we visited became more trusted agents of government services than the government itself. Kiosk operations enhanced their social standing. Social capital even accrued to some kiosk customers. One woman I interviewed, born of low caste and illiterate, would doubtlessly have been without much recourse had she been forced to visit district government offices herself. She would have been too easy for clerks to ignore. But via the kiosks, she became an effective advocate, directing many applications, complaints and petitions of her fellow villagers through the relative anonymity and assured response the kiosks enabled.

Emphasizing technology as “personal” thus tends to hide the relationships that are established, changed or disrupted by the presence of technology. Who is the “user” in the above example? Is it the village kiosk operator? Is it the woman who brings the government

petitions of her friends and family? Is it the friends and family themselves?³ Only by looking at entire community systems could we hope to identify where an appropriate opportunity for Intel might lie. To that end, the insights of cultural and political ecology seemed most appropriate for pointing out the right questions: what counts as a cost, a benefit, a resource or a need? How are these brought into alignment? Without this kind of perspective, if we had, for instance, focused too heavily on issues of personal ownership, or entertainment rather than productivity as the most interesting value proposition, we would have missed this important phenomenon.

This perspective paid off in a number of ways, the most important of which was guiding our attention to the right kinds of interventions for a product with the unfortunate, oxymoronic name of “community PC” (space doesn’t permit more detail on this product, but see Sherry, 2006). Other results included an ongoing research agenda, and the germ of work within my new organization Digital Health.

Clinicians: Building an aggregate understanding of the functioning of systems.

In 2005 I joined Intel’s newly formed Digital Health Group, where I have had the pleasure of working with a truly world-class research team. One of the first things that became obvious is that Intel got into this business without really understanding, in detail, how health care systems operate. This is not entirely a knock on Intel; I’m not sure many health care organizations understand how they really operate either – at least not at the level of decisions and work practices of their individual clinicians, health professionals and clerical staff (it’s the whole “management consultant fallacy” thing again).

Not long ago, our marketing colleagues asked us to “go study doctors” because, they believed (partly correctly) that as high status individuals with some level of say-so over their choice of technologies (more so than, say, nurses), we could get some easy sales by designing something appropriate for them. So, being the good corporate citizens, we ignored their request and went to study nurses. This was not a popular decision, I can testify, but we recognized that we needed to jumpstart Intel’s understanding of how health care works, and that the best way to do this was to start at the fulcrum. Nurses are where care happens.

Monique Lambert, a member of our health research team, proceeded to conduct a study of acute care hospital nurses on such an unprecedented scale and to a level of such amazing detail that I dare say she’s still recovering from the effort. This was not a matter of a few focus groups. Over hundreds of hours of observations she has pieced together a picture of nurses’ work practices that we’ll be mining for years. However, it’s not exactly that picture of nurses’ work that I’m interested in exploring here. One of the most important things Dr. Lambert did was to help explicate the key points at which nurses interact with fellow clinicians, with doctors, emergency medical technicians, discharge planners, social workers,

³ See Miller and Slater (2000).

pharmacists, with patients of course, and a host of others who inhabit hospital settings. Our study of nursing can be seen as one stop, one vantage point on the system of health care. While she was doing this work, other colleagues were filling out a picture of what we call “the hospitalization cycle” by examining other perspectives: emergency medical services and the process of hospital discharge (and, all too often, readmissions).

Gina Grumke spent hours riding along with EMS teams, carefully observing and documenting incidents, and of course asking lots of apparently impertinent questions. Like the nurses research this study was complete unto itself, yielding a number of insights that are inherently valuable to our organization (including the insight that emergency services provide a huge amount of routine care in the community, a fact that we are currently exploring in more depth). Likewise, Nancy Vuckovic conducted research focused on the process and immediate aftermath of the hospital discharge process. This project has been likewise self-contained, albeit incrementally more “systemic”; that is, Nancy looked at the issue from the perspective of nurses, discharge planners, patients and others. This work has yielded a number of potential opportunities both in the hospital setting prior to discharge as well as in the home afterwards, to ensure that patients who are released “sicker and quicker” these days are better prepared to care for themselves.

I would like to point out how important this approach is to our – and hopefully Intel’s – success. By identifying more recognizable, self-contained research projects, ostensibly devoted to understanding particular types of users, we’ve been able offer an acceptable research agenda to our colleagues.⁴ By providing concrete results on discrete portions of the healthcare system, we’ve been able to keep the wolves at bay, as it were, while gradually building up a composite understanding of how doctors, nurses, patients, information, medications, technologies, resentment, intrigue and a host of other tangible and intangible objects flow through health care organizations and interact.

A “multiple” levels approach here was thus crucial, not just for making the work more manageable and acceptable. Some insights about nursing work are most apparent when adopting a more “micro-interactional” approach, exemplified by research Nancy Vuckovic conducted before joining our group (Vuckovic, et al, 2004). This work showed how the practice of “eavesdropping” is critical for maintaining situation awareness among nurses in an intensive care unit, and opened for scrutiny the idea that our technologies must also make that kind of awareness possible. Other insights, however, can only emerge when we see more of what happens “off stage”, by following nurses, or physicians, or other clinical workers for longer periods of time, and understanding the power relations, constraints, and other factors that shape their own perceptions of their work, and responses to it. Large providers, insurance companies and governments exert tremendous forces that shape health care delivery on the ground – and these forces can be in outright conflict. Power relations

⁴ They got over the fact that we weren’t studying doctors first, when they realized nurses liked their first prototype better than doctors did.

among various types of physicians, between physicians and nurses, and throughout the hospital shape behaviors and understandings of work. This is all well known, but until the research is done it is hard to know, in a concrete way, ready for design, what it means for a nurse can be put on the spot for patient information by a physician, what a nurse or physician or phlebotomist might be willing to carry, or why it may be easier to introduce many new products into a hospital at one time, rather than bit-by-bit.

Perhaps more importantly, this aggregation has allowed us to better identify gaps, disparities, or other interesting aspects of broader systems in a way that few individual participants in these system would be ever able to articulate themselves. This in turn helps us to more quickly identify with our colleagues where the interesting technology and business opportunities lie. By constantly traversing between the two levels we're able to have much more meaningful conversations about what might be interesting for a given type of individual while at the same time understanding how such a solution might ripple through health care organizations more broadly. While being realistic about the constant possibility of unexpected consequences, we also know that a detailed understanding of how health care works increases our chance of success.

The Global Aging Experience project: beyond individual values

In a fashion quite similar to the clinic-based research we have a team pursuing a project called the Global Aging Experience project, which consists of both an over-arching agenda and a series of discrete projects. One of the key areas of opportunity being pursued by the Digital Health Group as a whole is the huge wave of adults now reaching an advanced age. There are a number of reasons for this interest. The vast majority of all care for seniors with any form of disability or chronic disease is provided informally by daughters, sons or other loved-ones who may not live under the same roof as the elder. Technology could assist with some simple aspects of daily monitoring and care. Health care organizations currently provide little direct care to seniors – and will provide proportionally much less as the coming wave of aging boomers reaches full maturity, yet they are still facing spiraling costs. Operators of retirement homes and nursing homes may be interested in expanding their services “virtually” via technology, without the heavy capital investment of additional real-estate. All these factors suggest the need – felt perhaps most acutely by most elders themselves – to let people age more gracefully at home.

This work intentionally built on prior research at Intel (Morris et al, 2003). A familiar mantra of that prior work was “aging in place” (that mantra is employed much more broadly than just at Intel, of course). At its best, it means enabling people to avoid unwanted institutionalization. Our progenitor group had put much emphasis on networks of sensors and other technologies to be placed in the home to allow aging adults to avoid or recover from cognitive decline, falls or other adverse events that might land them in a nursing home.

In what looks like a fairly standard qualitative research project for this large and heterogeneous “market segment”, members of my team conducted a massive, multi-country

study of the subjective experience of aging across western Europe as a first step in gaining a broader global understanding of what it means to grow old and whether “aging in place” is indeed a universal value. As with the clinics project, our success in pursuing our research agenda has hinged on our ability to deliver, along the way, results that are recognizable and useful to our colleagues. One of the things we produced last fall, for instance, was a somewhat rough approximation of a segmentation model, along with fairly simple personas. These include categories that segment people according to both their ability and motivation to care for themselves, and their orientation towards future uncertainties.

We’ve also produced a “reframing” of a sort that anyone at this conference might recognize, in this case, an emphasis on the importance of moving away from a medicalization of old age to an emphasis on healthiness, ability and aspirations, which is certainly reflected in our data. But this simple reframing almost immediately entailed the need to understand whole communities. “Aging in place,” it turns out, is fraught with implications about what needs to be “in place” throughout entire communities – good old fashioned geographic communities, that is – to make the proposition desirable or even feasible.

Part of this is obvious: many of the services that an assisted-living facility might provide (for instance, assistance with nutrition, hygiene or other so-called activities of daily living) are material. They need to be made locally available for a senior to access them from home. And other services – home maintenance, lawn care, etc. – must be available locally from trusted providers as well. Many of these resources are already found in the physical communities that people already inhabit. The challenge, however, is how to motivate and align these resources in such a way as to make them available, recognizable and useful to seniors.

Additionally, quite explicit in the discourse of seniors themselves is the expressed desire to remain active, productive members of their communities, to be able to participate in the life of these communities in various ways. If we focus too heavily on instrumenting households, the mantra “aging in place” can quickly devolve into a form of imprisonment, perhaps less desirable even than a nursing home. It doesn’t just take a village to raise a child, it also takes one to enable graceful aging.

Transportation resources offer a perfect example. In most communities – modestly affluent places, at least – transportation is not a scarce resource. And yet, lack of access to transportation is one of the key causes of isolation and institutionalization among elders. Perhaps not surprisingly, transportation is intimately tied to social participation; cognitive and physical stimulation; household provisioning and numerous other services that make staying at home viable. One of our first follow-on studies, conducted by Simon Roberts and team in Ireland, was on rural transportation systems. There are some groundbreaking experiments underway in alternative forms of transportation for the elderly, both in the US and in Europe. From the perspective of technology, there are interesting possibilities for facilitating a better linking of available resources (volunteer drivers, community-based transport systems) and those in need of a lift. This is not to say technology is the answer.

Some of the weakest projects we've seen are the heaviest users of technology. But done correctly, technology could provide a tremendous tool for linking providers with those in need.

Our study of aging has thus become less a question of what gadgets to create for individual seniors and more an exploration of how technology can be used to catalyze networks to serve the needs of seniors, to help bring alignment among a variety of actors to enable transportation, nutrition, home maintenance, medical care, social engagement and numerous other yet-to-be discovered services people of advanced age will need to age in a fashion they desire. This is no mean feat, and it explains why we actively cultivate research and development collaborations. It would be foolhardy to try this alone. Our research has involved a number of academic, private and non-profit organizations, and will continue to do so. But one of the distinct values we can offer as social scientists in these collaborations is to help uncover, through careful observation and questioning, not just unarticulated needs but also the resources and assets that lie unrecognized in the community, along with a careful understanding of how these might be mobilized.

Which, in fact, applies to all of the above examples. I have grown to view our work as less a job of "understanding the user" and much more a task of understanding these alignments, these interactions by which people create their own complex systems, exchanging value and establishing bonds and constraints of various types. We can't do this until we look at these systems "inside and out," as it were.

CONCLUSION

But at the same time, the more intimate networks of human agency, those social organizations that people recognize in their own lives, seem to offer the most useful level for understanding how these broader forces impact individuals. These are the work organizations, the communities and other social groupings that both shape and are shaped by daily human activity.

I'm sure many of you, in particular those of you who are in the consulting business, will view this with great skepticism. "What I wouldn't give for the luxury of exploring these broader systems!" I recognize that when you've got three weeks to become the expert on a particular domain (not of your own choosing), asking the client to let you build a picture bit by bit must sound ridiculous. But I wonder...is it really out of the question to take a certain amount of time to try to understand and represent a view onto your data that accounts for these broader, emergent systems that are created through human agency? At the very least, understanding how our products are implicated in the creation of meaning, or as boundary objects in the formation of social systems, seems vital. To reiterate, it's not as if no one has thought of this (see, for instance Bruner (2005) for an EPIC paper that reflects this kind of understanding).

This is all fine from the point of view of being a better resource to our respective corporations, but it also has implications for us as a community here at EPIC. Still I suppose it is hard to believe we attendees of EPIC will ever “do theory” on a full time basis the way our academic colleagues do (or at least that’s what I hear they do). That is not our job. What, then, do we circulate? Let me offer three very simple suggestions of the kinds of conversations I can imagine having:

- First, we might simply engage in discussions of how communities are seen to function from the perspective of our various research agendas. What are the types of communities that interest us? To what extent do the “players” we’ve identified in our work match up against those identified by researchers from other corporations? What “counts” in these networks or communities – what sorts of value is produced and exchanged and how? Given how Web 2.0 has seemingly captured the interest of so many different types of corporations, it may be we are ready to have such a discussion at this very meeting. In particular, there seems to be a certain naivety with regards to such systems, as if one can simply “design” a desired community. Given the preceding discussion, this seems highly unlikely.
- Second, additive discussions. By leveraging models of social systems already proposed and examined by ourselves and our colleagues, we might actually get a leg up on work we have yet to begin. Such models, if nothing else, might alert us, as researchers, what to be looking for the next time we embark on a given project with a given population. This obviously requires a certain level of openness. The fact that, most of the time, our corporations don’t recognize this kind of knowledge as intellectual property (yet) might make this easier.
- Third, search for complementarities. By focusing on how products and services might shape the formation of social systems, we might discover new ways to do what most of us are paid to do: help imagine new products and services. Beyond simply comparing how we look at technologies, I would love to engage other researchers, working for entirely different kinds of corporations than mine, in an exploration of how our various products and services, real or imagined, might interact in these social systems. As mentioned, we’ve already begun this with transportation, and the results have been fascinating.

Yes, there is much to be worked out, both theoretically and logistically. Even that working out might provide us, as a community, with something to actually do together. And that is how communities are made!

NOTES

I would like to thank Simon Roberts and Alex Taylor for their careful reading and comments on an earlier draft of this paper, of course, all errors and inaccuracies remain mine alone. I would also like to thank Tony Salvador and members of the social science research staff at Intel Digital Health for allowing me to discuss their work. The thoughts expressed in this paper are not the official views of Intel Corporation.

REFERENCES

- Anderson, Benedict
1983 *Imagined Communities: Reflectionson the Origin and Spread of Nationalism.*
London: Verso.
- Appadurai, Arjun
1991 Global ethnoscaples: notes and queries for a transnational anthropology.
In *Recapturing Anthropology: Working in the Present*, ed. RG Fox, pp.
191–210. Santa Fe, NM: Sch. Am. Res. Press.
- Bruner, Dan
2005 Social relationships in the modern tribe: product selection as symbolic
markers. EPIC 2005 Proceedings. NAPA.
- Greenberg, James. and Thomas Park
1994 Political Ecology. *Journal of Political Ecology* 1(1): 1-12.
- Grudin, Jon.
1988 Why CSCW applications fail: problems in the design and evaluation of
organizational interfaces. Proceedings of CSCW'88. ACM Press.
- Hughes, John, David Randall and Dan Shapiro
1992 Faltering from ethnography to design. Proceedings of CSCW'92. ACM
Press.
- Hutchins, Edwin
1994 *Cognition in the Wild.* Cambridge University Press.
- Latour, Bruno
1999 *Pandora's Hope: Essays on the Reality of Science Studies.* Cambridge, MA:
Harvard University Press.
- Miller, Daniel and Don Slater
2000 *The Internet: An Ethnographic Approach.* London: Berg.
- Morris, Margaret, Jay Lundell, Eric Dishman, Brad Needham
2003 New perspectives on ubiquitous computing from ethnographic study of
elders with cognitive decline. *UbiComp 2003.* Springer.
- Orr, Julian
1996 *Talking about Machines.* Cornell University Press.

- Ostrom, Elinor.
1990 *Governing the commons: the evolution of institutions for collective action.* Cambridge University Press.
- Preece, Jennifer.
2002 Supporting community and building social capital. *Communications of the ACM* 45(4): 37-39.
- Roberts, Simon, David Prendergast and Tim Plowman
2007 Homes as indexes of the ageing experience. MS in preparation.
- Sachs, Patricia
1995 Transforming work: collaboration, learning, and design. *Communications of the ACM* 38(9): 36-44.
- Sherry, John
2006 Compressed time, expanded space. Paper presented at the Annual Meeting of the American Anthropological Association, San Jose, CA.
- Sherry, John, Wendy March, Richard Beckwith, Tony Salvador and Steve Barile
2005 The life of the place: technology and communities. *HCI 2005 Las Vegas, Nevada.*
- Smith, Marc and Peter Kollock, eds
1999 *Communities in Cyberspace.* Routledge.
- Suchman, Lucy
1983 Office procedures as practical action: Models of work and system design. *ACM Transactions on Office Information Systems*, 1, 4, 320-328.
- 1995 Making work visible. *Communications of the ACM* 38(9): 56-64.
- Vuckovic, Nancy, Maria Lavelle and Paul Gorman
2004 Eavesdropping as normative behavior in a cardiac intensive care unit. *JHQ online*, Sept/Oct. 2004.
http://www.nahq.org/journal/online/sep_oct/Eavesdropping_Normative.pdf

Searching for the ‘You’ in ‘YouTube’: An Analysis of Online Response Ability

PATRICIA G. LANGE

School of Cinematic Arts, University of Southern California

Enthusiasm for adding sociality to Web sites is mounting. Yet, the YouTube experience shows that participation in social networking sites is complex and potentially contentious. Meaningful participation in part depends upon participants’ ability to respond to others and contribute to a site. While some participants demand more active involvement from administrators to create a safe and encouraging environment, others view intensive regulation as impairing their individual response ability to communicate with others and contribute. Discussions about adequate participation inevitably lead to a consideration of administrators’ responsibility for creating an environment that provides sufficient opportunities for widespread and diverse participation. Before embarking on creating a community or adding intensive social networking components that may be monetized to a site, administrators should think carefully about the challenges that will likely ensue as participants become more passionate about the community and consequently make demands that seek contradictory optimal participatory environments.

INTRODUCTION

Last year *Time Magazine* named “you” as its person of the year for “seizing the reins of global media” with so much “energy” and “passion” (Grossman 2006). YouTube is cited as part of this participatory movement because it enables global video sharing and facilitates online social networking. If prior statistics released from YouTube are accurate, people watch more than 100 million videos and upload more than 65,000 videos daily to the site (YouTube Fact Sheet 2007a). Yet, using the ambiguous term “you” masks certain participatory challenges faced by current and would-be participants. In linguistic terms, “you” is a deictic or shifter that changes in meaning according to the contextual time-space of the user and the recipient. When a person reads the article, the act of reading the word “you” urges the reader to interpellate or call into being their identity as a content creator who is part of the collective “you” to which Time refers (Althusser 1971). However, not everyone actually participates in advanced, user-content driven sites. What constitutes participation is complex and people may engage in certain forms while avoiding or being prohibited from others. Use of the ambiguous term “you” performs an inclusive slight of hand that obfuscates participatory complications, even when technical and economic participation requirements are met.

The figures for participation in advanced Internet-based content production are not impressive in the United States, where only an estimated 8% of the population reportedly uses advanced “participatory Web and mobile applications” regularly (Pew Internet and American Life Project 2007). Globally, major hurdles still complicate technical and economic access to basic telephony services—a far cry from multimedia, online content production (International Telecommunication Union 2001). An examination of 500,000 YouTube channel pages¹ by researchers at Delft University of Technology in the Netherlands revealed that some 70% of users with channel pages claimed to be from the United States (Gomes 2006). Although self-reported data must be used cautiously, such a high percentage suggests a U.S.-centric core of participation despite the availability of global video sharing. YouTube’s fact sheet states that they are “committed to ‘internationalizing’ YouTube by translating services and features into each country’s native language” (YouTube Fact Sheet 2007b). The site now offers YouTube portals tailored toward participants from Brazil, France, Ireland, Italy, Japan, The Netherlands, Poland, Spain, and the United Kingdom.

Yet, even after physical access is achieved, scholars have observed discrepancies in use that Jenkins et al. (n.d.) call the “participation gap,” which refers to “the unequal access to the opportunities, experiences, skills, and knowledge that will prepare youth for full participation in the world of tomorrow” (Jenkins et al. n.d.). The term applies not just to youth but to anyone who encounters difficulties achieving online participation. For example, although YouTube offers easy video uploading, it is clear from casual viewing that some people are more technically proficient than others in crafting videos. Learning to manipulate video equipment and computer-based editing software is expensive and non-trivial.

Participatory complications on YouTube include: 1) acquiring necessary skill sets; 2) understanding and abiding by terms of service rules and governmental laws; 3) navigating social conventions; and 4) dealing with unpredictable interactional effects both on and off the site, all of which influence whether participation will take place, and what the quality of that participation will be. This paper focuses on complications that emerge from interacting with other people, such as administrators, parents, and participants. The paper draws on data from a 1-year ethnographic research project on YouTube that was funded by the MacArthur Foundation and is part of a large-scale Digital Youth study examining young people’s media use and informal learning. A goal of the project is to use the findings to inform the design of educational programs and online environments.² The data includes weekly participant-observation sessions on YouTube, 50 formal interviews and pre-interview use surveys, 20 informal, video-recorded interviews, and attendance at 17 media- and video-themed events such as the YouTube meet-up on July 7, 2007 in New York City. The study also analyzed videos, comments, and related discourse. The paper explores participants’ perceived ability to respond and contribute to YouTube activities.

¹ A channel page is the YouTube equivalent of a social networking profile page. Channel pages contain user-selected, self-reported personal information such as where one is from, age, contact information, and lists of friends, subscribers, and videos.

² <http://digitalyouth.ischool.berkeley.edu/>

Linguists have noted that the very term responsibility derives from the social act of giving people the opportunity to respond in conversation (Bergman 1998; Linell and Rommetveit 1998). Interlocutors may facilitate or inhibit other people's ability to respond through encouragement or hostile acts. This paper will analyze the "response ability" of individuals to participate on YouTube and it will investigate the responsibility of administrators to create opportunities for meaningful participation. The paper concludes with questions that people who wish to add social networking to their sites should consider before launching a social community and facing related issues and challenges.

PARTICIPATORY COMPLICATIONS

Participatory complications often include negotiations with administrators and parents. YouTube's Web page states that "people can watch what they want, when they want on YouTube" (YouTube Fact Sheet 2007b). Yet, there are limits to what people can watch and upload, depending, for instance, on legal and copyright concerns. YouTube has a terms of service policy which has rules about posting inappropriate material. The policy also states that children under 13 may not use the site, while children 13-17 may participate with parental permission. Some people may view these policies as ageist or as necessary (and inadequate) for protecting young people's safety. Whatever position one takes, the fact is that participation is limited. Navigating issues such as copyright infringements is not straightforward for all participants. For example, several interviewees said they were confused about YouTube's policies as well as general copyright laws. Some interviewees were angered when their accounts were closed, claiming that YouTube did not explain why the accounts were closed nor did they provide adequate guidance about how to adhere to copyright laws and other regulations.³ In some cases, interviewees said their accounts were re-instated and the closures were acknowledged to be mistakes. In other cases, accounts remain suspended or closed and interviewees said they were still unclear as to why.⁴

Some interviewees claim that YouTube's application of their policies is uneven, with some users more visible and thus more vulnerable to censure than others. For instance, one group of children interviewed noted that although they admittedly violated rules about posting inappropriate content, they also attributed their account closure to a "rival" who flagged their videos and brought their transgressions to administrators' attention. People have expressed awareness that flagging popular videos as inappropriate can be a strategy to neutralize one's competition. YouTube investigates flagging claims, and states that they do not automatically close accounts that receive a flag. But in some cases, interviewees report a lack of dialogue between administrators and participants about reasons for account closures.

³ A website has been devoted to raising awareness about several suspended accounts by children. For more information see: <http://www.youtubers.com/>

⁴ In the video, "Youtube... please DO NOT close my account..." renetto claims to have gotten a call from a Google attorney saying that children under 13 cannot appear in videos without their parents appearing in the video with them. Yet he claims such information is not currently stated in YouTube's terms of service policy. See: <http://www.youtube.com/watch?v=Fuu4YzNaQck&NR=1>

The intense emotions associated with an account closing and the concerted efforts to negotiate with administrators to reinstate banned accounts reflects a commitment not only to keeping one's work online but also to maintaining a social presence on YouTube. When someone's account is closed, it is not simply a matter of starting a new account (which is ostensibly forbidden according to YouTube's account closure rules). If they have used YouTube as a primary storage facility for their videos because they do not have adequate computing capabilities, they will lose the videos as well. More importantly, participants lose all the textual commentary, ratings, personal messages, bulletins, and video responses that were posted on their channel page and videos. Comments and responses serve as a tangible articulation of a social identity that is lost when an account is banned.

In addition to administrators, parents may also have rules about how or whether their children should be allowed to post content or even view what could be characterized as explicit or controversial videos on YouTube. As a colleague researching home-computer use explains, "Even in Silicon Valley, arguably one of the most wired places in the US, kids do not have unfettered access to computers and the Internet. Indeed, kids still encounter age-old family dilemmas, including sharing the use of a computer with siblings, the deteriorating condition of 'hand-me-down' computers and restrictions on the time and duration of use" (Horst 2006). Interviewees have reported being unable to access YouTube from school which may be banned on school servers and children may not be aware of the technical means or have the social desire to circumvent these policies.

Anticipatory criticism from other participants also influences levels and types of participation. Several interviewees described how they felt they did not fit the model of certain forms of video making such as diary forms of video blogging (or video-based web logging) in which people often talk directly into a camera and relate their life experiences. Some interviewees expressed hesitation to put themselves on camera for fear of potential criticism and hurtful comments or because it was not socially acceptable. As one man put it:

You know I'm in my mid-thirties and not quite the Adonis I used to be, and, you know, maybe if I were a younger man it would be for me but right now I like the production side of it is very fun and I'm learning a lot about video production and tripods and cameras and that sort of thing.

These kinds of comments suggest that although people participate and enjoy YouTube, they may do so in self-determined socially acceptable ways according to characteristics such as age and sex. Certainly everyone has dispositions with regard to how they want to participate in a video sharing site. This may include posting your own videos, posting comments, or using social networking features. But a key question becomes, are people declining to take advantage of certain types of participation because of individual dispositions or are their choices motivated from social pressures such as the wish to avoid harsh criticism? If such social pressure were absent, would their participation increase?

Even seasoned users expressed concerns about what level of participation they felt was optimal. One popular YouTube celebrity, for instance, said that he did not participate in the social networking side of YouTube because he is unfamiliar with the features and associates them with youth.⁵ Further, he expressed concern about joining YouTube's partnership program, in which certain individuals are invited to share advertising revenues from ad banners placed above their videos (Riley 2007). YouTube has established a separate partner channel consisting of only partner-created videos. Some interviewees believe that partners tend to receive increased rotation on YouTube's featured video lists. Although achieving partnership is widely assumed to be the goal of many aspiring YouTube stars, this celebrity cited concerns about how increased visibility would likely prompt increased rules and unwelcome scrutiny of his work by administrators. He felt this scrutiny could compromise his enjoyment of and professional success with the site. Monetizing his YouTube work could compromise his self-expression, which could complicate his ability to attract other media producers who have seen his work and offered him business on the basis of his current YouTube videos. When asked if he would like to become a YouTube partner he said:

I don't think so. I don't think so because...[so far] they haven't said anything. They haven't told me I can't do this or I can't do that and I don't want to become a partner and then have them sort of scrutinize my creativity or what I do. 'Cause I do stuff sometimes, I mean I use unlicensed content. [laughs] You know, it's the Internet! You know, and I think I'm going to do it until somebody says don't do that. Cease and desist.

HATERS

Adequate participation is strongly influenced by the emergent outcome from negotiating not only with administrators and parents, but also through interacting with a specific group of others within and across sites. A number of people have cited so-called "haters" and harsh criticism of videos as a problem for YouTube (Lange 2007). As one interviewee put it, "a hater is someone who posts a negative comment that doesn't offer any [criticism] or any helpful information. Simply commenting with 'gay' is hater like. Saying 'This sucks go die' is hater like. [They] insult you and offer no suggestions on [improvements]" (Lange 2007).

Evidence from videos, posted comments, and ethnographic interviews suggests that these comments may discourage people from posting videos or engaging in certain genres, such as video blogging styles of participation. In a video called "The community of YouTube." [sic] posted on August 7, 2006, a YouTube celebrity named renetto expressed concern about the hostility he saw as an unfortunate limiter of participation on the site.⁶

renetto: I get so much email from people saying I would never make a video and

⁵ These include so-called "friending" practices in which a user asks another user to become his or her friend. If the user accepts the request, their friendship link may be displayed on their channel pages.

⁶ See <http://www.youtube.com/watch?v=RLcQVtuVMSU>

put it on YouTube. [reporting comments from viewers] “Cause you don’t understand, people will make fun of me, the way I talk, the way I am, the way I look.” [in his own voice] I look at some of the people who were brave enough to leave videos for me and [some] of them, I’ve read the comments underneath their videos and there are like just people just going after them. I mean just flat out going after ‘em for being brave enough to put up a video and talk about who they are ‘cause maybe they’re overweight or maybe they’re old. I mean, old, that’s what I get all the time...What’s the crime in that?

These comments, as well as comments from interviewees at YouTube meet-ups are valuable in part because they provide a window into problems with participation that may not easily surface when ethnographically studying the output of current participants who are posting videos and comments. Yet they enable access to information about people who are interested in participating. Renetto points out that even if millions of people are watching videos, the proportion of comments to viewership can be relatively low. In his view, a video with 1 million views but only several hundred comments and less than 10 video responses is a participatory “failure” since the exchange of feedback and interaction is minimal. Renetto and others attribute these low numbers to mean-spirited mockery and cruelty from haters. Reactions to haters (a problematic term) are varied (Lange 2007). For example, while some YouTubers are grateful that even comments from haters drive up their video views and comment tallies (which are used by YouTube to bestow certain honors such as “most discussed video”), others are hurt by the remarks and are discouraged from participation, which many people see as unfortunate not just for the individuals but for the interest of the YouTube community as a whole.

Another man posted a video, “Time for a Break from GoogleTube”⁷ in which he says that his participation on YouTube has ceased to become enjoyable, in part because of the frightening “[attacks]” he has had from video responders (some of whom sport ski masks) and from people on another site that used his name and YouTube videos in supposedly satirical, tabloid-style exposés. He called these accusations “libelous” and financially threatening should for example, his boss encounter the material and fire him. During our interview he expressed frustration with the account closures of children, and protested these closures at the New York City YouTube meet-up in July 2007. In his video less than two weeks later, he reconsidered whether children should be on YouTube in light of his unfortunate experiences. He interprets “GoogleTube’s” “indifference” to hating behavior as a willingness to leave the site to the “television stations” and “nut cases.” In his video he states:

I’ve really lost a lot of the fun that was here for me on YouTube...I know for a fact that I need to take a break. I need to just walk away for a while and try and get back a perspective. I’m, I’ve heard a lot of people talking about kids don’t belong on YouTube. They should require credit card verification and 18 or older to be on this

⁷ The video has been removed by the user.

site. Maybe that's true. Especially with the fact that GoogleTube is not interested in trying to ensure there's any kind of community or any kind of safety in the community, that's for sure. I don't think that GoogleTube is interested in the community at all anymore.

Interestingly, before ratcheting down his participation, he felt the need to make a video to explain his decreased participation to his subscribers (which number over 1000). He faulted administrators for not removing the response ability of "haters" and others who "attacked" him. He attributes his decision to decrease his participation to his increased popularity and visibility which brought a barrage of unwelcome attention from haters and others.

On the other hand, in the few short weeks since the first draft of this paper was written, he has posted an additional 80 videos, suggesting an intense interest in and enjoyment of participating and interacting with his viewers on YouTube. Some of the videos address his frustrations with YouTube while others examine different topics. The contention here is not that YouTube is only filled with haters and people who cannot participate. In fact, the data is biased to examine people who have continued on YouTube or have posted videos, despite the problems, because of the benefits of participation. As one 15-year old boy said in an interview:

But then even when you get one good comment, that makes up for 50 mean comments, cause it's just the fact of knowing that someone else out there liked your videos and stuff, and it doesn't really matter about everyone else that's criticized you.

Many people enjoy YouTube and are willing to endure negative feedback if it means they can connect with others, learn more about making videos, or find new friends. Not all interviewees reported having problems with haters. In addition, some people said they participate on YouTube despite the problems because YouTube has a critical mass of viewers for their work. However, not all forthcoming sites that plan to add social networking features will have YouTube's large audience. Retention of site participation will take on greater salience amid an increasing number of competing sites with similar video content.

CRITICISM AND FEEDBACK

Recently, scholars have reconsidered the term "flaming" in online research (O'Sullivan and Flanagan 2003; Lange 2006). The problem with terms such as "flaming" and "hating" is that they are relative, interactional, and negotiable. Complicating the challenge for administrators who are trying to foster community and formulate responsible policies is that while some people have a high tolerance and indeed enjoy confrontational types of participation, others eschew it to the point where it can interfere with their enjoyment of basic online participation.

In a popular video called “BAN SARCASM FROM YOUTUBE!!!”⁸ which was posted on November 4, 2006, a prominent YouTube partner named Paperlilies jokingly and sarcastically argued that sarcasm should be banned from YouTube. This video appeared on YouTube’s home page featured list and as of this writing (July 30, 2007) had 1.7 million views. In a follow-up video entitled “RE: Hater Comments from the Sarcasm video”⁹ which was posted on December 11, 2006 and to date has received over 180,000 views, Paperlilies reads some of the hater responses she received on her sarcasm video. These include stereotypical hater remarks that include permutations of words and phrases such as “gay,” “go die,” “you are ugly,” and so forth. What is interesting is that within her list, some comments may not necessarily qualify as “hating” behavior for some people. Not everyone who posts criticism or strong commentary would consider themselves haters nor would they want their response ability truncated. Because of the format of Paperlilies’ video which splices together a number of comments, viewers do not have the full context of the comments, in terms of prior relationship she might have had with the people who posted them. Nor do we know how the comments are positioned within the context of the poster’s other remarks. In and of themselves the comments below would not necessarily qualify from all perspectives as “hating on” her:

- “Sarcasm is a fine art; your attempt at it was amateurish.”
- “The way you did it wasn’t really sarcastic at all. There is a certain tone you have to use in order to be sarcastic and this video was in no way portraying that.”
- “[I] think she’s being sarcastic but she don’t do sarcasm well. You have to sound sarcastic.”
- “Stop going on YouTube if you have a problem with it, noob”

The first three comments could be construed as criticism, but are they motivated by hate? In academe, I can definitively state that similar wording has appeared in reviewer’s comments that I have seen. Despite the popular assumption that the Internet is responsible for fostering environments of hate, many other types of every day interactions contain their share of what receivers of such comments may feel is deliberate and unwarranted vitriol.

Problems with online haters, flammers, and other emotionally-charged interactions are well known. Rheingold (1993) describes having to physically remove himself from the WELL community and create balkanized zones where people who enjoy this type of verbal sport may go. Some communities may espouse the idea, as articulated in the fourth comment above, that people uncomfortable with this type of verbal sport should go elsewhere, while others set a tone through social mechanisms about the type of community they wish to create (Baym 2000).¹⁰

⁸ See http://www.youtube.com/watch?v=MPgkZfaA_K8

⁹ See <http://www.youtube.com/watch?v=uSYw4dUVb1E>

¹⁰ Part of the problem lies in the terminology that was first used in social science studies of online communities, which were actually not relegated purely to online interaction as Rheingold (1993) illustrates. Characterizing such groups as “virtual” rather than “dispersed” codes them as not real in social science research when in fact they involve real people having real reactions to others. The first decade of social science research has concentrated on supposed differences between “virtual” and

What is different today is that as businesses and educators seek to monetize sociality on their sites, they literally may not be able to afford to ignore the concerns of users and participants who may transfer their support to competitors should a particular environment not meet their needs. While in the past some online groups sought to maintain a small techno-elite, business concerns may wish to promote a more widespread user base. Yet, a difficult task facing them will be to determine what kinds of participation are perceived as negative and how interactional subtleties influence levels of participation and commitment to the site.

As noted above, not all interviewees perceived haters in the same way. One teenage interviewee noted that haters “never” discourage her from making another video. When I asked her if she thought haters were a problem for YouTube, she stated, “nah, they have their own free will to dislike things...I think it's fine. I just think it was funny that they waste their time trying to trash someone's work.” Yet, the same interviewee felt compelled to respond to a “rant” by a popular YouTube comedy sketch participant and partner called thewinekone. He characterizes his video, “3:00 AM Madness,”¹¹ as a “rant about people and their web cams” while also emphasizing that he doesn’t “have anything against these people.” In this video, which was posted on March 25, 2006, he states a “beef” of his:

I seriously don't know why all you Internet people, Internet users, love to download and watch others lip synch to their web cams. Doesn't make any sense to me! They're not good, they're not funny...Basically what I'm trying to tell you is that you need new material cause that stuff is all done with and done with. Do something innovative. Something unique that someone has never done on a web cam and then show it to the world, alright. It's simple. I mean, you can do something like this: throwing random water bottles everywhere. [throws water bottles around] Random water bottles, just one after the other.

The teenager whom I talked with posted at least two videos which responded to thewinekone’s rant. A popular lip syncher, she praised thewinekone for his video making ability and noted how much she enjoyed his rants. In two videos, she provided comedic examples of how she was trying to distinguish herself from the kinds of videos that thewinekone criticized. Even though she lists her style on YouTube as “Vlogging” or video blogging she nevertheless assures her viewers, and thewinekone whom she directly addresses, that she is “just not into” the kind of boring, minutiae-filled video blogging that thewinekone derides.

“real” interaction when in fact similarities exist and those are equally important to explore. Yet such similarities may not be seen by scholars as long as interactions involving online components continue to be coded in research as not real or “virtual” (Lange, in press).

¹¹ See <http://www.youtube.com/watch?v=6wdow8SNemc>

The rant is a genre in and of itself on YouTube and elsewhere in technical communities. The online Collaborative International Dictionary of English defines a ranting as “[raving] in violent, high-sounding, or extravagant language, without dignity of thought.” To characterize one’s remarks as a rant is a deliberate strategy that in Goffman’s (1981) terms, provides a frame that helps listeners interpret the remarks. Socially, the criticism in the rant is marked as biased, emotional, and not necessarily meant to be read as a personal attack. It is as if marking harsh criticism with the term “rant” makes it socially acceptable to its audience. In this example, what is interesting is that the teenager did not feel the need to respond to nor remove hateful remarks from her video pages. She claimed that these comments did not affect her participation or stop her from making videos. Yet, thewinekone’s rant attacked lip synching, one of her genres that her fans arguably appreciated. This attack prompted her to respond to him and to massage her public identity as one that is acceptable to technically proficient participants.

One reading of the “rant” dynamic such as that between thewinekone and the teenager is that such rants risk foreclosing participation through the actions of self-appointed members of “Internet police” who veil harsh criticism using the frame of the socially-accepted rant. Such rants are less concerned with helping others improve than with preserving a community for the techno-elite. In this interpretation, his remarks are not “constructive” but rather “deconstructive” criticism because they aim to discourage certain genres and types of participation (Lange 2007).

However, it is important to remember that in many cases, a person who “hates on” someone or “rants” is him- or herself responding to something that they see as morally wrong or incorrect. Scholars of conversational morality have observed that in person interaction is filled with moral positionings, accusations, and counter-accusations. In fact, ordinary, every day conversation is so morally-imbued that it is hardly possible to hold a conversation that is devoid of some explicit or tacit moral implications (Linell 1998). Seen in this light, thewinekone’s rant is a response to transgressions that he perceives to be unfortunate for the YouTube community.

An alternative interpretation of the exchange is that the thewinekone uses an admittedly emotional “rant”—which he personalizes and further softens through his wildly popular comedic style—as a way of improving the benchmark of individual quality and social participation on the site. His admonishment can be read as a type of technical mentorship that attempts to close Jenkins’ participation gap between uninspired and uninspiring video bloggers and lip synchers and technically-proficient and original video makers. If certain participants are being invited to be partners with YouTube and receive more air time, then it is to participants’ advantage to understand why certain popular members are preferred over others for receiving increased attention and monetary compensation.

Yet, the question remains, how do these dynamics affect participation? This is an especially important question when one considers that not everyone wishes their sociality to be monetized and that people may learn from or simply enjoy certain forms of participation,

even if they are socially eschewed. For instance, one interviewee told me that she had learned a lot about editing by learning to synchronize music with video in her lip syncing videos. Adequate mentoring may require a balance between providing feedback while avoiding harsh criticism that chokes off experimentation that many video makers say is crucial for improvement.

As participants demand more of each other, this may in turn complicate content makers' ability for experimentation and freedom of expression. On her channel page, Paperlilies stated, "I am completely daunted by having so many people watch me and I miss the old days when I felt like I could post any old crap whenever I felt like it." Participants may feel a certain sense of responsibility to their viewers which may complicate their creativity and social expression on the site.

FUTURE CONSIDERATIONS

Participation issues are becoming increasingly important as businesses, educators, content producers, and others seek to increase the sociality of their Web sites and services by including social networking components. Yet before deciding whether and how to implement such social network systems, it is very important to realize that as "passion" and commitment to community increases, the stakes also increase for participants who may demand more from administrators and other participants. Would-be administrators should consider the type of environment they wish to foster and how they will achieve it both technically and socially. As indicated here, some people expect administrators to be community liaisons, adjudicate complaints closely, and actively promote community, while others require more unfettered expression. To what extent administrators will even have the kind of control they wish is an open question. Some of the decisions about how the community will run will quite likely be greatly influenced by the needs and goals of participants as they work out the kind of community that meets their needs.

Elsewhere I have explored a number of top-down proposals that have been suggested to regulate problems on the site (Lange 2007). Few of these proposals have met with enthusiasm from the young people interviewed in this study. These proposals include rules such as being a certain age, posting at least one video, or being a member of YouTube for a certain length of time before being able to post comments. Most of the negative reaction stems from the perceived threats to free speech that they see as outweighing any potential benefits such as deterring haters. Further, implementing these mechanisms may not actually solve the problems. For instance, some participants suggested "viewer rating" or "karma" systems in which viewers rate each other with regard to their participation. Someone who makes thoughtful comments and videos would receive more stars while "haters" would receive fewer stars. Only those rated with a certain number of stars would be allowed to comment. Many interviewees cited obvious cultural relativity problems and sabotage that could undermine this policy's intent. In a sense, the tension seems to be that in order to create an environment that increases the "response ability" of some participants, such proposals

aim to decrease the “response ability” of others who would be subjected to uneven and culturally relative adjudication.¹²

The drive for adding social network components to online environments is currently strong but would-be administrators should consider the following questions before proceeding:

- What kind of community is optimal for a particular online environment?
- What constitutes a “problem” or social conflict that requires resolution?
- When problems occur, what social and technical mechanisms will be used to solve them?
- Will the problems be addressed through features such as increased customization and ability to “tune out” unfortunate comments or will problems be solved through social mechanisms such as community liaisons who publicly or privately adjudicate conflicts?
- Alternatively, will proposals emerge from the user community as they influence the changing parameters of their community?
- Is the goal to achieve one large community, or will smaller islands of community be beneficial for the site?

For example, whether the community enables customization to such an extent that islands of personal use are being created rather than a more communal experience depends upon the goals of the site and the participants. As noted above, user rating or “karma” systems in which users or their comments are rated are subject to certain abuses. One frequent complaint from YouTubers is a perceived lack of dialogue and feedback between administrators and participants. Yet, providing such feedback is time intensive and people managing sociality-based sites will have to assess whether such participation is optimal for their resources and goals.

Contrary to the folk belief that as people get to know each other, vitriol automatically decreases, the YouTube experience shows that when building community, passion comes with a price. As people care more about their community, they demand more and are more upset when demands are not met. Whether failure to meet the demands will drive users away or will prompt a tenacious drive toward resolution depends upon the success and approach of particular sites. Either way, managing sociality is non-trivial and will require attention to each individual’s response ability as well as responsibility toward others on the site.

Acknowledgments – I wish to thank Mimi Ito, Peter Lyman, and the MacArthur Foundation for their support of this study. I am grateful to the members of YouTube and the video blogging community who have participated in the study and contributed so many interesting

¹² YouTube recently instituted a comment rating system in which anyone can rate comments that have been posted to videos. An individual comment can be rated as: “excellent,” “great,” “good,” “average,” or “poor.”

</online> communities, all over again

videos. I would also like to thank the Digital Youth team's student researchers and support staff for their important assistance to the project.

REFERENCES

No author

2007a YouTube fact sheet. http://www.youtube.com/t/fact_sheet, accessed 28 February 2007.

No author

2007b YouTube fact sheet. http://www.youtube.com/t/fact_sheet, accessed 17 July 2007.

Althusser, Louis

1971 *Lenin and Philosophy and Other Essays*. New York: Monthly Review Press.

Baym, Nancy

2000 *Tune In, Log On: Soaps, Fandom, and Online Community*. Thousand Oaks, CA: Sage Publications.

Bergman, Jorg R.

1998 *Introduction: Morality in Discourse*. Research on Language and Social Interaction, 31(3&4): 279-294.

Goffman, Erving

1981 *Forms of Talk*. Philadelphia: University of Pennsylvania Press.

Gomes, Lee

2006 *Will All of Us Get Our 15 Minutes On a YouTube Video?* The Wall Street Journal. August 30, 2006.
http://online.wsj.com/public/article/SB115689298168048904-5wWyrSwyn6RfVfz9NwLk774VUWc_20070829.html?mod=rss_free, accessed 16 July 2007.

Grossman, Lev

2006 *Time's Person of the Year: You*. Time. December 13, 2006.
<http://www.time.com/time/magazine/article/0,9171,1569514,00.html>, accessed 16 July 2007.

Horst, Heather

2006 Presentation, The Digital Youth Project (Panel: Youth, Culture and Power in the New Millenium: A Research Agenda for the Future). *Celebrating the Institute for the Study of Social Change: Thirty Years of Research with a Conscience*. University of California, Berkeley. October 20, 2006.

International Telecommunication Union

2001 Digital Divide. <http://www.itu.int/ITU-D/digitaldivide/>, accessed 16 July 2007.

Jenkins, Henry, Ravi Purushotma, Katherine Clinton, Margaret Weigel, and Alice J. Robinson

n.d. Confronting the Challenges of Participatory Culture: Media Education for the 21st Century. <http://www.projectnml.org/files/working/NMLWhitePaper.pdf>, accessed 16 July 2007.

Lange, Patricia G.

In press Terminological Obfuscation in *Online Research. Handbook of Computer-Mediated Communication*. Sigrid Kelsey and Kirk St. Amant, Eds. Hershey, PA: IGI Global.

2007 Commenting on Comments: Investigating Responses to Antagonism on YouTube, presented at the Society for Applied Anthropology Conference, Tampa, Florida, March 31, 2007, <http://web3.cas.usf.edu/main/depts/ANT/cma/Lange-SfAA-Paper-2007.pdf>, accessed 16 July 2007.

2006 What is Your Claim to Flame?. *First Monday*, 11(9). September 2006, http://www.firstmonday.org/issues/issue11_9/lange/index.html, accessed 16 July 2007.

Linell, Per and Ragnar Rommetveit

1998 *The Many Forms and Facets of Morality in Dialogue: Epilogue for the Special Issue. Research on Language and Social Interaction*, 31(3&4): 465-473.

O'Sullivan, Patrick B. and Andrew J. Flanagin

2003 *Reconceptualizing 'Flaming' and Other Problematic Messages*. *New Media Society* 1(1): 69-94.

Pew Internet & American Life Project

2007 A Typology of Information and Communication Technology Users. http://www.pewinternet.org/pdfs/PIP_ICT_Typology.pdf, accessed 16 July 2007.

Rheingold, Howard

1993 *The Virtual Community: Homesteading on the Electronic Frontier*. Reading and Menlo Park: Addison-Wesley Publishing Company.

</online> communities, all over again

Riley, Duncan

2007

YouTube Launches Revenue Sharing Partners Program, but no Pre-Rolls. TechCrunch. <http://www.techcrunch.com/2007/05/04/youtube-launches-revenue-sharing-partners-program-but-no-pre-rolls/>, accessed 7 September 2007.

Getting Noticed, Showing-Off, Being Overheard: Amateurs, Authors and Artists Inventing and Reinventing Themselves in Online Communities

SUSAN FAULKNER

JAY MELICAN *Intel Corporation*

This paper reports early findings of an ethnographically-inspired research project focused on individuals who are actively engaged in the creation and online distribution of original media – on blogs, vlogs, and social networking sites – and on the collectives that form around “user-generated content.” In this paper, we profile a small number of creative individuals producing original content in four very different cultural contexts: a children’s book author in Los Angeles, a pair of video bloggers in New York, an ex-pat journalist and social commentator in Dubai, and a cosmetics expert sharing advice with an online community in Seoul, South Korea. We explore what motivates each “lead user” to create; we examine how they imagine themselves as authors and artists, and how they imagine (and interact with) their readers and viewers. In addition, we explain how the insights they provide into an emerging form of online authorship are relevant to Intel Corporation’s Digital Home Group.

USERS CREATING CONTENT

There are now fifty million tracked blogs; that number has doubled every six months for the past three years. One hundred million videos a day are being downloaded from YouTube. There are currently 136 million user-generated content creators worldwide (eMarketer, 2007). In three years, it is estimated, every one billion uploads of “user-generated content” will generate sixty-five billion views or downloads (In-Stat, 2006). The statistics are impressive, but they do not begin to capture the full story of this sea-change in the production and consumption of digital information and media, and how it is impacting the online and “real” lives of those who are driven to create and contribute.

“Users Creating Content” is the name given to a six-month, ethnographically-inspired, broadly-scoped exploration of the ways people capture, create, manipulate and share digital media, including video, photographs, and music, as well as creative and editorial writings. Launched in January, 2007 by the User Experience Group in Intel Corporation’s Digital Home Group, the study has focused on individuals actively engaged in the creation and distribution of original content on blogs, vlogs (video blogs), and social networking sites, and on the creative communities that grow up around what we in corporate offices of high-tech

companies call “user-generated content.” In this paper, we focus on a small subset of those creative collectives, and on just a few “content creators” whose stories of online exposure provide us with insights into an emerging form of authorship in the contemporary landscape(s) of media production and consumption. We seek to better understand how online authors imagine (and interact with) their readers and viewers. How do they imagine, express, present and position themselves vis-à-vis their publics? As individual and creative collectives, how do they imagine the medium of their expression – the Internet and the digital services and tools they employ?

This is Not Your Teenager’s MySpace

In the course of our study of Users Creating Content, we conducted approximately forty-eight in-depth interviews with content creators in Dubai, the United Arab Emirates; Seoul, South Korea; Los Angeles; and New York City. A thorough cross-cultural examination of home-grown media production and online distribution in these three countries and four cities is beyond the scope of this paper. By focusing here on individuals and the creative collectives with which they affiliate themselves, we hope to shed some light on both the variety of personal motivations found for content creation and the very different social conditions under which creative individuals are finding a voice – and sometimes an audience – in each of these disparate sites. The terms we in industry most often use to refer to their wide range of off-line and online activities (e.g., “user generated content”) gloss over so much that drives these individuals, they ultimately fail to describe any usefully coherent category of activity...or category of “user.” Compounding that, the global reach of the Internet as a distribution medium tends to equalize voices at the same time that it equalizes access to means of production and to the opportunity to be heard. If the Internet provides a window for all of us into remote corners of the global experience, it also obscures a great deal about the conditions under which the media and the messages we receive have been produced.

Statistics well publicized in the popular press¹ make it quite clear that while the sheer number of online Americans using social networking and personal-content-sharing sites continues to grow, that expanding user group is also looking increasingly mature (i.e., old). Despite those facts, the first impulse for many of us (and for most of our corporate executives) when confronted with the topic of users creating content, is still to imagine kids showing-off and having fun on MySpace and YouTube. We interviewed several teenage boys in Los Angeles who fit that bill. At fifteen and sixteen years old, these boys take skateboarding and their skate-video producing seriously. They edit out of videos their awkward missteps, falls, and other unflattering shots. And they casually post their videos

¹ An October, 2006 ComScore Media Metrix statistical analysis of traffic on four of the most popular social networking sites in the US asserted that more than half of MySpace users are 35 and older. It was widely reported in the popular press, including on NPR.

online for friends to see and admire, with some vague notion that maximizing the number of people who might see them skateboarding and pulling off some nearly-professional caliber tricks can't hurt their social standing back in high school. At this point at least, they're not seriously entertaining notions of becoming professional skaters; they skate and record themselves for the pleasure of doing something with (and potentially better than) one another. Social recognition in the bounded world of their school-aged peers is a bonus; they cringe at the thought that their parents might be checking out their MySpace pages.

While the web abounds with videos of mediocre lip-synching performances and cats playing the piano, we see increasing amounts of online content posted with the express intent of advancing the poster's entrepreneurial interests and/or their careers in creative fields. This content can range from dry, but instructional, to wildly entertaining and inspirational. The Koreans have a word for it: *proteur* – an awkward portmanteau combining the English words *professional* and *amateur*. The Korean broadcast company KBS provides the best definition we have found in its online glossary of IT jargon and market trends: "Proteurs...are people who have gained recognition as professionals for their hobbies even if they don't have relevant professional certificates or degrees." One can be a proteur in nearly any pursuit – photography, cosmetics application, tennis-shoe painting – but the term is now most commonly applied to individuals producing instructional videos and posting them online in order to demonstrate skill and mastery in a particular domain...and to the higher quality – more professional-quality – standards expected of that online media. While the big media and consumer electronics companies push the UCC (User Created Content) craze to market online services, digital SLR cameras, webcams, and camcorders, PCC (Proteur Created Content) is quickly becoming the standard for homegrown video in Korea.

As part of this study, we spoke with a Korean man who, in his spare time, produces instructional videos about building spreadsheets. Another uses video to teach online design and illustration classes. For these professional instructors, online video is a way to assert one's expertise and build one's reputation as a credible source of inspiration and information. By offering free video instruction online, the design teacher attracts business to his after-school academy (*bagwon*), and the spreadsheet instructor finds students interested in private lessons and new clients interested in his specialized document services.

In the US we make no semantic distinction between uploaded home videos and re-edited mash-ups of Hollywood film trailers or professionally produced comedy shorts. It's all "YouTube." Nonetheless, we see a trend that runs parallel to the emergence in Korea of a category of Proteur Created Content. In Los Angeles, we met with Grant and Bryan, an aspiring actor and would-be director using YouTube to circumvent the old-boy-network, big-studio path to Hollywood success. They created a spoof of a major network TV show that was seen by over 5,000 people in one weekend – by far the largest audience they had ever reached with their own material. Across town, their college buddies, Scott and Adam, have launched their own web channel devoted to documenting the eccentric inhabitants and everyday happenings of their new hometown, Venice, California. They hope that *Venice the Menace* will eventually support itself – and them – through advertising revenue shares.

There are striking similarities between the teenage skateboarders we interviewed as part of this study and the older, more professionally-motivated proteur content creators. They use many of the same tools, online services and social networking sites. All are motivated by a concern with their reputations and with how the online representations they construct are received by their peers and in their online communities. Our proteurs, however, are enmeshed in more complex networks of creative peers, fans, critics, and industry gatekeepers. For the purposes of this short paper, we focus on a few of those proteur creators – not only in Korea, but as they position themselves within creative communities based in the United States and in the United Arab Emirates as well.

Following the Blogrolls, Following the Comments: A Multi-sited Approach

Because we were interested not only in creative “lead users” – bloggers, vloggers and musicians posting original content online – but also in the geographically dispersed collectives in which those creative individuals are enmeshed, we realized early on in planning this study that it was particularly well-suited to a multi-sited ethnographic approach. That materialized as a special form of snowball sampling; we recruited primarily through blogrolls. In some instances we found our way into these communities through personal contacts. In others we simply joined in on the conversation associated with certain bloggers we found interesting (and who lived in New York, Los Angeles, Dubai or Seoul), then contacted them to ask if they were available to meet in person while we were in town.

In Los Angeles, we began with Gregory K, who is profiled in the next section of this paper. Gregory K led us to Denise, a blog consultant, and to Stacey, a friend who had recently started her own book-review blog. He also introduced us to children’s librarian and kid-lit blogger Fuse#8, whom we met on a trip to New York, and she turned us on to Brotherhood 2.0, a vlog that has developed a large following and is now regularly listed among the most viewed and most highly rated on YouTube.

In Dubai we found ourselves networking through the blogroll of a multi-author, aggregator blog site called UAE Community Blog, which bills itself as “a forum to unite UAE diarists.” We were introduced to Secret Dubai – a professional journalist, European ex-pat, and creator and co-administrator of the UAE Community Blog. Secret Dubai put us in touch with Emirati – self-proclaimed “Sheik of Controversy” and the only UAE national contributing to this community of otherwise ex-pat bloggers – and with Samurai Sam, a 17-year-old ex-pat Australian who has grown up in Dubai with deep affection for his adopted country, but deep dissatisfaction with how the country is run.

In Seoul, South Korea we met with a number of young women who were active in the online community – or “café” as it is called by the host portal, Daum – founded on the basis of a shared interest in exchanging tips for purchasing and applying cosmetics. Mary Jane, Renee, and Hyung Ja share their expertise with the other 350,000 (almost all female) members of this online make-up community.

When possible, we spoke with producers of premium content in addition to the proteur creators who were the focus of our study. These industry representatives often function as gatekeepers to the brand-name portals (like HBO's *This Just In* or the Korean GOM TV) and to the inside circles of industries to which our proteur creators were striving to gain access. For us, they provided an alternative perspective on issues of media ownership, credibility, and editorial control. As the majority of our subjects were actively creating original content of some variety and were sharing that content with a larger community, we had multiple points of contact with each, and multiple texts – beyond the transcripts of our interviews – across which to conduct our analyses: blog entries, comments from blog readers, videos or serial videos, in addition to our personal email exchanges with informants. Most of our participants had also pointed us to newspaper or magazine articles, blogs and other sites on which they and their work had been referenced or reviewed. As a result, our study of these individuals often becomes indistinguishable from an analysis of the media they produce.

PROTEURS AND THEIR PUBLICS

In the following sections, we introduce four of our study participants from four distinct communities and the original works they present online.

Gregory K – Fibonacci Poetry and Making a Place in the Kid-Lit Community

Gregory K. is a screen and television writer who decided a couple of years ago that he wanted to become a children's book author. Like many parents of young children, Gregory became a fan of kid's books, and has subsequently become passionately interested in writing one himself. He wanted to meet children's book authors in order to learn and network with them and their publishers. A longtime contributor to online news groups, and a former frequenter of AOL chat rooms, Gregory decided his first step in making this career transition should be to start a blog.

Gregory says, "Writing, again, is very isolating, and I'm not an anti-social person. Some writers probably like the isolation. I have problems with it.... There's an element of support group to any group of writers that get together because you all can complain about the same issues.... It's like, only people who are trying to do the same thing as you can really understand the difficulties of that, and can help you navigate sometimes, or can just share the same frustration."

Gregory did not want to blog in isolation either, so he started thinking about ways to attract readers, and contributors. He knew readers would come back more frequently if there was something to do on the blog, so he thought about ways to make it interactive. On April 1, 2005, he began posting "fibs" on his blog, and sent out a mass email to all his friends, family members, and extended contacts asking for them to send in "fibs" of their own. "Fibs" – a term coined by Gregory K. – are poems based on the Fibonacci mathematical

</online> communities, all over again

sequence – 1, 1, 2, 3, 5, 8 syllable lines. Submissions and comments started coming in from friends and family immediately, and were soon be posted to his blog’s comments section from people Gregory didn’t know. He went from a handful of visits a day to twenty, and then thirty. Then he had an idea.

Gregory says, “I submitted as a story to Slashdot, which is ‘news-for-nerds,’ as they lovingly say. But it’s news-for-nerds with a great point of view. And I submitted the post as saying, hey, this is just something fun to do for National Poetry Day. And on April 7th, which was a Friday, just after midnight, they put the story up on their main page where there’s seven-to-ten stories a day. And by the end of that day, I’d had 32,000 visitors to my blog.”

The tremendous success of his Slashdot effort made Gregory think even bigger. He contacted the *New York Times* and said, It’s National Poetry Month, you know. You need to do a story about poetry. Here’s one with a technology angle. *The New York Times* printed the story on April 10th and referred to Gregory as an “aspiring children’s book author.”

Gregory says, “Part of the great thing about that, from my point of view, was that the entire children’s publishing business is in...not the entire, but the bulk of it...is in New York City. And this is the paper of record for them as well.” Gregory K. was contacted by several publishing companies, and after months of discussions and correspondence he signed a two-book deal with a large, American publishing house that focuses on the youth market.

I had started because the connected power of the web is apparent to me. It’s incredibly powerful.... I had lots of people, both in children’s books and screenwriting, and in all sorts of things ask me endlessly why was I wasting my time blogging. So this was certainly a good answer, so I didn’t ever actually have to answer that question anymore.... So it was satisfying on that level. It was also satisfying because it was the intent. It was what I had hoped to see if it was possible. And I discovered that it is possible. That’s fantastic.

Mary and Liza – Responding to their Following as 39 Second Singles

Mary and Liza were both looking for work in the television industry – Mary as a writer, and Liza as a producer – when Mary suggested turning her friend Liza’s flailing love life into a video blog that would serve as a calling-card in their job search. Now Mary produces, and thirty-nine year old Liza stars in, a vlog called *39 Second Single*. The two creators describe their show as, “Dating stories so bad they must be true.”

Mary is the disembodied voice behind the camera, or to be more precise, behind the laptop; most of the footage for *39 Second Single* is shot with the built-in webcam on Mary’s MacBook laptop computer. As viewers, we hear Mary ask Liza questions, and encourage her in her quest for love; but we never see her. She remains the mysterious, invisible half of the

duo. In a sense – and in the formal set-up of her shots, Mary is Liza’s audience, and we as viewers are (literally) positioned as Mary is, across from Liza in the booth at the Palm Restaurant, as Liza’s confidant. Mary asks our questions for us, and doles out little bits of droll advice. Mostly, Mary eggs Liza on. As Liza says, “She gets me drunk and makes me talk about my dates.”

Like Gregory K., they thought strategically about how to draw viewers to their show.

Mary: Initially, when we first started, and we were still kind of figuring out the format, and bumping along, it was just emails to friends and word-of-mouth. People were forwarding it like crazy. It was great. And we were getting an average of, like, a few hundred views. . . . I started working freelance for AOL, and they were doing a partnership with HBO on this site *This Just In*, which is, like, a comedy-news-pop-culture site, and I was doing viral outreach for them, so I actually learned a lot of tricks from them about where to go, and just cheeky stuff, like, you know, posting things on DIG, going to Best Week Ever, and . . . other viewing sites from YouTube to Revver.

In addition to scheming to increase their visibility, Mary and Liza devised several formatting strategies for gaining and keeping viewers. The *39 Second Single* episodes are short, running from three- to a maximum of five-minutes. A new episode appears every Friday afternoon when viewers need something fun to kick off their weekends. The first season comprised 24 webisodes – the same number as most traditional TV sitcom seasons – and viewer mail was highly encouraged. As with most good serials and TV dramas, the season ended with a cliffhanger; Liza sits down at a table in an outdoor café, on a blind date with a man who was chosen for her by online votes of the *39 Second Single* viewers.

Mary and Liza appeared on *The Weekend Today Show* in a sequence about women who blog about their dates. They drew the attention of Jeff Jarvis, founding editor of *Entertainment Weekly*, and creator of BuzzMachine, a media blog, who hired both of them to produce and star in an online web show called *Idol Critic*, a morning-after critique of Fox’s *American Idol*. The attention culminated in an offer from TLC (The Learning Channel) to turn *39 Second Single* into a half-hour cable series.

It was all part of the plan. Liza explains,

Well that was what (Mary) said originally . . . we were working on another TV (show) . . . which we were writing-up a pitch for, and part of (Mary’s) rationale for starting the blog was, (when we) pitch this show people will say, “What else do you have?” (We’ll be) like, “Oh, check out our blog.” You know, it just gives us more credibility, gives them some place to go. And that’s true, that is how it’s kind of worked-out.

Mary Jane – Saving Face in the Making-up Café

Wide distribution of self-made content is not a goal of everyone in our study. We got to know members of a very active online community in Korea who, despite belonging to one of the largest online communities in that country, prefer to limit the audience for their own work to a small group of online friends.

In Korea, where a high value is placed on education and lifelong learning, much attention is paid to honing and sharing expertise. In recent years, producing informational videos and posting them online has become a way to spread knowledge, and gain acclaim for one's talents. These *proteur* videos are motivated by a desire to inform, and to propel the creator's career or reputation amongst peers. Mary Jane, a participant in our study, is a member of an online community devoted to cosmetics. Like other members of the community, she makes videos of herself applying make-up. She holds out her digital still camera, set on movie-mode, with her left hand, and applies make-up to her face with her right hand. She uploads these videos to the make-up community on the Korean portal Daum, to instruct others. She takes pride in her expertise, and feels happy to be able to share it with a large part of the female population of Korea in this online make-up community.

Mary Jane is very careful about protecting her own identity, and her image, as are the other members we have met from that community. Although she works part-time as an online fashion model for websites selling women's clothing (known as "shopping malls"), Mary Jane rarely puts videos or images on the make-up community that show her entire face. If possible, she only films the part of her face that is crucial for demonstrating the particular make-up technique she is employing. She spoke of feeling "shy" and even "ashamed" to show her face, yet she is a very active member of the community and posts videos frequently.

Mary Jane intends her online community contributions to be seen by a small group of friends and peers in that community. Unlike Gregory K., she does not hope to attract viewers beyond her inner circle. Not only does she not attempt to distribute her work more widely, she takes steps in hopes that it will not go beyond her small comfort zone. She leaves her user-created content videos up on the site for about three days. This is the amount of time she thinks it will take her friends, and the community members to whom she is closest, to stop by, and check out her contributions. After three days she moves videos to an online vault provided by Daum where content can be stored for free.

In putting a video online in Korea, and claiming expertise in a talent or skill such as applying make-up, drawing Spider-Man or playing the guitar, one opens oneself up to criticism and ridicule. According to Mary Jane, the risks involved in leaving a video up for too long can be quite high. Community members complain about strangers who happen upon the posted content and leave negative, insulting comments regarding a member's looks or technique. As Markus and Kitayama (1991) have pointed out, in many Asian cultures the

self is determined by the fundamental relatedness of individuals to each other – a contrast to the American notion of an independent self. When self is construed in terms of relationships with others, a creator and uploader can be seen as boastful and lacking humility, or can be seen as putting-down those who are less accomplished. Mary Jane sees her identity as interconnected with not only the people she knows in the make-up community, but with the people she doesn't know, and, most likely, with Koreans in general. So, the risks are high, yet she continues to create and upload videos because the rewards for uploading are also high. By posting useful, instructive, fun videos about applying make-up, Mary Jane has come to be known as an expert in the make-up community. Her strategy of leaving videos visible on the site for only a few days minimizes her risk, plus she has gained prestige in that group, and has been featured in a couple of Korean print magazine articles about applying make-up. She has successfully built a good reputation among a crowded field of participants, and takes pride and satisfaction in her role in that community.

Secret Dubai – Cautiously Controversial in the UAE

The emphasis placed on online anonymity is even more pronounced in Dubai where traditional Emirati society and a large, mostly-European ex-pat population co-exist in a tightly-controlled, rapidly changing country. UAE bloggers use pseudonyms, supply very little personal description on their blogs, and do not post photos of themselves or videos in which they appear.

Bloggers in Dubai tend to fall into two categories, those who consider themselves serious, politically-minded, risk-taking commentators on UAE society, and a larger group whom the politically-minded bloggers see dismissively as “just people going on about their lives.” (Samurai Sam) For the first group posting online is a form of political action, and a small step toward creating social change in a highly-controlled culture. One such blogger, a European ex-pat, calls herself “Secret Dubai.” Of her blog she says, “It's very tame compared to anything I would be able to do in the free West, we're all endlessly tiptoeing on eggshells here.” (from an email)

While it is desirable, and even necessary, to keep their own identities anonymous, the bloggers in Dubai do not wish to limit their audience. With social change as the ultimate goal, and censorship a constant threat and semi-frequent occurrence, these bloggers hope to reach as many people as they can. Secret Dubai is proud to have been mentioned in newspaper articles, referenced in other blogs, and shut-down once by her service provider.

How far they can go in challenging the government is a frequent topic of U.A.E. political bloggers. The government-owned national ISP, Etisalat, is a frequent target, as are issues of Internet censorship, and poor network connectivity – problems that are blamed by the bloggers on government-owned service providers. The circularity of the problem is evident. It is against the law to make derogatory comments about the government of the U.A.E., and the government owns and operates most of the infrastructure of the U.A.E., including the Internet service provider, and the phone company. But the best and most

</online> communities, all over again

effective way of protesting the government and striving for change (not just in the quality of infrastructure, but in human rights issues, women's rights, religious rights, etc.) is to use the power of the government-owned Internet and post a blog.

Secret Dubai addresses the lack of freedom of speech in the U.A.E., plus the frustrations of using her adopted country's shaky infrastructure in this post to her blog:

Secret Dubai, July 2, 2007: ...So while America may have a president so unpopular that one can currently buy a calendar in Borders to count the days until he leaves office, at least people have the freedom to express their loathing and the communications to convey it.

Whereas in the sandlands, according to the UAE Publications Law Chapter 7 Article 76, it is actually forbidden to "blemish" the president of any "friendly state". Which means that as the US is a UAE ally, we may only express loving praise for George W Bush and the wonderful progress he has made in Iraq and for world security in general.

She does not criticize the U.A.E. government directly until she talks about a specific article of U.A.E. law (which she subsequently published in its entirety in the Comments section of her blog.) Nor does she mention any of the U.A.E. leaders by name, knowing that by doing so a representative of the ruling family would be much more likely to happen upon this entry. She is also very aware that her opinions are controversial, and will be viewed by some U.A.E. nationals as the complaints of an outsider. In response to the post, one reader commented, "Your blog does nothing but spread hatred towards the U.A.E. & Arabs."

Secret Dubai chooses not to delete unfavorable comments like this one because that would be "untransparent," but engaged in a heated exchange with this commenter, and eventually asked the person to leave the blog permanently. It is a delicate balancing act. In the tightly-controlled media landscape of the U.A.E., Secret Dubai could be "outed," shut-down, or even deported.

DISCUSSION

We selected the content creators to profile above because, in some way, their stories illustrate larger trends we noticed across the population of our study. As individuals, the motivations, aspirations and concerns they express represent unique compositions of common motifs – motifs that are shaped by (among other factors) the etiquette and norms of their online communities, the stories they hear and retell, corporate interests they come up against, and cultural and legal constraints on their expression. In the following sections, we explore only two of the many themes that can be drawn out of these stories.

Audience, Identity, and Pseudonymity

We could safely say that all of the people we met posting original content to the Internet are looking for some sort of recognition – even our skateboarding teenagers. Some are actively seeking audiences for their creative expressions; some may be looking more for a sense of connectedness with others who share their interests or artistic pursuits. Their personal goals, as well as the conditions under which they create, give rise to subtle differences in how and how much they want to be seen and heard. We see those forces played out in our content creators' online identity management and the various approaches they take in connecting their online creations back to their real-world identities.

While “Gregory K.” is a pseudonym, it is closely related to the fib poet's real name. Gregory is not particularly concerned about his own safety or the malicious intent of his readers, though he has taken the step of not using his full name, and not sharing much information about where he lives or with whom he lives out of concern for his family and the everyday realities of identity theft in the US. “Mary Jane” is well known by that name – also a pseudonym – in the Korean make-up community. Her Western-sounding online handle refers only to the women's one-strap shoes. There is no chance of the name being linked back to her or to her family. She makes it clear she is very concerned about her personal safety and the malicious intent of strangers, and she goes out of her way to ensure she does not open herself up to ridicule or humiliation. The necessity of keeping her real-world identity concealed is made clear in the pen name “Secret Dubai” has chosen to represent herself online. Whereas Gregory K. might prefer that readers don't know exactly where he lives or what his children are named, Secret Dubai face the loss of her job or deportation if a reader should take offense and report her to the authorities. There is no personal information about Secret Dubai to be found on her blog (not even a hint as to her gender).

How these authors choose to represent themselves online has much to do with how they imagine the audience reading or watching their work. It also has to do with their different imaginings of how dangerous a place the Internet is and their perceptions of the risk they take in expressing an opinion or creative impulse online. Gregory sees mostly colleagues, fellow authors, friends, and family as his audience. Mary Jane pictures a mostly collegial audience in the make-up community, but goes to great pains to keep her audience small and friendly. News stories of a famous actress whose home address was widely distributed online, and of another woman who was publicly humiliated after her dog defecated on a subway train were often referenced by our Korean informants in connection with descriptions of their cautious approach to online exposure. Secret Dubai imagines a public made up mostly of ex-pat technorati, and an extended network of acquaintances and strangers who take an interest in the daily happenings of the U.A.E. She is aware that her audience is populated both by like-minded friends, and many who disagree with her views. In the volatile political climate of the Middle East, the debates on her blog can become heated, personal, and vitriolic. Since the media is tightly-controlled in Dubai, part of her

imagined audience is also the government, employees of the ruling family, and the Internet service providers who supply the channel she needs to continue blogging.

Participation is the Point

Bloggers and vloggers who produce serial entries – especially entries in the form of diaries, and whose subject matter tends to be personal – may develop followings of loyal fans, and as they develop those followings, often develop a new sense of purpose to their blogging, and a keen sense of responsibility to their publics. Secret Dubai, who started her blog as a way to communicate with her friends and family as she traveled, quickly recognized that her blog was regularly being read by a much broader audience – people she did not know, and who did not know her. Her blog entries now reflect her awareness that she is communicating with a large audience, and she uses the platform as a way to encourage participation in online activism that is directed at local causes, but appeals to a global readership.

While not politically motivated, Mary and Liza at *39 Second Single* also encourage interactions and fan participation. In episode 20, “America Decides,” posted toward the end of season one, Mary and Liza narrow down to three the list of potential suitors profiled on an online dating site. Then they issue a challenge to their audience – to “America.” “You decide”...who Liza dates next. In the weeks following, through their comments posted to the *39 Second Single* blog, viewers made their preferences known. The first season of *39 Second Single* concluded with Liza waiting at an outdoor café for the date her public had chosen for her. We had to wait until the second season to hear how that date turned out.

This sort of invitation for participation has become a common technique for bloggers and active contributors to online communities. It lets contributors demonstrate they belong to a larger community, as when widely dispersed members of the online kid-lit community individually recognize “poetry Fridays” by posting poems once each week on their personal blogs. It can help build momentum behind viral contagion, as Gregory K. demonstrated so dramatically with his call for fibs. Advertising agencies have come to understand similar techniques as a means of boosting consumers’ engagement and, in theory, brand loyalty. And as more stories spread from the blogosphere of online spectacle leading to spectacular success (or humiliating over-exposure), we are likely to see even more individuals following in the footsteps of the likes of Gregory K. – strategically manipulating online collectives with an eye toward self-reinvention

Internet technologies are providing the foundation for a model of “participatory culture” different from the one described by Henry Jenkins, which arose in a technological environment dominated by broadcast television. And artists like Mary and Liza, with their intimate, episodic communications are inventing the new media forms to fit it – to which, they acknowledge, their fans are active contributors as well, directly affecting their narrative as it develops.

CONCLUSIONS

As researchers working in Intel Corporation's Digital Home Group, we are, in the end, inevitably concerned with what these individual amateurs, authors and artists have to tell us about the technical challenges of creating digital works and sharing those online. They are more than simply interesting individuals; they represent a potential market. The numbers of people who create proteur content will, of course, always be dwarfed by the numbers who consume it. The same could be said of any artist/audience relationship. But while today's hot content portals may flame-out, some bloggers may quit their blogging, and particular online communities may disperse as quickly as they have gathered, creative individuals who are posting original media to the Internet are not likely to go away altogether. And, if the stories we have heard from Gregory K., from Mary and Liza, from Mary Jane, and Secret Dubai tell us anything about authors' ability to reach a public in the contemporary media landscape of "Web 2.0," it is that, with the right content, authors *can* be heard and audiences *can* be found; audiences can be large; they can be fiercely dedicated or brutally dismissive; they can be actively engaged, and they can be mobilized as a force to propel a career or change a government policy. For good reason, we are just as concerned with these collectives that form around our original content creators – their creative colleagues, their critics, their audiences. These (potentially) much larger markets drive demand for more original content, and their allegiances to the amateur/proteur content producers they find online – along with the cumulative effects of their passing that content along to friends – is reshaping how we think about entertainment choices and the technologies that support them.

In this short paper, we have elaborated on two of the many themes we hear as we listen to those content creators who are getting noticed online talk about how they position themselves as authors and about their relationships to their audiences. We hear about modes of self-expression heavily influenced by cultural norms of public display, by the language of consumer product marketing, and by formats that have evolved around television programming. We hear notions of ownership that – even in historically restrictive climates such as the UAE – resonate with the utopian cyberpunk sentiment that "information wants to be free." And we hear stories of creative participation of mobilized collectives that somehow, in the end, seem to run up against the success criteria of established institutions of the culture industry.

Across the board, our informants describe the online realm of user-generated content as having an untamed-frontier, anything-can-happen quality to it at this point in time. It's a space of opportunity for anyone willing to put in the effort (and having a little talent doesn't hurt either). A guy who has never written a book can go from blogging, to networking, to causing a stir, and end up with a book deal from one of the top publishers in the country. A couple of women who find their conversations about dating incredibly amusing turn out to be right, and end up with a television deal from a major cable channel.

</online> communities, all over again

Following individual artists through their connections to online, creative collectives, we get a better perspective on the personal motivations as well as the larger social forces that are working to turn this online playground of original content sharing into our newest Wild West, a space that participants in this study perceive as bursting with opportunities for the taking, complete with legends and legends-in-the-making of those who have been burned and those who have struck gold.

NOTES

The authors would like to thank Paul Dourish, Soo-Young Chin, Sooyun Park, Tonya Degance, and Jay Hasbrouck for, in their own ways, making significant contributions to the themes explored in this paper, and Alex Taylor for his thoughtful comments and leniency with deadlines. We also wish to thank the many research participants who gave their time generously to this project. The ideas expressed in this paper are not the official views of Intel Corporation.

REFERENCES

- Goffman, Erving
1959 *The Presentation of Self in Everyday Life*. New York, NY: Doubleday.
- eMarketer
2007 *User-Generated Content; Will Web 2.0 Pay Its Own Way?*
- In-Stat
2006 *User-Generated Content: More Than Watching the YouTube and Hangin' in MySpace*.
- Markus, H., and Kitayama, S.
1991 "Culture and the self: Implications for cognition, emotion, and motivation."
 Psychological Review, 98(2):224-253.
- Jenkins, Henry
2006 *Convergence Culture: Where Old and New Media Intersect*. New York, NY: New York University Press.
- Jenkins, Henry
2006 *Fans, Bloggers, and Gamers: Exploring Participatory Culture*. New York, NY: New York University Press.
- Kelty, Christopher

2005 "Geeks, Social Imaginaries, and Recursive Publics." *Cultural Anthropology* 20(2): 185-214.

Marcus, George

1998 *Ethnography Through Thick and Thin*. Princeton, NJ: Princeton University Press.

Parks Associates

2006 *Internet Video: Direct-to-Consumer Services*.

Spannerworks

2006 *What is Social Media?*

WEB RESOURCES

National Public Radio. "Marketplace Report: MySpace Going Mainstream."

<http://www.npr.org/templates/story/story.php?storyId=6209664>, accessed 1 October 2007.

Abstract 2.0: If We Are All Shouting, Is There Anyone Left To Listen?

DAWN NAFUS

ROGERIO DE PAULA

KEN ANDERSON

Intel Corporation

This paper explores notions of 'voice' as it relates to Web 2.0. We begin by tracing the social meanings of Web 2.0 technologies Brazil. There the notions of 'voice' as conceived of in the American media are absent, yet significant collective action took place online through a kind of speaking out. Next the paper describes the conflation of voice with a notion of social networks to explain how the American media misread the Brazilian action. This is achieved by an incredible plasticity and abstraction of the 'Web 2.0' construct, which flattens otherwise qualitatively meaningful distinctions. This puts us on some ground to raise the issue of how abstractions might become relationships. This, we argue, is evidenced both in terms of how Brazilians might interpret online relationships, and how Web 2.0 hype betrays a politics of abstraction at work in the wider economy.

INTRODUCTION

This paper examines the notion of 'voice' in the paradigm of "Web 2.0." We are interested in voice as it is constituted in the use of such systems, but more so in the public discourse about it. Here we trace the social life of Web 2.0 as a global assemblage (Ong & Collier, 2005), that is, a phenomenon that happens in particular places and times but is not a phenomenon 'of' any particular site. We view voice as an ethnographic phenomenon rather than as a theoretical object. That is, we are concerned with who thinks they have voice, and what they imagine it to be, and are not so concerned with creating a theory of voice as it relates to anthropological writing or industrial projects. There is an extended body of literature on the topic and little cause to rehash it here. The discourse about Web 2.0 centers on user empowerment, or the ability of users to make their own content and linkages. In this paper we explore the possibility that the more 'power' given back to users, the more that 'voice' might be emptied of texture and social significance. Our main argument is that the notion of voice is becoming flattened and divested of power through the 'brand' of Web 2.0. Voice is not emergent from what the software 'does' or how people 'use' it (although these things are nonetheless caught up), but instead is a discursive device that conflates a number of social relations into a reified commodity.

As authors it would be nice to be able to offer a definition of what Web 2.0 actually is. But this would do some violence to it as an emic concept. One can say it is a metaphor people use to describe what is currently normative about computing. There is a new look

and feel to the Internet that many attribute to it myriad new possibilities. But beyond this it escapes most moorings. Instead it floats as its own context. Technology has historically been a privileged site of self-induced ‘meaningfulness’ that cares little for the specificity of social relations (Woolgar et al 2000). If it is deemed a technology, these authors argue, it is deemed to have ‘implications’ without having to know what these actually are. So, one should not expect too much in the way of substantive meaning from these computing ‘paradigms.’ Most often, business people point to it as a means of justifying business plans based on hoped-for network effects (because Web 2.0 is about social connection), or attributing agency to users of it (because Web 2.0 is about self-production of media). The term gets used to provide context without specifying a place or people or objects.

We begin by tracing the social meanings of Web 2.0 technologies in Brazil. There the notions of ‘voice’ as conceived of in the American media are absent, yet significant collective action took place online through a kind of speaking out. Next the paper describes the conflation of voice with a notion of social networks to explain how the American media misread the Brazilian action. This is achieved by an incredible plasticity and abstraction of the ‘Web 2.0’ construct, which flattens otherwise qualitatively meaningful distinctions. This puts us on some ground to raise the issue of how abstractions might become relationships. This, we argue, is evidenced both in terms of how Brazilians might interpret online relationships, and how Web 2.0 hype betrays a politics of abstraction at work in the wider economy.

GROWTH OF WEB 2.0 IN BRAZIL

Networking as a Collective Experience

In an advertising driven economy, the expansion and retention of eyeballs is everything. It makes a certain sense, then, that narratives of success in Web 2.0 involve tales of technologies skyrocketing from local to global scales. Craigslist, for example attempted to solve a small-scale, local (even personal) ‘need’ as a relative newcomer in San Francisco to connect to other people, and reached unexpectedly large proportions. Orkut started from a US company (Google) to compete with Friendster. It was not local at all but quickly became localized, prompting talk of a “Crazy Brazilian Invasion”, which has been captured and extensively narrated by the Brazilian media.¹ A biographical account of this process can be summed up in three major epochs: ‘Orkutmania,’ ‘Orkutcídio’ (Orkut suicide – as some users realized the impact of turning themselves “public” on their everyday, external lives), and Orkut legal challenges (as, for example, illicit, illegal external practices, such as drug dealing found their way to this ‘virtual’ network of potential users). In January 2004, Orkut in Brazil was no more than a short note on a local newspaper about a new US-based relationship site by Google to compete with Friendster.com. Based on ‘invitation only’ subscription model where new users were required to receive an invitation from a member

¹ We explored the online archive of the largest newspaper in Brazil (A Folha de São Paulo), where we found 637 news articles that make at least one reference to Orkut since early 2004.

to join the site, Orkut grew organically out of individuals' social network paths. These initial users had an interest in Orkut as a social networking system. That is, the number of communities about social network analysis and related topics as well as the types of messages posted on them were relatively high.

While it was growing steadily in the US and starting to reach out overseas, something unexpected happened – a Brazilian tidal wave engulfed the site.² Five months after this first newspaper note about this, the number of Brazilian users 'beat' the US user population on site. This would have gone unnoticed if were not for that the ways in which Brazilians challenged pre-established social norms (or netiquette) and technological assumptions embedded in the design. On this note Brazilians took it as a clean slate, so to speak – although the system's UI was designed to afford the particular notion of social network that pervaded US academics and businesses at that point, Brazilians had not necessarily a pre-established set of norms and behaviors in place to shape and organize the use of the system. Instrumental notions of social network management described in the sociological literature (Burt, 1995; Granovetter, 1973; Nardi, et al., 2002) as critical aspect of people's everyday work practices turned out to be uninteresting and even unimportant for Brazilians adopting Orkut. In fact, people at that point had not been exposed to the existing instrumentalist discourses of social-network and social networking common in the US – the notion that a person fans out to collect as many contacts, and therefore opportunities, as possible, and that an affective relationship might be a totally separate concern. Orkut was not a social networking system but a site for "networks of relationships" (direct translation of "redes de relacionamento") or simply a relationship site. Although Orkut visualized relationships in this mathematical way, reflecting its instrumentalist origins, this did not stop people from viewing these as relationships rather than a disembodied network.

The Brazilian "takeover" in fact generated a big (negative, for the most part) reaction from other users that ranged from xenophobic hate messages to puzzled concerns. According to (Reuters, 2004), a Canadian user, Tammy Soldaat, was quickly labeled 'nazi' and 'xenophobic' by a group of Brazilians for asking whether only people who speak English should participate on her community site on body piercing. Brazilians did not hesitate to push off people (usually non-Portuguese speakers) from communities. Yet they argued that they simply wanted to "hang out" with their friends, as they usually do in bars, on the street, or on the beach. "Since we can invite anyone we want at Orkut, and my friends are Brazilians, it doesn't make sense talking to them in English," Reis said in Portuguese, "I use the language I know" (Quote from Reuters, 2004). Hence, in what terms were Brazilians acting (or behaving) differently than the rest of site user population?! The increasing frequency in which users start seeing postings in Portuguese told them that something unusual and unique was taking place – the realization that Americans are no longer necessarily the predominant (or dominating) user population on the web.

² Today, Orkut is the eighth most visited site on the web worldwide. It is the most visited site in Brazil, second in India, and 31st in the US – according to Alexa: http://www.alexa.com/data/details/traffic_details?url=orkut.com (accessed August 2007)

Becoming the largest geographic community, gave Brazilians a sense of ownership. This ownership was without any legal stake or control. There was a perceived right to overlook some of the basic community netiquette, such as, not respecting a community's language, as well as to complain about changes on the site UI, configuration, login setting, etc., which Brazilian Orkut users did amply. On the other hand, as one American user complained "Orkut is not even a Brazilian service" – so where do all these 'rights' come from? While Google had (and still has) a business interest in keeping Orkut running, nothing (legally or otherwise) could prevent them from discontinuing the service, changing policies, changing the technology, restricting access, or even charging for its uses.

Today, it is estimated that Orkut has reached over 63 million users, where 68.3% of its access comes from Brazil, according to Alexia,³ 14.6% from India (the fastest growing user population on Orkut, today), and 3.5% from the US. These numbers are even more significant when compared to participation of these countries on the Internet as a percentage of the worldwide Internet user population: the US leading with 18.8%, India coming in 5th place with 3.6%, and Brazil in 8th with 2.9%. By far, Orkut is the most visited site in Brazil, second most visited site in India, and merely 31st place in the US.

We can think about the nature of this takeover by contrasting it with two common views of social networking software: the individual and the collaborative. The individual view focuses on actions and experiences of solidarity actors and independent decision-makers. Here the focus has been on instrumental uses of social network software. This view would surface stories about how individuals from urban areas around Brazil were using Orkut to connect to past classmates to supplement their job opportunities or make new friends in places they wanted to visit, as well as the usual making connections on regular basis. This all was indeed taking place. The collaborative view of social networking views it in terms of orchestration and making something happen in collaboration with others. Using Orkut to assist in arranging meeting times for evenings or weekend get-aways with groups of friends might be an example. Being connected to others interested in sports for the physically impaired is another. Again, we have traced these activities through our fieldwork. An issue with collaboration here is that the social aspect still assumes a multiplicity of individuals, without looking at the collective as a whole. What the 'takeover' of Orkut offers a case study *collectivity* rather than collaboration. By collective experience we are referring to the intersubjectively negotiated, individually incorporated, and only more or less "shared", and yet in a way forms a common lens through which we make sense of an everyday experience.. Orkut grew in this way to be a part of the everyday experience of all the middle class participants in our studies between 2004 and 2006. The use of Portuguese as a voice to gain power *vis a vis* the Americans was the exciting aspect of it.

Orkut and Emergent Forms of Social Relations

³ http://www.alexia.com/data/details/traffic_details?url=orkut.com (last accessed in July 2007)

As the takeover was happening, a set of transformations was taking place. The meaning of various social categories, ranging from kinship categories, to hanging out with friends, to private, personal conversation were shaped by the ways in which the system represented such concepts in its technological affordances (e.g., UI), and consequently people endowed new meanings to these patterns of interactions mediated by these affordances. For example, conversations were re-framed as ‘posting’ messages (personal or otherwise) on people’s (acquainted or otherwise) public ‘scrapbook,’ (scrapbooks are a form of offline chat or messaging system that are one of the most popular activities on Orkut.) Writing public messages on scrapbooks parallels how people interact and approach other in public spaces in the physical world. Friends, high school buddies, relatives, co-workers, acquaintances, and the like, became equally unmarked as buddies in people’s buddy lists – or social network. This is a vast difference than what happens in physical world where categories amongst out participants in research were multitudinous. Distinctions that were often situational and dynamic in real life, in Orkut were static and fixed. The result was the categories became relatively meaningless. What became important was adding people to the buddy list. This was not a marker of one’s personal set of relationships but rather one’s “buddy list” became an entity in and of itself – the value was to have a large buddy list and the set of relationships was mostly irrelevant. While in the US users had a restrictive, exclusive notion of a personal social network – i.e. personal circles – users in Brazil had an exceptionally open, inclusive notion, such that it did not matter who was ‘in’ and who was ‘out’, what was ‘publicly’ available and what was not. What did matter was the size of the buddy list. It became a new social artifact.

While the distinctions of ‘friend,’ ‘kin,’ ‘fellow party goer,’ etc were not challenged in everyday life, in online life the notion of a ‘buddy list’ began to take on its own meaning. For the first time, the quantity of contacts, in such starkly reified form, became sociologically meaningful. In fact, users started somewhat competing for the number of people in their buddy list. For example, Brazilians on average had 150 other members in their buddy list whereas in the US people had around 40 or 50 buddies. One of our interviewees, while showing her buddy list, was unable to recognize people in her own list. That these buddies are listed and visually present construes a different way of thinking and interacting with people. At a party, for example, value does not come necessarily from the counting of the number of people but how enjoyable it is, as they put in Brazil, “festa animada.” The shift here was to an accounting where counting actually mattered in the virtual environment of Orkut. Similarly, Burrell (2007) notes how video technology in Ghana is in fact used not just to send well-wishes across a diaspora, but to count, and account for, who was present at gatherings. Orkut became a way to count and to account for who is present among your social relations. Our argument is not that accountancy is anathema to sociality in a general way. The competitive gifting of yams in Papua New Guinea, stacked and lined up in dazzling displays, famously demonstrates otherwise. However, we do claim that information technologies are particularly good at accounting, and such social accountancy has not historically been a part of Brazilian sociability. On Orkut, counting took on a social resonance. A person as a central node in the network was both more visible and more important. We can think of this transformation as a kind of audit culture (Strathern 2000).

Audit practices seek to measure production, but the fact of measuring changes the dynamic of what is measured. Education becomes a matter of exam passing and time spend doing degrees; teachers then focus on passing standardized questions and shuffling through students rather than producing critically thinking persons. Similarly, visualizing social networks into lists and nodes and spokes is not a mere mapping of what already exists, but the very act of measuring has consequences for social relations.

Numbers became a part of not just individual connectedness, but politics of what constituted a ‘community.’ According to recent market research figures just 9.8% of Brazilian households are connected to the Internet (Jupiter Research, 2006). The number of registered user far exceeds this figure. Orkut has become so pervasive that in Brazil when you ask about who is connected people will respond ‘everyone.’ In practice, Orkut was being accessed by people who were not normally consider key players in the informational revolution, secretaries from work, dental hygienists at neighboring offices, girlfriends at friend’s homes, and even women moving into the formerly male dominated sphere of public LAN houses. Orkut has been used in Brazilian LAN houses as a way of including (otherwise bored) girlfriends in boy’s computer activities. Speaking to a former LAN house owner, he told us that he used to send out Orkut invitations to the girls hanging out with their boyfriends in his LAN house, as a way to encourage them to stay longer. Initially, only boys would hang-out there, for the most part, playing games, but they would not stay long because their girlfriends would quickly get bored waiting. Soon, he realized that in giving access to Orkut, girls would spend their time browsing, chatting, checking other people’s pictures on the site, letting their boyfriends play longer ‘in peace.’ In the end, he reported more girls coming to his LAN house to access Orkut than guys playing games. The on the ground practice of Orkut was so pervasive by 2006 that if you were not on Orkut, you are out – you are left out of external social life. Many are the accounts of people who were not invited to a friend’s birthday party because they were simply not on Orkut or in a person’s buddy list. As such, it became its own form of social connection over time.

With such growth, it became increasingly normative to be on the site. The Orkut invitation-only subscription model endowed the site as a whole with notions of being part of ‘the’ network (or community). A certain type of social status created an aura around the site – “just wait, because sooner than later some one in your social network will send you an invitation.” Without any question, this drew great attention and excitement to the site, and people expressed anxiety getting access to it. At one point, people started selling invitation on a local online auction site (prices ranging from a dollar to US\$15). What really excited people, however, was competition for ousting the US as the largest user community. It started as a game (probably as an imagined soccer game of sorts against the US), where a Brazilian user created a community challenging the Brazilian user community to invite as many other Brazilians as possible until they achieved “the first place” in number of users according to a particular geographical origin. Orkut used to have a demographics webpage where users were able to see a number of very simply statistics about the user population according to self-defined personal information (e.g., geographic location, language, age, gender, and the like). The highlight of this page was the ranking of countries according to

their number of users—next to the country’s name one finds its flags, reinforcing the soccer game imaginary. On June 23rd 2004—a memorable date, according to the broadcast news (yes, it had national media coverage⁴)—Brazilians (31.55%) took the leadership of Orkut, surpassing the Americans (29.62%)—at that point, the site had not reached the 1 Million mark.

‘Community’ was used to describe online circles of people, sometimes in the sense of community of interest, as originally intended, but increasingly something more pliable. While there was an incredibly majoritarian and inclusive notion of community at work, it also became more suffused with numbers than the stuff of social relations. The numbers were the politics, rather than questions of, say, leadership or group provisioning or the myriad other things that people do in social groups. Community, of course, has always been a slippery word that people have to reinvent for themselves constantly. But here people were not creating its meaning out of relations, but of ever increasing numbers on a statistical reporting page. Again, this is not to say that social relations did not take place, or that Orkut was in some way asocial, but that the display of numbers grew its own social life such that it became interchangeable with notions of what a social circle was and what an interest group might be. With so many people on buddy lists and joining ‘communities’ within Orkut left and right, it also was interchangeable with a notion of a personal network—now equally arbitrary. As Brazilians were gaining a voice on Orkut, the very thing that gave them that power—a percentage—also eclipsed any substantive meaning of those links.

VOICE AND THE PLASTICITY OF WEB 2.0 AS A BRAND

We became interested in Orkut because it is a great success that remains utterly obscure to Anglophone discourse. It may as well be a passing comment or a footnote in the literature about social networks. The story about Orkut in the US should have been about the success of a global technology becoming local, but there was barely any story at all. What mention there is treats it as a negative example around issues of ‘misuses’ and focuses its legal troubles with local authorities. In this section we look at this absence in light of what was being said about Web 2.0 in the Anglophone press. One of the hallmarks of Web 2.0 discourse is the notion that seemingly anyone can have a voice on the web. “You” are the person of the year, according to Time Magazine, because “You” made videos, avatars, filled in Facebook content and design competitions. By doing this “You” used “a tool for bringing together the small contributions of millions of people and making them matter” (Time, 2006). Here social connection was assumed to be the site of knowledge production. Homemade videos are interesting if others link to them; websites like SecondLife allow you to mash up other’s digital parts to make an avatar. As mainstream media, Time perhaps had a particular reason to be concerned about how we ‘needed’ this revolution to get beyond pre-digested newsbytes. The new technologies they said made information more direct. Similarly, the cover of Newsweek some six months before declared Silicon Valley was

⁴ <http://www1.folha.uol.com.br/folha/informatica/ult124u16307.shtml> (in Portuguese)

“Putting the We in Web”, again under the same rubric of consumer empowerment, circumventing broadcast media. Together the news reports and blogosphere chatter hailed in a new era of openness.

What made Orkut impossible for an American public to even pay attention to was that in the Orkut case, such voice does not come via an individual ‘expressing themselves’ through their online generated content. Far from it—most Brazilian Orkut users did not have the faintest imagination of the publicness of their writings. They were not lone voices shouting out to the world. The Anglophone press betrayed a commitment to at most a collaborative, but certainly not collective, view of social networking. What it was particularly concerned with was the individual as an expressive agent. The stories assumed each atomized person made their *own* contribution. The mechanics of “making them matter” are consistently left wooly in these reports. A loose, atomized version of connectedness in the various software systems themselves provided an imagined stand in for counting socially. Brazilian ‘voice’, however, was heard in the various social network norm violations and competitive recruitment until it did become dominant. The being heard was the decolonization of the Web. It was a demarginalization of a non-English language as a dominate language of the Web and the emerging of the collective power of an emerging society. This was decidedly NOT the sort of voice imagined when *Time Magazine* nominated ‘You’ the Person of the Year.

There are enormous cracks in the just-so stories presented by *Time* and others. The most frequently watched videos on YouTube, for instance, are just as likely to be clips from broadcast programming and other commercially produced footage. Blogs are put up at astounding rates, as are MySpace pages, and they go dead just as easily. Network television viewership is declining, but it is somewhat of a leap to suggest a new participatory media is at stake, as if there were no participation in mass media previously, or ways in which people made it relevant to themselves. YouTube and the like are construed as ‘participatory’ because a slippery vocabulary of ‘community’ has emerged which places an ever expanding set of behaviors and phenomena under the same umbrella as if it were the same thing. Somehow, the Web 2.0 paradigm excavates democratic expression out of the minutest communication act.

It is worth turning to business chatter about Web 2.0 to understand how this social conflation occurs. In talking to many of social software entrepreneurs, we have observed how they rework this meaning-giving story of a new found personal expression into a ‘need’ which explains (away) what they sell. The need usually centers around the need to be heard—to individually shout across the ether. The need is ‘fulfilled’ by drawing the dots and lines of a social network. “I sell vanity” one businessman declared to Nafus at an industry conference. What is interesting about this notion that lines and arrows plus bits of text might equal ‘voice’ is that it recognizes the social nature of voice. At the same time, it puts power to one side. When pointing to Web 2.0 as a kind of context, business people also point to ‘users’ as source of agency. But by doing so they are allowing themselves to imagine a world devoid of power. If the important thing is that users are their own individual expressive

agents, then it stops mattering what sort of audience they have or who they influence. This imagination of “expressiveness” externalizes power *from* social connection. Put differently, if people were doing more than ‘expressing themselves’, say voicing their concerns of an American normativity by making co-ordinated attempts at taking over websites, this mainstream notion of voice simply cannot make sense of it. Power is not possible in the Web 2.0 framework. If everybody is voiced, shouting their own independent thoughts across the ether, does anybody stop to listen?

How is this imagination of voice without power possible? Here we use recent theorization of brands (Lury 2004) to link Web 2.0 discourse with broader transformations in the global economy. For Lury, brands are powerful in the way that they create connections and meanings between unrelated things. Brands in a postmodern economy no longer symbolize an object in a one to one sort of way. Rather, they assemble a set of experiences that may or may not involve any one particular object or media. They work through openness and plasticity, giving relative surface meaning to things, where people supply the rest, often in the interstice between objects. The whole means very little, but by drawing connections between the parts people engage with the brand as a kind of social project. For example, ‘Trainspotting’ as a brand signaled variously a book, a movie, a newer book, music not actually used in the movie, posters, and t-shirts which displayed no logo but which people came to understand as “trainspotting t-shirts”. Assembled under a tagline simultaneously ambivalent and plastic --“choose life”—the brand as a whole did not signify anything, and people could more or less ‘do’ parts as they saw fit. T-shirts became Trainspotting without any actual connection to the creators of Trainspotting. Lury argues that such indeterminant objects, freed of any social moorings, are growing both in economic and social significance.

If we were to take Web 2.0 discourse, both in business media and day to day corporate chatter, as a kind of meta-brand, certain things become clear. First, the discourse achieves a confluence of, and a parity between, notions of ‘voice’, and notions of ‘social networking.’ If Web 2.0 ‘gives’ users voice, it must be because they are networked. It matters relatively little that these things are ethnographically false—that people remain engaged with mass produced content, or that blogs go dead because very few people wish to hear what any given person has to say. While there are definitely Euro-American notions that to some extent configure this version of “voice”—for example, that voices are properties of individuals—no one really asks much of this ‘voice’. It is not required to ‘do’ anything, to change anything. In fact to do so, like forcing Americans off a website, would run counter to its amorphous plasticity. It would introduce some specificity and purpose and therefore diminish the ability for the paradigm to act as a meta-frame for every conceivable act of internet communication.

Thinking about Web 2.0 as a meta-brand also explains much about why social networking can now mean almost anything roughly to do with communication. What was once an obscure 1970s social science method has become an emic description of relations. Before Web 2.0 this was an abstraction to be sure but at least it had some specificity to it.

For example, Leitner (2005) traces the ways in which concepts straight out of 1970s social network analysis inform daily interactions in biotechnology, as well as state policies of ‘clustering’ industries. This notion of a network was limited in its instrumentalism and opportunity seeking. But made into a kind of a brand under which venture capital investments are made, it becomes something quite different. The drawing of lines and dots on a computer screen into a buddy list can be any number of social acts, but can now be read as ‘social networking’, as if all possibilities were the same, ill defined thing. Calling it Web 2.0 affords a sense of trajectory and growth which businesses now feel they must have a strategy around—that they must participate in. Moreover, because of the extensive media coverage it can now be read as participating IN a phenomenon rather than chatting or picking up girls or whatever else a person might actually do. This seeming participation in social networking is not unlike how buying a certain t-shirt and listening to barely related music is participating in “Trainspotting”. However, Web 2.0 is not a brand in any traditional sense. There is no single corporate agent selecting where logos go and attempting to curate meaning. We are left wondering whether the logic of the brand as an object that creates its own trajectory, rather than symbolizes a single artifact, has so thoroughly permeated everyday life that it might now be a lens through which we increasingly read social phenomenon.

CONCLUSION

As the early days of Brazilian Orkut demonstrate, people can make of technologies what they like. The flat, abstract imagination of social networking embedded in the system did not prevent Brazilians from using it as a network of relationships. But there *is* a power in this discourse about giving users ‘voice’ *as if* that version of voice were a form of power in any substantive way. The discourse is powerful because reframes the consumption of a commodity as a kind of social phenomenon *in which* one participates. It would be a stretch to attribute corporate intentionality to such a complex cultural crossroads that put ‘You’ on the cover of Time Magazine. It would not, however, be out of line with the scholarship on capitalist societies to suggest that we might be witnessing the reification and commoditization of social relations themselves. Terranova (2000), for example, has talked about the way in which content producers provide free labor, rather than free expression, to the new rich of the new economy. It can only be in a commodity economy where the docile mapping of one’s connections is treated *as an expression* and the entire takeover of a website by a collective registers a ‘does not compute.’

We have taken a global assemblages approach to looking at the Web 2.0. We have tried to demonstrate that there is a collective way to do voice on the Web via the example of Brazilians taking over. We have also tried to show that this collective voice was one that was actually not recognized as voice in Western press because of the emphasis on the individual and the emphasis on market potential. Poor undisciplined Brazilians are perhaps not terribly enticing as a market. We then introduced the concept of meta-brand as a way to understand Web 2.0. By discussing a meta-brand we can see how voice and social networking become conflated in the consumption of the web. This way of inventing paradigms no doubt has

</online> communities, all over again

consequences for ethnographic praxis. As companies feel the need to respond to, or otherwise create a strategy around the next wave of paradigms, they call on us to articulate what it is people are actually participating in. This on the whole seems rather good for our business. But if voice is perceived as done, need has been met, perhaps people who position themselves as an internal voice of customers might find themselves cut out of the loop. Wouldn't that be, like, so Web 2.0?

REFERENCES

- Burt, R. S.
1995 *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.
- Burrell, J.
2007 Videography in Ghana. Intel Research Seminar Series, Hillsboro, OR.
- Granovetter, M.
1973 The Strength of Weak Ties. *American Journal of Sociology*, 78, 1360-1380.
- Leitner, D.
2005 "A Successful Future: Networking, innovation, and the market as a moral agent in Cambridge bioscience - Notes from the Field". Seminar, University of Essex.
- Lury, C.
2004 *Brands: The Logos of the Global Economy*, London: Routledge.
- Nardi, B. A., Whittaker, S., & Schwarz, H.
2002 NetWORKers and their Activity in Intensional Networks. *Computer Supported Cooperative Work*, 11(1-2), 205-242
- Ong A. and Collier S. J., editors
2005 *Global assemblages: technology, politics, and ethics as anthropological problems*. Malden MA: Blackwell.
- Strathern, M., editor
2000 *Audit Cultures: Anthropological studies in accountability, ethics and the academy* [EASA series in Social Anthropology], London: Routledge.
- Terranova, T.
2000 'Free Labor: producing culture for the digital economy', *Social Text*, 63: 18(2):33-58.

Woolgar, S, editor
2002 *Virtual Society? Get Real!* Oxford: Oxford University Press.

Web resources

Time
2006 Time's Person of the Year: You. December, 13, 2006. URL:
<http://www.time.com/time/magazine/article/0,9171,1569514,00.html>

FROM FIELD TO OFFICE: THE POLITICS OF CORPORATE ETHNOGRAPHY

SUZANNE L. THOMAS XUEMING LANG

Emerging Markets Platforms Group, Intel Corporation

Critical corporate ethnography does not stop at the field or our reports but extends into our day-to-day work in the office. Using the example of internal research conducted for next generation internet Café (iCafé) product development in the PRC, we will argue that corporate ethnographers must go beyond self-reflexive fieldwork to tackle the organizational and cultural politics of our domain expertise. In this latter context, we become conflated with “the field” and, indeed, our corporate value is equated with the veracity of our field representations. The situation becomes eminently more complex in MNCs where in-depth ethnographic research is analyzed and acted on in multi-national teams and where internal cultural differences and professional disagreements parade as divergent corporate interests.

INTRODUCTION

We unequivocally claim ethnography as a research methodology and analytical discipline in all Foucaultian senses of the term.¹ But ethnographic praxis in the corporate context forces us to reconsider what we have learned from critical cultural anthropology. The very terms we wrestled with as academics – authenticity, scientific knowledge, authority and power – come back to haunt us in the corporation as our *raison d’être*. This is particularly true for ethnographers, such as Xueming and I, embedded in product groups.

Academics long have sought to shirk the over-reaching claims to power that science, authenticity and disciplinary knowledge have inculcated. In particular, the image of the lone anthropologist and his (and her) authentic knowledge of the Other is rife with the abuses of colonialism, racism, nationalism and beyond.² Remedies have been suggested in terms of self-reflexive analysis, radically situated knowledge, a dialogic model of fieldwork and representation and more.³

¹ Michel Foucault, *Discipline & Punishment: The Birth of Prison* (New York: Vintage, 1995) and *Power/Knowledge: Selected Interviews and Other Writings, 1927-1977* (New York: Pantheon, 1980).

² A succinct voice in this debate is Edward Said, *Orientalism* (New York: Vintage, 1994).

³ To cite a few compelling voices in this debate: Renato Rosaldo, *Culture and Truth: the Remaking of Social Analysis* (Boston: Beacon Press, 1989); James Clifford and George E. Marcus, eds., *Writing Culture: The*

But, the corporate drive for specialization and disciplinary expertise (key to achieving multinational scales of efficiency and task replication), we find ourselves back at square one.⁴ We might not claim an “authentic knowledge” of “the field,” but our colleagues demand it from us. With little understanding of our domain expertise, they grant us a research method that requires extensive journeys into “the field” and (to them) a frustratingly opaque theoretical toolkit for translating what we witnessed in “the field” into a reportable “authentic knowledge” of those located there. The demand for this domain expertise intensifies as we leave the company of our ethnographic compatriots and engage in cross-disciplinary teams, in our case, for the purposes of product development. The justification for our participation in these teams is writ large (and questioned) as verifiable knowledge of a field and market.

Despite this professional *raison d'être*, we do not recommend that we undermine the current faith in our knowledge and expertise. However, we do need to find more intricate ways of modulating our knowledge of the field, particularly as it is conflated with our corporate identity. Indeed, we argue that it is only by consciously playing with the shifting values of our fieldwork, our corporate expertise and cultural politics of our work – in short, the underpinnings of our authentic knowledge – that we can fruitfully engage with our colleagues.

To ground our discussion, we review a year’s worth of research on Internet Cafes (iCafes) in the People’s Republic of China we conducted in Intel’s Emerging Markets Platforms Group (EMPG). We do so to highlight the corporate specialization and discipline of ethnography as well as the necessity of adapting our voice as corporate ethnographers to address not only the cultural politics of the field but also of the office. In order to learn from this experience, we are frank about the strengths and weaknesses of our work and that of our colleagues.

To highlight the latter, we, the two authors, divide our voices as we discuss our experiences with research on China’s urban and then, briefly, that on China’s rural iCafes. We do so to highlight our uniquely situated experiences of the research.⁵ Xueming Lang is a PRC national with a recent master’s psychology and usability research. He works out our Shanghai office. Suzanne Thomas is a US national with a PhD in communications, cultural studies and Chinese studies. She also has extensive private sector research in qualitative and

Poetics and Politics of Ethnography (Berkeley: University of California Press, 1986); and Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).

⁴ Here we draw on Benjamin G. Shaw’s intricate analysis of corporate cross-disciplinary design (and often product development). In particular, he examines the inherent conflicts corporate specialization and disciplinary domains bring to collaborative work environments. See Benjamin G. Shaw, “Speaking Different Languages: Metaphor, Discourse and Disciplinary Conflict in Product Development,” unpublished MPhil dissertation for the Royal College of Art, London, 1997.

⁵ See Haraway’s discussion on situated knowledge, Haraway, 1991.

ethnographic market research. In 2006, she worked between Intel's California Bay area and Shanghai offices.

We also distinguish our voices in order to illuminate the cultural and nationalist politics shaping our work. As we continued our research into rural areas, the seemingly cut-and-dried market behaviors of urban iCafes became muddied by hostile government action. Questions over what to do with China's rural iCafes neatly cleaved us along nationalist and cultural lines. There was no easy fallback on the language of corporate interest (aka market segment win, market expansion or simple profit). Nor did a moral call to bring bridge China's digital divide unite us. The lines that divided us revealed as much about our team members' cultural proclivities and corporate standing as they did fundamental disagreements about the moral implications of our collective work.⁶

BACKGROUND ON ICAFES

As quick background, PRC iCafes are shared-use computing environments operated for commercial purposes. Unlike the internet cafes in the United States that offer coffee, Wi-Fi Internet access and possibly a couple of desktop PCs for those without their own laptop, China's urban iCafes are vast halls crammed with anywhere from a 100 to 1,000 desktop PCs. They cater to avid online gamers, those interested in watching downloaded (and usually bootlegged) movies, music and television, QQ denizens (frequent users of a wildly popular, local online chat software), and the occasional Internet surfer. Customers pay a relatively low hourly fee



FIGURE 1 Large urban iCafe

(less than thirty cents USD) to use the equipment there. The businesses are profitable enough to have saturated the urban market (where competition is fierce) and are actively expanding into China's rural towns and even villages.

It's worth noting that China's rural iCafes differ from their urban counterparts primarily in terms of size, clientele and legality. They are smaller, shabbier and host far fewer PCs (as few as five or six). The business model of an hourly fee for on-site use of the PCs remains the same, but for reasons of rural demographics, the clientele are primarily elementary and junior high school-aged children. In short, they are all under 18. This poses a



FIGURE 2 Village iCafe

⁶ In the introduction to his edited volume, Richard Madsen and his fellow editors offer an elegant discussion of the morality and how it folds into everyday life and the experience of modernity. See Richard Madsen, et.al, eds., *Meaning and Modernity: Religion, Polity and Self* (Berkeley: University of California Press, 2001).

nettlesome problem for iCafe operators. Chinese law clearly states that no one under 18 may enter iCafe premises. However, by sheer fact of rural demographics (most middle schools are located in urban centers, outside of towns), town and village iCafes can only but attract underaged customers. Add to this that licensing for such businesses is strictly limited and expensive. The result is that most rural iCafes operate under the table in order to make a profit. Local authorities struggle to resolve the tension between maintaining profitable local businesses (like iCafes) and adhering to central policy that designates these iCafes as illegal operations. One profitable solution for them is to frequently fine the businesses, but not shut them down.

AUTHENTIC TALES FROM THE FIELD

During the urban iCafe research, Xueming and I unequivocally aimed to faithfully represent the voices of those owning, operating and frequenting iCafes. This was how we justified our participation on the Shanghai iCafe product development team in Intel's Emerging Markets Platform Group (EMPG). We grounded our work in a methodology that was ethnographic in spirit. Call it a professional sleight of hand, but what we did (and what is detailed below) was attributed to our domain expertise. We identified (and expanded) a definition of "the field," in this case urban iCafes and all who crossed paths there. We designed a plan that was open enough to allow on-the-ground expertise to bubble up and shape not only how we conducted our research but also how we would represent it. Finally, we reported our findings as domain specialists responsible for the exploration phase of next generation iCafe product development process.

To our surprise, it worked to both our professional and ultimately Intel's benefit. This is the successful part of the story. Few doubts emerged about our "authentic knowledge" of "the field." Even beyond our business group, we emerged as experts on the PRC iCafe industry and compelling folklorists of the field. It helped that our core insights were confirmed by subsequent market research.

However, problems emerged as we struggled to translate our findings into product strategy. Here we found the limits of our storytelling.

The fieldwork and the report

Much of the authenticity and appeal of our research came from the aura of it being "ethnographic." To be frank, this was not ethnography by any anthropologist's stretch of the word. It was in-situ, qualitative market research guided by ethnographic methodology. But to our colleagues it was "ethnographic," and at Intel the aura of ethnographic research meant we were given such license with little knowledge or care about what this meant. We simply had to deliver.

In the following dialogue, Xueming and I outline the nitty-gritty details of our fieldwork and how these grounded what it was that we had to deliver, a research report to the iCafe

product development team. We delivered that report, but it was not exactly what they expected.

Xueming – When I got the urgent request to do research on PRC iCafes, I had only been an intern at Intel for less than three months. The project started because Intel was bleeding market segment share to our competitors. We needed to act fast, and the goal was to deliver a spectacular next-generation iCafe product asap.

Suzanne – I got called into the research project as a kind of ethnographic research consultant largely because the project lead was heading out on maternity leave. It was a week before Xueming, a new intern then, headed out into the field. That got my attention.

If the iCafe team wanted a deeper understanding of iCafes and their ecosystem, then we needed a more open-ended research plan. We set about reviewing the project goals and overhauling the research design. Xueming and I ditched the focus groups and organized in-situ, one-on-one interviews. We even toyed with the idea of 24 hour observations of the businesses (they do operate all day and all night), but due to lack of resources (and Xueming’s understandable need for sleep), we settled for shorter observation periods.

Xueming – From the outset, Suzanne and I talked nearly every day. (At the time, she was in her San Francisco office and I was soon to be in the field.) It helped that she could speak Chinese. Because we were on a tight budget, we started the recruiting ourselves. While doing so, I met an IT expert who serviced a number of Shanghai iCafes. Initially, I approached him for help in recruiting small, medium and large-sized iCafes. But he stopped me short saying, “I have different way of categorizing the iCafe market. If I were you, I’d look for ‘luxury’, ‘common’ and ‘dirty’ iCafes.”

Suzanne – When Intel’s prior small-medium-large iCafe segmentation (based on how many PCs were on the premises) fell flat in Shanghai, we turned to the business distinctions Xueming saw emerging on the ground – neighborhood iCafes where one killed time gaming (the “common” and “dirty” ones, which we dubbed local hangouts) and centrally located destinations iCafes where one went for a night out on the town (the “luxury” ones, which we dubbed entertainment destinations).

Xueming – Local hangout iCafes were places where customers could inexpensively connect to the Internet. Interiors were functional, not fancy – they survived by offering fast connectivity and computing at a low hourly rate. Cleanliness was not top on their list. Typically, they were located in residential neighborhoods, often next to schools



FIGURE 3 Local hangout iCafe

and factories and so attracted students and wage workers, often rural residents who migrated to cities for work.



FIGURE 4 Entertainment destination iCafe

In contrast, the entertainment destination iCafes were one-stop shops for leisure-time entertainment. They offered more than online chatting and gaming. One Taiyuan iCafe offered a wide variety of experiences to its customers – KTV box rooms, large screen PCs with sofas, a restaurant and tea shop, too. These iCafes were usually located in downtown shopping districts and competed with other entertainment venues (shopping malls, bars, KTV bars, etc.) for customers. While they had their fair share of students, they attracted a wider range of clientele – more women, more mixed gender couples, and more young professionals. The demographic

remained young (under 35), but the socio-economic range widened to include young professionals.

Suzanne –What customers did on iCafe PCs did not surprise us (gaming, chatting, movie & music downloads), but how and why they did that in iCafes did.⁷ Some customers opted to go to iCafes over using their computers at home. Why? To escape parent's nagging them about their homework or looking over their shoulders while they chatted online with friends. No longer just an online gaming hall, iCafes emerged as the place for urban Chinese youth to be youth. iCafes were one of the few places young urban Chinese could escape the pressures of schooling, work and their parents. In their eyes, digital technology made the iCafes modern, and the emergence of fancy, mega-iCafes made them hip.

For those who tended the iCafes, the beleaguered IT staff and hardworking owners, the pressures of relentlessly updating the games loaded on 100s of PCs, general PC maintenance, a viciously competitive iCafe markets and low profit margins forced them to consider avenues for beating the local competition. Depending on location and clientele, some went upscale while others fought trench warfare over technology prowess (primarily online gaming performance).

Xueming – Intel was not off-track when it incorporated iCafe management software into its first generation iCafe product. Owners did need to improve how they managed their businesses. But by 2006, nimble local companies were jumping to fill in that gap. Most of

⁷ For details on the Chinese internet and its tendency towards being an entertainment, versus information, highway, see Lyn Jeffrey's blog on IFTF's web site <http://www.virtual-china.org/> and Zhou Yongming's historical discussion of technology and political participation, Zhou 2006.

their solutions worked, well, not too badly and much less expensively than Intel's existing product.

Suzanne – In the end, it was the mix of urban iCafes and China's booming online entertainment youth culture that held the most promise for Intel. We shifted attention away from the iCafe owner's PC management headaches to highlight the potential of innovatively addressing China's tech-savvy youth market.

Xueming – Suzanne and I team-tagged across the Pacific Ocean to write the report together and three days after I returned from Taiyuan, we gave our presentation. In order to highlight the positives (a new iCafe industry segmentation and the discovery that iCafes were the places for China's new online and offline youth culture), we downplayed the negatives (the lackluster performance of our product in the market). Not only were these insights fresh to Intel, we felt they opened an innovative new product space.

Suzanne – Even though, Xueming did the research and wrote the meat of the report, we agreed that I would make the presentation to the opening meeting of the iCafe next generation product development team. This was in part because of the last minute demographic and cultural analysis I added. It also helped that I was a native English speaker (English was the meeting's dominant language) and the more senior researcher. The perceived status of the one presenting, be it in terms of professional experience or linguistic prowess, adds to the perceived veracity of the report.

Perhaps it also helped our credibility as fieldworkers that I gave the presentation from a small, noisy public phone stall in remote, western China. Outside, long-haul trucks rattled by, while next to me, small-town entrepreneurs made hurried calls home. But the locale made the silence after I finished the presentation surreal. After a moment of silence, a disembodied voice said, "So this is what ethnographic research is."

Xueming – In the room listening were industrial and interaction designers, engineers, software architects, marketing and product managers and one of our general managers. In retrospect, I think it was their first time to see an "ethnographic" research presentation. Our general manager was the one who broke the silence. The report opened up a completely new iCafe market for him, and that got him excited about our work.

But after the meeting, I heard a wider variety of responses. Our other general manager, emailed to say he enjoyed the report, particularly its singular use of photos from the field. My immediate manager seconded the praise but asked for more details saying, "You should have at least provided user needs!" Third, in a follow-on meeting the next day, the project lead asked me to summarize the most important user and market needs.

It became clear that the team accepted the report as a good ethnographic report, in short, we had told a compelling story about urban iCafes and their regulars. But they wanted something else. They wanted that story rendered in terms of actionable product

development strategies and directions. They wanted the prescribed “user research report format” which highlighted user “needs” or “pain points.”

COLLABORATION VS. THE FAMILY FEUD

As we moved from research exploration to product development, we joined a highly specialized (although junior) iCafe product development team. In these meetings, we parried our knowledge of gamers who wanted faster performance (what kind of performance?) and business owners who wanted that performance at a lower price (lower than what?) against the relentless progress of an Intel technology roadmap, the street value of a former iCafe product waiting to be sold, the promotional appeal of Intel brand, and more.

Frankly, the meetings felt more like a dysfunctional family fighting where the battle lines were drawn in terms of corporate specialization. Predictably, product managers argued with the research when it threatened their brand. Finance experts took hardware architects to task over the easy call for price and performance. That we, as the researchers, represented “the field” was a no-brainer. In those meetings, we were the field. Our problem was modulating our voice and the language of our insights into terms upon which others could understand and act.

Benjamin Shaw describes how corporate specialization and disciplinary training can lead to distinct “thought worlds,” each characterized by different practices and routines that, in turn, have their own syntactic, semantic and pragmatic dimensions.⁸ It is no surprise that specialists develop their own languages and jargon to describe things that are important to them.

But many more subtle or deeply rooted issues occur when people use the same word to mean something different or when people see different kinds of details across a similar body of data. There are ways to mitigate these barriers. Shaw argues for increased transparency and closer collaboration between disciplines. But this effect is best achieved after working for years together on shared projects.

As a relatively inexperienced product development team, we spent months hammering out the meanings of our terms, be they feature, price, performance and even the Intel technology roadmap. The script we followed, a series of meetings designed to discuss a preset array of questions, assumed that at certain critical junctures, we as a team would agree on our terms, reach a collective decision and proceed to the next set of questions. It was often not clear until too late that we were not operating with the same deck of cards.

⁸See Shaw 1997.

The product development meetings

Xueming – After our research report, I returned to school to complete my Master’s degree. When I returned to Intel one month later, I met up with the iCafe team. They showed me an array of iCafe product features that came, in their words, from the research. I was shocked. Without my input, the design team crafted core design directions and concepts that were shockingly unrelated to our research findings. As an intern, I did not dare to refute their work. I called Suzanne.

Suzanne – There is no good version of this story. Prior to my work at Intel, I worked as an ethnographic research consultant. My work rarely lasted past the final presentation, and for this reason I took the job at Intel. I wanted to see how to make the research work beyond the report. But I certainly did not do that here. With the report given and out of my hands, I had ventured on to other research projects (my own, this time), and gave little thought to the iCafe work until Xueming contacted me.

Then, I confess, I felt betrayed. The designers had misunderstood the significance of our findings. If we crafted our careers around authentically representing the field, it would not do to have designers and engineers messing up that “authenticity” with product concepts that did not adequately represent those findings. Mind you, this was no longer the field’s authenticity, but that of our corporate identity and professional value.

Xueming – The next thing I knew was that I was back in meetings with the designers and had a second chance at the design recommendations for the next generation iCafe product. This time, they were much more closely linked to what we saw in the field.

But I was only a junior researcher there in Shanghai. My voice could not stand up to the challenges that emerged during the development process where we negotiated user needs, business needs and tech needs.

Suzanne – The minute Xueming’s second presentation hit the team, the recommended feature set defined the field across which hardware and software architects, product managers, project managers, financial folks and more debated which should constitute the next generation iCafe product and how. And it was a muddy and messy field.

Shortly afterwards, the design lead quietly suggested that neither Xueming nor I need continue attending the product development meetings. Our exploration work was done – a set of rudimentary features had been delivered. This was, in the team’s mind, not an iterative process. We completed our work with our reports. We could go while the designers, engineers, product managers, and financial folks did their magic.

However, I did not trust the iCafe team to hear what the research had said. Nor did I trust our report to withstand the onslaught of questions that would inevitably arise as the team made decisions about which technology would be sold when, where and how. As an

artifact, it highlighted the fieldwork we had done. It could not anticipate questions down the road. We needed to be in the room for that.

Ideally, frictions over core terms and misunderstandings across specialized disciplines can be resolved collaboratively. But tensions in these meetings were so high that they shut down the kind of environment necessary for us to admit a lack of knowledge about another's domain. Differences between attendees English proficiency also complicated matters. More than once, a native English speaker used his or her native English fluency to silence a non-native English speaker. It was deeply unsettling to see how linguistic prowess was bandied about as decision-making authority. At points, the meetings simply became a matter of whose voice was loudest.

Xueming – None of the features that I worked on with the designers came to a reality. Unlike Suzanne, I remain disappointed. We recommended an iCafe next generation product that addressed what iCafe owners, operators and customers wanted. But nothing we recommended saw light of day. I still don't know why. Ultimately, someone high up in the process decided that the iCafe market could be better addressed by another business group. And the iCafe product slipped out of our, the ethnographers and EMPG's, hands.

Suzanne – It is true that none of the features we originally recommended were part of the final next generation iCafe product. But unlike Xueming, I agreed with the final decision to sell top-of-the-line Intel product into China's iCafe industry. That product did meet the core requirements of iCafe denizens. It also helped that those higher up in the corporate food chain took me aside and gently persuaded me that this was the right way to go.

Because EMPG was no longer creating a unique product for this relatively unique market but instead called for selling mainstream, volume product into China, this product no longer fell under our business group's jurisdiction. So, it was handed off to those who could follow through on our final product strategy recommendations. It did feel disconcerting to hand off all of our work and then hear little more of what happened next. But at the core, our research recommendations ultimately found an expressing in Intel's roadmap and market strategy. I see this as a success on our and the iCafe's team part.

CULTURAL POLITICS AND THE ETHNOGRAPHERS' VOICES

At no time during the urban iCafe product development meetings did we discuss the fact that the central and local Chinese government actively campaigned against iCafes. The urban iCafe market was too large, too promising and too enticing to consider this. Yet, when one of our product managers gave an external presentation in Shanghai, Chinese audience members challenged Intel to explain how it could support such an inherently immoral industry. In forceful terms, they made it clear that iCafes were the modern equivalent of 19th century opium dens. This is a tricky accusation for a foreign (and

decidedly Western) corporation, particularly considering the colonialist intentions of Britain's efforts to bring opium into the Chinese mainland in the 19th and 20th century.

Nor did we confront the uneasiness the Chinese government feels about iCafe regulars and the mechanisms it uses to control their on & offline lives. Western media and academics rarely fail to mention China's Internet censorship and other government controls over the access and distribution of digital information in China. Yet in our product development meetings, none of the US participants raised these issues. Neither did our Chinese colleagues. Our conversations were swept free of state politics and instead single-mindedly focused on the market practices of iCafes, their owners, their operators and their customers.

In hindsight, we researched an industry and its market and thusly framed EMPG's product development trajectory. The urban iCafe is less contentious than that of China's rural iCafes. Government restrictions on iCafe business licensing, policies forcing a consolidation of the industry and even crackdowns on unsafe or immoral iCafes guided the urban iCafe market rather than challenging its existence. Urban iCafe industry practices dovetailed with government policy in part because they had to, but also in part because the policies also meshed with emerging business practices.

Subsequent research on China's rural iCafes, however, delivered a resounding challenge to this relatively easy-going alliance between industry and government. Spurred by the business appeal of an even-larger iCafe market (one that reached deep into rural China) as well as research initiative designed to understand where technology markets existed amongst rural populations, we set out to explore the inner-workings of village and town iCafes.

As we brought home our research on rural youth and rural iCafes, we could no longer sidestep the state politics shaping China's online entertainment industry. The rural iCafe market was ground zero for government policy about youth culture and commercial Internet use. Internally, we enacted these conflicts and contradictions. We took sides with one side arguing that the market and its youth culture was strong enough to withstand government onslaught while the other side aimed to clean up iCafes so that the businesses would no longer wreak the wrath of local and central government offices and a larger body of youth and even young adults would feel more comfortable visiting the establishments.

What was striking about these two sides of our research was how easily they mapped onto cultural and national differences. Even the two of us authors quietly found ourselves on opposite sides of the fence. Xueming joined forces with his colleagues in Shanghai to brainstorm ideas on how to build a better, stronger and legal iCafes that would nominally conform to state policy and attract a broader range of clientele. In short, he and our Shanghai colleagues aimed to make rural iCafes into a more viable business and bridge the widening cultural divide between urban and rural residents. In contrast, Suzanne argued for what she felt was a more anti-establishment, support-the-underdog view – she wanted us to simply provide rural iCafes with as top of quality equipment as they could afford so that they could continue their unintended guerilla warfare on government cultural values.

What started as simple, cut-and-dried next-generation product development research evolved into a year's debate over what should be done about China's iCafes. During our urban iCafe product development process, we arrived at a common voice and singular answer. Yet as we continued our exploration of this industry and its regulars, we ended up deeply divided over how to answer this question. Ultimately, there was no easy fallback on the language of corporate interest (aka market segment win, market expansion or simple profit). Nor did a moral call to bring bridge China's digital divide unite us. Markets and governments (their own markets) clashed and we began to take sides. The lines that divided us revealed as much about our team members' cultural proclivities and corporate standing as they did fundamental disagreements about the moral implications of our work.

CONCLUSION

It is our job to observe and learn from those we research. It is also our job to represent our insights in such a way as to make sense of "the field" to our colleagues. In both cases, we face the myriad politics of authenticity. These politics shift tenor as we shift from representing the voices and lives of those we study, to our own as corporate specialists, to the voices of our mates, our nations and our cultures. To build collaborative and innovative business practices that value our work as corporate ethnographers, we must be prepared to tackle these politics from field to office and beyond. We offer this frank assessment of our year's worth of research on iCafes as fodder for learning, our own and hopefully others'.

REFERENCES

- Foucault, Michel
1980 *Power/Knowledge: Selected Interviews and Other Writings, 1927-1977*. Translated by Colin Gordon. New York: Pantheon.
- 1995 *Discipline & Punishment: The Birth of Prison*, Translated by Alan Sheridan. New York: Vintage.
- Haraway, Donna J.
1991 *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Madsen, Richard
2001 *Meaning and Modernity: Religion, Polity and Self*. Edited by Richard Madsen, William M. Sullivan, Ann Swidler and Steven M. Tipton. Berkeley: University of California Press.
- Rosaldo, Renato
1989 *Culture and Truth: The Remaking of Social Analysis*. Boston: Beacon Press.
- Said, Edward W.

1994 *Orientalism*, New York: Vintage.

Shaw, Benjamin G

1997 “Speaking Different Languages: Metaphor, Discourse and Disciplinary Conflict in Product Development.” Unpublished MPhil dissertation. Royal College of Art, London.

Zhou, Yongming

2006 *Historicizing Online Politics: Telegraphy, The Internet, and Political Participation in China*. Stanford: Stanford University Press.

Changing Diabetes Care for Good

How everyone stands to benefit from a better understanding and use of patients' perspectives and experiences of life with type 2 diabetes when designing and implementing treatment interventions.

MIKKEL BROK-KRISTENSEN

ReD Associates

The current approach to diabetes management is flawed. Providers' use of the concepts of self-management and compliance disguises a system in which the perceptions and everyday life of the individual patient is discredited and disregarded. The result is the loss of both patients' life quality and the wasting of billions of reimbursers' dollars. This paper proposes a new direction in which providers move to change practice and acknowledge the equal importance of patients' non-biomedical perception of diabetes in regards to cause, etiology and treatment initiatives. The paper argues that this change can potentially lead to a great improvement in the life expectancy and life quality of people with diabetes. It presents the outline of a practical model intended to assist providers in taking the first steps towards this crucial evolution in practice.¹

INTRODUCTION

Diabetes care is big business. This year alone, the total expenditure on diabetes and its complications will total more than 236 billions USD.² Similarly, the world market for insulin alone – prescribed for people with no or very limited self-production of insulin - is expected to be worth well over 11.8 billions USD in 2010 (Gale 2006: 1267). Regrettably not all of this money is well spent – in fact billions are wasted. Too many interventions are inadequately designed and executed, resulting in a poor efficiency of both public and private health care reimbursers' spending.

To make matters worse the number of people with diabetes is increasing at a phenomenal rate. In 2030 more than 30 million Americans will have to live with diabetes, an increase from 17,702,000 Americans in 2000 (WHO estimate).³ The increase will almost

¹ I would like to thank Brinda Dalal for constructive critics of previous versions of this paper and my colleagues at ReD Associates with whom the presented understandings have been developed.

² The human, social and economic impact of diabetes. The International Diabetes Federation <http://www.idf.org/home/index.cfm?node=41> , accessed the 27th of August 2007

³ World Health Organisation, http://www.who.int/diabetes/facts/world_figures/en/index3.html , accessed the 14th of July, 2007

exclusively be seen in the rising number of people with type 2 diabetes – also known as adult onset diabetes.⁴ Type 2 diabetes, which is the focus of this paper, already accounts for approximately 90% of all cases of diabetes and is largely the result of physical inactivity and excessive body weight (WHO)⁵. It is not only the ‘fat Americans’, as the European media so often depicts America, that are fighting a Sisyphus battle against diabetes. Diabetes is on the rise in every single country in the world, and by 2030 the global number of people living with diabetes is estimated to reach an astonishing 366.000.000 people – making it a ‘global diabetes epidemic’ (WHO).⁶

The economic burden of diabetes is vast even today. In the US a 1997 study showed that 10% of the total cost of health care was on diabetes and 25% of all Medicare payments were made to people with diabetes (Björk *et al.* 2000: 22). Improving the efficiency of intervention is critical if we want to ensure that the growing economic burden of caring for diabetes and its complications will not cause the health care sector to collapse.

However, of prime concern are the individuals living with diabetes that carry the burden. Diabetes is a chronic disease that occurs when the pancreas does not produce enough of the hormone insulin, or, alternatively, when the body cannot effectively use the produced insulin, hereby affecting the blood sugar levels that are controlled by insulin. An uncontrolled blood sugar level can either lead to raised levels of blood sugar (hyperglycemia) or lowered levels (hypoglycemia). This in turn can lead to a number of serious medical conditions. Diabetes is the leading cause of non-traumatic amputations and new cases of blindness in adults; it dramatically increases the risk of stroke; high blood pressure; central nervous system diseases; periodontal disease and depression (Center for Disease Control: 2002; WHO).⁷ It goes without saying that this is a serious challenge to people’s quality of life and studies show that their life expectancy – often referred to as ‘life quantity’ – is cut by 10-15 years, even when treated (Björk *et al.* 2000: 22).

Encouragingly much can be done to minimize complications, but the paradox, according to providers, is that these measures are not being implemented to anywhere near the extent to which they could be. With strong scientific evidence backing this assertion and progress being in the interest of both patients, providers, reimburses and society at large the

⁴ Type 2 diabetes typically affects middle-aged or older individuals and occurs when the pancreas does not produce enough insulin or when the body fails to use produce insulin effectively. Approximately 90-95 % of the diabetic population has type 2 diabetes, the remainder live with type 1 diabetes. Type 1 diabetes typically occurs in children and adolescents and affects them for their entire life. It occurs when the pancreas fails to produce insulin. (Prevalence of diabetes. The International Diabetes Federation) <http://www.idf.org/home/index.cfm?node=264> , accessed the 27th of August 2005

⁵ <http://www.who.int/mediacentre/factsheets/fs312/en/index.html> , accessed the 14 July, 2007

⁶ http://www.who.int/diabetes/facts/world_figures/en/index3.html , accessed the 14 July, 2007

⁷ To exemplify the severity about 50% of all people with diabetes will be affected by damages to the nerves. 10-20% will die of kidney failure. 50% will die of cardiovascular disease. WHO Facts <http://www.who.int/mediacentre/factsheets/fs312/en/index.html> , accessed the 14 July, 2007

natural question then is to ask: What is the problem? – Why is the prevalence of complications not decreasing?⁸ Attempting to address this apparent paradox has brought about an increased interest in the psycho-social aspects of how people live with diabetes (Schoenberg *et al.* 2005). It has also been the focus of several projects that I, and the company I work for, have been engaged in over the past 2 1/2 years. It is data and findings from these projects on type 2 diabetes that serve as the foundation of this paper.

SELF-MANAGEMENT

The proliferation of oral and injectable therapies has essentially placed the responsibility for achieving good control of diabetes on the person living with diabetes: Good control is defined as maintaining the right level of blood glucose (International Diabetes Federation).⁹ This means the responsibility for both medical and non-medical treatment initiatives (i.e. dieting and exercising) lies in the private space of the person with diabetes. The health care system and its different actors have thereby become suppliers of products, services, information, guidance and evaluation to the patients, with providers prescribing medication and giving advice and directions on diet, exercise, stress management all for the patient to self-manage. To use the words of a nurse we interviewed in a project: *“We don’t want to take over their diabetes, we want them to manage their own diabetes. We want to be the people that they can come to for advice”*.

Providers and other actors within the health systems view this concept of self-management in an un-critical light, but deeper scrutiny is required if we are to understand the real impact of the concept. Rose (1992), highly influenced by the thinking of Michel Foucault, explicates that the modern understanding of the self, is indeed what could be labeled an enterprising self: *“The enterprising self is [...] a self that calculates about itself and that works upon itself in order to better itself”* (Rose 1992: 146). Foucault in his study of Greek and Roman philosophy has showed how working upon yourself with self-analysis and confession was considered integral to taking care of yourself, making management of the self an old western tradition (Foucault 1988; Samuelsen and Steffen 2004).

The life of the enterprising self is thus a continuous flow of situations in which it is attempting to choose what best serves its interests and self-improvement. It is through these choices that the enterprising self is at once creating and defining itself in the eyes of others and itself: *“The self is to style its life through acts of choice.”* (Rose 1992: 151). The concept of the enterprising self hereby shows just how intrinsic choice-making is in our, western, understanding of what constitutes the individual as an acting subject (Foucault 1998, 2000;

⁸ According to the International Diabetes Federation (IDF) a 1% reduction in HbA1c – the measure for long term average level of blood glucose called glycohemoglobin, which is largely agreed to be ideal around 6.5 % < HbA1c - reduces diabetes-related deaths by 21%, risk of micro vascular complications by 37% and myocardial infarction by 14%. http://www.idf.org/webdata/docs/Fact_sheets.pdf, accessed 15 July, 2007

⁹ http://www.idf.org/webdata/docs/Fact_sheets.pdf, accessed 12 July, 2007

Rose 1992). It is because of this strong emphasis on the individual as an acting subject, that self-management is perceived as a self evident process whereby the individual living with diabetes will inevitably make decisions and take actions regarding treatment of diabetes that serves their own interest. Together with the assumption that treatment behaviour is a direct result of patients' decision making this is an important part of providers' perspectives on diabetes treatment (Hunt and Arar 2001: 348).

PROVIDERS' AND PATIENTS' DIFFERENT PERSPECTIVES ON DIABETES

Patients are generally taking it upon themselves to manage their diabetes. Equipped with medication, information and advice from providers on topics such as diet and exercise, they endeavor to find additional information and tools from the Internet, other patients and people within their social network (i.e. family, friends, the local minister etc.), hereby adding to the pool of what they consider relevant treatment initiatives. Patients generally consider more options than providers including such diverse initiatives as yoga, prayers, herbal tea and other medical options beyond those prescribed by their providers.

That patients and providers have different perspectives on diabetes is well-established (i.e. Balslem 1993; Mattingly 1998; Schoenberg *et al.* 2005; Hunt and Arar 2005). I will therefore only give a few examples from one in a series of the projects we, in the company I work for, have conducted on type 2 diabetes. The project that took place in greater London involved twelve people living with type 2 diabetes, who we observed in their homes, with and without their families, at their jobs, shopping, picking up the kids from school and doing the many other things that 'the everyday' is comprised of.

Cause explanation – understanding the cause of my diabetes

We found that people have considerable knowledge of the medically accepted causes of diabetes, such as obesity, unhealthy diet and a sedentary lifestyle, but nevertheless most of the people we met in this and other studies have their own individual 'cause explanation'. It is in these you find the difference between patients' and providers' notions of causality. We have found that while some people will refer to one of the medically accepted causes, they simultaneously explain how they also believe other causes, that do not find support from the medical establishment, were important triggers of their diabetes. Some patients exclusively attribute their diabetes to such causes. One patient, a man in his late fifties, explained how he got diabetes from eating large quantities of mango over the course of a summer.

Interviewer: So what caused your diabetes?

Informant: About seven years ago I got a big box of mango. So I was eating mango like nobodies business [...]. I was going to the toilet many times, so I went to the doctor and the nurse, she tested my bloodsugar. And I was very high. And she was crazy; she said that I was going to die. [...]. And she said straight away that it was diabetes.

In this and other studies we have encountered a vast array of cause explanations, their common trait being that all gave valuable insight into to how that person was living with diabetes, showing how ideas about the past and the present were influencing the patient's understanding. They simultaneously manifested the uniqueness of their specific diabetic condition (Ferzacca 2000: 39). From a provider perspective, this serves to highlight the importance of listening to peoples' cause explanations in order to understand their perspectives on diabetes, the key suggestion in the 'narrative medicine' proposed by Arthur Kleinman and many thereafter.

Management of diabetes – knowing how to live with diabetes

As already described, differences also show in relation to treatment initiatives. In some cases this is the result of a difference in understanding what is causing the diabetes, but we have also found that patients that have corresponding views to that of their providers will still enact treatment differently to what they have been advised. In the study a woman in her early sixties, knowledgeable about diabetes, and with an understanding of the causal factor aligned with the medical world skips part of her medication because she feels she doesn't need it. Explaining her oral medication she said: *"Then it went up to 500 twice a day, then it went up to 500 thrice a day, but I take it only twice a day"* Or to give another example a woman, of the same age, skips her medication for a couple of days when she feels fine and her blood glucose measurement is ok.

Informant: I can, not take my medication for two days, and if tomorrow I test my blood sugar it might be 5.3.

Interviewer: So you don't have to take you medication everyday?

Informant: No I don't have to, because its controlled

Interviewer: What does the doctor say?

Informant: He tells me to take my medication everyday.

Actions such as these are considered highly illogical by health care professionals as she is actively endangering her long term health, but there was no doubt that she was fully aware of the potential long term complications of diabetes: She explained that her mother had died from diabetes and had a sister who had one of her legs amputated. *"She got it bad"*, as she said. These and similar examples illustrate how the same body can tell different stories to different people. Where providers see an ill body for which medication is intended to slow down the inevitable deterioration, the patient might feel fine and hence see limited need for medication.

‘Anchoring’ diabetes management into the everyday – the constant choice-making

The everyday management of diabetes is best understood as a series of ‘smaller’ decisions where diabetes related issues are considered together and against the many other, and sometimes-competing, non-diabetes related factors that people manage in their lives (Hunt and Arar 2001: 362). Looking at how people live with diabetes naturally highlights that their life is full of different factors that take time and require emotional and sometimes also economic investments. Regardless of whether patients do regard the advice and information given by their provider as the right thing to do, competing influencers such as children, partners, other family members, friends, work, sports and economic issues are some of the many other factors that people with diabetes are exposed to and obliged consider. This naturally affects the possibilities of following advice and directions.

In addition it is also important to highlight that most people, to a varying extent and with varying frequency, feel the need to manifest for themselves, and to others, that they are not defined by their diabetes which often results in behavior that is directly opposite to what providers advise as good sense. A man in his late fifties, who had quit alcohol because of providers advice, had no plans to “*give up on*” his breakfast eggs and butter: “*I love my butter and eggs and I probably have about six eggs a week and half a pound of butter too...my nurse does not like that*”.

However, most often we have found that patients will divert from the guidelines and direction given by providers for limited periods of time and show remorse. Feeling ‘ashamed’ or ‘guilty’ as informants called it, shows how the managing self, blames itself for any shortcomings. “*I am naughty, I really am. I have been that for more than a month now*”, as one of the informants said when talking about her diet. It also shows how patients come to internalize or appropriate perspectives from providers as part of their perspectives - even some that conflict with their own understandings. Showing that patient and provider practice are rarely that far apart as Ferzacca has pointed out (Ferzacca 2000: 29), but also leading to a situation in which patients are never far from ‘failure’ one way or the other.

Self-management as compliance

The differences in patients’ and providers’ perspectives lead to providers labeling patients’ perspectives and behaviors as irrational, foolish, lacking understanding of diabetes and presenting an obstacle to achieving good control of the patient’s diabetes. Providers use terms like non-compliance or non-adherence when patient perspective or behavior is in opposition to what they have been told by providers. However to providers self-management seems to be defined as complying with the treatment they have outlined. This overriding perspective ignores the vital consideration that patients will not always subscribe to the same logic and rationality as providers, rather naïvely disregards many other factors in the life of a person living with diabetes, and leaves the responsibility for patients’ lack of

control to the patients themselves. Providers' attempts to assist the patients in achieving control tends to take the form of 'education'; giving rational arguments for the treatment regimen they have prescribed to the patient, and explaining how bad complications can become if they don't comply with the regimen. This they say is in order to 'get patients to realize the seriousness of the disease' and motivate compliance. However, patients are in general well aware of the seriousness of the disease. It could therefore be concluded that providers' efforts are somewhat misplaced (Hunt and Arar 2001: 362).

Providers intend patients to follow both medical and non-medical advice in an almost prescriptive way, which, they believe, will lead to good control. This validates the argument made by Trostle (1988) that providers' education of patients and their call for 'compliance' and 'adherence' at its core represents a form of control over patients, in which patients are 'blamed' and 'scared' into cohesion (Trostle 1988). They fail to take into consideration the 'reflection-in-action' nature of patients' decision making in which non-diabetes related goals are also weighed in on the anticipation of outcomes that guide their decision making or *sensemaking*, which I will prefer to call it, hereby disregarding the individual's ability to make sense of real world situations (Mamykina and Mynatt 2007: 51).

The current deadlock

A troubling ramification of this is that patients and providers find themselves in a situation in which the concept of self-management is misused in an attempt to coerce the patient into following the treatment regimen outlined by providers with the noble goal of improving patients control. However the result is a situation where the reality of patients' perspectives on, and life with, diabetes, is given inadequate consideration by providers when designing the treatment initiatives. This state of affairs has not led to substantial progress in the treatment of diabetes. It has resulted in unsatisfactory results for the individual, the health care providers, the health care reimburses and society at large with consequent detrimental human and economic costs.

GIVING VOICE TO THE PEOPLE LIVING WITH DIABETES

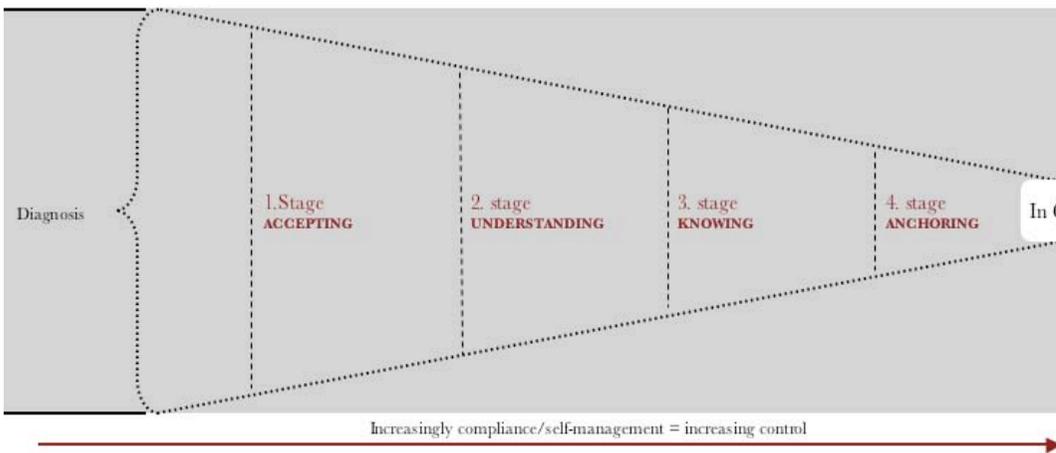
In order to break with the current "route" I suggest a new route where providers are helped to understand the perspective of each individual patient on diabetes and the factors that impact the way treatment is enacted. A route that acknowledges that the biomedical perspectives on cause, etiology and interventions are already effectively shaping diabetes treatment and that most power is vested in providers.

Striving to provide a simple way to ensure that patient perspectives and views are shared and respected, we have attempted to take into account the many different constraints and factors that providers face when caring for patients with diabetes. Limited time to spend for each consultation, economical constraints, guidelines and regulations from reimbursers and health authorities and economical incentives to focus their efforts on control all place demands on providers. With primary care providers becoming the main provider of diabetes

care in many western countries patients will increasingly be met by generalists for whom diabetes is just one of many diseases that they tend to; providers who have a more traditional and 'simple' knowledge and approach to diabetes.¹⁰

Taking all these factors into consideration we have tried to make a simple model (see below), which providers should find relevant and easy to relate to. Using the model as a point of departure providers will be able to prompt talks with patients about the different key aspects of life with diabetes, and together with the patient decide what to focus on and how to best design treatment initiatives. It is centred around the idea that from diagnosis people with diabetes will embark on what we have called the 'diabetes journey'.

I have already partly described three of the four aspects of the model, and will keep further description to a minimum.



- Accepting: How the individuals accept that their body is no longer producing the insulin needed, and hence intervention, either non-medical, medical or both, is needed. It is important to emphasize the dissimilarity to the 'package deal' thinking, that some providers seem to embrace when they use patients' lack of acceptance of diabetes to explain unsatisfactory control levels. In our studies we have found several examples of patients that have accepted that they have diabetes, but will still not be in full compliance with the prescribed treatment regimen. As I have also attempted to illustrate in this paper there are many other reasons for not following the provider's direction and advice. Thus I would argue for a more relevant use of the concept of acceptance.

¹⁰ This is the finding we have made through ethnographic studies of diabetes care in primary health care in the UK, DK and US over the last year.

- **Understanding:** Diabetes etiology and understanding the individual's cause explanations. The principal function is to ensure that providers understand how the patient perceives their diabetes and to make sure that patients and providers discuss these issues together.
- **Knowing:** The knowledge people have about how to live life with diabetes. Focussing the attention of the provider and patient on discovery of the different treatment initiatives available, and the pros and cons of these. Revealing to providers that the palette of relevant interventions is much wider than the options they perceive.
- **Anchoring:** The actual employment of treatment initiatives into the everyday life of a person living with diabetes. The many different competing factors in a person's life will be highlighted and included in patient's and provider's shared decision and sensemaking.

It has been portrayed and constructed as a journey because all of our projects have suggested that the four aspects follow each other in the proposed sequence. The journey structure suggests that these four aspects can be regarded as phases towards improved control levels, and that sustained successful control depends on a having addressed all four aspects in sequence. For example, trying to give advice and direction on *anchoring* to a patient without first endeavouring to ensure that you (as a provider) have fully understood their *understanding* of diabetes, and that the patient has fully acknowledged yours, would not be ideal. This finds support in theories on behavioural change such as the Transtheoretical Model, that argue a certain state of acceptance and understanding, and from this readiness for change, needs to be reached for knowledge and information to serve people effectively (Mamykina *et al.* 2006: 935). This understanding is also very well established among providers.

The underlying assumption is that providers and patients need to work together, because a provider trying to force the patient to a specific perspective or treatment intervention will only fail, and undermine their own future advice. Hence providers with the following attitude will be less successful: *"The responsibility of the patient is to understand it as a kind of student/ teacher relationship - that the patient is listening to the physician and understands what kind of illness he has, why we are going to treat it, and that they accept the insulin"*, said by a general practitioner.

It is important to understand that the journey does not end with the patient becoming in control. Life constantly changes hereby influencing the ways by which you live with diabetes and for people with diabetes this among other things includes a gradual deterioration of their diabetes. Hence people might get in control for a period of time, followed by a setback with unsatisfactory control levels; following a cyclical process that seems to characterise changes of habits (Smith *et al.* 2006: 284). Therefore providers and patients should continuously engage in fresh discussion in order to ensure that the right interventions are chosen - hereby actively avoiding that provider and patient believe that they have finished discussing the aspects of accepting, understanding and knowing.

FUTURE PERSPECTIVE

The diabetes epidemic is reaching enormous proportions, and the importance of addressing the primary cause of this increase – the extreme rise in the number of overweight and obese people – is apparent. This however, should go hand in hand with an improved approach to diabetes management, hereby improving life quality and quantity through an increasing number of people with good HbA_{1c} levels, which should ultimately bring about enhanced spending practice.

The economic case for improved diabetes management is making itself ever clearer. Studies conducted by a Danish team of economists and medical scientists argue that the economic consequence of improving care from current Danish practice to one following national and international recommendation would be a 40% decrease in the total medical cost for diabetes (Green et al. 2006: 9)¹¹. In the US - the team argues that their findings would apply to most western countries – the savings in 2002 would have amounted to approximately 40 billion USD.¹² However the problem of identifying the most successful and cost effective interventions to get there remains.

The presented model can serve as the overall framework for how to identify the right interventions. It is still a work in progress; the model will necessarily evolve to incorporate further adjustments and corrections, which is already taking place in a cooperative effort with our client, but it has been supported by research conducted by the client and by a recent project that focused on the training of doctors and nurses in primary health care to better understand and act on the ‘psycho-social’ aspects of diabetes. This training resulted in lowered control level among their patients.¹³ Hence, despite the need to hone the model, I would not hesitate to assert that the premises on which it is founded are correct: That there is a need for a new direction in diabetes management, a change in which the patients’ perspectives on diabetes and their everyday sensemaking is taken into unprecedented consideration. A mode where compliance or non-compliance disappear as the organizing principles substituted for a mode where real acceptance of the patients’ perspectives and ideas paves the way for self-management in its true sense, where providers together with patients choose the right treatment interventions to achieve good control.

¹¹ The research presented is based on the actual spending in 2001 and the spending that would have been had patients been granted the care following national and international advice from 1985 and onwards (Green et al 2006: 6-11).

¹² The premise of this calculation is that the of cost for care of people with diabetes in the US could be lowered with the 43%, that Green et al. Argue is the case for Denmark. The actual US cost in 202 was \$91.8 billion (American Diabetes Association 2003, <http://care.diabetesjournals.org/cgi/content/full/26/3/917>).

¹³ Due to confidentiality issues, I cannot go into detail

The model essentially presents a framework for understanding and for the design of interventions. At macro level it gives decision makers a better understanding of the issues that are the most prevalent and significant, and most importantly how to address them. At micro level it frames the use of current detailed treatment guidelines, questionnaires and interventions available for providers in guiding their decision-making on appropriate interventions or how to design new and more efficient tools, hereby giving them a better understanding of how to best serve the need of the patient on the other side of the table.

If the lives of millions of people living with diabetes are to be truly changed for the better, it is paramount that numerous concrete and practical interventions are designed. I would argue that the presented model may represent a good point of departure, and that anthropological and ethnographical work can make a difference here, by providing a deeper understanding of the experiences of people with diabetes while doing this in a manner with optimal operational relevance for providers. It is not until we have fundamentally changed the health care system that diabetes care can be changed for good to the benefit of people living with diabetes.

REFERENCES

- Björk, Stefan, Jaakko Tuomilehto and Rhys Williams (ed)
2000 *The Economics of Diabetes Care. An international perspective.* Oxford: Blackwell Science.
- Ferzacca, Steve
2000 "Actually I Don't feel that Bad": Managing Diabetes and the Clinical Encounter. *Medical Anthropology Quarterly* 14(1): 28-50.
- Foucault, Michel
1988 Technologies of the Self. In L.H. Martin, H. Gutman & P.H. Hutton, ed. *Technologies of the Self. A Seminar with Michel Foucault.* Amherst: University of Massachusetts Press. 16-49.
- 1989 *The Archeology of Knowledge.* London: Routledge
- Gale, Edwin A. M.
2006 Dying of diabetes. In *The Lancet* 368(9548): 1626-28
- Green, Anders, Susanne Reindahl Rasmussen and Martha Emneus
2006 Sundhedsøkonomiske omkostninger og benefits ved behandling af diabetes mellitus i Danmark. *Behandlerbladet* vol. 23: 6-11.
- Hunt, Linda and Nedal H. Arar

- 2001 An Analytical Framework for Contrasting Patient and Provider Views of the Process of Chronic Disease Management. *Medical Anthropology Quarterly* vol. 15(3): 347-367.
- Mamykina, Lena and Elisabeth D. Mynatt
2007 Investigating and Supporting Health Management Practices of Individuals with Diabetes. In *Proceedings of the 1st ACM SIGMOBILE international workshop on Systems and networking support for healthcare and assisted living environment*. New York: ACM. 49–54.
- Mamykina, Lena and Elisabeth D. Mynatt
2006 Investigating Health Management Practices of Individuals with diabetes. *Proceedings of the SIGCHI conference on Human Factors in computing system*. New York: ACM Press. 927–936.
- Rose, Nikolas
1992 Governing the enterprising self. In Poul Heelas & Poul Morris, ed. *Governing the enterprising self*. London: Routledge
- Samuelsen, Helle and Vibeke Steffen
2004 The Relevance of Foucault and Bourdieu for Medical Anthropology: Exploring New Sites. *Anthropology & Medicine* 11(1): 3-10.
- Schoenberg, Nancy E., Elaine M. Drew, Eleanor Palo Stoller and Cary S. Kart
2005 Situating Stress: Lessons from Lay Discourses on Diabetes. *Medical Anthropology Quarterly* 19(2): 171-193
- Smith, Brian K., Jeana Frost and Meltem Albayrak
2006 Integrating glucometers and digital photography as experience capture tools to enhance patient understanding and communication of diabetes self-management. *Personal and Ubiquitous Computing* 11(4): 273-286.
- Trostle, James A.
1998 Medical Compliance as an ideology. *Social Science and Medicine* 27(12): 1299-1308.

WEB RESOURCES

American Diabetes Association

Economic Costs of Diabetes in the U.S. in 2002, accessed 2007.10.10

<http://care.diabetesjournals.org/cgi/content/full/26/3/917>

International Diabetes Federation

The human, social and economic impact of diabetes, accessed 2007.08.27
<http://www.idf.org/home/index.cfm?node=41>

Fact sheet, accessed 2007.07.12
http://www.idf.org/webdata/docs/Fact_sheets.pdf

Prevalence of diabetes, accessed 2007.08.27
<http://www.idf.org/home/index.cfm?node=264>

World Health Organization

Diabetes facts and figures, accessed 2007.07.14
http://www.who.int/diabetes/facts/world_figures/en/index3.html

Diabetes. What is Diabetes, , accessed 2007.07.14
<http://www.who.int/mediacentre/factsheets/fs312/en/index.html>

The Local Ingenuity: Maximizing Livelihood through Improvising Current Communication Access Technology

ANDREW WONG

Telenor Research and Innovation Centre Asia Pacific (TRICAP)

This paper presents what it means for the low income, non user segment to have 'technological voices' and in turn 'be heard' socially and economically. It argues that the ICT liberates low income people to explore ways in which technology might help to support their livelihood. We draw on recent ethnographic research conducted in Bangladesh on the low income, non user segment. Some of the questions this paper seeks to answer are as follows: What constraints do people have when using communication access technology? How do they modify communication access technology to better suit their lifestyle and livelihood? As the provider of service, how can we be constantly aware of the need to modify features and make the necessary modifications?

"Communities have the know how to convert technologies to uses that satisfy their needs in ways often not anticipated by the producers of technology."

Francis Tusubira, Professor, Directorate for ICT Support, Makerere University, Uganda

INTRODUCTION

In many cases, companies find it difficult to integrate unexpected findings from the field into their design of services. This paper examines first, the ingenious and local ways in which individuals living on less than a dollar a day interact with technology, and secondly, the social meaning and implications for technology adoption in lower income segments, especially the non users¹. By understanding the phenomenon of local ingenuity² and adoption, we hope to better predict the sustainability of communication access technologies³ in the longer term.

¹ This paper focuses on the very poor or low income segment and non users. The non users are defined into two categories. First, mobile and PC/Internet non users: people who do not own a mobile phone or have PC/Internet access, and rarely or never use other people's mobiles and Internet access. Second, mobile and PC/Internet users: people who do not have their own mobile and PC/Internet access, but do use other people's mobiles and PC ("non mobile and PC owner" and "users").

² Local ingenuity or borrowing innovations is a concept about an economy or a group or a person being inventive by adapting and modifying original ideas developed by others, thus creating local ingenuities that better suit the local environment and needs.

³ We define communication access technologies as comprising of devices that can access the Internet and/or mobile communication.

THE STUDY BACKGROUND

Our research objectives were to uncover the needs of non users in the low income community, how they might use or adopt mobile and Internet services, and how to design technology based on people's needs, constraints and aspirations. This research was funded by Telenor Research and Innovation Center Asia Pacific.

We did not set out to create a new method; however, a new approach emerged as a result of the research. This paper attempts to demonstrate a more robust way for researchers to elicit 'thick description' not only from the perspectives of the respondents, but also respondents' interactions with their local community. The author experimented and reapplied this method across different domains such as a public call office (PCO); group learning, sharing and experimenting; mini minutes upload; voice news; multiple SIMs; video conferencing-on-the-run and amplifying signals. We interviewed and observed individuals before and after they used mobile and internet services, and based on examples of local ingenuity, identified the relevant dimensions of new services for the non users

FIELD RESEARCH METHODS

We recognized the difficulty of targeting low income, non users for fieldwork. The challenge was: How do we draw out behaviors and create new services when there is little evidence of technology consumption? The fieldwork approach of this project thus reflected these limitations.

Fieldwork

The field studies included about thirty semi urban areas and villages across Bangladesh. In each site, our interviews averaged three to four respondents. We sought to understand the 'wholeness' of the communication access technology adoption and social communicative practice (Borgatta and Borgatta, 1992; Ling and Pedersen, 2005). This fieldwork was conducted through indepth interviews, two person interviews (or sometimes known as friends/intergenerational interviews), contextual observation and shadowing (Kuniavsky, 2003; Rosenthal and Rosnow, 1991; Agar, 1980; Bernard, 1994).

- **In-depth and two person interviews:** The indepth and two person interviews were designed to garner descriptions about the respondents' needs, values, aspirations, daily livelihood, experience with using the Internet and mobile phone, communication and interaction behavior, and social network. We spent approximately three to four hours at each site, soliciting general descriptions as well as specific opinions triggered by the respondents. The indepth interviews often attracted curious onlookers and the interviews turned into ad hoc discussion groups, which enabled us to gather rich, mixed opinions.
- **Contextual observation:** We did walk around the local community to get a sense of the contextual livelihood of the respondents that we interviewed. In many instances, we

found interesting ways in which people interacted with each other and were shown different ways in which people used the mobile phone and Internet.

- **Shadowing:** Whenever we chanced upon an individual who shared information about their friends and surroundings, we asked them to show us what they did on a daily basis.

Analysis

The analysis of transcripts, photos and notes was conducted by three researchers with a background in psychology and ethnography. We spent two to three hours or more each day for 2 months to discuss and analyze the rapid assessment process. In addition, the author of this paper used the traditional grounded theory method (also known as Glaserian grounded theory method) to bring out the “What’s going on?” description in each of the interviews conducted.

FINDINGS: FORMATION OF LOCAL INGENUITY PHENOMENON

Our findings show the prevalence of local community influences in shaping interactions between individuals. There were many facets of influence, including time (duration and period), place (common or private space) and acceptable practices (whether it is encouraged or frowned upon). A respondent that we interviewed openly acknowledged, “*I am doing what other do here. The thing is – when I talk to my friends, I know I am free to talk on certain issues at certain time. I am ‘trapped’ by certain rules, I might say*”. We shall discuss four main points to further understand the formation of the local ingenuity phenomenon.

The Three Constraints

The constraints influence the way an individual thinks about his/her willingness to pay for something that is relevant to his/her lifestyle. These constraints affect the way a technology is developed and deployed. We observed three main constraints experienced by the low income, non users segment. First, people may be ‘trapped’ by infrastructure constraints due to the scarcity of electricity, limited public transportation, restricted communication options and limited entertainment.

“Some of us here listen to voice news through mobile phone. It will be great if we can get some voice entertainment and news at night. Our usage on mobile phone is only voice, and nothing beyond that. Internet is a strange word for me.” A barber quoting his limited knowledge about what else is out there aside from voice calling

Second, individuals are restricted by never-ending financial constraints and a set of inter-related challenges such as poor living conditions, low education, poor health, unskilled work and limited education opportunities.

“I am here to pick up some photocopy documents. No, I haven’t heard of the Internet before and I have no clue what I can do with that. I visited this place quite often, but I

don't have much interest about it. I don't think I am interested anyway. I am kind of nervous, how do I point? How do I know where to go? Is it expensive to access to these pages?" A teenage youth at one of the photocopy cum cybercafé shops who has never used Internet or mobile phone before due to financial constraints

Third, initially, people are reluctant to enter in or extract information from devices, and use only the basic functions. They are wary about the need to learn new skills.

"After a while the Internet and PC get boring, there is nothing good there. We rather read and flip newspaper than getting lost (read: browsing aimlessly)". A teenage youth in a library telling us about being bored without local Bengali content

Interestingly, despite these considerable challenges, we found that individuals started to work around their constraints. A new way of using and doing things emerged that enabled people to use communication access technology in ways appropriate to their local needs and environment.

Modification of Components

From our findings, the modification of components focuses not only on technology, but also on perspectives of behavior and usage. An example of a widespread local ingenuity is the practice of "missed calls". In short, a missed telephone call is used as a signal in lieu of a short call. When one makes a missed call, it may signal to the other party some urgency such as a need for money or getting to a meeting place early. Missed calls can be used in different contexts such as signaling.

"I usually use missed calls with my father. If I give him a missed call, then he will know that my overall balance has run out. So immediately he sends me money" or in the form of coding, *"Otherwise, I might use missed calls when I arrive at a place early to let my friends know that I have reached the place. This makes them hurry up and come faster"*. A teenage girl relating her experience with missed call and how she uses it as a means to save money and message coding

Mixed Consumption

A third finding is the notion of mixed consumption. In many situations, we observed the low income segment utilizing different devices and services to address financial constraints. For instance, even if they co-owned a mobile phone, some of them will still use the Public Call Office (a public phone facility manned by an operator) to get an instant reduced call rate due through the on-network call service. The respondent's quote succinctly defines the real value of a PCO:

"I don't like to upload my call credit, I rather just pay 10 Takas and make a short 2 minutes call." A working adult telling his reason for alternating between uploading and not uploading call credits

Intransitive Choice

The notion of intransitive choice⁴ is the phenomenon of modifying a new technology based on how people evaluate different choices of consumption. In some instances, in order to save money, an individual may resolve to do SIM switching⁵ either due to lack of network calling clarity or to try to save on few Takas of calling time:

"I will use whichever number gives me the lowest call rate. If Grameen offers it, I will use Grameen, if Banglalink offers it, I will use Banglalink." A working woman recounting her decisions on which service to choose

LILC FEEDBACK LOOP: A WAY TO BREAK THE MINDSET

It is through the use of a fusion of ethnographic and participatory design methods that we are able to stimulate and generate insights into human communication and interaction behavior. For example, rather than being stuck with introducing more products or service features (designing a solution around a problem), the LILC feedback loop process examines the use of a product or service from the viewpoint of an individual and his/her local community to get to the core of his/her needs and desires (finding the root cause to a problem).

Local Ingenuity Feedback

The LILC feedback loop process begins by understanding the local ingenuity feedback (See Figure 1). It facilitates understanding the interplay between different constraints and how they in turn, affect those dimensions being modified. At this juncture, we may introduce a service currently being developed or a current service for the users to try out. Then, we observe and note the user experience and in what dimensions users modify their usage behavior. For example, if the user repeatedly skips a step to access a service and uses another feature more often to access the service, we should note what is being done and know why the user is doing so. This could be a source of inspiration for local ingenuity.

⁴ It refers to a person's inconsistent choices for different consumption purposes. For example, a person might rank A higher than B and B higher than C, and unexpectedly, rank C higher than A.

⁵ SIM-switching refers to the practice of a mobile service subscriber possessing more than one SIM card and alternating the main SIM card with one or more SIM cards.

Domestication and Diffusion Process

Our assumption is if the local ingenuity proves to be appealing to more people, the process of domestication⁶ and diffusion will begin and will affect more lives within the local community. This will set the stage for the second phase of the process, which is to observe behavior within the broader community by further exploring design modifications. In other words, how and in what ways does the community experience and influence consumption? A brief phenomenological mapping of consumption experiences and constraints enables us to draw out meaningful structures of the consciousness of human experience (Polkinghorne 1989). At the same time, from a sociological perspective, we attempt to understand how individuals consciously develop meaning from their social interactions, and examine whether these will sustain local ingenuity in the longer term (Swingewood 1991; Moustakas 1994). If so, as a service provider, we can innovate from this point through further modification. The interplay of the local ingenuity and community feedback loop gives us a clearer picture of the domestication and diffusion process between individuals and local community.

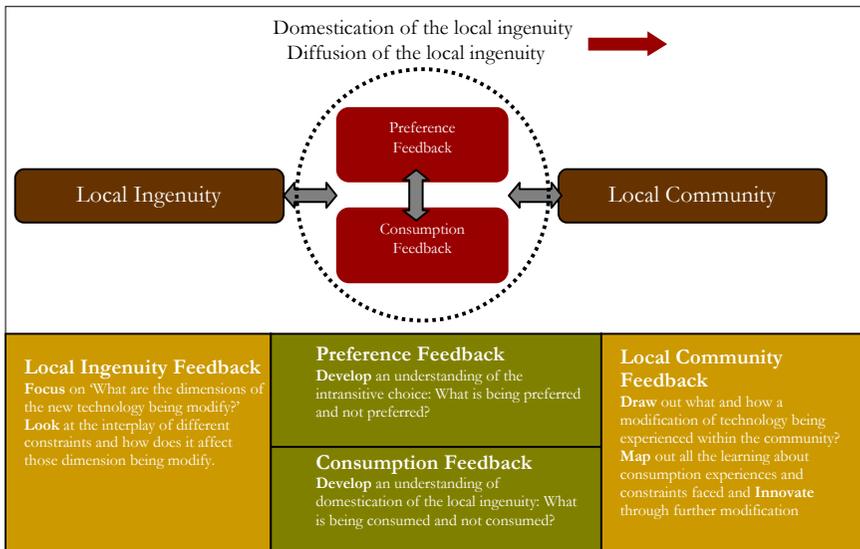


FIGURE 1 The LILC feedback loop.

Preference and Consumption Feedback

The process so far is quite straightforward. The next loop phase is more complex as we dig deeper to look into intransitive choice and domestication of local ingenuity. We start to review the local ingenuity phenomenon at the level of service constraints and modifications

⁶ Refer to the work of Silverstone and Haddon (1996) about domestication of technology.

for the individual and the community. To really come out with a good service based on the research, we need a deeper understanding of ‘What is being preferred and not preferred?’ At this stage, we initiate a second round of understanding the local ingenuity by examining the intransitive choices of the targeted segment. At the same time, we will be able to develop an understanding of domestication (what they really use) of the technology: What is being consumed and not consumed? The closer examination of the interplay of consumption and preference feedback loop gives us a clearer picture of what product/service features that really resound with the users’ needs.

Local Community Feedback

To complete the LILC feedback loop, we need to extract what and how modifications of the technology are being experienced within the community. And, at the same time, we need to map out what we learn about consumption experiences and constraints and to develop modifications and new service innovations.

As in many research projects, the schedule was tight, and yet lengthy gaps in the schedule are needed to understand users’ feedback. The deployment of the LILC model means working continuously with the users and their local surroundings with little inactive schedule in between. The model also works well in an environment where there is little knowledge about usage/user experience. There are some notable constraints when applying this model. We need to take into account the cultural differences of different communities. For example, in a local community, people may be willing to express their preferences and help to elicit their requirements clearly; this may not happen in other communities. There is also a need to be aware of two interpretation biases of this model. Firstly, there is the simplification bias due to the investigator not having the complex model of an expert. It is important to be aware of this bias and ask users or a subject matter expert to review notes/observations. Secondly, there is the translation bias due to expert users attempting to translate their knowledge so that the investigator can understand it. The more the translation, the greater is the danger of oversimplification.

CASE STUDIES

We will describe a case study⁷ to illustrate the use of this method.

Public Call Office

Our research found that a large number of people who did not own a mobile phone nonetheless knew about or had used mobile phones before, either sporadically or as

⁷ Only one case study is described here in order to adhere to page limit guidelines. There are other examples such as group sharing, learning and experimenting, multiple SIMs, video conferencing on the run, mini minutes, voice news and amplifying signal.

frequently as three to five times a day. What we found points to a popular place that can be found on almost every street corner in Bangladesh. A vast majority of the non owners of mobile phones were found to be hanging out or dropping in briefly to rent a mobile phone to make call at a public call office (PCO) The PCO is a manned version of the automated payphone located either on a busy street or lonely corner. Customers can rent mobile phones from PCOs to make calls. The PCO operator usually owns multiple SIM cards of the same or different mobile operators. The main reason for this is to match the customer's chosen mobile operator to save on on-network cost per call. Some of the more technically skilled PCO operators also obtain licenses to fix simple mobile phone malfunctions.

For now, I am communicating with my parent through a PCO (Public Calling Office). I will just go there, pay up and use the phone facility over there. A college student quoting his way of communicating without owning a mobile phone

The popularity of the PCOs is not just a phenomenon that is related to non-ownership of mobile phones. The interesting revelation was the similarity between owners and non owners of mobile phones – they all used the PCO to make calls. We observed that the PCO serves four purposes targeted at the low income segment: First, as a 'hanging around place', whereby the PCO serves as a social place that is frequented by regular customers. Second, it is a social connector, the PCO operator serves as a messenger (if someone sends an SMS or leaves a voice message), and as a creditor (if someone needs to borrow a few minutes of calling time). Third, it serves the purpose as a convenient drop in place, the PCO provides a place to make a call, get upload, fix the mobile phone and as a convenience store (some PCO operators do other business as well). Fourth, it is a window for mobile communication, the PCO operator assists in helping to dial a number (especially overseas calls), sending SMS, and as a helper in starting to learn about mobile phones.

"The PCO (short for Public Call Office) is everywhere and I don't have the problem finding one, I rather walk a few miles to the PCO, if necessary to save a few Takas."
A college student quoting his way of communicating without owning a mobile phone

Assessment through the LILC Feedback Loop

Through the PCO case study, we were able to elicit several observations and reapply the information to enhance our understanding of why the PCO (as a local ingenuity) survives and is sustained by assessing it through the LILC feedback loop⁸. In particular, this supplied us with information on what dimensions are modified, what is preferred and consumed, and finally, how is it being experienced by the individual and his/her local surroundings.

Local ingenuity feedback: As a result of their financial constraints coupled with their limited capability to make calls, some individuals started to use the PCO to build their

⁸ Please refer to Figure 1 for a diagrammatic representation of the model.

confidence in using a mobile phone before purchasing one for their own use. They tried to work out their limited capabilities such as dialing a number or sending SMS by asking the PCO operator to do it for them.

"I learn to use mobile phone through the PCO. No one teach me at home, I am not allowed to use a mobile phone. Now I can." **A female student, early user of mobile phone**

Preference feedback: The PCO users like the fact that PCOs are everywhere, either along a busy street or on a lonely corner. It is also a place for socializing and meeting up with friends to catch up on the daily happenings. In essence, it is the social bonding experience that is striking here, rather than the mere calling facility.

"I like it here. Just drop by, have a cup of tea, hanging out. Here I can hear a lot of gossip about what happened here and other place. No need for radio or newspaper." **An elderly man who spends some of his time in the PCO and considers it essential for his social bonding with friends**

Consumption feedback: Most of the experiences that we elicited from the respondents indicated their sustained interest with the PCO. There were strong indications that the PCO is part of their daily life rather than just a facility; this is even more so for a person who owns a mobile phone but still goes to the PCO to make calls. The PCO is referred to as a social institution by some respondents. This is due largely to the function of the PCO as a provider of a simple, cheap and convenient service. According to the respondents, this is really what they want from a mobile service, no more than that.

"I have no worry whatsoever to call or receive call. I just go to my trusted PCO who has been serving me for a number of years." **A trader, who frequented the PCO five to six times a day**

"It is so easy here. Why should I get a mobile phone?" **A rickshaw puller commenting on why he is still a non owner of a mobile phone**

Local community feedback: Taking the preference and consumption experiences as a whole (from the local community perspective), we could deduce some form of concrete behavior modifications that had been domesticated. First and foremost, there is a tendency of the PCO to mushroom further as more people own a mobile phone. This is because the PCO attracts not only non owners, but also owners of mobile phones. Although the attraction of the PCO is very much price driven, further inquiry would show that there are more underlying reasons for their popularity within the local community. Our analysis showed that the PCO's sustainability in the local community is due largely to the formation of social circles around the PCO. Social circles are much the same as social networks, but we refer to it here more as a circle of individuals that are connected to and surrounding one individual. In this case, a person's social circle is comprised of the persons/individuals one

communicates with through the mobile phone. This explains the distinction in the degrees of relationships. The closest to one's social network (such as immediate family and closest friends) is the first degree circle, and the next to it (such as friends of friends, other relatives, colleagues) would be the second degree circle.

"PCO has a long history in our society, they serve me well when I first migrated to the city. I was alone and without any mobile phone. The PCO is like a line life for me!" A trader telling us about his long time experience with the PCO

On this basis, we are proposing to leverage on the social circle factor when we design new mobile and Internet services that are wrapped around simple, cheap, shared access and convenient factors; for example, creating a mobile service with simplified pictorial interface that shows different circles of friends to differentiate call rates and other benefits.

IMPLICATIONS AND APPLICATIONS

The findings show the importance of understanding the users' surrounding environment before attempting to focus solely on a singular entity such as a farmer or a hospital. This is important in order to unearth the enabling factors that can drive a project forward such as identifying key stakeholders and understanding some unique social practices. Another lesson is that it is important to conduct an impact assessment study before and after implementation of a service offering. Looking at the PCO case study and the model, several questions were posed:

- What's the story behind every local ingenuity case study? Is there a way to track back such local ingenuity?
- Is the usage behavior pattern coherent with other local communities?
- If more than one person studied a focus area or observed a single user, what are the similarities and differences found?

We are still at an early stage of design decisions. The findings were used as inputs into empirical and business case prioritization and filtered into several major services' distinctiveness. The work involves identifying the activities that are directly connected with owning and using a product or a service (Allmendinger and Lombrelia 2005). The question then becomes, 'Which of these activities represent opportunities?' The modification of services will be proposed for the management before the start of the pilot study.

CONCLUSION

We found the important notion of local community influences on individuals or groups in shaping social communication and interaction. Therefore, it is an important perspective to follow through in ethnographic and participatory design processes. In the end, it is for us to conduct indepth ethnographic research to find the inner voices of the low income segment and turn their inner voices into 'technological voices', subsequently touching their lives, and in turn enabling ways in which their lives 'can be heard' by the wider world.

Acknowledgments: This material is based upon fieldwork supported by TRICAP. The author would like to acknowledge Dr. Kristin Braa, for her leadership and support, Dr. Richard Ling, for his comments and guidance, and Kristin Thrane, for her ethnographic interlocution. Thank you to the entire CSOU team for the deep dedication to the project. The discussion on the LILC feedback loop does not represent the official view of my current employer.

REFERENCES

- Agar, M.H.
1986 *Speaking of Ethnography*, Beverly Hills, CA, Sage
- Allmendinger, G and Lombrelia, R.
2005 *Four Strategies for the Age of Smart Services*, October 2005, Harvard Business Review.
- Bernard, H.R.
1994 *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, Thousand Oaks, CA, Sage
- Borgatta, E.F. and Borgatta, M.L.
1992 *Encyclopedia of Sociology*, New York, Macmillan
- Ling, R and Pedersen, P.E.
2005 *Mobile Communications: Renegotiation of the Social Sphere*
- Moustakas, C
1994 *Phenomenological Research Methods*, Thousand Oaks, CA, Sage
- Polkinghorne, D.E.
1989 *Phenomenology: The Method*. In P.L. Munhall & C.J. Oiler (Eds), *Nursing Research: A Qualitative Perspective* (pp. 69-82). Norwalk, CT, New York, Plenum
- Rosenthal, R. and Rosnow, R.L.
1991 *Essentials of Behavioral Research: Methods and Data Analysis*, New York, N.Y., McGraw-Hill
- Silverstone, R and Haddon, L
1996 *Design and the domestication of information and communication technologies: Technical change and everyday life*, *Communication by Design: The Politics of Information and Communication Technologies*, Oxford
- Swingewood, A
1991 *A Short History of Sociology Thoughts*, New York, St. Martin's.

Representing the Non-formal: the Business of Internet cafés in India

NIMMI RANGASWAMY

Microsoft Research India

It is our contention that small businesses of information and communication technologies are deeply embedded in a context of non-formal business relations and practices in developing economies. Cyber cafés in the city of Mumbai, the subject of our study, operate in and through an unregulated grey market of non-formal business practices. In this paper we explore the fit of ICTs into this 'area' of commercial practices. We do this by profiling café managers, business strategies and contextualizing these in the broader culture of non-formal business relationships pervading every day transactions. With regulatory discourse of information technologies centered on piracy and illegitimacy, informality of business practices in emerging economies provide an alternate premise to understand its nature and function. These challenge received notions of visualizing IT in emerging economies as simply piracy and illegality. It also implies coming to terms with markets shaped and structured by para-legal and non-formal processes in negotiating on-going and future business relationships.

Introduction

We report from an on-going research study of cyber cafes¹ in and around Mumbai metropolis. Many small businesses in Mumbai operate in and through a grey market of non-formal business practices. Informality pervades the warp and woof of these businesses. They are often developed through dispersed family ties and local social networks, and sometimes rely on underground connections to run and maintain their day-to-day transactions.

Our focus, in this paper, is to explore the fit of information technologies into this parallel domain of non-formal practices. We use ethnographic explorations to give voice and visibility to the small business of cyber-cafes. We attempt to reveal how cybercafé businesses discover survival niches, sustain social networks and adapt organizational strategies to endure an uncertain marketplace.²

Our research is based on open-ended interviews among 30 cyber café owners in town, suburban and outer suburban Mumbai, conducted during August 2006 to April 2007. Cyber cafés are an increasing presence in Mumbai as they are in many parts of Urban India. Proliferating cafés have made it a highly competitive business with small margins. In our

¹ We studied cafés run as small business, the mom and pop kind, not up-market chain of i-cafes run by corporate giants in India. Almost all cafes in our sample refer to these as cyber and not internet cafes. For a broader range of information on internet cafes in India, see Haseloff(2005)

² This paper speaks of outcomes from ethnographic research rather than merit ethnography as method in bringing grey data into the light of day. That will command a paper by itself.

study, most of the 31 cafés are in low-middle income neighborhoods and 6 out of these are in the midst of bustling slums/shanty towns, 5 in Dharavi and 1 in a South-east suburb (we consider Dharavi in a separate section). We deliberately chose these neighborhoods to understand the interplay between business practices and the demand for ICTs in low-income populations living in poor infrastructural living conditions. More importantly, non-formality entrenched in the commercial cultures of poor locales provide an opportunity to study ICTs away from IT business parks.

Our understanding of the ‘non-formal economy’ in Mumbai is similar to and builds upon the notion of ‘the informal sector’, a term used by Keith Hart(1973) to describe unregulated, small scale economic and social exchanges in urban Ghana, whose individual economic transactions do not ever rise to the taxable limit. The informal sector is frequently considered synonymous with survival strategies of the poor, where economic transactions may range from daily wage labor to economic exchanges that are unregulated or remain untaxed. Mumbai is home to an extraordinarily vibrant and organic commercial culture as well as a thriving shadow economy, with businesses crisscrossing the formal and non-formal at various points³. As a result, mainstream (and audited) economic practices are subsidized when people enter into informal business relationships. The state, in turn, exploits the situation by aligning illegally with these businesses for a price (Srivastava, 2003).

We studied small cybercafés (own-account, less than five employees) and use the term non-formal economy, for the purposes of this paper, to denote the unregulated nature of small businesses⁴.

Information and communication technologies, ICTs, are considered a privilege of technologically mature ecologies used by an informed populace in countries deploying huge infrastructural investments. How do the same technologies organise themselves into small enterprises in developing economies like India? Here, the IT sector is abuzz with opportunities for livelihoods spawning a host of business ranging from formal cutting edge software development to dubious para-legal outfits buying and selling computing hardware, software solutions and internet access. Non-formal relations underscoring developing economies are nothing new. Our research forays into the contextual specificity of Mumbai providing an interesting case-study of internet technologies adapting to the demands of a broader shadow economy of the metropolis. The normative forms of internet technologies and the structure of Mumbai’s economy combine to endure in locations some where between the formal and the non-formal, the secured and the unsecured and the legal and the

³ Here Mumbai belongs with Bangkok, Hong Kong, Sao Paulo, Los Angeles, Mexico City, London, and Singapore, the loci of the practices of global capital. Typically, these cities are large (10–20 million people) and are currently shifting from economies of manufacture and industry to economies of trade, tourism, and finance (Appadurai 2000)

⁴ A broader definition includes household enterprises that are own-accounted, family or non-formal employees, contract employees employed by the formal sector, casual labour and intermittent labour all of which work under varying conditions of (un) regulation. Mumbai’s non-formal economy accounts for 68% of all businesses (Agarwala 2005).

para-legal⁵. The dialectic of the two processes surrounds the liminal status of the cyber café as small business. We bring to surface the constant dialectic and adjustments the two sectors engage in. The big clash seemingly occurs when organizational commitment to entrench ICTs by the state, corporates and other legal players encounter non-formal ICT businesses at the grass-roots. It might be safe to say the two have come of age co-existing and adjusting to sociological forces binding them. This nexus becomes inevitable with the expansion of ICT markets and usages depending heavily on these small businesses. We, thus far, see two social blocks, the *quasi-legitimate users* and the *legitimate expanders* of ICT, and the necessary interrelationships they need to contend with. Hence the dilemma, of ICTs emerging from a digital rights domain conflicting with the expansion of its user base, a market in constant confrontation with legality. The focus of an earlier paper dwelt on three interrelated contexts crucial to cyber regulation in India: the grass-root, the state and the non-formal economy. While cyber café managers 'dismiss their responsibility to police on-line security, state level initiatives show contradictions in their stated enthusiasm for an IT enabled society and sporadic regulatory behaviour directing public usage of the internet (Rangaswamy 2007).

Extant literature around urban cyber café in India is scant. Apart from Haseloff (2005) we found little scholarly engagement with internet cafes. Haseloff's consideration of urban cyber cafes focused on their being potential development tools complementing the telecentre movement in rural regions. Research was conducted 'to explore the problems and potential of cybercafés as development tools for different urban communities'. The study gave us a good overview of urban internet cafés and a starting point for our research. However, we move away to probe the specific trait of non-formal small businesses in Mumbai and the fit of cyber café operations into these.

Our study enabled seeing, hearing and recording albeit partially, the voices, transactions and deals of the everyday in the internet café, located at this intersection of the formal and the non-formal. The dynamics of transacting in any of the cafés is borne out by processes that are organic, spontaneous, necessitated by existing market relations and economic structures of survival. As ethnographers and researchers we don a role by not taking sides against the 'unregulated' but *problematizing* legality in these spaces. To represent the non-formal is not to celebrate its grit or subversion but point to its enduring form.

The Mumbai Mosaic⁶

"... I am French.... I am gay, I am Jewish and I am a criminal, more or less in that order. Bombay is the only city I have ever found that allows me to be all four of those things, at the same time..."⁷

⁵ Rangaswamy (2007)

⁶ Patel (1995, 2003)

⁷ Roberts (2003)

The quote pretty much captures the generous spirit of survival and accommodation extended by the megapolis to droves of humanity seeking a place under its sun, a city described as ‘India’s symbol of uneven modernity, and hectic contradictory character of the nation’s modern life’ (Khilnani 1997).

Mumbai is a site of various uncertainties; of employment, wages, housing, citizenship and security. People, drawn by their already established kindred come to her in large numbers from impoverished rural areas to find lively hoods, even if it offers a six by six foot space to sleep and work is often difficult to obtain and retain. To quote Appadurai,

“Frequently, these are cities where crime is an integral part of municipal order and where the circulation of wealth in the form of cash is ostentatious and immense, but the sources of cash are always restricted, mysterious, or unpredictable. The everyday is shot through with socially mediated chains of debt—between friends, neighbors, and coworkers—stretched across the continuum between multinational banks and other organized lenders, on the one hand, and loan sharks and thugs, on the other” (2000:628)

A significant contextual factor, before we turn towards empirical discussion, is that Mumbai is not representative of India at large. Mumbai is extreme in terms of average income, cost of living, and the gap between rich and poor. A metropolis of very rich and desperately poor, of a relatively large and prosperous ‘middle class’, and site of concentrations of huge slums in Asia (Nijman, 2006). Quoting Naregal (2000) from another unregulated terrain, the cable communication business in Mumbai;

“Historically, Mumbai’s economic success has always been built upon ‘a pragmatic and most ruthless exploitation of her far-from-perfect communication and commercial networks’. These have, quite visibly, since the 1970s, bred what has been described as a ‘robber-baron’⁸ culture of economic speculation and processes... The privatization of public sector, the speculative rise and fall of the city’s stock markets, national inflationary trends, a growing consumerist ethos, shrinking employment in the formal sector have created thriving interfaces between the under-world and the ‘cleaner’ capitalistic sectors(pp296)”.

Mumbai is also home to many from diverse ethnic backgrounds who create an imaginary community for themselves. I am using the word ‘imaginary’ more in a physical rather than a culturalist sense.⁹ Here, people with different backgrounds and socio-economic biographies, come to recreate themselves as belonging to one community (Falzon 2003), in this case the various geographically framed ghettos in the megapolis. These communities retain a degree of cohesion that manifests itself in marriage and kinship practices, in the

⁸ Lele (1995)

⁹ See Anderson (1991) for a culturalist definition of imaginary communities

politics of group identity and, most notably, in the types of business networks they engage in.

Survival of the fittest: Cyber worlds in Mumbai Metropolis

Our interviews with café managers and participant observation in café premises reveal an atmosphere of arbitrary norms and regulatory practices towards internet browsing and tolerance of pirated software transactions governing everyday operations. There are inconsistencies in billing, evidence of pirated software and multiple businesses running under a single business title. In an environment rife with non-formal business relations, cyber cafés are spaces that depend on social networking to procure and maintain café infrastructure and a loyal clientele (Rangaswamy 2007). Prem, 25, manages a café in the largest shanty town, Dharavi, says, *“We even allow happy hours during the day halving rates and allow our loyal clientele to browse longer if they want to...”*

The oldest café in our sample, in outer suburban Mumbai started shop nine years ago. Amit, who has now taken over the business from its original owner recalls, *“... it was some kind of dating services. We had cubicles with curtains running all around them... I believe the owner thought that in his area, that had no open spaces or parks this would be hit... At that time when cyber cafes opened pornographic surfing was very rampant... In Mumbai where do you get private space...? But I don't allow such activities...”* Around 20% of cafés in our sample still have separate cubicles but deny any thing improper or illegal going on. When asked why then enclose spaces when one could open up more shop space, the owners fall silent and smile.

Out of our 31 cafés, 3 had enclosed cabins and 5 others partially enclosed spaces for internet browsing. Almost all operators, including those with enclosed cubicles, said they strictly prohibit pornographic web surf. We probed:

“I mean, you created privacy even in this small space, when you could have freed up more space for business... and you cannot know what goes on...”

“We have written very clearly on our walls... Yes, we do not peep over shoulders to see what is going on...”

“Err... why you had these private cubicles”

“Hmmm... we wanted people to do work in privacy, like e-mail, chat etc without getting disturbed... Well, what can we do if they go to these sites...?”

“There are blockers etc... You know...”

“Yeah! If we install these even good sites get blocked and slows down the already shared connection... We cannot do all these things just to stop all kinds of surfing”

Enclosures not with standing, ‘inappropriate’ surfing are a distinct possibility. We did note the preponderance of young adult and male users at certain hours in cafés. All cafes had regular women clients but afternoon hours saw very few visiting cyber cafés and are predominantly a ‘male space’.

Inside café premises several business practices fall into the contested terrain of legality. Café managers are hard pressed to run a profit making enterprise and resort to available measures, time tested in existing business practices, slipping into the broader culture of non-formal economic relations. We are yet to encounter a café that owns original software. Many do not own any legal software while some have a single system license and generously share with the network. Amit, opined that in today's MTV world there is 'so much out in the open'. People can easily hire pirated CD's etc and watch at home. He added that some cafes that he knows of in adjoining neighborhoods offered pirated CD's for circulation. I asked him what he felt about piracy. He remained silent and smiled. But Taussif, who runs a café in Ray Road, a South Mumbai neighbourhood and home to a sprawling informal automobile hardware market, lost his temper when he heard the name of our research sponsors "... *how the hell do we buy your software when it so expensive. We are running hand to mouth business and you fancy buying legal versions for all our computers....*" When we mentioned our research focus and the company's interest in ground level realities, he told us to 'get lost and never to show our faces in his café'.

All cafés in our sample had attached business. Many who began the business thinking it lucrative had to diversify to make ends meet. Computers, software, maintenance and repair were all obtained in markets with dubious legal credentials. The ready availability of such markets promoted proliferation of internet cafés driving heightened competition amongst them. To beat maintenance expense, around 50% of café owners, in our sample, were hardware literate and assembled and sold PCs to their customers. Infact their cafés attracted prospective clients. Assembled PCs were cheap¹⁰ and parts were procured in Mumbai's sprawling informal markets at Lamington Road. Around 70% of cafés were communication centres offering local/national/international telephone services and digital Xerox/scanning/printing services. Around 30% had mobile servicing as attached business. One of them had a book lending library, one was a photo studio, one is a share/stocks trading centre, the last two using idling PCs for café business. One of them even offered food catering services. Many of them ran these multiple business under a single license. From what we gathered, income and profits were not declared with full transparency, more so when profits were hard to come by.

Sanjay, owner of a cyber café next to Mukesh, also operates a interior design consultancy, a money transfer franchise and a telephone booth from the same premises. He says;

"...I grew up in Mumbai. My family members are all in services but I wanted to run a business. I started my own outfit with the help of friends and began interiors. I began the café 4 years ago. There is such heavy competition amongst internet cafes. Surfing rates are dropping steadily. We have 4 other cafes down the road itself... Starting a café is not much. Assembled PCs are cheap, home PCs are increasing. Even this telephone business is going down. The Sathyam corporate chains of i-cafés are providing

¹⁰ Anywhere between 6000-20,00 INR, 150-500 \$US, depending on quality and specifications demanded by a client

VOIP so cheap. We find people with headphones talking away in these cafes paying so little”

Most café spaces were rented out and relations between owner and tenant were unclear. Dinesh, managing an outer-suburban café says:

“...: Actually, there are two different people. One owns the place while the other has rented it and set up the cyber café”

“...okay meaning the place belongs to a different person and the setup belongs to a different person”

“...yes exactly. ... I am a third party in this business. The second party totally handed over the business to me. I have no contact with the first party, the space owner. I deal with the second party who own the cyber café”

“And you have employed some one else to look after the café in your absence”

“Yes, that is the fourth party who reports to me”

Dharavi

In Dharavi, the non-formal slips back and forth into the illegal with greater vigour. The very social-geographics of this hyper-active slum community is intimately tied to illegal squatting, tenements and the many productive business transactions. It is true that Dharavi is unique even amongst slums. It is spread over 223 hectares and consists of densely packed informal settlements accommodating an estimated seven lakh people (although figures of how many actually live in Dharavi remain disputed). It is also different from other slums in that it is home to over 4,000 ‘industries’ producing anything from foodstuffs to clothes, jewellery, leather and surgical sutures. A recent survey¹¹ established that in a central area of Dharavi called, Chambda, ‘leather’, bazaar the density is 336,643 people per square kilometer!¹² Virtually all regions (and languages) of India are represented in Dharavi. In every nook and corner of Dharavi there is ‘industry’.

There are 6 cyber café serving, arguably, a million people. We found and profiled 5 of these. All are recent, the oldest around 13 months ago and youngest, a week old. That demand for internet is an emerging phenomenon was interesting in itself.. All of them had pirated software or a single licensed copy generously shared with the network. All had attached communication centres offering public telephony. One had an adjoining business of textile retail. All cafés have attached business and without exception, offer public telephonic services. Some have Xerox/printing options and mobile phone services. Space being premium PCs, usually 4-8 in a café, are crowded into as many cubicles. It is claustrophobic space, to say the least. But cafés get crowded all day, mainly visited by male

¹¹ <http://www.airroots.org/?p=57>

¹² If we take the 700,000 population figure, the population density of Dharavi would be around 314,887/km, more than Manhattan in rush hour, which is about 50,000 people/km (Dharavi, High-rise Eviction, Economic and Political weekly, June 23, pp:2364, 2007)

youth who are busy surfing the internet. The most popular activity is visiting the chat-room at Yahoo! Youth spend hours, as much as 8 hours a day, chatting with on-line friends. Internet is popular with students for information search and mail. Gaming happens but limited due to lack of networking resources. PC's are brought with pre-loaded games. Of course, all are pirated including windows software.

Typically, café owners run a parallel family business alongside the cyber café. Catering, cloth merchandise, printing, are older business. The communication centre offering telephonic services are reportedly losing business due to proliferating mobile phones and cheap calling rates. At least two out of the five cafés were managed by teen age college students wanting to move out of family businesses.

Ram Kumar, 17, who manages *Devi Communication*, says:

We, my brother and I, are handling the café on our own. We alternate and sit in the café to manage our college timings. We want to get bigger a better place, as this is too small and can barely accommodate four computers. ... Having started the café we surely have had a boost in our reputation. People find it nice to see us, so young and all, handling a business ... Internet is fast catching because of its speed and you can find anything on Google ... In terms of the café we now have second hand and assembled computers, but in the future we want new PCs and provide better facilities, of web-cams, better systems, etc. Right now our focus is to finish studies...

Regi runs the most fancy of cafés in Dharavi. It is air-conditioned and has 7 computers and good decoration inside of the café.

“... We are the biggest and the best in this area. We have 50 to 60 clients visiting us every day. Many of them like the air-conditioning from the heat of Mumbai and visit us even from neighboring areas... We have a cloth retail next door our family business but we acquired this area to begin internet. We got cousins from our native place who learnt computers and they run the show here...”

Café owners believed Dharavi offered the cheapest going rates for services. Edward, running a small café, wanted to diversify into desktop publishing, with his computers, “...It's been only five months since me and my brother started the café. You see it is on the mezzanine floor above a cloth shop”. The brothers have rented the place and currently have four computers. The computers are second hand and hence required cheaper capital. In the future he plans to get into printing business; jobs like those of printing banners, cards. He said, “... Dharavi is a major market for printing, because it is the only place where you'll get the cheapest printing rates. The printing job is public related. The more connection we have with the public the more business we'll get. With those intentions I started the café...” He is worried about the printing business being risky with good possibility of clients wanting 'to forge documents'. He nevertheless wanted to start one!

Café owners adopt a furtive attitude towards privacy in café premises. As noted, there is awareness of regulatory norms that turn ambiguous in practice (The crowded cubicles and

predominance of male youth are common observations). Interestingly, there is a slippage between these ‘irregular’ youth activities inside the café and its embeddedness in Dharavi’s contested legal status as a residential slum, an active community and a bustling economic unit. There is large amount of literature around the contested status of Dharavi’s economic history¹³ and nature of re-development politics¹⁴. It would be understating to suggest small business in Dharavi come under a cloud of unregulated practices. Functioning Internet cafés operate very much within this paradigm as there is little scope for economic transactions outside of the penumbra of the non-formal commercial culture. It is little wonder what goes on inside the café are above board!

Of gamers and chatters

‘It seems ‘the newest hotspot belongs to the internet café. Where else can the young go to travel the world in an hour, spill your heart out to millions, and get the latest news, gossip, and trends from every possible source?’¹⁵

Chatting, dating and ensuing social relations are often denied or considered illegitimate and pursuing these through the internet in a café almost seem like an allegory of the informality or even illegality of business ethics. However, we know little from research about how youth sexuality is culturally constructed and what structural arrangements enhance or inhibit sexual experiences. Several studies and reports in India dwell on youth sexuality from a social health perspective. For example, a better known work, Leena Abraham’s (2002, 2001) study of ‘heterosexual peer networks and partnerships among low-income, unmarried, college-going youth in an Indian metropolitan city’ tackles the issue to contribute towards designing culturally relevant sexuality education and the planning of appropriate sexual health services. Nevertheless, un-coded and partially regulated spaces such as the cyber café and access to the world of internet in them are emerging unsupervised spaces for youth to explore socially restricted practices.

Embedded in cyber café non-formality are young chatters and gamers who perceive chatting and gaming as social needs that internet fulfills. As we discovered these enthusiastic internet addicts we saw the ‘social needs’ linked to secrecy around dating, expressing sexuality and coded flirting behaviour. What struck us is the fit between the greyness of cyber café status as legitimate business in low-income neighborhoods and the greyness of behaviour and use of internet by youth clientele. The age-group which patronizes chatting and gaming are adolescent – young. They occupy a loosely marked social zone between childhood and adulthood and also occupy a special place in the city’s changing commercial culture. Here, we make a speculative and ideational connection between the

¹³ Here is a list of select literature, Chatterji(2005), Sharma(2000), Desai(1995), Verma(2002) PROUD(1989), Appadurai(2000)

¹⁴ Mukhija (2002)

¹⁵ Blog spot on internet cafés, <http://technolojai.blogspot.com/2007/06/internet-cafes-rockget-excited.html>

'grey' non-formality of café businesses and 'unmonitored' chat-room dialogues that youth indulge through these very businesses

Cyber cafes made most of their money selling internet time to young 'gamers and chatters'. A considerable portion of income comes from these activities. We heard many café managers remark that internet publics, especially the youth, have turned 'purposeful'. They have discovered the joys of social networking, gaming, web surfing and plain and simple mailing and job search. While decoding non-formality in cyber café business practices, our ethnography made interesting connections at the client-end. It is clear, at the outset, youth in urban India are discovering the covert pleasures of internet chatting and the new high of gaming supersonic cars and terrorists. We spoke to 16 such self-confessed addicts and their on-line passions. Café regulars were 16-24 years of age, the youngest so far, in an outer suburban Mumbai café, is a 8 year old gamer who come regularly with his elder cousin. All except 4 were male. The four girls were made contact with great difficulty as is considered norm for young and female persons to avoid cyber cafés for chatting or gaming. Two of them, chat addicts, went on-line from their home PCs; one young woman of 22 was an employee in a suburban Mumbai café and got into yahoo chat with idling PCs¹⁶; The fourth was a regular gamer visiting 2 or 3 favorite cafes in South Mumbai with her group of friends¹⁷. The 11 boys were hooked to these internet practices and were regular cafe visitors and spent good money on these services. They report most of the cash came by way of pocket money from parents and other generous relatives¹⁸.

We try and glean from narratives the import of these activities in the lives of youth subjects. These were ethnographic data whose meanings were not apparent on the surface of things. They also held a tenuous link to café business practices, not always talked about, partially hidden from the public eye nevertheless playing out in public space. We report two of our chat room encounters. Sagar, 17, in high school, lives in South Mumbai. His father drives a cab and family income is around 270\$US per month. He uses the Yahoo chat room while at the café, some from around 9 in the morning to evening time, when he is 'in the mood'. He says, it not really a major part of his life, but yes "*if at all I am fed up and tired then I sit to chat. I am not dependent on it. If I feel like it then. Yes there are boys who can't stay without chatting at least once during the day*". But this conversation we had while he was chatting, tells a different tale, "*Ah here is a female! One can guess immediately from the language of the person... You know, when in chat rooms you are relieved of all the tension. You feel relaxed... Feel like doing a lot of mischief...*" Aadil, 21, moved from his home town to study computer engineering in Mumbai. His first internet experience was in a café to check exam results. He is an avid internet user, e mailing, Orkut, information for college projects and even looks for free downloads. But his most passionate past time is chatting at Yahoo. Beginning on a serious note about computing technologies he eventually told us his less talked about pursuits;

¹⁶ She reluctantly gave us a brief interview and refused to discuss in detail her on-line chatting practices.

¹⁷ Female gaming needs special and separate attention to analyse gender dimensions of public and shared internet usages. We have not gone into this issue in this paper.

¹⁸ We need to probe further about who funds youth internet time.

"I was chatting with a girl and she told me how she looked and that she was looking for someone with so and so looks. I thought that she was lying so I lied to her too. I started bragging about myself. One day we decided to meet. Instead of going personally I sent my friend ahead and watched from far..."

"Did her description of herself matched?"

"No it didn't. So she was bragging... and she was dying to meet me... and finally it did not work out for us. There are other girls and there are 22 states in India. I want a girl-friend in each of the 22 states..."

Concluding Remarks

In conclusion, we wish to reiterate the nexus between Mumbai city, its pervasive non-formal business culture and techno-social needs inflecting the every day of cyber cafés. The pervasive nature of informality demands us to look at the emerging market discourse of IT business practices not through the discourse of illegality but informality. With regulatory discourse of information technologies centered on piracy and illegitimacy, informality of business practices in emerging economies provide an alternate premise to understand its nature and function. These challenge received notions of visualizing IT in emerging economies as simply piracy and illegality and coming to terms with markets shaped and structured by unregulated and non-formal processes in negotiating on-going and future business relationships. Several of cyber café socio-economic transactions occupy an indefinite legal status, flirting with copyright laws and appropriate internet browsing behaviour. We also point to irregularity in business infrastructure licensing and ownership. Café find ways to survive the cost and maintenance of expensive internet technology, again seeking existing non-formal business networks of Mumbai.

As we point out in the paper, cyber cafés, especially those sprouting in 'illegal' tenements like Dharavi and social practices like youth chatting and gaming lend a new dimension to non-formality. Cyber cafés, already suffused in non-formal/para-legal business sociality, become sites offering a certain amount of secrecy around virtual dating and flirting for young clients and economic transactions for businessmen. The scope of the paper did not allow a detailed reflection upon the affinity among young clients and cyber cafes. However our ethnography shows the 'grey'ness of youth internet practices ironically reflecting the 'grey' areas of café business practices. We also point to the many instances whereby the non-formal and the illegal develop tenuous links, overlap and mute boundaries separating them, a function of the overarching shadow economy of Mumbai.

Acknowledgments – This material is based upon work supported by Microsoft Research Labs India. The author wishes to thank Kentaro Toyama, Microsoft Research Labs, Bangalore, India, Rahul Srivastava, The Research Forum, Goa, India, for valuable comments and editorial suggestions, Amit Vasudeo, Omkar Shenolikar, for field ethnography and data collection.

REFERENCES

- Abraham, Leena
2001 *Redrawing the Laksbman Rekha: gender differences and cultural constructions in youth sexuality in urban India*, South Asia, **24**, special issue, 133-156.
- 2002 'Bhai-behen, true love, time pass: friendships and sexual partnerships among youth in an Indian metropolis', *Culture, Health & Sexuality*, 4:3, 337 - 353
- Agarwala, Rita
2005 *From Work to Welfare: The State and Informal Workers' Organizations in India*, Center for migration and development, working paper series, Princeton University <http://cmd.princeton.edu/papers/wp0407.pdf>, Last accessed, 1 February 2007
- Anderson, Benedict
1991 *Imagined Communities: Reflections on the Origin and Spread of Nationalism (revised edn)*, London: Verso
- Anjaria J Shapiro
2006 *Street Hawkers and Public Space in Mumbai*, *Economic and Political Weekly*, May 27 pp: 2140-2146
- Appadurai Arjun
2000 *Spectral housing and urban cleansing: notes on millennial Mumbai*, *Public Culture*, 12, 3, 627-651
- Chandavarkar, Rajnarayan
1997 *The Making of the Indian Working Class*; E.P. Thompson and Indian History" *History Workshop Journal*, spring, 43,
- Chatterji, Roma
2000 *Plans, habitation and slum redevelopment: The production of community in Dharavi*, *Mumbai, Contributions to Indian Sociology*, 39: 197-218
- Desai, Vandana
1995 *Community participation and slum housing*, Sage, New Delhi
- Dharavi, High-rise Eviction*
2007 Editorial, *Economic and Political weekly*, June 23, pp:2364
- Dharavi: a natural city in the heart of Mumbai*, <http://www.airoots.org/?p=57>, Last accessed, 1 February, 2007

- Falzon, Mark-Anthony
2003 *Bombay, Our Cultural Heart': Rethinking the relation between homeland and diaspora* [Ethnic and Racial Studies](#), 4, 26,
- Hart, Keith
1973 *Informal income opportunities and urban employment in Ghana*, Journal of Modern African Studies 11:61-89.
- Haseloff, M Anikar
2004 *Cybercafés and their Potential as Community Development Tools in India*, The Journal of Community Informatics, Vol.1 no. 3 pp.53-64
- Naregal, Veena
2000 *Cable communications in Mumbai: integrating corporate interests with local and media networks* [Contemporary South Asia Volume 9, Number 3/November 1](#)
- Nijman, Jan
2000 *Mumbai's real estate market in the 1990s: de-regulation, global money, and casino capitalism*, Economic and Political Weekly, 35, 575–82.
- Patel, Sujata and Alice Thorner
1995 *Bombay: Mosaic of Modern Culture*, OUP, New Delhi
- Rangaswamy, Nimmi
2007a *ICT for development and commerce: A case study of internet cafés in India*, Proceedings, 9th International Conference on Social Implications of Computers in Developing Countries, São Paulo
2007b *Regulating India's Digital Public Cultures: A grey or differently regulated area*, 12th Conference on Human-computer interaction, Beijing, China, July 2007
- Roberts, D Roberts
2003 *Shantaram*, Abacus, London
- Sharma, Kalpana
2003 [Rediscovering Dharavi: Stories from Asia's Largest Slum](#)
- Srivastava, Rahul,
2003 *Formal sector and urban poverty*, http://www.infochangeindia.org/urban_india_04.jsp, Last accessed, 1 February, 2007
- Verma, Gita Dewan
2002 *Slumming India: A chronicle of slums and their saviors*, Penguin, New Delhi.

ICT4D => ICT4X: MITIGATING THE IMPACT OF COGNITIVE HEURISTICS & BIASES IN ETHNOGRAPHIC BUSINESS PRACTICE

TONY SALVADOR, JOHN W. SHERRY & L. WILTON AGATSTEIN *Intel Corporation*

HSAIN ILAHIANE
Iowa State University

With more than five billion people, large corporations have expressed non-trivial interest in “emerging markets” as potential future sources of revenue. We in this community of ethnographic praxis, are privileged to move with some ease between corporate board rooms and people’s living rooms around the world. Yet, our messages and meanings that might lead to positive action are hampered by both our own language – that of development -- and the ways in which people bear our language through specific cognitive heuristics and biases. In this paper, we specifically unpack the prevalent business interest concerning the “digital divide”. We discuss how that particular framing, i.e., digital, divide, essentializes upwards of 85-90% of the global population as simply poor and living in developing countries limiting business engagement. We argue that these predilections are further magnified by specific cognitive heuristics and biases we all possess but which are especially powerful amongst the business elite and which must be overcome to be effective. In response, we introduce an alternative scaffolding based on exchange rather than development, a view grounded in Simmel’s simple and powerful notion of “exchange”. In the example of development, which we use in this paper, we argue to reposition ICT4D (ICT for Development) to ICT4X (ICT for Exchange). We suggest this repositioning reshapes the possible actions for business possibilities and opportunities, shifting the conversation from hand-outs to business ventures, an otherwise well understood construct.

BACKGROUND

The term “digital divide” typically represents a division between those with and those without access to information and communications technologies (ICT’s). It is implied that having said access is beneficial such that without access, one is disadvantaged. Many have subsequently made the rather obvious point that the *digital divide* is really the visible, cumulative effect of many smaller divides, like access to education, infrastructure, language, jobs, etc.

From the outset, at the UNICT Task Force with Kofi Anan's statement that "ICTs are good for development" the *digital divide* has been linked to the traditional language of *development*. That is, the concepts of *digital divide* and *development* have been inextricably linked. Development was multilateral organizations; development was non-governmental organizations; development was philanthropic charities that advertise on TV. Development was about giving away money, not about making money; development was not business.

Being Heard Note 1: In 2001, two of the above ethnographers responded to Anan's phrase: ICT's are good for development, by asking: a. are they, b. if so, how and c., if so, what's in it for Intel? They began talking about their work by referring to it as an investigation into the digital divide. Uniformly, every manager and employee they talked to asked: "Why are you doing this? Intel isn't a philanthropic organization." (Working at Intel, it doesn't take long to realize Intel isn't a philanthropy...so they of course knew their work wasn't about philanthropy. Turns out at that time about 10% of the planet did have access to ICTs and that corresponded to about \$30 billion US revenue dollars a year. They changed the name of their project to "The Next 10%" because "that sounds like revenue."

But Anan wasn't finished. He further implicated Industry by saying that Industry had to show "us" the way. That is, in a deft move, he linked Industry to development – the thing Industry wasn't so interested in. (He probably thought that was very clever – co-opting industry on an international stage like that; I suppose that's what it takes to be Secretary General of the United Nations.)

About this time, Stuart Hart, Allan Hammond and C.K.Prahalad began writing about what they named: "The Bottom of the Pyramid". They argued that there are bona fide business opportunities amongst 4 billion of the "poorest" people on the planet. The oft cited example was the success Unilever Hindustan (in India) had repacking large boxes of laundry soap (too large a quantity to be affordable) into small "one wash" sachets that were affordable. (More recently, the World Resources Institute has published "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", which is an attempt to quantify various markets at for those 4 billion people; a welcome step.) While we accept that there are those without access to ICT's, we are less inclined to assign them as *divided*. Division assigns a sense of "otherness" to people who are otherwise not "other" in this way. Dividing separates, by definition, into parts, sometimes equal parts, more often than not, unequal parts. As a side note, some might posit that sowing division is even immoral.

*Historical Note: Dante Alighieri wrote about the hell in the early 1300's; at least the Italian version. Perhaps not surprisingly, hell is hierarchical, not unlike a corporation, except that the "CEO" is at the very bottom, not the top. There are nine circles of hell; some have various layers called *bolgia*. Circle 8 (lower than circle 7, and hence closer to the CEO), *Bolgia 9* (out of 10) contains "the sewers of discord". As punishment for sins of division, some wee devil hacks the bodies of these poor souls; they *beal*; repeat.*

In summary there are two framing narratives related to the "digital divide" as relative to the "market": Business at the "Bottom of the Pyramid", and "ICTs for Development"

(ICT4D)”. Relative to high tech multinational corporations, neither resonates particularly strongly in the context of the business (product and service) interests. Computers can’t be simply packaged as “soap products” and development sounds too terribly much like philanthropy to be about business.

THE LANGUAGE OF DEVELOPMENT IN BUSINESS

Craig Barrett, the current Chairman of the Board of Intel Corporation has run one of the world’s most profitable corporations, making products of dizzying complexity (microprocessors) in a highly competitive market, undergoing constant, rapid change. Here’s how Dr. Barrett talks about the United Nations Global Alliance for ICT’s and Development, which he chairs:

Rhetorical Note 1: “Last year, I’ve traveled to more than 30 developing countries to witness how rural areas are benefiting from technology. In my trips, I’ve also experienced how private and public organizations can collaborate to amplify opportunities created by technology in the developing world. That is why we organized a summit with the U.N.’s Global Alliance for Information and Communications Technology and Development (U.N. GAID) to meet with Silicon Valley leaders. Our shared objective for the summit is to come up with solutions that can speed the delivery of technology to the 4.8 billion people who don’t have access today. The summit was designed to foster collaboration and, more importantly, create action to bring technology to countries around the world.” – Craig Barrett, Chairman, Intel Corporation¹

The above is fairly typical rhetoric regarding ICT’s, development and the digital divide especially amongst the business and multi-lateral elite. It’s standard fare. In this section, we address why Dr. Barrett - *and others to be sure!* - specifically address these topics in these ways. Consider the following contrasting framing:

Field Note 1: Jose Miguel’s family, members of the Cañari indigenous community in the Ecuadorian Andes, lives at 11,000 feet, in a small community, in a mud-brick house. It looks like this here. They had some land for farming – for themselves and some to sell. Like every other farmer, they sold the commodities in the same locales; hardly an income that will grow. Jose Miguel wanted to study agronomy. He wanted to learn modern agricultural techniques and apply them to his community. While many of his cohort were leaving for North America, Jose Miguel wanted to stay and help. In a stunning decision, Jose Miguel’s father sold his land to send Jose Miguel to Rio Bamba University in central Ecuador. The land meant everything. It was all he owned. (Today, Jose Miguel is married, two kids, has a house, has presented his work at Intel Corporation and has received a Smithsonian Fellowship, amongst other endeavors.)

This is Jose Miguel’s framing. He describes how his father made a business decision to invest in Jose Miguel as the future for the family. Imagine the colossal risk: sell everything,

¹ <http://www.intel.com/intel/citizenship> at the time of the original draft

with no other way to earn income to invest in an 18 year old soccer playing, guitar strumming boy. Even a responsible one! Anything can happen – he could get hit by a bus. He could simply fail. Imagine.

None the less, in America, we have phrases for this very sort of risky business venture: “bet the farm”, “bet the house”, “bet your life”, “bet your salary”. In fact, we at Intel Corporation have a history of “bet the farm” decisions. Andy Grove, the storied CEO and Chairman of the company wrote about many of the “big decisions” he and his cohort made that “bet the company” – monster decisions infused with risk in markets where variability cannot be controlled.

Jose Miguel’s father made a business decision – a risky one – but nonetheless a business decision. And yet, we corporately see Jose Miguel through the lens of development. Let’s reconsider Dr. Barrett’s fairly standard statement:

Rhetorical Note 2: Last year, I traveled to more than 30 developing countries to witness how rural areas are benefiting from technology. In my trips, I’ve also experienced how private and public organizations can collaborate to amplify opportunities created by technology in the developing world. That is why we organized a summit with the U.N.’s Global Alliance for Information and Communications Technology and Development (U.N. GAID) to meet with Silicon Valley leaders. Our shared objective for the summit is to come up with solutions that can speed the delivery of technology to the 4.8 billion people who don’t have access today. The summit was designed to foster collaboration and, more importantly, create action to bring technology to countries around the world. – Craig Barrett, Chairman, Intel Corporation

In this reading, *Silicon Valley* has “leaders” “creat[ing] action” to do something for “ [developing] “countries around the world.” The other 4.8 billion people “don’t have access” and are “developing”. This is the language of business – the language suggested by economists who first organized the “emerging markets”, by Kofi Anan who linked ICTs and development, by Prahalad who’s called out the four billion people as being “the bottom of the pyramid”. It’s also the language many researchers and non-profit organizations have adopted as well. Why is this?

COGNITIVE BIASES & HEURISTICS

In essence, those global citizens who comprise the digital divide have largely been reduced to a single word: poor, and their nations as: developing. From these two words spring forth the rhetoric of the “digital divide” and “development”. Yet, from even a cursory view, it would seem unlikely, somehow that such large swaths of the global population would be reduced to these one-dimensional turns of phrase.

One candidate explanation may be due in part to a reliance on what are called cognitive heuristics and biases. In general, a heuristic is a simple, effective “rule of thumb” that people use to live their everyday lives. For example, one might be: you can always go 5 miles an

hour above the speed limit and not get a traffic ticket. Heuristics have likely developed over the long span of human existence as a cognitively efficient means of achieving most of what we need to achieve to survive and reproduce. Much of the time, these heuristics work just fine. But there are some that lead to systematic errors in judgement and decision making. We shall discuss one such heuristic in a moment.

Cognitive biases are human behavioral traits that result in interpretations of the world falling outside the bounds of objectivity. A simple example is the well known “confirmation bias”, in which people tend to seek for or interpret information in ways that confirm their own suspicions, desires or predictions. This would be in contrast to the far more efficient strategy of disconfirmation, in which one should seek key bits of evidence to negate a reigning supposition. The classic example by Karl Popper relates to swans. All swans are white. Seeking ever more white swans is easy, but does not prove the premise as one black swan is all it takes to refute it. Kahneman, Slovic & Tversky (1982) were the first to systematically examine both cognitive biases and heuristics and their for which Kahneman won the Nobel Prize. (Tversky was deceased at the time and Nobel prizes are not awarded posthumously.)

For the purposes of this work, there are two culprits conspiring to relegate 4.8 billion people as both *poor* and living in *developing* countries. The first is known as the *availability heuristic*. The availability heuristic suggests that people tend to draw conclusions about the probability of some event based on what they are able to call to mind most easily, very often, what they’ve heard, seen or come to know most recently and repeatedly. A really good example in the US relates to the probability estimate of children being abducted. The probability is stunningly low compared to what people estimate. This estimation is based largely on the spectacle of child abductions in news media, which yields the impression that child abductions are far more common than they are. For our purposes, that the only vision of *developing countries* often concerns the *poor* and needy yields an estimation that they are all simply poor and needy in developing countries. Hence the ethnographic “surprise” when we show the image of Jose Miguel’s mud brick home, his meager room with newspaper tacked to the walls and ceiling to slow the falling of mud dust, and a computer sitting on a desk. We shall return to this point in a moment.

The second phenomenon to discuss is referred to as the outgroup homogeneity bias. A bias occurs when heuristics routinely lead to systematic errors in decision making and judgment. Quattrone & Jones (1980) identified this particular bias in which members of one group consider themselves as more varied and more individual than members of other groups, which they actively consider as more homogenous. That is, men consider themselves more varied than women, the latter of whom are more similar as a group, i.e., less varied. Not surprisingly, women feel the same way about men. Boys about girls, girls about boys. This is all very amusing at a cocktail party or in the high school lunch room. However, it turns out that Americans will presume homogeneity of the French, the French about Americans, the rich about the poor and the poor about the rich. Perhaps more pointedly, citizens of developed nations will consider that citizens of developing nations are all the

same. Thus, people in developing nations are all much more homogenous than people in developed nations: they're all poor; and activities in developing nations is about *development*, *per se*, and it simply can't be about business because they're *all* poor.

The availability heuristic and the outgroup homogeneity bias may well work together, each magnifying the effect of the other. The ever prevalent news media portrays people in developing countries often in disasters or in terms of humanitarian crisis – genocide, drought, famine, etc. The media does not often portray everyday life, such as buying vegetables, using transportation, playing sports, engaging in business, going to the shops, working, or any of various other humdrum activities that are certainly available to the local people but are not of nearly enough interest to air in the media. Thus, what multinational business people see – and have available to them, repeatedly, daily -- are the media reports of war, famine, drought, etc. And since this is all we see about *them*, we assume homogeneity.

Thus, the availability heuristic and the outgroup homogeneity bias each magnify and reinforce the effect of the other, triangulating if you will, toward the solidly held position that it is only the *poor* who live in *developing* countries which are developing because they are *poor*. That they are poor and developing suggests, of course, that they don't have access to the wonderful technologies available to us. In but a short, albeit ironic, turn of phrase, the *digital divide* reifies the boundary separating *us* from *them* in ways that have ultimately separated and largely isolated business from philanthropy, and *exchange* from *development*. In our last section, we discuss shifting our language from that of *development* to that of *exchange*.

EXCHANGE

In the first two sections, we outlined the rhetoric of digital divide and the concepts of the availability heuristic and the outgroup homogeneity bias. In this section, we examine Simmel's concept of exchange as a means for escaping the rhetoric of divide and overcoming the systematic errors that result from our unfortunate reliance on these heuristics and biases. In the final section, we argue to change our own language and rhetoric – especially in business settings -- from that of the *poor* and *development* to that of *society* and *exchange*.

Georg Simmel defines exchange such that each party in the transaction must give up something meaningful (a sacrifice) in the expectation and hope of receiving something more meaningful, i.e., of more value, in return (Simmel, 1907). In other words, everyone needs to give up something to get something better. In colloquial American English: “give a little to get a little”. Simmel's philosophy posits that it is exchange that defines society, specifically when “...individuals enter into interaction”. It is in the *exchange* that society is manifest; all societies by definition therefore exhibit exchange.

From a business perspective, our challenge is to determine viable mechanisms of sustained exchange over time to form mutually supportive societies, which we might refer to as markets, or market societies. McMillan, in a recent business book, Reinventing the

Bazaar, refreshingly quotes Simmel, and argues that markets – defined by the conduct of exchanges of this nature – are many, varied, dynamic and ever flourishing – perpetually finding new and innovative ways to conduct exchange. And technology is a prime catalyst for creating new means of exchange.

Field Note 2: Matyas Gaspar is the founder of Hungary's Telecottages (in Hungarian: Teleházak). A telecottage is a form of community telecenter designed to support people living in rural towns, mostly for economic growth and to foster business opportunities. The genius of Gaspar's telecottage isn't the technology; it was the legal and operational structures he designed into them. The business model for the teleház has three legs. Each is sponsored by a local nonprofit civic organization, created by the local government explicitly for the teleház, and by an independent for-profit operator. The official owner is the civic organization; the local government supports the enterprise with either a building or land or some other resource. The operator who runs the business profits through a variety of means, such as charging for the computer time used in playing games or in searching the Web. The operator also writes grant applications for community members and gets a fee or a percentage of the grant if it's accepted. (Grants are offered by the national government.) Of particular relevance is that though this structure was common across all telecottages, the specific role of each telecottage varied depending on the town and the wishes of the people, e.g., one became the hub of an art and tourism industry in Western Hungary. One focused on encouraging and growing strong local small businesses. One, which earned income, supported a second in a neighboring town that became a non-alcoholic social center for the youth from both towns. Additionally, computing and connectivity enable the operators in the teleház to work effectively with the government, searching the databases for grants, applying, transacting.

Gaspar set up the telecottage system specifically to encourage and enable exchange. The tripartite model was determined to permit each of the three entities to take maximum advantage of tax and sales laws in Hungary, e.g., civic organizations get certain discounts, while individual owner/operators have more latitude in conducting business. Additionally each telecottage was designed – indeed encouraged – to support and grow locally relevant businesses and therefore establish their own ecosystems. The first 30 telecottages were initially funded with a grant to overcome the initial hurdle of startup capital only and they were subsequently on their own.

Locally meaningful models of exchange emerge locally, amongst local people familiar with the social, cultural, economic and political milieu. To the extent that technology can be locally appropriated to foster new models of exchange, the probability is higher that it will be. Had Hungary been subjected to a “standard” telecenter funded and deployed not unlike the cinderblock loo's in Cañar, one ventures to suggest they would not be viable now.

Global models have a lower probability of working locally because the exchange model is inappropriate. That is, people don't want what's on offer enough to give up something meaningful, whether it is time, money, labor or barter. Further the cause may not be due to the actual exchange model, but the way in which that model is embedded into the local political economy. In a similar vein, recent work has also suggested that capital inflows in the form of Foreign Direct Investment and in the form of grants does not correlate with

increased access to or use of ICTs (Heinsz, et al, 2005). In recent work by Howard (2007), where he looked at five indicators of “digital dividedness”, international trade, measured as the proportion of a country's GDP coming from imports and exports, has a small *negative* impact on these indicators. That is, sustainable adoption of ICTs locally seems to be driven by local economic cycles, not global ones. Put another way, raining money and material from the sky without a firm linkage to locally meaningful models of exchange may be worse than doing nothing in that it inhibits locally driven growth of exchange models.

In a second example, we approach from a different perspective. Here, we find individuals adopting technologies of their own accord, without active planning of the sort in the telecottage example, but where the benefits were clearly about the ability to exchange information, time, knowledge and money.

Field Note 3: Ilahiane (2003) studied a group of small craftsmen, laborers and assorted small businessmen operating out of the souk in the Moroccan city of Casablanca. The men were bound by ties personal and business ties. They'd known each other for years, played soccer together on regular basis and they congregated at one shop operated by a plumber. They would share news of work, recommend each other for jobs, etc. When the mobile phone became available, they adopted them rather quickly and found that their incomes rose on average 66%. They were able to take more jobs because they could be reached in a more timely fashion. They were able to take jobs at further distance that the previously couldn't risk due to travel costs and no guarantee of work. They were able to build their networks of contacts, which in turn led to more work. Overall, they adopted a technology that was beneficial to them.

At the root of is all, these are businessmen. They have invested in a technology and are using it to a profitable return. It's pure business. What I find in my own and my colleagues' work, however, is that in our zeal to represent the people – the eternal subaltern if you will – we strive to show their daily lives, their context, their construction of reality. But if we show their photos, if we show their places of work and their homes, if we present our findings about the *souk* while sitting in a Silicon Valley high tech office complexes bathed in airborne digitalized waves, if we do these things while also using the erstwhile useful language of development the ever present and very powerful cognitive heuristics and biases arise , reinforcing and reifying the concepts of *poor* and *development* which in turn defeats the possibility of approaching these people as markets in a spirit of exchange.

CONCLUSION: ICT4X

Therefore, for *us* to be heard, for *us* to share the meaning of our work such those decision makers have the capacity to hear what they need to hear is not simply a matter of representing the people and their meanings for we do that well enough. Rather, it's a matter of shifting the context of those representations onto a structure, onto scaffolding that challenges and ultimately defeats the prevailing cognitive heuristics and biases so prevalent in our *milieu*. Ironically and perhaps unfortunately, the otherwise benign and noble rhetoric of

development and *poverty* may do more to *inhibit* being heard and *hinder* our ultimate justified effectiveness than we might otherwise hope to expect.

Rather than poverty and development (ICT4D), we might consider investment and exchange (ICT4X), shifting the conversation entirely to a business footing while maintaining the meanings we need to convey. We should talk about markets, services and products. We should talk about risks and rewards. For example, I've reframe some of the work we've done as follows in conversations at Intel Corporation:

“Jose Miguel’s Dad made a *risky investment decision*, in selling his land and sending his son to university.” Possible Action: Is there a service to offer to reduce that risk to enable more people to make such a decision?

“Gaspar has a brilliant mind for building viable, locally relevant telecenter *businesses that grow local economic productivity*.” Should he be paid as a “market development consultant” to expand his vision of economic development through technology? Might the telecentres be considered as local software vendors?

“The plumber and his cohort are using technologies to *increase the metabolism of their businesses*.” Are there other such opportunities elsewhere?

By shifting the foundation from *development* to *exchange*, we shift the assumptions and rationale with which people hear the stories about people, places and their practices. It creates a space for new ways of listening, hearing and thinking. It makes possible conversations about products, services and opportunities that may previously have been occluded. This reframing onto familiar – and admittedly potentially profitable -- territory mitigates the effect of the availability heuristic and outgroup homogeneity bias (and perhaps others of this ilk we've not discussed in this paper).

In our practice, it's tempting to borrow the language and frames of our various social science disciplines to engage and “shift” the conversation in the corporate setting. However, in the case of development, the language hinders, not helps taking positive action toward engaging more deeply in these markets with products and services that can sustain and grow local economic productivity.

Moreover, this reframing is expansive and inclusive. It's expansive, because it introduces a new way – or for some at least a different way -- to think about ICTs, their design, their use, etc. By imagining the products as parts of extant systems of economic exchange, the opportunities for business and design are expanded given a much greater sense of possibility and potential for sustainable business. This framing is inclusive because it suggests strongly a continuing, bi-directional exchange - rather than a one way handout – which is exactly the way business operates today, and exactly what Simmel would argue forms the basis of all societies.

Making this shift is an ethnographic was to “reinvent the bazaar” of ideas, to borrow MacMillan’s phrase. It’s about actively figuring out new ways to do business, new business models that may be relevant and the products and services that might be viable that do not require constructs that create division or that isolate large populations as poor or developing. Exchange is a part of everyone’s lived experience and forms the basis of our membership in societies. It’s these messages we need to convey, to teach, to impart in our businesses, for these are the meanings that matter to us all.

REFERENCES

- Henisz, W.J., Zelner, B.A., Guillén, M.F.
2005 “The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977–1999.” *American Sociological Review*, 70. 871–897.
- Howard, P. N.
2007 “Testing the leap-frog hypothesis: The impact of existing infrastructure and telecommunications policy on the global digital divide.” *Information, Communication & Society* Vol. 10, No. 2, April 2007, pp. 133–157.
- Ilahiane, Hsain
2003 *Personal Communication*.
- Kahneman, D., Slovic, P., Tversky, A.
1982 *Judgment under uncertainty: Heuristics and biases*. New York: Cambridge University Press
- Prahalad, C. K. Hammond, A.
2002 “Serving the World’s Poor Profitably.” *Harvard Business Review*. November-December. 48-57.
- Prahalad, C. K., Hart, S. L.
2002 “The Fortune at the Bottom of the Pyramid.” *Strategy+Business*, 26: 54-67.
- Quattrone, G. A & Jones, E.E.
1980 “The perception of variability within in-groups and out-groups: Implications for the law of small numbers.” *Journal of Personality and Social Psychology*, 38, 141-152.
- Simmel, G.
1907 “Exchange”. In: *Georg Simmel On Individuality and Social Forms*. Levine, D (Ed) 1971.

Do you hear them working? Listening to, experimenting with and architecting work process.

JULIA C. GLUESING

Wayne State University

This EPIC2007 session draws our attention to ethnographic approaches for understanding work process in context. Each paper highlights ethnography's uses to promote new ways of working through experimentation and innovative design or architecture of work and work processes. The purpose of this introduction is to provoke discussion from multiple angles of the ethnographic approaches to work process described in these papers as well as to focus attention on the work processes in which ethnographers themselves are embedded.

INTRODUCTION

As technologies and organizations undergo rapid transformations that have the effect of disrupting work practices and making chaos out of work processes, organizational researchers and ethnographers are focusing on the improvisational and emergent properties of work practices. Ethnographers are working with organizational members to experiment with work processes that promote adaptation and foster innovation. At the same time, there are some routine aspects of work practice that also attract the attention of ethnographers who are interested in helping workers and organizations bring some order to the chaos of technological and organizational change by architecting processes that can remain somewhat stable in the face of changing technologies and organizational forms, yet still flexible enough to adapt to unpredictable circumstances. The papers in this session all focus on some aspect of work process ranging from listening to the sociality embedded in standardized practices and uncovering the meaning of routine activities for the participants in the work process, to provoking new perspectives and altered action through ethnographic intervention in work processes, to designing the ethnographic work process itself to add value to organizational work and to the daily work lives of the people who do it.

The first paper by Dorothy Deasy, Erik Lucken, William Down, Gretchen Gscheidle outlines an approach to the architectural design of work spaces at Herman Miller to enhance group work and particularly to foster the exchange of ideas. The authors describe the research they conducted to build spaces that would support lateral work and creativity. They articulate clearly how work technologies, work spaces, and work practices together can foster the voicing and the hearing of ideas.

Next, we hear from Jacob Buur and Laris Sitorus from the University of Southern Denmark, who show us how ethnographic practice can be woven into the engineering work process to provoke new ways of thinking about users and technological design. In this way, ethnography enables engineers to hear the voices of their users.

In the third paper, Akihiko Obata, Shigeru Yamada and Hiroaki Harada from Fujitsu Labs and Sadayo Hirata and Seisuke Ito from Fujitsu propose a new approach to the project inspection process for IT projects to help mitigate the risks that come from tacit knowledge that may not be uncovered in the standardized process. They show us how ethnography was taught to and used by inspectors to alter their work process and improve their ability to hear how work is being done and to learn about potential project risks that might otherwise have gone unvoiced.

We learn about an ethnographic assessment of print shop practices from Nathaniel Martin, Mary Ann Sprague, Patricia Wall and Jennifer Watts-Perotti at Xerox. They explain an ethnographic process they used to help make invisible work visible and give voice to workers' ideas and opinions in a print shop before making changes to the work process. Their work is an excellent example of how ethnography can help streamline a work process and make it more predictable yet still accommodate improvisation.

Melissa Cefkin, in her paper, takes an unusual look at the sales pipeline and routine work practices. She explains how sales people, as part of what she calls their "rhythmscape of work," make their voices heard within the constraints of their everyday work. By expanding on the concept of rhythmscape, she helps us understand how it is created, who creates it, and what its implications are for the sales people involved in the sales pipeline as well as for the broader organization. She shows us how to assess work process in novel ways to hear what we don't ordinarily listen to.

The final paper in this session is by Luis Arnal and Roberto Holguin from In / situ in Mexico, who use a wonderful analogy to show us how we can make our ethnographic music heard more widely by more people in business audiences. To Arnal and Holguin, being good ethnographers means learning to play our music in new ways that may not be part of our standard work processes as researchers.

The Built Environment: Exploration toward a New Paradigm

DOROTHY DEASY

ddeasy inc

ERIK LUCKEN

Gensler

WILLIAM DOWELL

GRETCHEN GSCHIEDLE

LAURA LEENHOUTS

Herman Miller Inc.

Abstract

For most businesses, group work is the way in which ideas are given voice. In this study, ethnographic research was conducted to explore group work and the environments in which it occurs. The research provides context for architects and designers who are conceiving improvements or reinventing the ways the built environment (e.g., furnishings, décor and architecture) influences the outcome of group activities. The research took place in two phases; phase one sought to develop a set of observable hypotheses and phase two sought to validate the hypotheses through observation. In the first phase “embedded reporters” were recruited from Herman Miller and Gensler staff to serve as observers of their own group work and to report on idea flow, knowledge transfer, size of groups, reasons for working together, stage of process, etc. During the second phase of the study, an ethnographic researcher shadowed a “hub” person skilled in group work for 1 – 3 days and observed group work behaviors. A second researcher with architectural experience documented the spaces where the observations took place. Same time / same place interactions are most important when meetings are highly staged or highly urgent. The intangible aspects of communication such as emotional comfort and group dynamics add value that is integral in these situations.

Introduction

To inform next generation design of group work environments, Gensler (a global architectural firm) and Herman Miller (an environmental furnishings company) conducted a joint research project. The goal, in part, was to understand the variety of group work needs so that environments may be tailored to support an array of collaborative and cooperative behaviors. A basic underlying assumption of the work was that group work places that are well-designed allow for cleaner, clearer communication. Since group work is primarily, if not

exclusively, about communication, designing places that enhance communication is an essential part of “being heard.”¹

Background and Purpose of the Study

The primary goal of this study was to more deeply understand the context of collaboration. Herman Miller and Gensler, both experts in their own domains of the built environment, had not previously worked closely in collaboration. The research study was to provide an experiential opportunity for the two companies to collaborate. The research was intended to provide deep context to both companies and also serve a value-added function of allowing the companies to experience each other’s collaborative process. In this way the study was a mirror image of what was being examined – place being both a platform for meetings to occur and place as adding value in addition to the content of the meeting.

The research design assumed that the application of the contextual findings would serve a diversity of design needs. The study needed to explore the attitudes and behaviors related to collaboration so that the learning could be applied to both architectural and furnishings designers. Rather than prescribe specific product development ideas (e.g., “incorporate drop-down tables in hallways for spontaneous group interactions”), as a context study, the output was intended to address issues such as:

- Why aren’t meetings obsolete?
- What makes effective meetings?
- How can space improve the ratio of good meetings to bad?
- What would collaboration look like if we hadn’t inherited conference rooms as our default?

Methods

The study was designed to allow input from an array of audiences. We sought to put in place a structure for informing design innovation while allowing for optimal discovery and exploration. In the first phase, primary emphasis was to leverage workplace experts to help develop a set of hypotheses that could be validated through observation in phase two. In the second phase, the ratio of expert to “typical” respondents was inverted. Companies, and the individuals shadowed within those companies, were recruited from those not necessarily skilled in workplace design, but who strongly depend upon group work to function.

Before the research began, a definition of group work was agreed upon: when three or more people were meeting, with at least two or more of them in the same time and the same place. This eliminated groups from the study where the physical environment was either not essential (e.g., exclusively teleconference) or where interaction was not a key component

¹ Designed environments can augment knowledge transfer by “renewing the importance of decidedly low-tech practices” such as spontaneous encounters and cross-team interactions. (Levine & Gilbert, 1998)

(e.g., resource areas where information may be exchanged in the same place, but not at the same time).

Phase 1: Embedded teams

Herman Miller and Gensler team members turned the mirror on themselves to develop hypotheses around group work. Team members, working on their own projects served as embedded reporters for how and where group work in general (and idea flow and knowledge generation in particular) is currently working, or not. As experts in the built environment, the Herman Miller and Gensler team members were already hyper-aware of how the physical environment exerts influence. The goal was to focus this knowledge specifically on group work and learn from real-life situations. A researcher from *ddeasy inc* worked with the participants, using probing and questioning to download data and sharing key insights with other participants. Questioning such as “what if projection becomes portable?” or “how does porosity influence group work?” allowed the reporters to combine observation of behaviors with their expertise to help develop testable hypotheses.

A total of 12 Herman Miller and Gensler team members were asked to simply pay attention to their behaviors as part of their normal group work activities. Each participant was given a register sheet and asked to record their meetings including duration, number of people, place, type of content (e.g., information download, knowledge sharing, knowledge creation, etc.). Some people, when appropriate and convenient, took digital photos of the meetings places and sent those to the research team via email. A *ddeasy inc* moderator contacted the team members once every week for a three week period, conducting a 15 – 20 minute interview to discuss what group work was like, what was happening in terms of communication and how and when people decided to meet. Additionally, four depth interviews (1 hour each) were conducted at the conclusion of the reporting period (with a mix of younger and older workers) to explore specific place requirements.

Although a brief discussion guide for the touch-base calls was used and shared with team members, download calls were highly conversational and driven by the observations and insights from that week. The process allowed team members to bring their expert insight to the study and for research to aggregate and translate the insights into hypotheses.

The reach of the learning depended upon who from the Herman Miller and Gensler teams participated, so team members were from different functions (e.g., sales, research, design, account management, project management, administrative, etc.) to provide a breadth of observation feedback. Age, geographic and cultural input was likewise balanced.

This initial phase was intended to be very exploratory and key insights were identified by anyone participating. The core team, most of who did not participate directly as observers, got updates on a weekly basis and also helped to raise areas of inquiry and provide a point of view on learning. The output of the test period was key learnings and hypotheses about what may influence group work.

Phase 2: Ethnography

In-office ethnography was conducted with non-Herman Miller or Gensler participants. Participants included leading edge and normative companies (relative to work place design). The companies included a restaurant chain corporate headquarters, a global marketing communications firm, a leading technology hardware manufacturer, a think tank, a manufacturing plant's offices, and a consulting firm.

Each of six companies identified 1 - 3 team leaders or members who were perceived as hub persons, skilled in group work and attended a lot of meetings. A researcher shadowed the respondents for 1 – 3 days each and observed group work behaviors, following them to meetings, observing while the person was working in their space and following as they went about a normal day.

A researcher trained in architecture was included on the team. She made architectural sketches of the places used for group work. These sketches were used to tie the research learning about behaviors to place cues, supports and obstacles. For example, lighting, furniture type and placement, peripheral space, etc. could be documented for those meetings with higher energy levels or greater degrees of porosity. When possible, the spaces and interactions were also documented with photos, video and audio recordings.

Observation, informal interviews and depth interviews were used to understand how to improve design of the work place to reduce or eliminate barriers and obstacles for group work interactions.

Hypotheses & Findings

- Place adds a dimension of value. Other meetings “work,” but place adds a texture and tone that enhance results beyond just working.
- The leadership styles of the groups determine, in part, what meeting spaces are needed. Top-down meetings infer greater formality. Meetings of peers may benefit from more informal setting.
- Short-term planned meetings tend to omit telephone contributors. If a group has an urgent need to meet within a few minutes or hours, they often do not include members who typically participate by phone.
- Owned meetings tend to limit free-flowing contribution with contributors deferring to the agenda. Scheduled meetings tend to take place in more formal settings and follow an agenda.
- Informal spaces may exude a “personality” that helps members connect and relate.
- Informal meeting spaces lack a standard definition.
- Informal spaces may be associated with “better” meetings. Meetings that were more high energy, involved freer exchange of ideas, more fun/enjoyable, felt more

relaxed and continued for longer than anticipated because of the productivity of the content tended to take place in informal spaces.

- People may congregate around resources and then end up in a spontaneous meeting.
- Meetings held in open areas allow for “wild card” contributors. Unexpected or short-term contributors sometimes take the conversation to different/unexpected places and enrich the thinking of a group.
- It may be that since the nature of work has changed, the balance has been tipped so that work is no longer primarily an alone function but rather a collaborative one.

Conclusions

Same time / same place adds a level of value above and beyond accomplishing the goals of the meeting. While all meetings observed “worked”, the meetings held same time/same place usually offered elements of value add, such as higher concentration, an ability to multitask with collaborators on multiple subjects and more opportunity for unscheduled knowledge exchange.

In his article *Changing Attitudes in Communication: The tradition of the Vermittler from Oral to Print to Cyberspace*, Donald Sunnen (2005: 2) writes “[c]ommunication and information are not opposites, but they tend to move in opposite directions.” He argues information deals more with facts and communication more with truths. This study demonstrated that that axiom applies to business interactions as well. Same time / same place was found to be of most value when the meetings were either highly staged (e.g., kick-off meetings, client presentations, brainstorming, seminars, etc.) or highly urgent. When the information being shared was complex, face-to-face both increased understanding and prevented misinterpretation or misunderstanding. Same time/ same place allowed collaborators to quickly come together to and to use all levels of, including interpersonal intelligence, to make decisions. Communication in same time / same place settings benefited from texture and energy.

This study showed that business contexts benefited from intentional physical environments in much the same ways as learning environments: promptness of attendance, leveraging the space as part of the meeting content, putting people at ease, helping to dissipate apprehension and overall increased comfort².

² Laurie Noe’s May 2005 article “The Literacy Caravan. Professional Development in a Unique Environment” discusses the influence of a specialized mobile classroom to help train early childhood educators. In the parlance of the work group study, the caravan represents a highly staged meeting.

REFERENCES

Levine, David I. & Gilbert, April

1999 “Managerial Practices Underlying One Piece of the Learning Organization”,
Institute of Industrial Relations, University of California,
<http://socrates.berkeley.edu/~iir/cohre/knowledge.html>

Noe, Laurie R.,

2005 “The Literacy Caravan. Professional Development in a Unique Environment”
(Beyond the Journal: Young Children on the Web, May 2005)

Sussen, Donald R.,

2005 “Changing Attitudes in Communication: The Tradition of the Vermittler From
Oral to Print to Cyberspace.” (MIT4 Conference – Massachusetts Institute of
Technology, May 6-8,)

Ethnography as Design Provocation

JACOB BUUR

LARISA SITORUS

University of Southern Denmark

In this paper, we present our experience in sharing ethnographic material with engineers that have a very different perception of technology and the role of its users. Rather than convey ‘findings’ in a rational argument, we have experimented with formats where the role of the ethnography is to provoke engineers to reframe their perception of new designs. Based on four design encounters (workshops) from two different design projects completed in industry, this paper looks at the ways in which the ethnographic material provokes design. We use video transcripts and conversation analysis to learn more about this mechanism of provocation.

INTRODUCTION

Researchers have advocated the use of ethnography in technology development for the detailed information and insights about users it provides (Bentley, 1992) (Hughes, 1997). Later studies have, however, pointed out that this view mainly sees ethnography as a data collection tool, and essentially limits the way the designer understands field studies to finding problems to be solved or gathering requirements for new designs. Ethnography as a data collection tool is problematic since it isolates the researchers from design (Anderson, 1994) and limits the ways in which practice and technology can evolve together (Dourish 2006). In this study we would like to take a closer look at the role ethnography may take in provoking new perspectives in a design organisation. We take as a starting point Anderson’s claim that

“...the contribution that ethnography may make is to enable designers to question the taken-for-granted assumptions embedded in the conventional problem–solution design framework.” (Anderson, 1994)

We will offer two project cases that show such questioning of conventional understandings of problems and solutions and discuss how ethnographic material provoked this. In relation to the conference theme ‘Being Heard’, our focus is – at least at a first glance – on how ethnographers or (more broadly) design researchers may be heard in the organisation they work for. But on another level it is as much about the participants, the ‘users’, being heard in the design process, for we believe that provocation through well-crafted ethnographic material can instigate, and at the same time provide framing for, an ongoing dialog between organisation, participants, and design team.

ACTION RESEARCH

This work originated with the Danfoss User-Centred Design Group that up through the 90's – after realizing that user interaction design is more of a social challenge than a technical one (Bødker & Buur 2002) – strove to develop new participatory design (PD) methods for product development in industry. The base was approaches from PD and computer-supported cooperative work (CSCW) that originated in IT (office) work settings. When the Danfoss Group expanded into the Mads Clausen Institute in 2000 and became a 'university', we maintained the practice of regarding every new design encounter as an action research experiment, in terms of video documentation, reflection on learning etc. Sometimes – as in this case – it has taken years to realise that experiments across several projects may form a new line of investigation and argumentation. In this instance we have gone back to 1999 tapes and analysed one project from the perspective of 'provocation' in order to stage the activities in a second project in 2006. For the analysis we solicited the help of conversation analysis colleagues to get a basic understanding of the socially constructed nature of the dialogues on which we wanted to focus.

Both projects included similar types of field observations: Shadowing of professional technicians at work in plant environments with one or more video cameras. The studies were counted in days (rather than weeks), and subsequently the technicians were involved in sense-making workshops and PD activities around design concepts. Both projects had some measure of text work theorizing about the observed work practices and what they meant. To talk of these as 'ethnographies' might be overstating the fact, but they certainly had qualities beyond mere requirements gathering. One point we will make in the discussion, though, is that the theoretical understanding only came about gradually *through* the engagement with engineers in the organisation and the realization that some findings seemed to thoroughly provoke them.

THE WATER VISION PROJECT

The Water Vision Project was initiated by the Danfoss User Centered Design Group to investigate opportunities for novel products to control wastewater treatment processes. It included field studies at six wastewater plants in Denmark and Sweden. Along with researchers from Aarhus University and Malmö University, we shadowed plant managers, process operators, technicians, and electricians through an ordinary working day and videotaped what we saw - typically with three camera teams working in parallel.

The project was a 'vision project' (as opposed to a development project) initiated in corporate research. It had budget support from R&D directors of three business units, but the innovation horizon was set so distant (8-10 years) that we had the freedom to explore without immediate client accountability. The first episode took place soon after the field study, when the team of design anthropologists, interaction designers, and user-centered engineers started discussing design opportunities based on field study findings. With half of the ten-member team being interns and visiting researchers, the team was still forming at this

stage. The episode shows a clash of opinions between the team and a marketing representative, in discussing automation at wastewater plants.

The designers had seen operators quite naturally move around the plant to feel, smell, and observe the process, whereas the marketing representative was convinced that automation technology is about shifting work into the comfort of a control room. And, clearly, the designers lost this first duel on rational arguments.

Episode 1 – A Clash of Opinions. The design team is visiting one of the business units (the Flow Meter Division), to learn more about the products and company concerns. A marketing representative presents the product line and how it is applied, and then the team splits into small groups to sketch out future scenarios of use based on knowledge from the field. Joining one of the groups, the marketing representative presents a scenario of an operator in a control room. The following conversation unfolds (simplified transcript):



FIGURE 1 Heated discussion between design team and marketing representative on the necessity of operators ‘walking the plant’

Team member 1: ‘This I’m a bit sceptical about. Everything we have seen about the way water treatment people work, right, they walk out in the environment all the time, and I don’t think that’s something we neither, you know, they feel like stopping doing or they *can* stop doing.’

Marketing: ‘Well, they are allowed to walk out there in those facilities; we don’t mind that. If he has to sweep (the floor), then he has to sweep it.’

Team: (uneasy laughter)

Team member 2: ‘They do walk out there, right?’

Marketing: ‘They are walking out there, yeah’

Team member 2: ‘So therefore I really think that it must be nice if one can see that there is an error on one (component) out there, not necessarily how one can solve it.’

Marketing: 'That's what I say one can then do on the computer, it is if uh at the time when this system is technologically so developed that all the parts function'

Team: (shuffling, laughter)

Marketing: 'Then uh its actually uninteresting that it is signalling, because he will anyway see it on his monitor; because that's where he gets his information inside; in an easily understandable way.'

The conversation is about where an operator will find out if a flow meter has a defect. When presented with a scenario, where the operator handles everything from inside a control room, one team member objects that in her understanding the operators seem to walk the plant at all times; and that they neither 'feel like' nor 'can' stop doing this. The marketing employee counters that it is only necessary to enter the (dirty, noisy, smelly) facility to 'sweep the floor', i.e. that the *real work* takes place in a control room.



FIGURE 2 *The Bioscope; an information display at the basin's edge*

A second team member steps in to support the observation that operators walk the plant, and it must be 'nice' to see error messages on the component itself. The marketing employee distances himself by stating that he is talking about a future 'when technology is so developed' that parts don't break down. Then it's 'uninteresting' to visit the plant, because all necessary information is provided 'inside' in the control room. Basically, here is a breach in understanding of what work is about at a wastewater plant, and what role technology can play, but it is expressed in a design decision about whether or not a flow meter should have a local alarm display.

Having observed operators at work, our team in this session came to realize that 'walking the plant' may be a really important characteristic of operator practice. That

operators actually performed ‘control work’ on location was not common knowledge in the business units, and it seemed to upset employees and their understanding of their product and what automation is about. It was also very distressing that the team – even being ten to one – was not able to win the argument in a rational manner. In fact the ‘us’ versus ‘them’ perception was amplified throughout the session, and this contributed to a confrontational atmosphere.

In the course of the next 3 months we struggled to come to grips with the field observations and how they might ‘inform’ new product opportunities. The design process involved scenario sessions, operator workshops, design games in the company and in plants, and many other participatory activities. One of the design concepts that emerged, we called ‘The Bioscope’, a screen placed out in the plant facility. This concept focused on precisely the issue described above: On whether operators in the future will be based in a control room or ‘walk the plant’. The second episode shows how ethnographic knowledge, reified in a product mock-up, provokes a debate directly between operators and product engineers, with the design team acting merely in the role of ‘go-between’.

Episode 2 – Design Mock-up as Provocation. The design team has invited six operators and ten experts from the business units to a final workshop for evaluating the outcome of the 6-month vision project. In mixed groups, participants discuss how various design concepts will change work practices. Then during the presentations, when an operator praises The Bioscope, the following conversation takes place:

Engineer: ‘Wouldn’t it be just as clever to see it (the information) inside from an office chair rather than at the basin’s edge in 10 degrees frost?’

Operator: ‘But maybe there is nobody inside.’

Engineer: ‘Okay?’

Operator: ‘He may be only inside for a quarter or half an hour a day. He doesn’t stand around looking at the screen all the time.’

One of the business unit engineers challenges the very idea of The Bioscope; wouldn’t the operator prefer to be inside in an office? I.e., isn’t the ‘clever’ work happening inside? The operator responds that they do not actually man a control room, but only check the control computer occasionally – *because* work is located outside in the plant. To him ‘inside’ is not an option, nor a desire. In fact, the same question is repeated three times by various engineers during the next 20 minutes, with the weather conditions becoming worse and worse (rain, frost, snow), but the operators never give in; to them work is about ‘walking the plant’, and a computer screen in an office cannot substitute for that.

THE CONFIGURATION PROJECT

The USEC (User Supportive Embedded Configuration) research consortium is a joint effort between industries and universities in Denmark. It explores opportunities to apply configuration technologies in the industrial field. The consortium is divided into three research areas: software algorithms, product logistics, and user studies. As the user studies group, we collaborate with Danfoss on configuration technologies for refrigeration systems in supermarkets and industrial kitchens.

Whereas the debate in the first Water Vision encounter came as an unplanned surprise to the design team, the third encounter shows an organised debate between engineers and designers in a large, on-going interface design project. By carefully crafting the ethnographic



FIGURE 3 Engineers discuss what configuration means to service technicians based on video and storyboards

material into videos and storyboards, we aimed to stage a provocative debate similar to the unplanned one in Episode 1.

Episode 3 – A Staged Provocation. The half-yearly USEC workshops bring researchers from the various university and industry partners together to share results and coordinate progress. The third one took place at Microsoft Business Solutions. For this workshop, we have prepared a group activity for all participants to discuss different perspectives of configuration. This activity was intended to provoke disciplinary understandings while basing the discussion on real and concrete configuration scenarios. By doing this, we were hoping that the various groups would have the opportunity to learn from each other.

In the first part of the activity, the participants watch video stories of configuration practices from three different field sites. Each video is introduced with a brief overview about the location, the technicians and the purpose of the configuration. Then the participants work in groups of two. Each group analyzes a storyboard of one of the videos. We ask them to describe the scenario from their point of view and to identify any configuration issues. We also ask them to describe possible problems and solutions. Finally, participants present their storyboards for general discussion in the large group. The following is a discussion that takes place between several engineers and a designer:

Engineer 1: 'So, at the end we reject the question and say that this is not configuration. From what we see, it is a natural language problem.'

This is a problem of logic, which is not a problem in our field. So I wouldn't describe this one (as configuration).'

Engineer 2: 'Yeah, well if we were to say that this is configuration, or to support this by configuration, then we would need some more information on this....'

Engineer 3: 'But could you explain to us that this is not a kind of configuration problem? Because to me this definitely describes some...'

Engineer 1: 'Well, it is. But it is not the problem that we're interested in. I wouldn't really describe this as a configuration problem. I would describe this as a natural language problem.'

Designer 1: 'So you wouldn't see it as a configuration problem, because it doesn't say configuration?'

Engineer 1: 'Well...I would describe this as a natural language. That's as far as I know.'

Engineer 3: 'That's interesting. Because for me, I could see how they would need to configure the system somehow to optimize it. Maybe in a way it is actually a de-configuration example.'

Engineer 4: 'Well, we had a similar discussion here. We thought that optimization is not a configuration. But we have to do re-configuration to get an optimal condition. So there is a purpose, which is optimization. But it is not the reconfiguration.'

Engineer 3: 'So reconfiguration is actually the means to optimize such a system.'

This discussion is clearly about understandings of configuration. One of the engineers (Engineer 1) refuses to consider the tightening of bolts and screws on pumps as configuration. He argues that the manual practice is not a configuration problem – to him, configuration is a complex mathematical challenge that can be solved by advanced computer algorithms. After some discussion, other engineers (Engineer 3 and 4), who also worked on the similar material, offer a different view on the manual practice. They consider that such manual work is part of configuration work, as it aims to optimize the system.

In this case, the video and the storyboards helped us provoke engineers to discuss fundamental and important issues which otherwise would not come to the surface. We had learned from field studies, that technicians configure a refrigeration system not only through computer settings, but also by sensing the plant and doing physical manipulations. Configuration involves a process of making sense of how the system is put together and exploring the various configuration possibilities (checking the history of the previous configurations) (Sitorus & Buur, 2007).

The most commonly proposed solution to configuration problems is to hide the complexity from the users and introduce computer technology that can automatically work without too much user intervention. However, we have learned from our studies that it is

important for the technicians to be able to deal with the complexity, rather than to lose their grip on for what they are responsible. They rely on the physical setup of the plant to help them orientate and develop a better strategy to control and configure the various parameters.

Episode 4 – Design Mock-up as Provocation II. The fourth episode was another experiment of reifying ethnographic concepts in a simple design mock-up. It provoked the engineers to reconsider their preference for screen and button solutions, as the mock-up moved the issue of hidden parameters out into the open. The design concept ‘The Compass’ allowed technicians to manipulate relevant parameters by means of configuring the shape and physical structure of the interface, rather than hiding the parameters in screen menu hierarchies.



FIGURE 4 Technicians discuss how they see configuration parameters triggered by an imaginative design mock-up.

We brought the Compass to the technicians on site at a refrigeration plant (Figure 4). Provoked by the large size of the Compass and its simplicity, the technicians asked whether the Compass should be used as a dedicated interface to control specific things in the system. They explain that often configuration involves copying one setting from site to site, with small tuning and tweaking. The challenge for them is when they have to tweak settings from scratch.

When discussing the tangible mock-up with the engineers at a later workshop, we asked them to briefly imagine and describe a model of a system that would support the Compass. At first it was difficult for them to do, since the system is much more complex than what the interface visualizes. The physicality of the mock-up provokes them to question their software solutions and to think about the relationship between the technology and the technicians’ bodily practice. Through discussions, the engineers have come to understand that the system should be structured carefully using the technician’s point-of-view.

DISCUSSION

By comparing the two cases we would like to draw attention to issues that seem crucial to make Anderson's (1994) 'questioning of the taken-for-granted assumptions' come about – at least in engineering organizations like the ones with which we engage. But first, did ethnography make a valid contribution, and if so, what was the nature of the design provocation?

In both cases we struggled with rather fundamental understandings of how technology relates to people's work practice. In the first, the theme was *automation* and how technology shapes or supports work. In the second, it was *adaptation* of technology, and whether configuration is a precondition for work to begin or a core attribute of work. The ways technicians experience their work was in both cases so alien to the engineers that they reacted strongly against it and refused to be persuaded by a mere statement of the technicians' perspective, as this would have severe consequences for the way they regard company products and the role the company plays in the world.

Whereas in Episode 1 the design team was taken by surprise that their knowledge from practice observations could actually have such a strongly provocative effect in the organization, Episode 2, 3 and 4 represent various ways of dealing with this situation through the shaping of ethnographic material. The conflict experienced in Episode 1, however, wasn't all negative. In spite of a human (at least a very Scandinavian) urge to avoid direct confrontation, this clash of opinions had a profound effect on teamwork. The new team seemed to rally around the fact that it shared obviously controversial knowledge, and this provided a strong identity and a driver for the ensuing process.

Ethnography as shared material – The material used to stage discussions in Episode 3 was edited video stories and storyboards. In combination with challenging questions it brought about discussions of deeper issues. Should we think of such material as *empirical* or *analytical* in Dourish's distinction (Dourish, 2006)? To encourage engagement and collaborative sense-making the material did not spell out a particular reading, but it certainly, through its selection and composition, represented an analytic focus and a stance beyond that of naked data. There seems to be a delicate balance here, between theory/analysis and involvement, on the one hand to ensure sufficient depth and precision, and on the other to make a difference with the people involved. Elsewhere we have argued that video can play a special role when regarded as 'design material' in a collaborative process, rather than as objective data (Buur et. al., 2002, Ylirisku & Buur, 2007). While video collages, portraits and stories convey an analytical perspective, they maintain an ambiguity that allows the design team to play with alternative readings. Involving others in analyzing ethnographic material helps them relate their competences to concrete user practices.

Ethnography embodied in design – The design mock-ups in Episode 2 and 4 help focus discussion on particular issues. Rather than prototypes, we should probably regard them as 'provotypes' (Mogensen, 1994) in the sense that they do provoke certain themes to surface in the dialogue (Does work happen inside or outside? Is configuration a precondition or is it core work?). This challenges us to think of ethnography not only as text, but also as physical

form. The product in a sense *embodies* the ethnography. There is still much to be learned about reification of understandings; in particular because this is certainly not part of standard anthropological training.

Ethnography for framing user engagement – The design mock-ups helped stage dialogs in both Episode 2 and 4, but in different ways. In the Water Vision project the mock-up served as a tool to engage R&D engineers and process operators in direct dialogue. In a sense, the design team escaped the unattractive role of interpreter, representer, or go-between. In Episode 4, the engineers were not directly involved with the technicians, but the design mock-up served first to engage technicians in dialog with the design team, then – along with video of the technicians’ reactions – to trigger dialog between engineers and the design team. In this way the ethnographic material helps ‘frame partnerships between those on different sides of the production/consumption relationship, as in Dourish’s reading of Suchman (Dourish, 2006). The material mediates the exchanges of understanding and perspectives of various practitioners. Wynn argues that by creating openings within the boundaries that form such practices, one diminishes the distance between these practices (Wynn, 1991). These openings take place when designers are willing to be more sensitive towards the boundaries (Wynn, 1991). Ethnographic material can help these practitioners expose, exchange and reframe their understandings.

CONCLUSIONS

There are a number of conclusions that we would like to draw from our study. Firstly, to engage the potential of ethnography to provoke organisations to rethink their understandings of problems and solutions, the textual form may not be adequate. Neither are insight bullet points, as they submit to the logics of rational argumentation that hardly provokes questioning and engagement. Instead, we find it paramount to develop ways of engaging the organisation in sense-making through the use of visual and physical ethnographic material.

Secondly, the ethnographic theory building, though crucial to design, cannot progress independently of the prevailing conceptions of (work) practices ‘out there’ in the organisations – and these may not become clear to us until we confront the organisation with our material. Better sooner than later.

Thirdly, to move collaboration beyond requirements talk among the design team, organisation and participants, needs well-crafted ethnographic material to frame the encounters to focus on fundamental issues and perceptions.

Acknowledgments – We would like to thank Svenja Weinmann for locating and transcribing the video sequences, and conversation analysis colleagues Jacob Stensig, Maria Egbert and Johannes Wagner for their perspectives on the episodes. Also, Wendy Gunn was supportive in discussing the experiences. The USEC project is funded by the Danish Research Council of Technical Sciences.

REFERENCES

- Anderson, R. J.
1994 Representations and Requirements: The Value of Ethnography in System Design. *Human-Computer Interaction*, 9, 151-182.
- Bentley, R., Hughes, J., Randall, A., Rodden, T., Sawyer, P., Shapiro, D., Sommerville, I.
1992 Ethnographically-informed systems design for air traffic control. In *Proceedings of the 1992 ACM Conference on Computer-Supported Cooperative Work* (Toronto, Ontario, Canada, November 01-04, 1992). CSCW '92. ACM Press, New York, NY, 123-129.
- Buur, J., Binder, T., Brandt, E.
2000 Taking Video beyond 'Hard Data' in User centered Design. In *Proceedings of Participatory Design Conference*, New York, NY, 21-29.
- Bødker, S., Buur, J.
2002 The design collaboratorium: A place for usability design. *ACM Transactions on Computer-Human Interaction*, Vol. 9, No.2, 152-169.
- Dourish, P.
2006 Implications for design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Montréal, Québec, Canada, April 22 - 27, 2006). R. Grinter, T. Rodden, P. Aoki, E. Cutrell, R. Jeffries, and G. Olson, Eds. CHI '06. ACM Press, New York, NY, 541-550.
- Hughes, J., O'Brien J., Rodden, T., Rouncefield, M., Blythin, S.
1997 Designing with Ethnography: A presentation Framework for Design. In *Proceedings of the Conference on Designing interactive Systems: Processes, Practices, Methods, and Techniques* (Amsterdam, The Netherlands, August 18 - 20, 1997). S. Coles, Ed. DIS '97. ACM Press, New York, NY, 147-158.
- Mogensen, P.H.
 Challenging Practice - an approach to Cooperative Analysis. Ph.D. thesis, Computer Science Department. Aarhus University.
- Sitorus, L., Buur, J.
n.d. *Configuration practices of service technicians*. In the web proceedings of Nordic Design Research: www.nordes.org . ISSN: 1604-9705.
- Wynn, E.
1991 *Taking Practice Seriously*. In Greenbaum, J. and Kyng, M. (1991). *Design at Work. Cooperative Design of Computer Systems*. Lawrence Erlbaum Associates, Publishers. London, 45-64.
- Ylirisku, S., Buur, J.
2007 Designing with Video. Focusing the user-centred design process. Including DVD with 34 video samples. Springer 2007.

Ethnographic inspection identifying project risks

AKIHIKO OBATA, SHIGERU YAMADA, HIROAKI HARADA
Fujitsu Laboratories Ltd.

SADAYO HIRATA, SEISUKE ITO
Fujitsu Limited.

We propose a new approach for project inspection applying ethnography to identifying IT system project risks. Guideline-based inspection is generally conducted in the IT industry to reduce project risks. Guidelines are created based on analysis of failures in past projects. However, it is difficult to detect new risks that emerged according to changes of project environments. We hypothesized that an ethnographic method would have some value to detect such emerging risks by capturing insiders' perspectives. We developed procedures and guidelines to conduct inspection by ethnographic approach for IT experts. To clarify the value of the method, we conducted project inspection by the ethnographic approach on two projects that have already received guideline-based inspection. Problems found by the ethnographic inspection were not quite new for the members observed and interviewed. However, the ethnographic inspection successfully captured tacit problems that were rooted in organizational structures and culture, and triggered discussion and review of policy and standard models.

INTRODUCTION

As information technology has been rapidly progressing, troubles caused by IT systems have the possibility of causing a big loss in society. Non-technical issues are perceived as important issues in reducing risks of system development and maintenance projects (Ewusi-Mensah 1997, Keil 1998, Barret 2004). In this paper, we propose a new approach for project inspections applying ethnography to identify IT system project risks caused by non-technical factors.

Guideline-based project inspections are generally conducted in the IT industry to reduce project risks (Ewusi-Mensah 1997). We hypothesized that guideline based inspections have some limitation. It is difficult to detect new risks that emerge according to changes in project environments, since guidelines are created based on analysis of failures in past projects.

Jordan and Putz (Jordan 2004) discussed other limitations of documentary based assessment such as using checklists. Documentary assessment could produce negative side effects by generating unanticipated "work-arounds" that undermine the intent of the assessment. For example, when Quality Standard norms were introduced in an auto parts

industry, all evidence of non standard practices was removed before the audit (Bueno Castellanos 2001).

We hypothesized that an ethnographic method would have some value to detect such emerging risks and hidden problems by capturing the insiders' perspectives (emic) that are hardly detected by guideline-based inspections (etic). In this paper, we propose a project inspection method that is based on an ethnographic approach for IT experts who have no experience of fieldwork, and discuss the value of the method by comparing the results of ethnography with guideline-based inspections.

METHOD

First of all, we studied problems of guideline-based inspection based on observations of two inspection teams and questionnaires received from 101 inspectors. Then we developed guidelines and procedures of ethnographic inspection for IT experts by articulating the essence of ethnography based on the analysis of the guideline-based inspection. To clarify the value of the method, we conducted project inspections using an ethnographic approach on two projects that had already received the guideline-based inspections by IT project experts and discussed the difference between the two methods.

Target projects of inspections are IT maintenance projects. The main tasks of these projects are changing and adding new functions and capabilities in application software and hardware according to clients' requirements, daily operations on IT systems, and trouble shooting.

GUIDELINE-BASED INSPECTION

In guideline-based inspections, inspectors were provided a guideline that includes 300 or more checklists (e.g., Did you provide clear escalation rules for emergent cases?). They inspected documents and interviewed several project members based on the guideline as well as on their experiences, and then pointed out problems that should be fixed in the agreed upon time limit. We observed two inspection teams and received questionnaires from 101 inspectors about the difficulties of inspections. The following episodes illustrate our findings. Episodes 1 to Episode 4 are examples taken from the observations of the two inspection teams. Episode 5 is taken from questionnaires completed by 101 inspectors.

Episode1: Mismatch to the project context

A project manager argued that a problem pointed out by inspectors was mismatched to the current project situation. The inspectors argued that the project manager should clearly define roles between the project side and the client side. On the other hand, the project manager argued that the issue pointed out by the inspectors was generally reasonable,

however, not realistic in their project context. They continued the discussion, but failed to reach an agreement at the observed meeting.

Inspector: "You should avoid ambiguous descriptions in the contract document, such as one party performing the main role, and the other performing the support role."

Project manager: "It is difficult in our project situation to clearly distinguish roles with our customer. We have been working quite well with our customer for decades, and have successfully developed good team work. If you argue the issue without regard to our project context, it is not persuasive."

Episode2: Lack of evidence for shared understanding

An inspector pointed out a communication issue among project members. The project manager under inspection could not understand the problem because the inspector could not provide the details of the problem.

Inspector: "We did not get the frequency, but there are some communication errors from team A to team B that fully depend on oral communication and e-mail."

Project manager: "I could not figure out what was happening.

Communication errors are important problems; however, it is of no use if you can not give us more detailed information."

Episode3: Difficulty of relaxing wariness

As their general policy, the inspection teams tried not to be auditors but helpers. However, a project manager and a leader received the suggestions from the inspection teams as criticisms and rejected the team's suggestions.

Inspector: "Some of members of your project have been in your project for many years. There are possibilities that certain skills belong to individuals and are not shared with others."

Project manager: "I could not figure out what kinds of skills are not shared. Specific individual skills are needed to some extent. However, we rotate members inside our project, assuming there is a risk that some members will leave the team. It is basic of project management. There would be no problem even if someone passed away."

Inspector: "We raised this issue as a suggestion from a third party's point of view. I hope you will regard our suggestions as positive feedback."

Episode4: Questions based on past experience of failures

Typical questions of the inspectors we observed are questions based on past experience of failures. Most of them are questions that confirm how they take actions for some risk factors.

"What actions do you plan for transferring skills of experienced members who are going to retire?"

"What is being done for variation of work load?"

“How frequently do you report to your client about the work progress?”

Episode5: Difficulty of uncovering real problems

The inspectors were concerned that they failed to put project members at ease and, therefore, could not uncover the real problems the members faced. The result of the questionnaire from 101 inspectors showed that 25% of inspectors described the difficulties of uncovering real problems.

“I always face difficulty in making project members feel at ease enough to speak about real problems.”

“Project members would not tell us about their real problems. I don’t think they like to be told of problems by inspectors since that will produce re-work.”

“Before inspections, some projects create documents that are rarely used in their projects.”

On the other hand, some of the questionnaire data showed that there are episodes that inspectors sometimes ignored problems, considering the burdens of project members.

“Considering the burdens of project members, I sometimes do not dare to point out problems that may be hard to tackle.”

“The leader of my inspection team told me, you should not describe problems that are hard to solve.”

Discussion

The inspection teams tried not to be auditors but instead to be helpers as their policy. However, guideline-based inspection does not always fit the project context, and sometimes they failed to obtain shared understanding of problems because they lacked evidence, or caused wariness among project members. Questions raised by inspectors tend to be closed questions confirming how they take actions for some risk factors that are invoked by past experience. We also found evidence in the questionnaire responses that guideline-based inspection produces the side effect of generating unanticipated “work-arounds” as Jordan and Putz pointed out (Jordan 2004). Moreover, considering the burdens of project members, inspectors sometimes did not dare to point out problems that were hard to tackle.

Guideline-based inspection is a good tool for checking whether projects follow basic standard rules or not. However, the evidence showed that guideline-based inspection is not always effective in uncovering the real problems that projects face.

ETHNOGRAPHIC INSPECTION

We hypothesize that an ethnographic approach will be effective in addressing the issues of guideline-based inspection that we illustrated in the previous section. First, an

ethnographic method is suitable for pointing out problems in a way that is suitable for the project contexts. Understanding detailed contexts of the projects is helpful to avoid conflicts of problem descriptions that do not match the project context, as shown in episode 1. Second, detailed information about problems like that in fieldnotes might help to create shared understanding among inspectors and project members in such situation where evidence is needed, as shown in episode 2. Detailed descriptions, observations and interviews will be a common ground to discuss problems and might lead to constructive discussions by which different stakeholders and experts can contribute to solving the problems using their own experience and knowledge. Consequently, the problems pointed out by inspectors will be persuasive to project members and reduce the wariness of project members. Moreover, ethnographic interviews that encourage informants to speak in the same way they would talk to others in their cultural scene (Spradley 1979) might help to figure out tacit problems from the insiders' point of view that are rarely uncovered by such closed-ended questions primarily based on past experience, as shown in episode 4. These features of the ethnographic method might help to externalize the tacit problems of projects and help to treat difficult problems as organizational issues rather than project matters.

Guideline

We developed guidelines for ethnographic inspection for the IT experts by articulating the essence of ethnography. The following is an overview of our guidelines.

Describe problems from the workers' perspective – To describe problems from the workers' perspective, we developed the following guidelines:

1. *Do not attribute causes of problems to workers' mistakes.*
You should look for causes of problems in the workers' environment, such as tools, organizational structures, policy, or pressure from outsiders. Try not to judge a problem in such a way that makes the workers feel their performance is insufficient to accomplish their tasks. Instead, try to describe the workers' difficulties in accomplishing their goal or fitting their work to the standard processes.
2. *Do not use evaluative questions. Get episodes of everyday work practice.*
You should encourage informants to tell you about their everyday work practices. Ask probing questions to elicit more detail about the episodes. When your informants talk about their problems, you should not evaluate them using standard models.

Describe episodes in detail – To encourage description of problems that would be like fieldnotes, we developed the following guidelines:

3. *Describe problem episodes in detail to create a common ground.*
Do not describe problems in abstract terms. Describe concrete episodes that occurred in the field. It allows many stakeholders to discuss problems from a common ground.

4. *Do not introduce outsiders' standards uncritically.*

Problems pointed out by inspectors tend to introduce outsiders' points of view uncritically. These points sometimes cause conflicts between inspection teams and project members, whose perspectives may be different. Describe a problem by dividing it into three parts: 1) the name of the problem, 2) the episodes that illustrate the problem, and 3) discussions about the problem. Refer to descriptions of the episode in which you do not to introduce outsiders' point of view.

Analyze patterns and structures - It is important for the ethnographic method to focus on what people take for granted and rarely discuss (Jordan 2006). We developed guidelines for helping inspectors discover important patterns and structures from everyday work practice:

5. *Using heuristics for detecting patterns.*

Jordan and Dalal argued that ethnographic study requires years of theoretically grounded training and practical experience. The special skill of trained ethnographers is the ability to look for patterns (Jordan 2006). To help IT experts who have no experience in fieldwork, we provided heuristics for detecting patterns. When inspectors analyze filed memos, they consult the heuristics to find interesting patterns. We provide heuristics written in short messages that are easy to remember. We developed these heuristics based on papers by Hughes (1997) and Martin (2004). For example, these papers described heuristics such as "working division of labor" and "distributed coordination" to find interesting patterns.

6. *Analyzing problems as systems.*

We provided a process for analysis by integrating several episodes to determine the tacit structural problems that were deeply rooted in organizational structure and culture. After describing several episodes of problems, inspectors created causal loop diagrams (Senge 1990) discussing the casual relationships among episodes.

Procedure

Ethnographic inspection is conducted in the following six steps. It takes approximately three weeks from step 1 to step 3 for a few days' observation and a few members' interviews. The time needed for steps 4, 5, and 6 depend on the difficulty of the problems.

Step 1: Setting up the fieldwork theme - Interview the manager of the target project, and then discuss the theme and target tasks and workers. Examples of themes are; "Why does the same kind of mistake frequently occur?", "Why do they have difficulty following the standard process?"

Step 2: Interview and observation - Get agreement on conducting ethnographic inspection with informants. Interview and observe informants whose work is related to the theme, and collect episodes that illustrate the problems.

Step 3: Co-analysis with informants – Show the collected episodes to the inspection team and discuss them with both inspectors and informants. Confirm the validity of the episodes and try to get a deeper understanding of the problems.

Step 4: Analyzing patterns and structures – Based on the collected episodes from multiple observations and informants, analyze the patterns and structures of the problems.

Step 5: Co-design with stakeholders – Feedback the problems based on episodes from interviews and observations, and create shared understanding of problems among stakeholders. Then discuss a vision for resolution of the problem and actions to solve the problem. Participants in these discussions are not limited to project members, but also include executive managers, clients, and experts from other projects.

Step 6: Following up actions – Observe how actions are executed, and what the effects are of the actions. Continue these steps repeatedly if new important issues emerge in the process.

CASE STUDIES

We conducted inspections using this ethnographic approach on two projects that had already received guideline-based inspections by IT project experts. We discussed the difference between the two methods. The guideline-based inspections successfully pointed out several new problems that project members did not realize before the inspections. Problems pointed out were mainly about documents and processes that did not fit the standard models. On the other hand, each of the problems uncovered through ethnographic inspection were not quite new to the project members who were observed and interviewed, because the ethnographic inspection found problems from the insiders' point of view. However, the ethnographic inspection successfully captured tacit problems that were rooted in organizational structures and cultures, and triggered discussion about and review of policy and standard processes.

Case 1: Organizational structures and culture behind human errors

One of the projects that we inspected had approximately 50 project members. Several executive managers perceived that this project produced more system troubles than other projects, and wanted to know the underlying problems behind the recurring troubles. On the other hand, the project manager perceived that human errors were unavoidable to some extent. He was unsure how he could reduce human errors.

Inspectors using guideline-based inspection pointed out problems in several documents. Descriptions of work distribution with their client in the contract document were too ambiguous, and lacked description of the escalation process and rules. They also suggested that the project manager should get agreement with the client and make the project members

aware of the new rules. In contrast, the inspectors judged that the project provided documents properly for quality management that were in alignment with the standard model. We interviewed one of the inspectors about the recurring troubles. He suspected that the recent replacement of the project manager might be a cause of the problem. He suspected that the relationships with customers and sub-contractors might not be going well.

We conducted fieldwork to determine the underlying causes of the recurring troubles. We observed several meetings such as progress reporting and the issues management meeting, and took notes during the meetings. We interviewed several members of projects sharing with them descriptions of episodes that had occurred in the meetings.

We obtained several episodes from meetings that indicated a leader of the project had just tried to publicize the standard model rules, but that he did not make sure that his members rigidly follow the rules. Here is an excerpt of a conversation that occurred in a progress meeting:

Project manager: "What did you do for this issue?"

Leader: "I just told them again and again that they should follow the standard rules."

We interviewed several leaders by sharing episodes to understand the stories behind them. Then we found a leader who perceived that the project team members were overloaded:

Leader: "We have many things to do. We don't have enough time to pay attention to each incident. I asked for too much work from my members."

Moreover, we got episodes illustrating that work was increasing unexpectedly due to the retirement of experienced members from the information system division of their customers:

"There have been a number of experienced customers in the information system division who got involved in building the current system from the scratch. Those experienced customers are gradually retiring. Recently, two experienced customers retired and were replaced by young people. "

"When I asked a customer about their work process, they directed me to investigate the work ourselves. I think they did not know their work flow."

"Customers of different divisions tend to impose additional work on each other. They don't like to get additional work. They only know their related tasks. Currently no one knows the whole system and can not coordinate such conflicts. There is no way, except that we are taking on this role. "

Team members are willing to do such additional hidden work because of their cooperate culture:

“Even if we defined detailed work distribution with customers in the contract, maybe we can’t say no to our customers. This may be our corporate culture.”

From analysis of these observation and interviews, underlying problems of recurring human errors emerged. There are organizational and cultural issues such as retirement of experienced customers in the information system division that is producing unexpected hidden work, and there is willingness to do overloaded work for their customers. The executive manager thought similar problems might also be emerging in other projects, and began discussion with members of his department to overcome these problems.

Case 2: Problems behind multi-layered business

The second project that we inspected had approximately 300 project members in the development phase, and the project downsized to 18 members in the maintenance phase after years of development. This project is part of a multiple systems integration project. Three system integrators were participating in the project. One of these system integrators was a first-tier company, and others, including the project we inspected, were second-tier companies.

The problems pointed out by inspectors using guideline-based inspection were similar to Case 1. They pointed out that descriptions of the distribution of work with customers in the contract document were too ambiguous, and there was a lack of documents that described the escalation process and rules. In addition, they suggested adding a cross-review process to the library management process. The project manager appreciated the suggestions of the inspectors.

We interviewed the project manager to discuss the purpose of the fieldwork. He was not concerned with system problems. His primary concern was how they were to handover the knowledge of the system during the transition from the development phase to the maintenance phase. We focused on meetings that were related to handover of system knowledge.

We uncovered episodes that the inspectors who followed guideline-based inspection had not pointed out. The project team had difficulty in handing over system operations work to the first-tier company. The responsibility of the first-tier company was not clearly defined, and they had to do additional work for their real customers. Here is a sample of comments that illustrate the episodes:

“Mr. Suzuki who participated in the meeting (a meeting for handover) is a newcomer. He has not been here before. We did handover the process

with Mr. Sato who accompanied the three operators. But they were missing. “

We reported these episodes to the executive manager as well as to the project manager. They recognized the problem well. However, the discussion based on these episodes created reflection. They said they should clearly define work distribution and responsibility for the maintenance phase in the system proposal phase. They appreciated the results of our inspection:

“It is important to describe such tacit problems that occur in everyday work to discuss standard process. It might be effective to create new guidelines for inspections.”

CONCLUSION

Ethnographic inspection as a tool for organizational learning

We have described the situation in which guideline-based inspections do not take into account the project context, and sometimes these inspections failed to obtain shared understanding of problems, and caused wariness among project members. Questions raised by inspectors tended to be closed-ended and simply reconfirmed, actions invoked in response to some risk factors encountered in past experience. Moreover, the primary focus of the inspectors in our study was correcting work practices to create a better fit to standard models. Our result suggested that guideline-based inspection is not appropriate for pointing out emerging and hidden issues that trigger reviewing company policy and standard models.

On the other hand, ethnographic inspection successfully uncovered organizational issues that were not pointed out by guideline-based inspection, such as retirement of experienced customers in the information system division that produced unexpected hidden work, and the ambiguous scope of responsibility in a multi-layered business. The executive manager perceived these problems not as a project matter, but as general issues that should be addressed by the organization. Our results suggest that ethnographic inspections could be a tool for reviewing organizational policy and standard models.

We obtained some evidence that ethnographic inspection could capture not only risk factors, but also risk-mitigating best practices devised in the field. Externalizing and sharing tacit knowledge is an important practice for organizational learning (Nonaka 1995). Ethnographic inspection might also be useful to create a shared vision, another important factor for organizational learning (Senge 1990). Executive managers and project managers might have personal visions that never get translated into shared visions and, therefore, cannot be of value in guiding and encouraging project members. Policy and standard models that are reviewed based on episodes taken from many projects can reflect these many contexts

and might strongly support project members for overcoming difficult issues. We will continue to explore ethnographic inspection as an organizational learning tool.

Cooperation and diffusion

It is important to develop tools for IT experts that they can easily and effectively use to conduct ethnographic inspection and penetrate work practices organizational wide. Four IT experts who work as inspectors participated to our ethnographic inspection following the guidelines and the procedures that we illustrated in this paper. At the start of the project, participants were accustomed to established practices for evaluating project work, and tended to violate the guidelines we provided. They evaluated the work practices based on their own observations and perspectives rather than describing problems from the workers' points of view. We reminded them repeatedly about the guidelines and procedures for an ethnographic approach, and they gradually understood the value of approach. By the conclusion of the project, the guidelines for ethnographic interviewing seemed very useful to them. Some inspectors said they enjoyed doing ethnographic interviews because they could get various interesting and informative episodes from project members.

However, the descriptions of episodes were sometimes insufficient. The members of the inspection team who were outside the project teams had difficulty understanding what was going on in the projects. Professional ethnographers sometimes pointed out that the relationship of the episodes to the discussions was unclear. It took many hours to review episodes before people outside the work were able to easily understand the project contexts. Analysis also required many hours. We totaled the time we needed for each step. We found that the analysis step was the most time consuming task. Moreover, some inspectors were concerned that there would be a risk that they would not get interesting episodes within the time allotted for inspection, while they could achieve their goal of checking all guidelines in a guideline-based inspection within established time limits. In the future, we need to develop support tools for IT experts to conduct ethnographic inspection more effectively if we are to diffuse this practice company-wide.

Acknowledgments –We thank Jack Whalen, Erik Vinkhuyzen, Nozomi Ikeya, and Yutaka Yamauchi for basic training of ethnography and useful comments on our research. We also thank Julia Gluesing and anonymous reviewers for useful comments on the draft version of our paper.

REFERENCES

- Barret, R., Kandogan, E., Maglio, P., Haber, E., Takayama, L., Prabaker, M.
2004 *Field studies of computer system administrators: analysis of system management tools and practices, Proceedings of the 2004 ACM conference on Computer supported cooperative work, November 06-10, ACM.*

Bueno Castellanos, Carmen

- 2001 “Globalization” of Global Quality. *Practicing Anthropology* 23:14-17
- Ewusi-Mensah, K.
1997 *Critical Issues in Abandoned Information Systems Development Projects. Communications of ACM, Vol.40, No.9, 74-80, ACM.*
- Hughes, J., O'brien, J., Rodden, J., Rouncefield, M., and Blythin, S.
1997 *Designing with Ethnography: A Presentation Framework for Design. Proceedings of DIS'97: Designing Interactive Systems: Processes, Practices, Methods, & Techniques 147-158*
- Keil, M., Cule, E., P., Lyytinen, K., and Schmidt, C., R.
1998 *A framework for identifying software project risks. Communications of ACM, Vol.41, No.11, 76-83, ACM.*
- Martin, D., and Sommerville, I.
2004 *Pattern of Cooperative Interaction: Linking Ethnomethodology and design, ACM Trans. on Computer-Human Interaction (TOCHI), 11 (1), 58-89.*
- Nonaka, I., and Takeuchi, H.
1995 *The Knowledge Creating Company, Oxford University Press, Oxford.*
- Jordan, B., and Putz, P.
2004 *Assessment as practice: notes on measures, test and targets. Human Organization Vol.63, No.3, 346-358.*
- Jordan, B., and Dalal, B.
2005 *Persuasive Encounters: Ethnography in the Corporation, Field Methods, Vol.18, No.4, November 1-24*
- Senge, P.
1990 *The Fifth Discipline: The Art and Practice of the Learning Organization, Currency*
- Spradley, J.
1979 *The ethnographic interview. Wadsworth Group/ Thomson Learning.*

Giving Voice to Print Production Facility Workers: Representing actual work practices in the streamlining of a labor intensive production print job

NATHANIEL MARTIN

MARY ANN SPRAGUE

PATRICIA WALL

JENNIFER WATTS-PEROTTI

Xerox Corporation

This paper presents findings from an ethnographic study of digital production printing, with a focus on a complex, labor-intensive production print job. The goal of the study was to inform the development of tools, processes and technologies to improve the efficiency of this kind of job within the print production facility. By documenting how work was done from the perspective of the people who did the work, our study ensured that the voices and perspectives of the workers were formally represented in the process of improving and streamlining the tools and print production facility workflows.

INTRODUCTION AND BACKGROUND FOR THE STUDY

This paper presents findings from an ethnographic study of a complex, labor-intensive print job in a digital print production facility. Management hoped to use the study to inform the development of tools, processes and technologies to improve the efficiency of this kind of job within their facility. A major goal of our study was to understand how the print job was done from the perspectives of the print production workers, so that any new tools or workflow designs would support the actual work necessary to complete the job. By documenting how work was done from the perspective of the people who did the work, our study ensured that the voices and perspectives of the workers were formally represented in the process of improving and streamlining the tools and print facility's workflows.

Our study focused on a quarterly high volume print job, described by the print production facility as complicated and labor-intensive. The job arrived at the printshop on a series of data tapes. The printshop organized the data into meaningful sequences of documents, printed the job, and organized the printed pieces into bundles that were ready for mailing. The final job included more than 400,000 sheets of paper, which were grouped into quarterly retirement statement packages and sent to companies who provided the retirement plans for their employees. Each company received a package containing company information sheets, bundled envelopes of individual employee retirement statements, and a

set of prospectus booklets. About 38,000 packages were printed and distributed within a 10-day period at the end of each quarter.

Due to the complexity and tight deadlines for the job, the print production facility had undergone an earlier optimization assessment to streamline their work process. The work practice observations presented in this paper ran in parallel to a second phase of the optimization assessment, enabling the work practice team to observe the assessment team and their techniques as well as the print production facility during their normal work. This paper focuses on our study of the print production facility. We reserve the findings from our observations of the assessment team for future publication

The study provided an opportunity for all of the workers at the facility to reflect on their work and offer suggestions for improvements with assurances that the researchers would work to make sure that those suggestions were at least understood if not necessarily acted upon. In addition, researchers carefully documented the observed work practices, thus representing not only the workers' suggestions, but also the strengths and complexities of their current practices. Though the financial benefit of the improved efficiency would go primarily to owners of the facility, the secondary benefits of reducing complexity and increasing effectiveness for the workers are not negligible. Indeed, without the thorough study of the work practices from all angles, efforts to improve efficiency risk both failure from unanticipated consequences and frustration from the people who implement them. In addition, benefits accrued to the researchers' organization. The researchers are members of a group dedicated to technological innovation in print environments and the kind of detailed knowledge gained from the study was critical to innovation.

Below, we describe the print job we observed, including the physical layout of the shop, the current steps required to print the job, the paper documents used to support the job, and the roles of the people who worked on the job. We also provide some key findings and observations that were missing from management's written descriptions of the job and discuss the implications of capturing the voices of the workers.

METHODS AND PARTICIPANTS

The print facility included a wide variety of workers with different backgrounds and scopes of responsibility. The workers included managers, permanent employees and temporary employees. Managers focused on the financial aspects of the job, allocating people and machinery to tasks and managing schedules. The permanent workers operated the complex machinery such as the printers and inserters (devices for folding and stuffing documents into envelopes). The temporary workers manually sorted and bundled the printed documents.

Building relationships with the site and study participants

Our relationship with the printshop began with the positive rapport that the first assessment team established through their efforts to help decrease the complexity of the work. Before the study began, work practice researchers and members of the first assessment team held a series of meetings with the management staff to become familiar with their concerns about their work and their hopes for the study. These meetings, as well as agreements to abide by their operating rules helped form a good working relationship between the study participants and the observers.

The participants at the print production facility were actively engaged in the study. They provided open access to observe their work and were willing to explain their work when asked. During the observations, clarifying questions were asked of the workers to better understand the reasoning process used, and opinions and suggestions were openly sought. Participants from all of the job categories (management, permanent, and temporary) actively voiced areas of concern with the current process, provided historical perspectives on how the job had evolved, and shared ideas for improvements.

Work Practice Data Collection Methods

Researchers conducted open-ended interviews and observations during the course of the entire 10-day job. They observed printing, insertion of statements into envelopes, grouping of statements and prospectuses into packages, quality assurance processes, troubleshooting, and oversight activities. They also observed interactions among workers, workarounds, problem solving, schedule adjustments and load balancing.

Work Practice Data

The data collected for this study included field notes, paper forms and artifacts, and over 30 hours of video documenting every aspect of the observed job, from printing through fulfillment. Paper documents included job tickets for two file types: employee and company files, fulfillment tracking forms, envelope counting forms, and other training, labels, and record keeping forms. We also collected formal procedural descriptions of the job developed by the print facility's management, so we could compare these descriptions against the actual work practices that we observed.

We indexed and summarized the videotapes per Wall and Brun-Cottan (1995). The collected set of observation information was analyzed and used to create graphical representations of the current practices, and for highlighting issues, insights and opportunities for production work (e.g. Wall and Mosher, 1994, Woods et al, 2002).

The work practice observations were qualitative in nature. They provided real-time perspectives and insights into the dynamic, unpredictable aspects of the work that would otherwise be transparent to quantitative evaluation. The observations revealed some of the

problems encountered during the course of the 10-day job and how those problems were resolved. In addition to observations, workers' suggestions for improvements to the process and comments on the process were noted.

Analysis process

The researchers collected their field notes in a central location and viewed, transcribed and summarized the videotapes. From this material, they pieced together the overall work process and categorized findings based on the interests of the sponsors of the research activity. Sponsors included both management of the print production facility and the managers of our internal research organization, who were looking for research opportunities that might result in new service opportunities for the company. As information was processed, team members reflected on implications and asked follow-up questions on site.

We created graphical representations of the multiple branches of each step of the highly-manual process, noting extensive detail, including how the process worked, problems that were identified, and how intervention and corrections were accomplished. The representations included photographs taken at the site and illustrations of the activities that comprise the processes, supplemented by textual descriptions. We documented dependencies and problems within the overall process and included them as overlays on the workflow diagrams. See Figures 5 and 10 for examples of these representations. We also created PowerPoint summaries of potential technological improvements, as well as the potential impacts of these changes.

SUMMARY OF OBSERVATIONS

The work process for the retirement package job was based on a number of different factors, including the layout and available space for the shop, the previous printing experiences with this job and the experience of the entire staff. Here, we outline the process to give a sense of the complex constraints on the process and the techniques the print facility had developed to tame it.



FIGURE 1 –Print room (left) and Inserter room (right)

Map of print production facility layout

The print facility occupied two different rooms, with a third area for offices, meetings and some fulfillment activities (i.e., processing for mailing). The main print room contained four digital production printers (1), a computer server room (2), a shipping area (3) and a work area for fulfillment activities (4). A second room across the hall held three production inserters (5) and two postal meters (6). The second room also contained a locked area (7) storing controlled paper stock, such as serial numbered blank checks. Another stock room between the two main rooms was used for paper. This stock room was connected to a loading dock where the U.S. post office dropped off and picked up bins of completed envelopes and All Purpose Containers (APCs). The layout of the two equipment rooms can be seen in Figure 1 (illustrations created by the print facility).



FIGURE 1 - Preprinted fund guide sheets stacked in halls



FIGURE 2 - Company sheet with colored separator sheet on bottom

The Quarterly Retirement Package Work Process

The quarterly retirement package process delivered a retirement statement to employees in several different companies. Each employee got an individual employee letter, but the letter was delivered by the managers at their respective companies. Therefore, the printshop inserted individual employee letters into individual envelopes and bundled them with the retirement information provided to the company. The envelopes containing the employee letters were inserted into a larger envelope

(or occasionally a box) that was sent to the companies who distributed the letters. Sending the wrong letter to an employee or the wrong employee package to a company was a serious error that the print facility worked very hard to avoid. One technique they used to minimize the potential for this kind of error was printing a sample set of letters, called “hold files”, which their customer examined to make sure no such errors had occurred.

The 10-day printing and packaging process consumed 2-3 shifts per day. The current practice, as shown in Figure 5, started when the facility received data tapes from the customers and the data was downloaded onto local servers for printing. It then split into two main paths – one for the company (labeled C files in Figure 5) and another for the employee (labeled P files in Figure 5). These two paths met further along in the process where their results were merged into large envelopes, postmarked and shipped to the Post Office for delivery.

Fund Guide Sheets. Before the main quarterly retirement statement job arrived for printing, the print facility received and printed a set of retirement fund sheets, known as guide sheets, which would later be inserted into the quarterly retirement packages. These guide sheets were stacked in paper racks in the hallways for later insertion into the quarterly print run (Figure 2). These stacks were labeled with colored sheets that indicated the appropriate retirement fund family and marked to indicate which packages would need which guide sheets (Figure 3).

The print operator split the printing of the guide sheets across the facility’s four production machines. The operator checked the page counts on the device before the file started and after it finished printing, and wrote the start and end values on the job ticket. The page counts indicating the number of sheets for each file were transferred by hand to the final billing statements. The print operator also hand-wrote the sequential company identification numbers of the files on the job ticket. These company identifications numbers ensured that the sheets were kept in order in all subsequent steps in the work process.

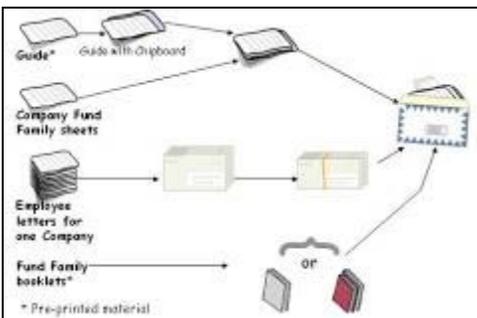


FIGURE 3 – Sample company package

each stack, the production facility placed the stacks and colored sheets for each company in an orientation that was offset at a 90 degree angle from the company sheets below. Once a stack of 300 company sheets was complete, the output stack was manually recounted to

Company Information Sheets. The packages that were sent to each company included company information sheets, which summarized employee quarterly retirement investments. The print facility called the files that contained the company information “C-files.” The information sheets were printed from these files in batches of 300 companies. The prints for each company were separated by a colored sheet that contained the company id. To further differentiate between companies in

ensure that sheets from different companies were not combined. Next, the appropriate fund guide sheets were inserted into sets for each company. The company sets were stabilized with chipboard and shrink-wrapped. The stacks of shrink-wrapped company bundles were kept in batches of 300 companies, each with its own paper job ticket that traveled with it.

Employee Letters. Employee Letters were the documents given to individual employees. They summarized the employees' quarterly retirement package investments. They were delivered in files called "P-files" for participant files. These letters were also printed in batches of 300 companies. The sizes of these files varied greatly because the size depended on the number of employees in the company. These file sizes were unknown until print time because no pre-processing of the files was done by the print facility, and the customer could not provide this information. Once the files were printed, the sheet counts were handwritten on the job ticket for use in quality assurance and future billing. After they were printed, the employee letters were automatically inserted into envelopes with an insertion machine, and stacked sequentially in postal letter trays. Each employee letter had a client id number above the address that was used for grouping, sequencing and matching

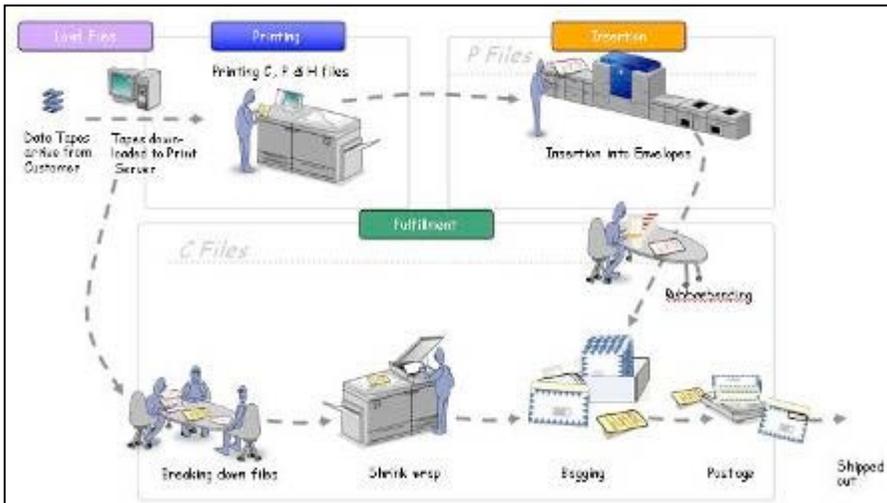


FIGURE 4 – Quarterly retirement package work process

with the company bundles. The employee letter envelopes were grouped and rubber-banded by company number and replaced in letter trays in sequential order.

Hold Files. Hold files (H files) were files designated by the customer which were printed and held apart from the rest of the job so a customer representative could review them for quality assurance.

Bagging. Once the company information sheets, printed from the C files, and the employee letters, printed from the P files, completed their paths, the temporary employees gathered batches of 300 together for merging. They did this operation at several large tables in the primary printing room.

They “bagged” a single company bundle and the corresponding set of employee letter envelopes into larger envelopes, along with any appropriate prospectus booklets that were provided by the fund families (Figure 4). They recounted all the envelopes for a given file to catch errors in the bundling process. They then sealed the large envelopes and sent them back to the insertion room where other employees weighed each envelope and manually affixed postage. The stamped envelopes were packed back into postal bins, carted to the loading dock and picked up by the post office to be shipped directly to the companies. Postage errors were noted on the job ticket to adjust the final billing statements. Figure 5 diagrams the entire process.

Document Artifacts

To support the quarterly retirement package work activities, the print facility had developed a number of different documents to monitor and track the flow of the files through the shop. Samples of the following documents can be found in Appendix A.1.

These documents are what Shalin (2005) called “representations.” That is, they are lower resolution descriptions of a complex reality. Though paper based, these documents, like the representations Shalin describes, support response to anomalies. They provide a graphic representation of the state of the job so it can be altered if anomalies occur. They have the additional benefit that they are physically associated with the artifacts they describe, providing them with a deictic character.

- **The job log (job ticket)** was a paper document that moved through the shop with the various files. At each step in the

FIGURE 5 - Job Ticket

work process, the file was checked, counts were logged by hand, and the job was signed off by the workers. Quality checks and samples that were pulled for inspection were also handwritten on the job ticket.

Manual fulfillment steps were tracked through several documents:

- **A fulfillment status document** listed each file and recorded the completion of each stage in the fulfillment, or bundling and packaging, process. This document was kept in

an open binder on the shop floor, for the shift manager and floor manager to monitor the job's progress. It also provided status information during shift changes.

| File Name | File Number | Date/Time | Status |
|-----------|-------------|-----------|---------|
| MFC | 1 | 7/11 PM | 7/12 AM |
| | 2 | 7/12 AM | 7-12 AM |
| | 3 | 7/12 AM | 7-12 AM |
| | 4 | 7/12 AM | 7-12 AM |
| | 5 | | 7-12 AM |
| | 6 | | 7-12 AM |
| | 7 | 7/13 AM | 7/13 PM |
| | 8 | 7-12 AM | 7/13 PM |
| | 9 | 7-12 AM | |

FIGURE 5 - Fulfillment status

- **Envelope counts** for each file were written on a form to track the counts of different sizes of envelopes used for each file. Results of quality assurance checks to maintain the correct number of clients in the file were also recorded on the same form.

| Change from the Original File | Print | Mail | Post | Pre | Reprint | Job | QA | Done |
|-------------------------------|-------|------|------|-----|---------|-----|----|------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

FIGURE 5 - Envelope counts

Comparison between observed workflow and documented process

As required by corporate policies, the workflow for the process was documented by the print production facility. The documentation consisted primarily of a procedural description that listed each of the activities that needed to be performed to accomplish the job. For this particular job,

there were two such descriptions: one describing the printing process, the other describing the fulfillment process. The descriptions in each document are at different levels of detail. The fulfillment process, which is quite complicated in practice, is documented in only one page, whereas the print process document is seven pages. In addition to procedural descriptions, the fulfillment process also suggested the best way to accomplish specific aspects of the job.

The formal documentation created by the print facility left out important characteristics of the work. For example, as described below, anomalies arose constantly throughout the run of the job, from diverse sources such as multiple copies of a file delivered as a single file, malfunction and breakdowns of the machines, and human error such as misplaced letters. Resolving these anomalies required dynamic adjustments to the process on an ongoing basis. These adjustments were made by everyone involved in the process regardless of whether they were managing or executing the process. The type of adjustment depended on the person's job: a manager might reassign a worker or a machine; a worker might halt the process due to bad input, or stop to search for a misplaced statement.

These anomalies were unpredictable and therefore were not included in the official documentation of the process. This unpredictability, coupled with the relative rareness of each particular anomaly suggests that formal documentation of the anomalies and procedures for addressing them might not be a good use of the print facility's time and money. The cost in time and effort of writing the extensive documentation needed to deal with all anomalies, coupled with the cost of finding the right information in a large compendium of documentation is likely to be greater than the cost of dealing with the

problem in an ad hoc manner. However, one contribution of our ethnographic study was to highlight the fact that these anomalies do occur, and that any new tools or automation developed to optimize the job must include some way of dealing with them. Currently, the existence of a human in the loop allows the flexibility to create ad hoc solutions as anomalies arise. New tools could focus on facilitating the detection and response to these anomalies, in addition to making the general job processes more efficient.

Other characteristics of the work which were missing from the facility's formal documentation are listed below in our key findings section. Two of the key findings described below, dynamic scheduling and proactive troubleshooting, represent the kind of procedural knowledge that is difficult to capture in formal documentation. Dynamic scheduling requires managers to reallocate machinery and people to new tasks as anomalies occur. This rescheduling requires managers to anticipate scheduling disruptions caused by such reallocation and work within constraints such as the availability of workers. Proactive troubleshooting requires workers implementing the process to carry out activities that catch errors early. While such troubleshooting can be formalized, reactions to the errors, once caught, are necessarily more ad hoc, since each error is unique. It was seen that experience with troubleshooting these problems provided more options for the floor manager to work in more flexible ways to accomplish the work in the given time, despite the problems.

These anomalies were also important reasons why a process such as the one observed could not be fully automated, or had limits in the amount of optimization that can be achieved. Issues such as the dynamic adjustments and shifting of the work were among the findings passed on to the optimization assessment team.

Indeed, the ability to make these quotidian heroics visible is one of the values of ethnography. A smoothly running process that includes humans is likely to also involve dynamic scheduling and proactive troubleshooting. These activities tend to hide themselves because, when they are most successful, the process does not suffer. As outsiders, the ordinariness of the activities is more apparent to ethnographers, so they are able to make the activities visible, ensuring that the optimizations to the process support these necessary aspects of the work.

KEY FINDINGS

A number of key observations were found during the work practice study of the quarterly retirement package job. These observations are summarized below and focus primarily on anticipating and managing trouble in order to ensure maximum productivity

Dynamic Scheduling

Dynamic scheduling was a critical aspect of the print facility's operations, in which its management fluidly allocated resources to different aspects of the job, based on existing or

potential bottlenecks in the flow of the job. Although there was a basic plan for how the entire job should proceed, the facility's floor manager constantly monitored the progress of the job, both within and across different areas of the facility. Based on the progress of the job, adjustments were made to maximize the utilization of resources.



FIGURE 5 - Colored job tickets allowed floor manager to see status at a glance

Dynamic scheduling in the print facility was supported by the paper based representation mentioned above. Like the computer display described by Shalin (2005), these pieces of paper provided critical information about the context of the re-planning required that made such re-planning possible. The color and position of the job tickets provided a visual cue which made the

paper in context with the shop layout integral to the information it provided. This information was something that the floor manager was able to ascertain knowing the shop layout and the work process. Figure 9 shows one example of such a representation. The color job tickets and their proximity to a given work station provide status information to the floor manager and enable monitoring of the job's progress in real time. For example, the job tickets shown in Figure 9 were on top of company information sheets in the main walkway of the print shop, in queue to be offset and counted by the temporary employees. The contextual knowledge needed for re-planning is knowledge of the current state, especially the goals that have been achieved. The stacks of paper with their colored cover sheets provided clear indication of what needed to be done. This knowledge could be coupled with the subtle and shifting knowledge of who was available and capable of working on the rest of the task.

The visual contextual information, provided by the location, orientation, and color of the printed sheets was a very efficient and effective way of representing the status of the job. This particular aspect of the job might be missed by engineers who plan to develop tools to optimize the job. Therefore, one of our contributions from the study was to highlight the fact that this status information was available, and was an important element in the work of the shop floor manager. Therefore, any new tools that are developed will need to include some form of status information which is available to the shop floor manager at a glance.

As an example of dynamic scheduling, we observed several instances in which the shop manager reallocated people and equipment, both in anticipation of potential problems, and to work around problems that had already arisen. As mentioned above, after files were printed, workers separated the printed data stream into bundles that would be sent to specific companies. They did this by stacking the pages for each company in a different orientation (i.e., offsetting each set of prints), and placing a color coded sheet between the pages for each company. (See Figure 3) They called this process "breaking-down" the files. As the number of broken down files increased, a second available shrink wrap machine was

brought online to handle the surplus of broken down files. The increasing number and size of the stack provided the cue that led to additional shrink wrapping.

In another instance, the automatic inserter machines stopped working for a period of time. These machines are used to automatically insert employee letters into envelopes. Once the inserters were fixed, more people were shifted to the task of placing rubber bands around collections of envelopes to manage the surplus produced by the automatic inserters. Here, the stacks of filled envelopes provided the contextual knowledge that indicated a need for more workers to add rubber bands.

In a third instance, the floor manager began to notice a bottleneck in the shrink-wrapping stage of the job. As a workaround, the floor manager brought in workers for an extra shift to focus on shrink wrapping. This extra shift enabled the contract workers to place envelopes into bags the following day. Again, the stacks of artifacts indicated the need for more work.

This kind of dynamic scheduling, in which people and resources are fluidly re-allocated based on current and predicted problems with the job, is very difficult, if not impossible, to represent in a standard procedural description like the one developed by the print facility's management. This characteristic of the work was indeed missing from the procedural description of the quarterly retirement package job. However, it is the fluid, adaptable nature of the scheduling and resource allocation that was essential to getting the job printed in the tight timeframe that was required. The proactive aspect of the dynamic scheduling activities can be difficult to implement in an automated scheduling program. However, the entire job could shut down in response to anomalies like machine failures if management attempted to automate job scheduling without realizing that the dynamic scheduling helped to accommodate the anomalies, reducing their risks and contributing greatly to the success of the job. This proactive characteristic of dynamic scheduling is indicative of a more general proactive troubleshooting trend that we observed throughout the run of the print job. It is similar to other work processes that deal with anomalies that we've observed in other print shops and in studies of office work. Also see Bowers et al (1995) regarding observations of work in production print environments.

Proactive Troubleshooting

Throughout the job that we observed, all members of the production staff were on the lookout for potential problems in an effort to intercept problems before they became major issues. We observed one print operator detect a defective print file that contained 3 copies of the given file instead of one. He caught this problem by checking the computer screen to monitor the percent completed of the job and by noticing that the total number of printed pages was significantly larger than it was for typical files. Another print operator identified a graphic alignment issue early in the print run by routinely checking the printed output. These problems required the print production facility to stop printing the file and request that new files be sent to the production facility.

The fulfillment team also demonstrated instances of proactive troubleshooting. They checked for, and fixed, several unsealed inserted envelopes. They also detected, and corrected a serious error in which two different client statements had been combined into a single shrink wrapped packet. Due to their proactive checking, this problem was resolved before the statements proceeded to the final bagging stage of the job.

Critical process know-how and proactive troubleshooting such as the observed undocumented actions were highly valued by the print facility because job integrity of 100 percent was critical for this financial job. Therefore, the need for job integrity was emphasized in all departments. For example, this kind of troubleshooting was part of the verbal orientation received by the temporary employees doing the manual fulfillment steps, though it was not mentioned in the written documentation. The temporary employees were instructed that if they had any questions or noticed any inconsistencies, they should immediately escalate them to the shift manager for resolution. The shift manager had the authority to redirect workers or work to keep the job moving.

Proactive troubleshooting was also built into formal processes. Daily shift handoff meetings were held to facilitate a smooth transition between shifts. These were brief meetings at the beginning of the morning shift, so the night shift could provide a quick update on the progress of the job and any problems that may affect the workplan for that day.

Another example of proactive troubleshooting happened at the end of every quarterly job. The permanent staff held a post mortem meeting to discuss any potential improvements to the process. These meetings brought about improvements and suggestions that were investigated with the customer for future jobs. A list of suggestions was created and those that required customer assistance were reviewed with the customer. Others were assigned to champions and tracked throughout the year. Those changes that affected the work process caused updates to the documentation as time allowed. Temporary employees were gone when this meeting was held, creating a gap in the discussion that the work practice research team was able to bridge during their study.

The use of proactive troubleshooting, even when everything was running smoothly, is similar to other domains like space shuttle mission control, in which operators routinely monitor an ongoing process with the goal of predicting, or detecting any problems before they escalate out of control (e.g. Watts et al, 1996, Woods, 1994, Woods and Patterson, 2001). Proactive troubleshooting activities are instrumental in facilitating a successful completion of the job. As with dynamic scheduling, these kinds of activities were not formally represented in the procedural descriptions that the print facility's management used to document the workflow of the job. However, it is important to maintain, or at least facilitate the continuation of proactive troubleshooting in any tools or automated processes that are implemented to streamline the job.

Role of paper-based tracking/communication mechanisms

We observed that paper-based tracking and communication related to print jobs were central to operations at the print facility. Paper forms were designed by the print facility team and were used throughout the workflow. The paper job ticket traveled with the job to track status, page counts and quality assurance checks. A color-coordinated job ticket, fund file, fulfillment tracking forms, separator sheets, and matching labels were used to track the usage of different versions of files throughout the process. In fulfillment, forms were used to track the envelope counts for each file. The print facility also used paper forms to track the status, and monitor progress of each fund family, consisting of multiple client files, as it moved throughout the print facility. The color coding of the paper documents and their location in the shop provided a visual status of the process, available at a glance from a distance. In designing tools and processes to streamline this print job, it will be important to maintain the tracking and status functions that the paper documents provided as the job moved throughout the shop.

Here, the physical nature of the paper had advantages. Because it is physical, it does not need to be turned on to be queried giving the floor manager a continuous sense of what was going on, on the floor. Its physicality also meant that it moved with the stacks of paper it was on without additional activity. Because it is inexpensive, many pieces of paper could be used to support the process. Because it is markable, notes on unexpected events could be added to it helping to make sense of those events.

Incorporating workarounds into standard practice

The dynamic scheduling, proactive troubleshooting, and workarounds described above were implemented on an ad hoc basis as the need arose throughout the run of the print job. There were other problems that occurred

regularly whenever the job was run. These recurring problems were formally identified by the print facility team, and procedures were written to address the problems whenever they arose. For example, one recurring problem was when the count that was performed during file breakdown did not

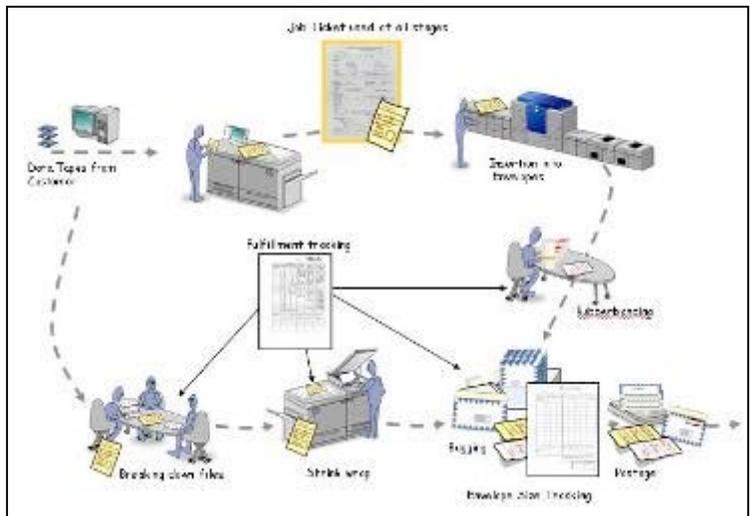


FIGURE 10 - Documents used in the work process

match the expected number. The procedure implemented by the shop to handle this kind of problem was to re-inspect and re-count the file to find the error. Another procedure that was implemented to avoid recurring problems was to count envelopes before sealing them, in an effort to find any double-stuffed envelopes. This procedure was performed before the envelopes were sealed, so that re-bagging would not be necessary. Another procedure implemented by the print facility team was to log postage adjustments such as double postage or bad postage on the job ticket, to aid the task of balancing the books at the end of the job.

By formalizing these workarounds and creating specific procedures for recurring problems, the print facility was able to respond efficiently and effectively whenever the predicted problems appeared. Here, the formalization was possible because the problems occurred several times, and were expected to continue to recur. Truly unanticipated problems will still require ad hoc solutions.

OPPORTUNITIES AND EXAMPLES OF IMPROVING CURRENT PRACTICES

The retirement plan package job is unique for this print facility in terms of the quantity and complexity of the output and the resources required to complete the job. It stresses the resources of the print facility and was selected for our observation because the management was interested in suggestions for improvements. In our initial interviews with the staff, as they described the job in terms of their roles and perspectives, we were told repeatedly that the job was difficult to describe and that we had to see it to understand it. This section discusses some of the opportunities and examples for improving the current practices for the retirement plan print job.

Applying paper-based tools to a broader base of jobs

The development of paper-based tracking and communication tools was discussed earlier. A series of document-based tools in the form of checklists, logs and charts was created by various individuals over the course of successive quarters and inserted in critical points in the process. These tools enabled the staff to better manage, track, communicate job progress, and enable smooth transitions across shifts. This portfolio of documents could potentially provide the basis for a set of tools that could be applied to other jobs.

Proposed changes in the structure of files

The electronic data files, created by the client and delivered on tape to the production facility, were structured as data streams rather than document files. One implication of this was that the print facility workers could not determine the file size, specifically the number of images in a file, prior to printing the file. This uncertainty resulted in the need to manually calculate the number of prints and record it on the job ticket. Since any changes to the file structure would require programming level changes by the client's IT team, this change

required negotiation with the customer. At the time of the conclusion of this study, the customer had not agreed to implement the suggested file structure improvements. This example illustrates the interplay and dependence of the print facility on the customer to provide files in such a way that the print facility can cost effectively complete the job. These kinds of activities, in particular the negotiation and articulation of critical handoffs, were not accounted for in any of the formal process documentation. For more discussion on the asymmetrically collaborative relationship between printshops and their customers, see O'Neill et al (2007).

Despite identified opportunities for improvement of the process, not all improvements were possible to be implemented as shown above. The print facility did not have control of the format of the data input and that put constraints on how the data could be handled. Such adjustments were not always ideal, but it provides a view on how external factors can affect a work process.

Potential Technology Interventions

There were several occasions where staff indicated that the introduction of a technology solution to streamline the process would be welcome.

One example concerns the job tickets which were manually logged with meter counts, client numbers and quality assurance at every stage. The data from the job tickets were manually transferred into an electronic spreadsheet to record the costs of the job and to prepare the customer's bill. Suggestions for more automated ways to capture the print counts for billing purposes were discussed and have been investigated both by the research group and the print shop.

The practices described above represent a level of detail that is not captured in the formal process descriptions of the print facility. It was through our observations and interactions with the workers across the entire cycle of the job that resulted in the identification and confirmation that these would be beneficial to the job and the people responsible for the work. At the conclusion of the study, we shared our findings with the print facility managers and the workers. We described our observations about current work practices, using this as an opportunity to solicit clarification and corrections to our representations. We also presented a range of suggestions for improvements and discussed potential next steps to pursue the highest priority suggestions.

DISCUSSION AND CONCLUSIONS

This paper describes an ethnographic study of a complex, labor-intensive print job in a digital print production facility in order to inform the development of tools, processes and technologies that could potentially improve this kind of job within the print production facility. We discovered several techniques that workers used to insure that this complicated

job ran smoothly, including dynamic scheduling, proactive troubleshooting, the role of paper based communications and the incorporation of workarounds into their standard practices. These activities were not visible within the formalized descriptions used by the print facility to document their procedures. Although management was aware of many of the things we observed, such as dynamic scheduling, other work practices such as proactive troubleshooting were less visible. Our study articulated these practices in a way that could be shared and recognized. It also raised the awareness that any innovations or improvements need to carefully fit with and support existing practices and not undo what is already working. In this way our work represented the voices of the workers, which were not previously documented in the formalized workflows familiar to the print facility's management. These findings represented the voices and current work practices of a broad cross section of the workers whose voices, though not silenced, were not available in an organized fashion, or in a way that would contribute to the development of new tools or more efficient workflow designs.

Project findings also represented the voices of the workers to research teams who are looking at ways to automate and streamline the print facility's operations. Many of the workers' comments would never have been heard by research teams through any other methodology. It emphasizes the important roles that people played as part of their work practices and how their own tacit knowledge can impact the work. Improvements to such a manual work process can certainly be made, but it is still up to the human in the process to make the judgment call on how best to intervene when a problem occurs.

In this study the value of people in the quarterly retirement work process became apparent in the observations surrounding dynamic scheduling and proactive trouble shooting. Not only do people possess the ability to address problems and situations when they arise, but people have the ability to understand when such adjustments are necessary and when the system can operate without intervention. The contribution of our ethnographic study was to highlight elements of the complex printing workflow where people were detecting and creating solutions to a wide variety of unexpected problems on an ad-hoc basis. These findings can guide the development of more successful technologies to optimize the process by showing the types of problem-solving skills that are necessary for the job, and by highlighting areas where the skills of the human workers can compliment any automation that is developed.

REFERENCES

- Bowers, J., Button, G., and Sharrock, W.
1995 Workflow From Within and Without: Technology and Cooperative Work on the Print Industry Shopfloor. In *Proceedings of the Fourth European Conference on Computer-Supported Cooperative Work*, pp. 51-66.
- O'Neill, J, Martin, D; Colombino, T ; Watts-Perotti, J, Sprague, M.A.; Woolfe, G.

- 2007 Asymmetrical relationships in print shop-customer relationships. *Proc. ECSCW'07*. (in press).
- Shalin, V. L.
2005 The roles of humans and computers in distributed planning for dynamic domains. *Cognition, Technology & Work*, 7, pp.198-211.
- Wall, P., and Mosher, A.
1994 "Representations of work: Bringing designers and users together". In *PDC '94: Proceedings of the Participatory Design Conference* (Palo Alto, CA), pp. 87-98. Computer Professionals for Social Responsibility.
- Wall, P., and Brun-Cottan, F.
1995 "Using Video to Re-Present the User." *Communications of the ACM*, 38 (5), pp. 61-70.
- Watts, J. C., Woods, D. D., & Patterson, E. S.
1996 Functionally distributed anomaly response in space shuttle mission control. In *Symposium on Human Interaction with Complex Systems*, Dayton, Ohio: IEEE Society.
- 1994 Cognitive demands and activities in dynamic fault management: abductive reasoning and disturbance management. In N. Stanton (Eds.), *Human factors in alarm design*, Bristol, PA: Taylor and Francis.
- Woods, D.D., Patterson, E.S.
2001 How unexpected events produce an escalation of cognitive and coordinative demands. P.A. Hancock and P.A. Desmond (Eds.). *Stress Workload and Fatigue*. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 290-304.
- Woods, D. D., Tinapple, D. Roesler, A. and Feil, M.
2002 Studying Cognitive Work in Context: Facilitating Insight at the Intersection of People, Technology and Work. Cognitive Systems Engineering Laboratory, Institute for Ergonomics, The Ohio State University, Columbus OH at url: <http://csel.eng.ohio-state.edu/woodscta>

Numbers may speak louder than words, but is anyone listening? The rhythmscape and sales pipeline management

MELISSA CEFKIN

IBM Research

In this paper I explore the often fleeting, seemingly constrained acts of expression performed through participation in everyday, routinized actions and practices. The vehicle I use for this exploration is the tools, processes and practices sales professionals use to manage the list of possible sales opportunities, or sales pipeline. I give particular attention to the meetings in which sales professionals and their managers discuss the pipeline. The element of talk, with its potential for unruliness, plays a central role in this otherwise hyper-rationalized activity focused around numbers, accounting and calculability. I suggest that to understand such signification processes and the forms of meaning that emerge through them we must look beyond the content of enunciated statements to consider the forms they take over time. I propose that participation in the sales pipeline process, particularly the meetings, forms a part of sales-people's rhythmscape of work. By situating sites of expression in the notion of a rhythmscape, I point to the broader performance landscape in which employees participate in and experience their organization and in the market more broadly. By doing so, we are reminded to recognize the multiple levels of meaning and signification embedded in ordinary workplace tools and practices, including those intended for other uses, when considering recommendations to and designs for tools, processes and interventions that support them. The paper also suggests the need for a theory of sensation of late capitalist market production.

Sensory channels may not be modeled after linguistic forms of communication – a perfume is not the same as a sentence – but they are still heavy with social significance. *David Howes, 2005*

INTRODUCTION

Members of a globally distributed sales team for a global IT firm are meeting by phone to discuss the possible sales opportunities, or “pipeline”, for their client, a multinational financial services firm. Sellers from different product and service lines of business as well as different regions and geographies together with some of their team management are present. A seller in the UK notes that he is under pressure from both divisional and regional managers to close a particular sales effort this quarter, and it's not looking good. Referring to the spreadsheet data the team members were all sent in advance of the meeting that summarizes the status of each acknowledged opportunity—its potential revenue amount, for instance, and its likelihood of sale—a Germany-based colleague draws attention to some better news: “At least you've booked another \$300,000 in signings.”

Moving on, the manager for the sales team asks after the next entry in the pipeline, noting that the possible revenue amount on the opportunity had changed from last week. “What is this number?” he wants to know. What does it represent? Is it what the client has since told them they want to spend? What the seller’s gut tells him they can get for it? What the proposal, now complete, priced out at? Soon he will be needing to send his expectations for the next quarter’s revenue from this client up to his management and they will of course “challenge” him—that is, set a target and compensation plan designed accordingly—to do even better. What should he really expect here from this one? Is this a reasonable number or a stretch?

And so goes a typical weekly sales pipeline meeting where sales reps in turn speak to their sales pipeline, the status of the sales they are in the process of trying to make. The engines of global market production operate through such everyday practices performed by actors working throughout the system. From the standpoint of the actors of the system, participation in such practices forms one of the sites through which they experience the market and interpret their role in it. Such meetings and exchanges occur repeatedly and unremarkably on a daily basis, forming a known and mundane pattern in the organizational life of commercial organizations. Processes and practices associated with sales pipeline management, with their emphases on numbers and categorization, reflect the rationalizing processes associated with modernity.

There are many ways to interrogate such site of exchange for what they say about the experience of participants in the productive capacity of the global economy: through a Foucauldian analysis of how power is generated and instantiated through such forms of practice and institutions, for instance, or how more textually through consideration of how processes of modernity are subverted by speech acts. Understanding the “emotional management” required and reinforced in the narrative forms of similar kinds of exchanges has had a well established tradition of effort since Hochschild’s 1985 publication of *The Managed Heart: Commercialization of Human Feeling*. Anthropologists have long paid attention to forms of resistance (Abu-Lughod 1986) and the articulation of both authorized and subversive cultural values and concerns in everyday narrative forms. In studies of work, Orr’s (1996) rich exploration of the varying contexts of exchange among field service technicians shows how the bits and shards of storytelling conducted throughout and within technicians’ practice form a constitutive part of the doing of the work.

Here I am interested in exploring the processes and exchanges of sales pipeline management in terms of the way they form sonic sensory experiences for participants that exceed their narrative form. I am interested in listening to them for what they say about the rhythms of everyday work. I argue that we can enhance our understanding of such processes and the meanings that emerge through them by looking beyond the content of enunciated statements to consider the form of the interchanges over time. To move beyond a logocentric approach to understanding, I introduce the notion of “rhythmscape” as a way to

situate such exchanges as a part of a broader dimension of the dynamics of market production.

By *rhythmscape* I refer to the regularly repeated and patterned auditory events by which actors in the many enterprises that fuel market production experience the global economy. Exploring the *rhythmscape* as part of ethnographic design research in commercial organizations offers a particular filter through which to access work practices and to model employee experience and dimensions of market dynamics more broadly. While the work I speak to here has not yet resulted in manifest new designs for tools or methods of support¹, I believe that such an understanding holds promise to lead to better designs, both technical and organizational. Echoing observations by Dourish (2001) about the dual role of technologies arrived at by stepping back and looking at the technologies and their use from a view beyond their intended functions, I attempt to engage a fuller sense of work activities and their instantiation in organizing processes and technologies than that produced through analysis of such activities solely as direct, if complex, means of data flow and exchange. To “hear” the dynamics of the marketplace and the actors within it we must listen in for more than words. I propose that consideration of the dimension of “*rhythmscape*” offers a unique means for this hearing in the context of the complex business enterprise.

The sales pipeline review process—or, as its known in the key research site I draw on for this work, the *cadence* process—offers a particular window into the *rhythmscape*. For many a company sales rep, the ritual of participation in sales forecasting activities, particularly pipeline review meetings, is an inescapable aspect of their work on a weekly (in some cases daily), monthly and quarterly basis. Inputting, updating, and managing data for the forecast and otherwise figuring out a means of engaging with it is a persistent, if often unattractive and distracting part of the work practices of sales reps and managers. The pipeline, in its overall management and particularly in the form of the pipeline review meeting, reveals a promising site for examining the rhythms of everyday work and the forms of meaning and expression that emerge within them.

METHODS AND APPROACH

The thinking for this paper draws on projects over many years of my ethnographic research among sales professionals in a wide range of commercial enterprises, from independent ‘agent’ reps working for small office supply companies selling Xerox copiers in places like rural Maine, small town England, and suburban Dusseldorf and Barcelona, to large teams of seasoned business and technical specialists selling, through protracted and complex sales interactions, billions of dollars of products and services. Participation in activities related to pipeline management, notably meetings to review the unit’s status, has been a consistent aspect of my observations across these settings. These different studies

¹ My argument here falls out of research conducted for different applied ends, most heavily from investigations of team collaboration. I am using this analysis as an occasion to push further in thinking through the design implications that may fall out of such a perspective.

were conducted for a range of applied aims, from the design of distance learning programs for far flung independent sellers to advancing collaborative practices among large teams of globally distributed and highly specialized sellers. None of the studies have (yet) been consigned with the explicit purpose of making interventions to the pipeline process.

While my thinking for this paper builds on this broad set of experiences, for this paper I draw particularly from research projects conducted with my colleagues at IBM, Jeanette Blomberg, Lisa Kreeger and Jakita O. Thomas. The objective of these projects has been to prompt interventions to enhance the collaborative practices of the sales teams. We have conducted ethnographic research among four sales teams of a large IT service and product company. Each team is dedicated to a single large (and similarly global) client, and includes roughly 60-75 members. Our fieldwork consisted of two to five months per team and included observations of team activities, including one-on-one observations of personnel, attending key planning and organizational meetings in person and by phone (as with other members of the teams), and listening regularly to their sales pipeline review meetings. We also conducted 57 interviews, many of which explored the interviewee's experiences with and views onto the pipeline process. In addition, we have reviewed materials accessed through the corporate intranet which speak to aspects of the sales management process. For this paper particular analysis has been focused on the forms and interactions of the pipeline review meetings as well as fieldnote and interview data pertaining to the pipeline review process.

THE CADENCE OF SALES WORK

Sales pipeline management is used in commercial enterprises as a means to direct focus and attention of personnel and to anticipate future performance. The system of accounting expressed in the sales pipeline is used to monitor potential revenues, manage investment decisions, and to frame future projections and hence provide guidance to shareholders and market analysts. Once a sale closes, it comes off the pipeline. In this way it differs from the double-entry form of balance statements, a history and practice of continued critical interest (see, for example, Carruthers and Espeland 1991). It shares with double-entry bookkeeping, however, in being emblematic of the rationalizing processes of modernity.

In this fieldsite the sales pipeline process overall, as well as the particular meetings that occur within it, are known as the “cadence”. The cadence process revolves around efforts of varying actors—sales representatives, sales management, controllers, and administrative support, most notably—in updating and managing the data, an activity punctuated by regular meetings to review the data. The notion of cadence appears to primarily point to the cascading of meetings that occur to discuss the pipeline and the report about the pipeline assembled to guide those meetings. The cadence is tied directly to the broader sales methodology used in the company and is the focus of a great deal of training and attention. It is also the source of a great deal of dissatisfaction on the part of sales reps.

The application through which the pipeline data is used is a customized version of a well known Customer Relationship Management (CRM) system. The tool is considered cumbersome to use – users must navigate multiple windows and numerous fields to enter a new opportunity, for example, and it has limited integration with other systems. The company has made, and continues to make, multiple efforts to address these issues. Another complaint revolves around the perceived marginal value of the pipeline review meetings in proportion to the time devoted to this activity. While our observations revealed that there can be significant value gained by ensembles of people coming together to discuss the sales pipeline, an observation that was supported by some interviewees, concerns and complaints about these meetings in interviews, in corporate-wide employee intranet forums, and in comments to management blogs were vocal and pronounced. One complaint concerned the time and scheduling required for the meetings. Cadence calls (both due to geographical distribution and to allow people to call in from client sites or at home during off hours) almost always include participants joining by phone. Some cadence meetings are held entirely as conference calls. Participants often experience distraction and interference, timing their schedule to join the meeting, for example, by cell phone en route from one client call to another. Others may be joining the meeting in the middle of the night from a distant time zone. Multi-tasking is rampant and is made visible by the frequent pauses and requests to repeat questions or comments.

In addition, cadence calls are held for each team, unit, product group, and region. Depending on the particular role of the seller (client executive, product specialist, territory rep, etc.) any given individual could potentially be requested to join multiple calls a week as each brand, region, dedicated account team and other sales units could potentially request their input. Sales managers, in addition, participate in further cadence meetings with their management as the information is disseminated upwards. There is an effort to reduce this profusion of meetings. Indeed using a language invoking the sense of the rhythm being out of whack, a general manager for a large geographical region commented in his internal company blog that the aim is to make it so that each sales rep should only have to participate in one meeting a week, and asks of employees to comment on whether they are still fielding requests for “out-of-cadence” reviews.

Issues of control and surveillance, as have been identified by other researchers focused on the adoption and resistance to technologies (Brannen 2005; Hanson 2004; Orlikowski 1995) are also apparent. Not only the recorded pipeline data but also the cadence meetings are perceived in some cases to primarily serve the interests of management by enabling them to oversee and monitor sales rep actions and behavior. Entries in company blogs echo views expressed by some interviewees, that in theory the data should be directly attainable through the system. Carefully weighing his words, one interviewee asserted that the cadence meetings serve three functions--to feed the managing director's need to know what is going on, to provide a means for the managing director to figure out where to “insert herself” into the work, and to force the sales reps to “focus themselves” by having to prepare for the

meeting²--all pointing the sense that the meetings are larger about supporting management's need for a sense of control.

These factors are emblematic of the disdain for cadence calls, an attitude witnessed in the following exchange: A sales team manager, a client executive and a brand specialist who span two continents are meeting to discuss some joint work pursuing opportunities for a client. As they conclude, the sales team manager comments "last year we had regular calls [to collaborate on opportunities]. Maybe we should have regular calls every four to six weeks?" The specialist reacts negatively and assertively, reminding him that she serves multiple accounts. "I'm not going to agree to any more calls." The client executive chimes in "we are trying *not* to make it [this particular exchange] a cadence call!"

MANAGING THE PIPELINE

The forecast consists of a list of the opportunities for the as yet unrealized sale of a firm's products and services and is embodied in artifacts such as index card files, whiteboards, spreadsheets or complex information systems³. Reporting or listing conventions vary. Typical components include the name of the potential buyer, the products and services under consideration for purchase, a dollar amount related to the cost of the purchase, and an indicator of the likelihood of sale. The information in the forecast is meant to be populated in most cases by sellers on the front lines. In theory, each new opportunity is entered as it is identified and then is updated on a regular basis. Ideally chains of management throughout a business organization should be able to reference the current state of all open opportunities in the pipeline at any given time and gain a realistic snapshot of the potential future business performance.

In practice, however, there is often a lag between the actual current state of an opportunity and what is recorded. Indeed, the very question of when and even *if* to add an opportunity into the pipeline record is a matter of some consideration, negotiation and

² Personal communication, Dec. 8, 2005.

³ While the pipeline process used in small organizations may be of a modest level of technicality and detail, a simple spreadsheet, for instance, those of larger enterprises often involve complex information systems. In the early 1990's, database and enterprise software companies accelerated their competition to dominate the market in tools to support the tracking of sales opportunities and to integrate the information contained therein into enterprise-wide work and information flows. The rise of enterprise management software such as Sales Force Automation (SFA) and the Customer Relationship Management (CRM) systems in which SFA's are typically embedded, the management of the pipeline and the tools, knowledge and practices used to support it have spawned a whole market. In addition to product firms such as Salesforce.com, Seibel, and Oracle (now owned by Seibel) are consultants who specialize in services to improve the effectiveness of firm's processes surrounding the pipeline process, systems integrators who tie the technical systems into other systems such as HR and payroll, and training companies offering courses in everything from general management of the sales process to improving business decisions through the use forecasting data.

manipulation by sellers. What constitutes “an opportunity” is itself open to interpretation; is it upon the first indication that a customer may have a need, such as when noticing a broken machine but before exploring the client’s expectations of replacing it? Is it after presenting a pitch about how the seller’s company can help solve a client’s business problem? Upon receipt of a Request for Proposal (RFP)? Once an opportunity is noted and entered, a whole range of considerations emerge concerning the data and practices in updating it. Chief among these are considerations of time and perceived benefit. Finding time and remembering to go into the system and navigating through the multiple fields to make updates is commonly perceived as a nuisance and diversion by sales reps, and an activity of little benefit to their primary orientation to aspects of the work involving interactions and relationships. Accordingly, various disciplining practices have emerged in an effort to enforce the timely and thorough maintenance of pipeline information, from monitoring by sales management to the addition of sales support staff whose job consists largely of tracking down sales staff in order to update the pipeline.

Choosing to enter opportunities into the system and managing updates is also a matter of individuals’ efforts to control their standing in the team and vis-à-vis management. The visibility accrued by inclusion of an opportunity in the system can flag the need for support and investment – the more significant the opportunity, for example, the better the chances of getting additional administrative support and resource investment in the sales process. On the flip side, however, this also exposes sales reps to added attention, something that is not always desired. Should an opportunity stall or the size of the opportunity decrease, a seller’s savvy in reading or managing the client may be questioned. If the opportunity is large, people elsewhere in the system may exert pressure and interference in an effort to grow or hasten the sale. As the pipeline travels in throughout the organization, identification of opportunities that may relate to additional areas of the client can bring attention from multiple units; in the IT sector, it is not uncommon for opportunities to involve hardware, software and services components with representatives of each of those areas trying to get a piece of the action or to stave off potential trouble, adding considerable complexity to deciding on and executing particular approaches in the sales effort. With this, sales reps risk loosening or losing control over their highly valued and often guarded client relationships.

Moreover, the practice of quarterly or annual quota setting (the amount of business a sales rep or unit is expected to accomplish) is based in part by ‘upping’ the amount of the current pipeline. (Other factors for target setting include historical data on actual sales and other market projections). This leads to a ‘punished by reward’ syndrome in which those reps or units who do particularly well are charged with having to do even better the following quarter or year. Given these factors, participants actively attempt to control their pipeline by avoiding disclosing an as yet uncertain effort underway, setting potential close dates further out than is anticipated, understating potential revenue amounts, minimizing the likelihood of sale, and by not pushing to finalize a sale within a certain time period so as to avoid over-achieving the target (thus leading to an even bigger one the following term) and at the same time getting ahead in their achievement of the next term’s quota. Management typically considers such actions to be ‘gaming’ the system and may make efforts to stop it.

Indeed, CRM applications themselves are often designed with functions intended to prohibit these manipulations by triggering notifications after certain time has elapsed, for example, or when key milestones have been achieved.

TALKING ABOUT THE PIPELINE: CADENCE CALLS

Cadence calls, the re-occurring meeting held to discuss the pipeline, is typically led by a person whose role crosses those of the reps, such as the team manager or controller. A report is used to both focus and guide the meeting. The report is a transformation of the data fed through the CRM system and ported into a spreadsheet. The production of this report itself constitutes a site of significant activity for members of the teams. Sellers' work practices are often significantly framed in relation to reporting deadlines as they scramble to enter their updated info or reply to requests for information from others. In certain cases, participants were known to dedicate a heavy portion of their week to producing the report. As I show elsewhere (Cefkin et al. 2007), these activities in turn have an impact on intra-organizational relations and team dynamics. Importantly the production of the report requires a fair amount of manual manipulation, a sign that the information is always in need of contextualization and interpretation despite the promise of the tools to automate and simplify the process.

Various ordering principles are used to structure the information, and this typically sets up the flow for the meeting itself. It may be based on categorical differences in which the opportunities are organized by rep, product or division, for instance, or based on valued differences, where the opportunities are organized from the most to least likely to close or highest to lowest value deals. Differences in organizing principles appear to be driven by both the conventions of the unit or company and managerial preferences and provide sellers with some expectation from week to week about when they'll be likely to need to speak during the call.

While the meeting is explicitly designated as a group event, review of the opportunities proceeds, nonetheless, as a series of primarily one-on-one interactions. The key node of interaction is between the sales rep with designated responsibility for each opportunity and the meeting leader (sales manager or controller). As the turn comes to the rep, he or she typically provides an update on the status of the opportunity, either repeating what is reflected in the updated pipeline or by offering new information to update the status at that moment. More generally the seller fills out the story of what has led to any changes in its status or, if there are none, to defend why not. The seller's peers may occasionally interject with bits of additional information, questions, ideas, or, as suggested in the opening vignette, attempts at camaraderie and morale boasting, but the primary role of other participants during each seller-manager interchange appears to be as witness. In other words, completion of the pipeline review requires the serial interchanges between the manager and each seller whereas peer-to-peer inputs are optional.

Various interaction modes characterize the interchanges themselves, suggestive of the highly negotiated nature of the work practices and of representations within them. Explanation and interpretation are common throughout the meetings – describing why a revenue amount was changed, for instance, and then discerning whether it is being appropriately categorized. Interactions can also be seen as positional plays by participants to affect particular perceptions or to prompt particular actions or behaviors. This may be about positioning participants collectively as representatives of the firm against the competition or about status and power plays among and between team members and management. To illustrate, during one cadence call a data entry error was identified. Instead of a total potential revenue amount in the thousands, the opportunity was in fact worth millions. In addition, the opportunity was not yet marked “qualified”, meaning it had not been factored into potential quarterly revenue. The manager grew audibly excited by this find as it suggested the team had greater potential of achieving their target. However the tone of the seller’s reply was one of worry and consternation as the manager suggested they reclassify the opportunity as “validated”. The seller replied quickly that if they did so, he would request that the total revenue potential be lowered. The implication to the seller was that he would likely receive greater attention and pressure than perhaps he felt would be useful. The manager disagreed, despite the sellers protestations.

TOWARDS THE RHYTHMSCAPE

The practices and experiences pertaining to the sales pipeline share with other corporate rituals such as quarterly meetings and celebrations of teamwork efforts in their repetitive, supererogatory nature; in this era of automation and digital information flows it is functionally possible for the data-as-information to be entered and disseminated as necessary without requiring participants to come together in a single time and place to speak to the information. And yet the practice persists, suggesting that something more than simple information exchange is going on. The focus on numbers and the dimension of calculability create a particular aura for the event; unlike other corporate rituals such as a quarterly meeting which are already construed around the ‘softer’ dimensions of identity production (e.g., team building) and morale support, pipeline review meetings are construed as the ‘real’ work of managing the business through the hard and neutral representation of numbers. This ‘real’ work transpires, nonetheless, through a ritualized form of interchange of call-and-response between leader and seller with others as witness.

My interest in this paper is to explore different means of interpreting these dynamics. I introduce the notion of “rhythmscape” as an effort in that direction. The notion of “scape” identifies a particular dimension of broader dynamics without forcing them to be fixed or reduced to singular meanings. Rather than fixing a single point-of-view, the notion of scape carries with it a sense of fluidity and dynamics; a *landscape* changes, for instance, as the perceiving subject moves across space. The perceiving subject also experiences the scape from a particular position, reminding us that a scape is also perspectival. It is perceived according to the specific histories of participants in conjunction with the histories of the dynamics with which they intersect. Appadurai (1996), for instance, posits that notion of an

“ethnoscape” as a constitutive dimension of the global cultural economy. Howes (2005) suggests that a “sensescape” to point to broad fields sensory experience while Feld (2005) specifically explores the soundscape as a means of overcoming the dominance of visualism. Following on these efforts to open up and extend means of grasping social processes, I similarly aim to overcome singularly logo-centric ways of understanding and to emphasize an aural-kinesthetic sense to the dynamics.

The rhythm of the cadence is suggested by both its auditory and its cyclical/repetitive aspects. I have thusfar been describing a routine and seemingly rationalized process of generating, sharing and managing data, and through it, actions, perceptions and behaviors. It is worthy of note, however, that despite the fact that there are all sorts of means for the data-as-content to pass through the system, a ritualized practice of auditory expression is maintained and repeated within the process. This auditory performance—an occasion to verbally repeat expression of the data and to subject it to discussion—is replicated through a whole series of meetings cascading from team to unit to division to corporate levels of the organization and repeated on a weekly, monthly and quarterly basis. These auditory events happen in a pattern of predictable repetition which play out both across time in relationship to other such meetings (that is, the cascading of meetings is meant to happen in a particular order from week to week, and from which the cadence gets its name) and within the course of a particular meeting as the talk moves from rep to rep through a patterned form of exchange.

Close attention to what transpires in the meetings suggests the form exceeds the semantic dimensions of the discourse, in other words, what happens is more than the summation of the content of the utterances made. In the course of the meeting, numbers may be guessed at and the categorization of information changed due to movements in the conversation itself whether or not any material change in the opportunity had been previously identified. Participants attempt to play with and control the proceedings to avoid prompting unwanted repercussions. The auditory repetition of review of the pipeline in the form of the cadence call, I would suggest, functions to both expose and enable these sorts of practices. The risk of data flowing through the system un-interrogated in a setting such as a cadence call is that such opportunities to impact sellers’ actions and behaviors would go undetected. Pointing to the albeit flawed connection between the use of the system for tracking and maintaining data and the holding of a meeting, said one interviewee “The problem is you’ve got a tool everyone uses for discussion, and the ease of use hinders that discussion.”⁴ By holding a meeting in which individuals must speak out loud, the context is created to generate enunciations that may have meaning-creating consequences. Such enunciations hold greater potential for manipulations that can impact performance than do mere numbers in a spreadsheet. In the case noted above, for instance, a manager’s identification of a data entry error in the revenue amount – the opportunity was worth much more than had been thought – and the manager’s insistence on reclassifying it against the

⁴ Personal communication, April 2005.

wishes of the sales rep from an “unqualified” to a “qualified” opportunity surely resulted in the sales rep leaving the meeting with a pressing sense of the need to act on this effort.

As auditory events, such meetings participate in a powerful aspect of hearing, that it is, however imperfectly, an immersive experience (Carter 2004). The meetings proceed by way of creating an “acoustic space” (a notion of Carpenter and McLuahn taken up by Feld). The prompting of these enunciations in a relatively public context plays a disciplining role; others act as witness to the movements and changes of effort. The particular perspective a participant brings to the event, the positionality of the participant, contributes to the ways the meeting is heard, but participation more generally entails a kind of forced listening. That the process repeats from week to week with a high likelihood of the same information being reviewed repeatedly suggests that the particular significance of any given adjustment to the content is negligible. Further changes to the same opportunity could be made again in the weeks following.⁵ The overall form and repetition of the meeting compels the meaning of the process. The form itself generates an expectation of movement and action. This imperative, reinforced as part of the rhythmscape of business workers, exceeds the function of articulating data and exchanging information. The form of the meeting, with its repeated series of one-on-one interactions of manager and sales rep held in front of an audience who may also at time join in the interaction to participate, produces an urgency, an imperative to act.

The cadence in the work of sales emerges and becomes formed by the many practices of sales work, among them as explored here, the practices of the sales pipeline. In the data-saturated world of tool, process and technology design it is appropriate to focus attention on the content of what is being expressed, to search for layered and multiple angles of signification. But there are other ways to understand and access what is happening. By giving a name to the aural dimensions of work, by suggesting they participate in a dynamic, fluid, cyclical dimension of rhythm and sound, a rhythmscape, I am suggesting they operate as a performative site for the production and reproduction of the market and sustaining organizations within it.

Consideration of the phenomenological aspects of the pipeline process, examining it in terms of its form and in particular the rhythmscape, provides a novel way to access existing workplace experience. It draws attention to ways to hear that which often is not listened for, less the content of what is being expressed than the forms which make up the contexts of the expressions. That the design of products and services can be enhanced through (some would say, requires) understanding the social and cultural contexts of use is by now well established. The rhythmscape, I am suggesting, offers designers a refreshed orientation to the sonic and rhythmic aspects of these broader contexts of use and a novel way to consider how their products participate in broader cultural dimensions of practice. To practitioners of

⁵This reinforces the point, as Julia Gluesing pointed out in review of an earlier draft of this paper, that the event is less about the data than it is about the relationships among participants and between them and the actions at hand—the data are manipulated to achieve particular relational outcomes.

ethnographic research in industry, the rhythmscape suggests a way to identify and elaborate on performative dimensions of market production and consumption by opening up a different route into understanding experience than the dominant visual and logo-centric means of interpretation. I am suggesting that a theory of sensation in late capitalism is needed and that linguistic transactional analysis is not sufficient. I gesture towards what may become this theory by exploring the rhythmic and auditory aspect, the rhythmscape, of practices that emerge across combinations of the technologies, people, processes, and disciplining structures and which underlie and form these productive processes.

Acknowledgments – I wish to thank my colleagues in the many projects that have informed this thinking over the years, namely Jeanette Blomberg, Lisa Kreeger and Jakita O. Thomas with whom the core material discussed in this work was gathered, as well as the sponsors of and participants of the research. Julia Gluesing and Mazyar Lotfalian provided valuable feedback on drafts of the article.

REFERENCES

- Abu-Lughod, L.
1986 *Veiled sentiments: honor and poetry in a Bedouin society*. Berkeley, University of California Press.
- Appadurai, A.
1996 *Modernity at Large: Global Dimensions of Globalization*. Minnesota Press.
- Brannen, M.
2005 “Once More with Feeling: Ethnographic Reflections on the Mediation of Tension in a Small Team of Call Centre Workers,” *Gender, Work and Organizations*, 12(5):420-439.
- Carruthers, B.G. and W. Espeland
1991 “Accounting for Rationality” Double-Entry Bookkeeping the Rhetoric of Economic Rationality,” *Journal of American Sociology*. 97(1):31-69.
- Carter, P.
2004 Ambiguous Traces, Mishearing and Auditory Space. In *Hearing Cultures: Essays on Sound, Listening and Modernity*. V. Erlmann, ed. Oxford, New York: Berg. Pp. 43-64.
- Cefkin, M. and J. Thomas, J. Blomberg
2007 The Implications of Enterprise-wide Pipeline Management Tools for Organizational Relations and Exchanges, *Group '07 Conference Proceedings*, Sanibel Island, FL, US, ACM.

Dourish, P.

2001 "Process Descriptions as Organisational Accounting Devices: The Dual Use of Workflow Technologies." *Group '01 Conference Proceedings*, Boulder, CO, USE, ACM.

Feld, S.

2005 "Places Sensed, Senses Placed: Towards a Sensuous Epistemology of Environments," *In Empire of the Senses: the Sensual Culture Reader*, D. Howes, ed. Oxford, New York: Berg. Pp. 179-191.

Hanson, N.

2004 *Consuming Work, Producing Self: Market Discourse in Dispersed Knowledge Work*. Anthropology. Philadelphia, Temple University. PhD.

Hochschild, A.

1992 *The Managed Heart: Commercialization of Human Feelings*. University of California Press.

Howes, D. ed.

2005 *Empire of the Senses: the Sensual Culture Reader*. Oxford, New York: Berg

Orlikowski, W. J.

1995 *Evolving with Notes: Organizational Change and Groupware Technology*. Sloan Working Papers.

Orr, J. E.

1996 *Talking about machines: an ethnography of a modern job*. Ithaca, N.Y., ILR Press.

Ethnography and music. Disseminating ethnographic research inside organizations

ARNAL LUIS

HOLGUIN ROBERTO

In/situm, Mexico

In the applied context of ethnography its value depends not only on the quality of the research product alone but also on how it is received by the business audience. This paper presents some variables that describe and hope to overcome common barriers to the appropriate reception of ethnographic research in the business context. We are using music as a metaphor to the discussion of barriers and research use.

Ethnography is an invaluable method for any organization, its wide range of applications can benefit different areas and levels; from Human resources, Finance, Manufacturing to Innovation. The advantages of ethnography are somewhat obvious to ethnographers but still almost imperceptible to most members of an organization. Every day there is more and more evidence that the word “ethnography” is slowly shifting from academic “jargon” to almost becoming business cliché. A lot has been done, mostly in the US over the last 10 years toward ethnography in business, and positioning this term in the mainstream. The media has been an important ally for this, magazines, newspapers, pundits and blogs have disseminated the benefits of ethnography; from the pioneering FastCompany¹ article portraying the work of E-Lab (1996) to the most recent story in BusinessWeek² (2006) in which several columns are dedicated to explain what ethnography means for business, giving examples of successful ethnography projects. As this article puts it “... ethnography has entered prime time”. However, there is still a long road ahead to disseminate the real value of ethnographic research within organizations and to turn it into an indispensable tool for businesses, both in the US and even more in other countries.

As professional ethnographers we are most times involved in communicating the results of ethnographic projects, making sure our clients understand the value of our work and that it turns into actionable solutions. However, most of our clients are not ethnographers and may lack the training or sensibility of an ethnographer, they are also already busy with their different roles, such as marketing, human resources or product development. This makes it harder for ethnographers since the value of our work is not just measured in rigorous fieldwork, our exhaustive analysis, or our dense descriptive writing (all attributes which

¹ Posner, Bruce, The Future of Marketing is Looking at You, FastCompany Magazine, Issue 05, Page 105, October 1996

² Ante Spencer E., and Cliff Edwards, The Science of Desire, BusinessWeek Magazine, June 5, 2006.

ethnographers value) but also in the case for the EPIC audience on how useful the work is for business.

Even in-house ethnographers in corporations with some ethnography history (i.e. Intel, Microsoft, Motorola, P&G) are often challenged when trying to justify their project or when presenting final results to non-ethnographers. The fact is that the responsibility of ethnographers working for corporations (both internally or as consultants) does not end with the product itself, but in making sure the product is disseminated and used. “Being heard” is nowadays a responsibility of ethnographers, and the more we can do to make ourselves heard, the more we will be able to justify the value we can deliver.³

In this paper, music is to be used as a metaphor for the assimilation of ethnographic results by a business audience. Music is the product of our work, whereas playing is the delivery of our work. We believe that music is intended to have an effect on the audience the same way the delivery of ethnographic work can have an effect on business clients. There are crucial components to the performance which make for a better or a worse experience with music or ethnographic research. For example, if you are alone, driving a convertible in a sunny Italian autostrada you might choose loud, and cheery music, but if you are at home and want to put your baby to sleep what you need is a soft lullaby. The same way we adapt music to our lives, we need to adapt the delivery of ethnographic research to the business context. If you conduct research for exploring potential opportunities using a new technology to an R&D team, you require different formats, interactions, and content than the one you need to describe a customer segment to a marketing team.

As with any ethnographic project, music is composed of two parts: production (turning information into knowledge) and play (disseminating sound). Both are equally important as the right effect is achieved by the right mix of both parts. Listening to Beethoven’s Fifth Symphony in AM radio is not as compelling as being in front of a live symphony orchestra. Music is useless unless it is played, just as knowledge is useless unless someone does something with it. Disseminating ethnographic knowledge within an organization is crucial for delivering value, and accomplishing the right dissemination is key. Most of us have had the experience of doing the work and not carrying across our message, the implications of our research. Research like music sometimes fails to deliver its full effect. Distortions, noises, environments, bad reproduction or many other factors can affect the listeners’ complete appreciation. As with music, the delivery of ethnographic research to business sometimes falls short of delivering the right experience to businesses.

³ This is not different from what Van Maanen described as the three moments of ethnography; data collection, writing the ethnography, reading and reception of different audiences. Van Maanen, *Tales of the Field: On Writing Ethnography*. Chicago Guides to Writing, Editing, and Publishing. University of Chicago Press. 1988

During our years as professional ethnographers our work has suffered exposure to several listening “distortions” or situations where ethnography fails to deliver its full value. These distortions are really barriers which prevent businesses from reaping the rewards for good quality ethnographic work. Although we recognize there are many other barriers, the most prominent ones we have encountered are:

Don't like the music (the first time I listen to it)

Ethnographic research is a relatively new discipline within business; a lot of people have never been exposed to it and therefore lack an appreciation for the type of research we do. Constant questioning arises, such as: “So, you interviewed only five families?” or “Did they say that or it is your interpretation?” This lack of appreciation happens because the audience is used to another type of music (such as focus groups or quantitative research) and they need to understand ethnographic research in order to appreciate it and feel confident using it.

The same happens the first time one listens to a new band; with the first exposure it is quite hard to turn into a fan, but once you are familiar with the style, you may like most of the songs played in that style (even willing to pay for it). This is what happens with companies who have a positive experience doing their first ethnographic research. Suddenly the second project gets more receptiveness.

The piece is too long to be appreciated in its totality

Ethnographic research takes time, results are often very detailed, and sometimes ethnographers feel they need to communicate everything they learned in the project. Research methods and disciplinary stands are sometimes at odds with the demands of marketing and product development. The patience required to conduct ethnographic research is not always something business can do, where time is one of the most important assets. So taking more time than needed to produce ethnographic research can be disastrous.

This not only applies to the length of a research project, but also to the presentation of results. Many times researchers have a hard time synthesizing their work in a business presentation format, thus falling short of expectations with the audience.

If all you need is a jingle and you are exposed to a 30-minute Mahler symphony, appreciation for the piece could be incomplete, only partially understood, or simply ignored.

Too many different non-rhythmical sounds (think John Cage)

One of the things that ethnographers strive for is exhaustive documentation and detailed descriptions. At the end of the data collection phase, we may end up with thousands of images, hours of video and booklets with notes. Analysis is no exception as we may end up with a collection of different messages, theories and frameworks, all true but not all

equally relevant. A common situation for ethnographers is having too many ideas on our plate, too little time and usually an urgent need to communicate everything we have learned. Condensing all this information and aligning all the messages into a single song can be challenging, and business audiences lack the interest to follow an intellectual whirlwind like the ones we enjoy.

If you have heard abstract music by John Cage you will feel what some business audiences experience when they read or listen to reports of ethnographic research..

I have heard that song before, therefore I know it already (boring repetitive)

Business people must process different types of information every day, and ethnographic research is only one of these forms. This information deluge is used as input to make decisions: introduce a new product, invest in a specific technology or solve a particular issue. In a sea of information, ethnographic research may look similar to other types of information, so it becomes hard to distinguish how it is different from market research if close attention is not paid.

It is like a version of an old song that does not seem to introduce anything new or interesting, inviting us to jump to the conclusion early that we have heard it before and to tune out.

Many business people are not accustomed to looking for the subtle differences that are easily distinguishable to ethnographers. They are less sensitive to the results, and this increases the chance of being perceived as the same as they knew before.

These barriers are just some situations which we have seen hinder the assimilation and dissemination of ethnographic research inside an organization. Sometimes the problem lies in the product (bad research), but in most cases the problem lies in the way it is being delivered. Finding a way to improve the delivery of ethnographic research is key.

A Formula for improving the delivery of ethnographic research

In order to fully appreciate music, we need the highest standards in: 1) the product (music) and 2) the delivery (play). Likewise, the value of research in an organization depends on the research product and the way it is being disseminated.

$$\mathbf{V \text{ (value of research)} = Rq \text{ (research product)} * Df \text{ (Dissemination factor)}}$$

(Df = Speed, Transcendence, Reach, Excitement, Exposure, and Involvement)

This formula highlights the connection between the outcome of a research product and the way it is delivered. The research product when multiplied by a high Dissemination

Factor, brings more value to the company. If the Df is low, it may undermine even the most insightful and well-run research project.

Dissemination factor

But the Df is composed of several variables. We have uncovered six of them which make contribute to the good or bad dissemination of research inside organizations. These are: Speed, Transcendence, Reach, “Compellingness”, Exposure, and Involvement. These principles (or variables) help us enhance the quality of our work and help the audience better assimilate the results of ethnographic work.⁴

Understanding these principles can aid the organizational ethnographer in the task of “being heard” inside the organization and offer a way to increase the value that ethnography can deliver to business customers.

Speed: The rate at which new knowledge is spread inside organizations. This is important because research knowledge for business purposes expires earlier than knowledge for academic purposes. And just as some types of music depend on trends or yearly seasons (have you tried listening to Christmas music in April?) ethnographic research can be awkwardly perceived if communicated in an untimely fashion.

People inside the organization need to make use of research knowledge when it is still relevant and can be put to the best use as it becomes available. Business decisions need to be made in a timely manner, and often ethnographic research arrives too late to influence crucial decisions.

Speed is measured in a scale of slow (research arrived too late to influence decisions) to fast (research results communicated in time to influence various decisions, even those that were not directly targeted to benefit from the research outcomes).

One way to increase the speed of dissemination is by making our research process transparent and visible to others as a way to communicate intermediate results throughout—even if these have not gained a final form. Having a physical or virtual space for collaboration that is easy to understand—even for people not directly involved in the research project—proves to be an effective way to influence business decisions before the final outcome is crafted. But even this collaboration needs to be encouraged, so using social networks (inviting information brokers to the project room) or offering moral incentives, such as a sign-up sheet in the project room, are practices which will help increase participation and the speed at which knowledge is transmitted inside an organization. For example, during a project, we designed a WIKI in which members of the team would add comments and analysis. The WIKI would record the number of times that people had

⁴ Most of these principles have been drawn from our experiences with companies in United States, Europe and Latin America that are less familiar with ethnography and ethnographic methods.

accessed as well as the type of changes they did to the analysis. Anyone on the team could see who was the most constant collaborator.

Transcendence: The ability that research outcomes have to influence crucial aspects of the organization. This is one of the most important variables because research is a means to an end, not an end by itself. “Some music has a moment of popularity and fades quickly, while other music, some of the Beatles songs or soundtracks from movies such as *The Sound of Music* transcend time and continue to impact new audiences.” Likewise, to have lasting impact, the intent of research needs to be justified with a resonating sound and transcendental business proposition.

Transcendence is measured with an “impact” scale. A low score means research has influenced marginal, low-risk decisions, for example: measuring brand recognition. A high score means research influenced crucial, important and high-risk business decisions, such as a product portfolio for the coming five years.

One way to affect transcendence is for the research lead to gain a better understanding of the business strategy that will be informed with the research and also the business context in which this takes place. Sometimes, research teams are short sighted in their business perspective, don’t have a legitimate understanding of the business implications of their research, or are simply not exposed to the business imperatives. The best research proposals we have been exposed to have been co-created between researchers and business managers, and are iterated several times before a final agreement is made on a prioritized set of objectives, methodologies, and expected outcomes that everyone understands and can buy into. Objectives of a research project should be prioritized and the transcendence should be explicit from the beginning of a project. Having a problem definition session between the different members of a project helps. One in which all constituencies define what they intend to obtain from the research and jointly get at the real source of the problem/issue or generate hypotheses together.

Compellingness (or excitement): The excitement created due to the format in which the research outcomes are communicated, which increases the memorability of the results.

Very often slideshows are used to communicate research findings and the most excitement is an occasional video throughout the presentation. The easy way out for presenting ethnographic research is either a document or a slideshow; however, passive presentations are not the only format useful for disseminating information and certainly not the most compelling.

Music also has different formats, and each format is more or less compelling according to the context and situation. Listening to music on an iPod allows for ubiquity but is not as compelling as going to a live concert.

Compellingness is measured in a scale of engagement: A low score goes to “very boring / audience not engaged” and a high score goes to “highly entertaining / audience very engaged”.

We have used several techniques to increase the level of engagement of the audience when presenting ethnographic research materials, and the most effective ones include some level of interaction. Engaging the audience in an exercise, quiz, or a more elaborate activity, such as role playing, helps the audience be more engaged and results from the research get assimilated more efficiently. For example: During a project presentation, we developed a game in which two teams were formed. Each team would represent a user type (we had two segments). Each team was given a set of cards with questions related to the behavior, characteristics and needs of their customer segment. Each team would then ask these questions to the other team and the other team had to answer these questions using as input the information that was presented. The end result was that members of both teams had exposure to the results of both customer segments.

Reach (vertical and horizontal): The ability for research outcomes to cross-pollinate other areas and levels inside the organization. This reach is accomplished to a greater or lesser extent depending on the organization type, structure and communication policies. Nevertheless, it is important for an ethnographer to understand the way the organization communicates and actively push for assimilation of results both vertically (different levels) and horizontally (different areas), even if those areas are not directly related to the project. Both depth and breadth are important, vertical reach is important because it increases the likelihood knowledge will influence top-down decisions and strategic (vs. tactical) plans; horizontal reach is important because it allows for convergence of ideas and approach and for interdisciplinary work to happen more efficiently.

The equivalent of “reach” in Music would be the “volume” at which it is played. If music is played loudly enough it will reach more people—even if those people were not originally interested in that music.

Researchers sometimes favor secrecy over openness; but in order to deliver value to an organization, ethnographic researchers should affect others in the organization for example: Operations, finance, human resources, or strategic planning.

Reach is measured in the number of people exposed to some part or all of the outcomes of the research. The higher the number of people who are exposed, the more the more likely that ethnographic research will deliver value; the fewer the people exposed, the less the chance that research will reach the potential audiences.

Reach is accomplished by companywide presentations, designing research teams as interdisciplinary ones, creating easy to understand frameworks that can carry throughout other areas (people can take these and insert into their presentations), by immersing people in physical spaces or labs or other environments, through internal public relations

(newsletters), by encouraging accessibility of team members through social networks. (could work more on detailing specific examples of how we have done this) This is actually what is happening when organizations organize their internal information with social networking oriented software. Tags are a great way of people defining what things are and then letting others discover or generate new relationships from that information.

Exposure: This variable refers to the number of times that research outcomes are—partially or entirely, consciously or unconsciously—seen by someone inside the organization. Exposure refers to redundancy of the message but not of the message form. The first time we listen to a song, we may not like it as much as we do after listening to it repeatedly. In the same way, people need to be exposed to research knowledge frequently in order to reap its learning. Exposure does not mean repeating presentations over and over, but instead to finding ways to make the results of our work more visible to others in different ways, different formats that reinforce the same messages.

A research document that is seen during a presentation and then is used only for sporadic reference would have a low exposure level. A research outcome that is seen by many people several times throughout the organization could result in better and more informed decisions taken by the organization, in the end it is about the ideas that remain, the actions the research triggers.

One way to increase exposure is to create different formats for communicating research outcomes, such as posters, screen savers or pamphlets that describe parts of the research outcomes that are relevant to specific groups of people. For example, a poster with a framework and several images describing different customer segments was placed within visual reach around the marketing department to reinforce the key outcomes in the research presentation. This allowed for most marketing people to assimilate research implications faster and more accurately than if they had just attended a presentation. This format also allowed for its reuse in more situations since it was really easy to reference.

Involvement: How extensively an organization's employees become involved in the development of the research project throughout all of its phases (from the project design, fieldwork, analysis and communication of results). The consequences of high involvement are: 1) higher perceived, 2) higher commitment to the project, 3) more knowledge “volume” to be shared with business constituencies, not just results, but examples in the form of fieldwork anecdotes and stories 4) Implications that are easier to understand by the organization since they have been part of the making of the research, active learners during the process of research.

Very often, the climax in any music concert happens when musicians engage the public in singing, or clapping their hands in unison. That feeling of the audience being in sync with the musicians is similar to what happens when you are presented with research results you have helped shape.

Involvement is measured in the number of people involved and their degree of involvement: A low score is “I sat down in a couple of focus group sessions”. A high score is “I was present in interviews, participated in analysis and was present in final presentation”.

There are different ways to achieve involvement, both formal or informal. An example of the former would be having high-level executives officially endorse the research project or make participation obligatory. But we have seen that the best way to increase involvement is by creating a fun, relaxed and engaging participatory interactions. Well planned fieldwork, intellectually-stimulating debrief sessions, empathy (i.e. avoid the customary 12hr. fieldwork days), and having interesting researchers with good interpersonal skills also helps. It is amazing the effect that good food can make.

Concluding remarks

In the last ten years we have come a long way in positioning ethnographic research within businesses. The research product, like any good music is fine, but there are still a lot of improvements that can be made in the delivery of our music. Research outcomes need to reach a wider audience inside organizations; understanding and applying our formula is one step toward accomplishing this goal. Once we know the variables—and we are sure there are many others besides those presented in this paper—we can begin to work on the specifics.

These variables make up the dissemination factor, which can increase or decrease the acceptance of ethnographic research inside organizations. We are sure there are other variables and solutions for improving dissemination. The point is that the value of ethnographic research in an organization does not depend solely on the research product, but on how that product gets disseminated and used in the organization to create value.

As more and more companies work on the delivery of research and its effectiveness, the value and the relevance of ethnographic research to the bottom line and to the organization’s competitive advantage will become more and more widespread.

ENGAGED CLIENTS: STORIES OF COLLABORATION

Elizabeth Anderson-Kempe, Curator
Artemis Research by Design

Three client-consultant pairs discuss highlights of their collaboration with an emphasis on the outcomes of that collaboration – whether a product or a service brought to market, a methods innovation, or a shift in business strategy. Instead of telling seamless success stories, each team focuses on the challenges of collaboration and specific approaches to addressing these challenges. By listening to stories of collaboration challenges, ethnographers are exposed to practical ideas that they can apply to their own practice of ethnography in a business context.

The Mystery Project

MARK DAWSON, Jump Associates
 PETER WYATT-BRANDENBURG, HP Global Design

The Mystery Project was started by Hewlett Packard (HP) to create and map out a product development strategy for an internal business unit. It was also a pilot project to identify best practices when working with a diverse group of teams over a large geographic area. Rather than concentrating on the output of the project, this will be a discussion between the primary strategic partner in the project, Jump Associates, and the HP client, Peter Wyatt-Brandenburg. Discussion will examine the challenges of managing a complex project involving multiple companies and how the project successfully showcased to influential stakeholders the value of the Global Design Group's role in participation in developing corporate strategy. The main points include:

1) The importance of realizing that managing several different contractors also means managing several different cultures. Each has its own method of working, standard of what "good" looks like, and level of comfort with transparency of process when cooperating with other groups that may overlap as competitors.

2) The project enabled the Global Design Group to show the company immediate opportunities for strategic improvements in overall organization, as well as the product development process. These strategic changes included bringing together HP working groups that had not previously interacted in the context of product development, addressing immediately apparent weaknesses in the supply chain to achieve significant savings, and the adoption of the methods of the Mystery Project by participating groups for the pursuit of their own initiatives.



Stress and trust relationships between suppliers and clients

MONICA DIAZ, *insitum*

TOM RIDEOUT, *Touchpoint Innovation*

Our hypothesis is that achieving a close and long-term relationship between suppliers and clients implies a greater level of stress when starting a relationship, but soon after this stress turns into trust.

During the development of a project, the relationship between clients and suppliers can range from complete agreement to stressful misunderstandings. Depending how close the interaction is during each project stage, each party demands different manifestations of trust. These manifestations take the form of written communication, behaviors, reports, attitudes and a number of other non verbal communications.

During the initial phase of a project (project definition and planning), the relationship can be described with “green lights”. In this case, both parties act as a single entity and have a good alignment over expectations.

Common tools for this stage which help increase trust and certainty include Kick-off meetings, the development of project work plans and face-to-face meetings.

As the project evolves into fieldwork and analysis, there is a higher chance to experience stressful moments. Fieldwork can be too demanding to pay close attention to client catering- if the client is not involved.

From our experience, the highest moments of stress happen during the analysis phase when both parties have different expectations and responsibilities. Clients are anxious to get results and researchers need time to perform good analysis. In order to avoid stressful moments, it is important for clients to be involved in fieldwork as much as possible and participate actively during analysis. Making the analysis process more transparent will help reduce stress during this phase and will make for a more efficient knowledge transfer.

After final results are delivered it is necessary to put effort into maintaining the client-supplier relationship in order to capitalize on the trust that has been built up over time. It is natural that the supplier leads these efforts by means of further analysis and keeping track of the client’s market developments. The most effective relationships occur when both parties nourish the relationship and see each other as partners, rather than as “client” and “supplier”.



The Second Coming of Lego

CHRISTIAN MADSBJERG, ReD Associates

MARK WILLIAM HANSEN, Lego

Lego Company A/S is a Danish toy brand renowned for its celebrated Lego bricks. Despite appealing to a vast range of playful buyers from 2 to 99 years old, boys between 5 and 9 are their primary market. Lego enjoyed decades of success, growth and profitability – but at the end of the nineties sales plateaued and Lego entered a recession.

The rich connection to children and play was faltering and the company's finances were in trouble. The worrying diagnosis was that technology had changed the way children played and that platforms like Sony Playstation had transformed the toy industry into something new and scary.

In response to this perceived shift Lego redoubled efforts to innovate in the toy category and ventured into uncharted waters such as children's clothing and software design. However, the new products didn't shine and Lego started to look old and tired.

In 2003 Lego hired a fresh young CEO named Jørgen Vig Knutstorp. He put his ear to the ground inside Lego and concluded that it had lost its soul, and therefore its direction and energy. Lego needed to take a long hard look at some of the assumptions behind the crisis and reconnect to its customers – children as well as parents. Jørgen transformed the company from a production based, asset heavy company to a lightweight platform enterprise.

In order to reconnect with customers and consumers ReD Associates were commissioned to answer one simple question: "Why do children play?". The global study involved deep ethnographic observational studies in multiple sites and a revision of the basic theory inside of the company regarding children's play.

The results were dramatic. It transpired that claims about changing landscape of play had been much exaggerated and that Technology plays a far smaller role in the lives of families' - and especially children's - play than they had expected. The study also uncovered some disturbing new insights about how children perceive their surroundings and experience control: They feel they are under constant and intrusive surveillance from their parents and surrounding society.

This shift in the foundations of Lego's understanding of the world in which they operate sparked the reconfiguration of top level strategy in Lego and a reassessment of a swathe of the product portfolio.

Engaged Clients

Today Lego is an expanding, ambitious, revitalized company. Profits have soared and Lego's inner sense of what it is – and what it is not – has been rediscovered. Underlying this, and perhaps more importantly, Lego has a rich understanding of children's play, rituals, practices and needs. The CEO often refers to two reasons when rationalizing Lego's dramatic recovery: "we are now the right size and we now understand why and how children play."

Enabling our voices to be heard

RICH RADKA

NEST – the home lab

Identifying differences in how ethnography is practiced in academia and in business is the key to successfully developing ethnography further as a business discipline. In the following paper, I propose that the key difference between the practice of ethnography in academia versus business is the purpose of the ethnography, and that all other questions we struggle with in the transition from academia to industry clearly flow from this difference in purpose. Addressing this difference honestly is the key to being heard correctly, even to being heard at all. By describing how business disciplines are conceptually structured and by exemplifying analogous disciplines, I will provide thoughts on how we might shift the way we think and talk about business ethnography. I believe this shift will enable us to find common ground with other disciplines, be recognized for delivering clear value to the businesses we work for, and create opportunities for making positive contributions to society at large. Finally, I will conclude by summarizing the organizing principle of this chapter of the proceedings, and will briefly introduce the section's seven papers.

What's the difference?

Ethnography – as an approach, as a set of skills, as a way of understanding, but perhaps most importantly, as an orientation to the world – has barely tapped the potential it can bring to industry. In order for us, as a community, to realize the potential we have to offer, we need to clearly recognize and address the realities of the business context.

In academia,¹ ethnography is employed to understand cultures through the lens of those cultures' own views of the world. The purpose of this pursuit is to deepen our understanding of the world around us, to create a story about the meaning of existence and culture, and to add to the theory, methods, and knowledge of the practice itself. In the business community, ethnography is also employed to understand cultures. These cultures might be defined in a slightly different way than in academia but practitioners still strive to understand people and their perceptions of the world around them. In industry, practitioners of ethnography are also asked to develop an understanding of particular groups of people and their experiences, but the purpose is to use this understanding to help improve business elements such as profitability, competitive advantage, or organizational efficiency.

¹ Or within the social science tradition, et al; here I will extend a blanket apology for the use of “academia” throughout this paper. I use it for its brevity, and though it may be a bit reductive, it is not intended to convey any value connotations – positive or negative.

Harmony

This difference in purpose is no big surprise; the question of description vs. prescription provokes ongoing and “lively” discussion within the community of ethnography practitioners in industry. Nonetheless, the underlying orientations that support the two divergent goals are important to note. Academics are trained to maintain distance and to avoid disturbing that which they study, whereas in industry, the entire point is to disrupt – we seek to understand people so that we can change their circumstance by introducing new products into their lives, by creating workarounds to daily frustrations, by changing the way they accomplish tasks, or by ultimately getting them to choose brand A over brand B.

We cannot ignore that these are the goals for the industrial commissioners of ethnographic study. If we will not or cannot translate our fieldwork observations into steps or guidance that our businesses should take in order to achieve their goals, someone else in the organization will do it for us.

The burden of being heard

Ethnography practitioners in industry bear a burden of ‘being heard,’ on top of their core activities and stated objectives in project work. All too common, frustrations include the endless task of educating clients, struggling with communicating findings to cross-disciplinary colleagues, and the over-simplification of insights as we report up the ladder.

To maximize the impact we can have in industry, it is helpful to consider how businesses and the functional areas within businesses are structured conceptually.²

- Goals – what we want to achieve for the business
- Strategy – how we plan to achieve our goals
- Process – structures & systems we use to execute the strategy
- Expertise – capabilities & experience we employ within the process
- Styles – values & behaviors exhibited through the work

This breakdown is not always viewed as a sequence of contingencies, though commonly, it is a useful structure. Without goals, it is difficult to set strategy, which makes it difficult to choose the best process and evaluate necessary expertise to execute the process. The point in describing a business in this way is to generate a relevant conceptual structure that ethnographic practitioners can use to align with their business organizations. So, what does this mean?

A focus on goals and strategy

² With apologies to Thomas J. Peters and Robert H. Waterman Jr. for my loose interpretation of their 7S model of corporate strategy.

Practitioner discussions of ethnography that take place within a business context gravitate toward dissection of process, expertise, and styles. This is like starting a discussion of ice cream by comparing the pros and cons of two spoons that could potentially be used for eating the ice cream. People don't care about the spoon; they care about the ice cream. The commissioners of ethnographic research – or more broadly, any method that allows deeper understanding of people and the subsequent better connection of products, services, experiences, processes to people – don't care *primarily* about process, expertise, and styles (and the underlying questions of doctrine), they care *primarily* about results: the valid, appropriate insights that can be brought to bear on business problems they are trying to solve. These commissioners of ethnographic work will likely only then be interested in methodology as a means of achieving the result.

As ethnography practitioners, we must shift our conversation (and internal orientation) to goals and strategy first. This shift benefits us threefold. First, it creates common ground with our cross-disciplinary colleagues by focusing on the core value of business: results. Knowledge presented without integral explanation of its direct utility is not valuable in most business contexts. Common ground also allows us to develop a shared vocabulary with cross-disciplinary colleagues; for “us” to become conversant in “their” terminology and conceptual frameworks, but also to provide a platform for injecting new language and concepts into the corporate vernacular when necessary.

Second, shifting our orientation toward goals and strategy ensures that we are involved in the interpretation and transformation of our research into useable forms that have impact within the business and out in the marketplace. Abdication of our role in shaping observation into a roadmap is a recipe for miscommunication at best, and at worst, misses the real opportunity, or abuses the trust of our research participants. We cannot shy away from explanation of analysis techniques. Analysis is where observation develops business impact; if others can understand it and contribute to it, our methods increase in value. Ethnographic analysis techniques and conceptual framing devices are not unknowable, and it is in our best interests to have rigorous and transparent analysis processes that non-practitioners can understand.

Third, if practitioners of ethnography are seen as bystanders to the communication, prescription, and application of the knowledge we create, then we are marginalized as a practice – we are just thinkers, not doers. I say “just” thinkers, because again, in industry ethnography has been viewed as an applied practice, not a pure art or science, and within the business context a connection between thinking and doing is expected. Process and expertise are not the goals; they are only necessary conceptual constructs designed to reach the goals.

Ultimately, our work goals, strategies, processes, expertise and styles need to clearly support the long-term goals of the business, and the goals of the particular initiative, offering, department, functional group, geography, etc. for whom we work. This means that we need to understand these business goals and, ideally, agree with these goals. If we do not,

then we need to clearly identify and publicly articulate what we feel needs to change about the business goals.

Analogous disciplines

In order to conceptualize and articulate ethnographic practice in industry so that we can maximize our impact, it may be useful to look to the models provided by other business practices. Three analogous disciplines that may impart a lesson to us are operations management, design, and technical research and development.

Operations management is core to running any business. At its most fundamental, the function of the operations management discipline is to make sure that the business is running as efficiently as possible, and that infrastructure is flexible enough to respond to changes without being wastefully bloated. Persons involved in operations management will have best practices, established routines, and benchmarks for evaluating decisions. But these tools are in support of the goals and strategy; they are not the goals and strategy. Are we similarly framing our work in the context of the goals rather than the methods?

Over the past two decades, design has become an increasingly important function within global industry. Whether this is product, service, information, interaction, or experience design, it has moved to the center of many companies' values. Design has historically had a difficult time establishing clear return on investment as a practice, but by documenting the value within the context of specific project successes, designers are developing ways to tell stories that logically, if not numerically, better communicate impact, and encourage collaborative design across disciplines within their organizations. How can we similarly communicate the impact of what we do?

Technical research and development is well established in many of the companies that EPIC attendees work with directly. The "research" part of the equation is, of course, open-ended pure research. Many technology companies realize this is core to their futures and invest accordingly. The "development" refers to research insights that are applied to specific (product) development efforts with relatively short horizon lines. But even the pure researcher's efforts have to make a connection to business impact in some way. This is increasingly evaluated through measures such as the number of defensible patents that research yields. What equivalent measures can we use to evaluate the impact of open-ended ethnographic research in industry?

Practitioners of ethnography need to establish themselves as "ethnographers in the pursuit of business goal X, Y, or Z" and not simply as ethnographers. Like statistical analysis, technical benchmarking, or design illustration, when divested from a larger strategic context, the ethnography process diminishes and becomes merely a commodity tool without much intrinsic value. We should be contextualizing why we conduct ethnography within the

frame of business results; otherwise, we are evangelizing about a method rather than a purpose.

Of course, just like in any other functional business area, there will be people operating in “ethnography” at all levels and for many reasons, and that is as it should be. However, our practice has an interest in establishing more practitioner-proponents in industry who both operate at the highest strategic levels within their organizations and value ethnography as a way of seeing the world and situating their business’ goals within it. We do not want to create a perpetual corporate underclass of practitioners of ethnography who just think, but don’t do.

Unique value is worth defending

Ethnography does offer a unique perspective and value that can change not only products, services, brands, perceptions of and interactions with consumers (i.e., people); it can also contribute to positive changes in business cultures and values, and how businesses impact the world. To defend ethnography’s efficacy in the business world, there are a few things we need to do. We need to protect the standards that matter while questioning our assumptions about which ones really do matter, and clearly explaining why in plain English. We need to understand how to create common ground with others to teach them what we know, rather than falling back on obfuscation that masquerades as explanation. We also need to recognize that there are things to learn from other methods and traditions; collaboration can combine the strengths of ethnography with other inputs to bring about the best solutions to the problems our business organizations face.

Who is qualified to conduct ethnography? Who has the requisite training or “frameworks of understanding” to put observations into a larger cultural context? We don’t necessarily want to be defined by a methodology; we should be defined by our results, and how we create meaning that is relevant to the context of our business. The question of “real” vs. “fake” ethnography is irrelevant. Whoever delivers results – no matter how they may relate to or interpret ethnography’s tricks of the trade – will prosper, and those who don’t deliver results will fade away. And this thing called “ethnography,” no matter what name(s) it eventually operates under, will evolve and develop into as many flavors as necessary to provide value within different industries, experiences, contexts, and purposes.

The ethnographic skill set and methodology are not unknowable, unlearnable, or unexplainable. And the fact that others will learn to interact and contribute to the practice doesn’t mean our area of expertise will be taken away from us. It won’t, just as long as we constantly prove the efficacy of our work. Operations, marketing, and product management are not unknowable disciplines. Yet other functional areas aren’t clamoring to marginalize or cannibalize them; they’re too busy with their own workloads and agendas. An open understanding of processes allows disciplines to interact, collaborate, and argue effectively. There will always be border skirmishes when functions bump up against one other, but

ethnography is now an established (if evolving) business discipline, and its practitioners should act with confidence in this knowledge.

In order to create a positive impact, practitioners of ethnography should strive to draw together business goals and people goals so that the organizations that we work with are able to see markets and segments as real people, but also so practitioners of ethnography can see other disciplines as sources from which to learn. It is not about evolving “their” ethnographic thinking, but evolving all of our thinking together.

A shift to strategic impact won’t happen just because practitioners of ethnography know that the approach creates value or because we want it to happen. We need to clearly illustrate value at each step of each engagement. We need to illustrate that what we do is aligned with business goals and strategies. We need to make our analysis processes transparent, knowable, inclusive, and rigorous.³ Today, how well do we define ourselves first by our results (what we achieve), and only afterwards focus on our methods (how we achieve)?

Trying to hear and to be heard

In order to be relevant and influential in the business context, we have to carefully decide what is important to maintain and build upon from the academic tradition of ethnography, and what must be modified or even discarded as we practice within industry. We also have to decide what to adopt and what to reject from our colleagues from other disciplines. The struggle with these questions is one we take on as individuals within the contexts of our industries, companies, areas of focus, processes, deliverables, and our unique angle of entry of this thing we call “ethnographic praxis in industry.”

The following seven papers that constitute this chapter represent very real ways that the authors are currently trying to do just this. The papers’ topics range across a spectrum of strategies for being heard; on one end are new methods and even orientations for gathering field data that are meaningful to the goals of the businesses we work for; at the other end are descriptions of approaches for integrating ethnography within business organizations and collaborating effectively with other disciplines. Each paper focuses on specific undertakings that the authors have been involved with, and certainly their points of view and agendas are divergent from one another and from my own. Still, I believe the thread that connects them all is their focus on developing specific value for the organizations they work for.

³ Rigorous does not mean reducing analysis into pseudo-quantitative processes (“she said ‘ice cream’ 17 times during our observation”) that may be familiar to some of our cross-disciplinary colleagues, but are ultimately not useful in providing insight or worth the time invested.

Harmonizing Human Eyes with Digital Sensors

HIROSHI TAMURARA *R&D Division, Hakubodo Inc.*

TAMAMI SUGASAKA

Fujitsu Laboratories Ltd.

In this article we report on our research that focused on enhancing shopping experiences by introducing new media services in the physical environment of grocery shopping. Since we were interested in situated shopper's experiences we conducted fieldwork. In particular, we paid attention to the holistic grocery shopping process because a shopping experience is, as we suggest, more than a composition of discrete actions and/or feelings towards a shopping arena. Rather it is a type of narrative featuring various vignettes. In addition to pure ethnographic observation, digital sensors were used as a complementary means to observe shopper's experiences, since digital-sensor observation enabled us to record shopper's entire moment-to-moment behaviors with unified metrics, i.e. digital sensors served to complement our perceptions that turned out to be less reliable in terms of consistency; under these conditions of time-space transition, observers face difficulties to become aware of subtle changes or differences concerning informant's behaviors and emotions yet sometimes these come to be valuable resources for our critical insights. By combining these two means constitutive insights into grocery shoppers could be obtained. We propose an exploratory process for the most important process that we called "Three-Phase Model," which was applied to successfully develop new media services.

INTRODUCTION: COULD GROCERY SHOPPING EXPERIENCES BE MORE ATTRACTIVE?

The clouds have begun to gather over food retailing industry. In recent years conventional supermarkets in the United States have been losing their market share. Instead superstores, that distinguish themselves by enormous inventories with low-pricing strategy and organic food stores selling quality foods with relatively higher prices, in comparison, expand their market share and with a large variety of business formats, therefore, unfurl fierce competition in the industry (Food Marketing Institute, 2006). This trend forces the industry to operate at minimum profit margins (Roussos, 2004). Quite similar situations can be noticed in many developed nations such as Japan, Germany, and the United Kingdom.

One more serious issue in the industry is not just that quite a few consumers have been getting bored with shopping, they have, worse yet, unambiguously come to say "I hate shopping!" (Reid and Brown, 1996). Grocery shopping is the strongest contender for their

vexation, so that experiences at grocery store, including supermarket, superstore, and even organic food store, are no longer the ones that may hold any sort of promises. In other words, grocery shopping has got to be one of chores.

Against this backdrop, we encounter various important questions: “Is grocery shopping a mere effort for consumers just to replenish supplies?” “Will grocery shopping at a physical store, eventually be replaced by home delivery in order to save hassles?” We believe grocery shopping is not the one “ticky-tacky” experience, rather, it consists of multi-strata experiences, i.e. each shopper has the opportunity to experience painful and/or delightful moments during the purchasing process (even during the same shopping trip).

As for our technology development project called “Smart Shopping-Aid”, we aimed to enhance shopper’s experiences by introducing new media equipments and information-communication systems at a physical grocery shopping environment. Our principal technological challenge was not to improve logistics or store operations, which was likely to be employed at similar technology development projects (for an overview of the area, see Krafft and Mantrala, 2006), but rather to ease shopper’s sore experiences as well as to expand capabilities for him/her to encounter enjoyable moments; this should be truly a human-centered approach.

For these reasons, we had to understand shopper’s experiences at a physical storefront as the first outset. Some basic questions arose here: How did he/she conduct everyday grocery shopping? What did he/she feel in the course of his/her shopping trip? What were the painful or delightful experiences and why? And, then, what did he/she expect explicitly and implicitly when grocery shopping?

OUR APPROACH: COMBINING PARTICIPANT OBSERVATION WITH DIGITAL-SENSOR OBSERVATION

To address the questions posed above, we paid particular attention to a holistic grocery shopping process because the shopping experience is, as we suggest, more than a composition of discrete actions and/or feelings towards a shopping arena. Rather it is a type of narrative featuring various vignettes.

But how should we approach this seemingly complex process with limited time and budget? Besides, our project team consisted of solely tech-heads: an HCI researcher with an artificial intelligence background (first author), a system engineering researcher (second author), and an interaction designer, and none were familiar with fieldwork¹ at the time.

¹ It is unfortunate to say that field research industry is immature in Japan. Field research suffers from untrained designers and engineers. One of the problems is that they tend to gather instrumental data for design and development activities, and do not deeply understand users and/or settings.

Along with learning how to conduct fieldwork, we, as tech-heads, came up with an idea that we could use digital sensors as complementary means to observe shopper's experiences. We already knew of earlier studies that utilized digital sensors to learn about shopper's experiences in retail arena. Sorensen's work is a prominent one: He installed location sensors in shopping carts and baskets, and observed more than 200,000 shopping trips in a laboratory store (Sorensen, 2003). Sorensen conducted a series of experiments to know "shopper behavior on a wall-to-wall, entrance-to-exit basis," and clarified "the impact of location on shopper behavior, independent of the products in front of them." Not only his discovery, but the approach itself was very attractive for us, one of the concerns for us was however that Sorensen broke "the entire shopping process into component parts." As we mentioned earlier, we were interested in the entire shopping process because the purpose of our work was to know the truth about shopping, not the store layout's.

We, therefore, reexamined his methods and framed our methods: to build complementary relationships between participant observation and digital-sensor observation. As for participant observation, we assumed we could take down detailed behaviors and utterances with relatively small number of shoppers. As for digital-sensor observation, we would be able to gather behavioral data with a much larger number of shoppers through multiple sensors embedded in shopping carts. We were convinced that each means had its respective advantages. Participant observation can preserve shopper's behaviors and utterances that encapsulate a variety of contexts without spoiling these mutual relationships. On the other hand, digital-sensor observation enables us to record shopper's entire moment-to-moment behaviors with unified metrics, i.e. it can easily bring about answers to such the questions: "How fast does a shopper walk around in the store in the course of his/her shopping trip?" "How many times does he/she stop by at the aisles?" We expected digital sensors could complement our weak point such that human perceptions were not always stable; under the condition accompanying time-space transition, observers face difficulties in becoming aware of subtle changes or differences of informant's behaviors and emotions, although these sometimes come to be valuable resources for our critical insights.

By referring to the data derived from both means, we believed we could eventually obtain robust insights into shopping. We will discuss now these operational details in the following section.

RESEARCH SETTINGS

Research Focus

Unlike the United States, Japanese consumers are likely to shop at grocery stores quite frequently², perhaps because Japanese residence is relatively small□ refrigerators tend to be smaller than those in the U.S. accordingly□ and the weather is humid, it is, therefore, more difficult to keep grocery foods as fresh. Their primary objective is thus to buy things for the day, especially for their dinner arrangements. While they shop, they are likely to think about “What is good for today’s main dish?” and “Which snacks or appetizers are well suited as main dish?” These thoughts imply that grocery shopping is no longer a mere replenishment of supplies, but rather an integral part of the entire meal arrangement process.

Our primary research purpose was, therefore, to understand the process. Hence, we aimed at placing heavy weight on recognizing shoppers’ behaviors and emotions at the storefront, especially by shedding light onto these transformations overtime.

Research Procedure

As our lively research venue we chose an outlet of a regional supermarket chain³ based in Fukuoka City, which is one of ten largest cities in Japan. The outlet of the chain is medium sized and has about 12,000 SKUs lined up. It is located at a new residential area popular among wealthy young families and is recognized as a high-class supermarket sufficient for the area, i.e. it provides high-quality grocery foods with relatively higher prices, like organic food stores in the U.S.

As for participant observation, we had nine informants (two of whom were for pilot studies) chosen from the customer base of the outlet. All of them were female homemakers ranging from 30s to 50s and residing within walking distance from the store. The observations were conducted one by one with each informant from August to September 2005, for about two weeks. The procedure consisted of the four following steps:

1. **Pre-interview at home (30-60 min.):** interview with an informant regarding her rituals and attitudes of everyday grocery shopping; checking whether she had her shopping plan or not; and observing her preparation for the expedition, i.e. looking in the refrigerator,

² Our previous survey, which was conducted in Tokyo metropolitan area in 2005, clarified that more than 80 percent of respondents went grocery shopping once in less than a few days.

³ This supermarket chain recently experienced some difficulty by a decrease in its variety and breadth of offerings. Thanks to the development and spread of information technology as well as those of physical distribution technology, competitors could easily respond. The supermarket chain therefore, was looking for a new differentiation strategy and expected our project might bring such opportunities.

2. **Participant observation at the storefront (20-50 min):** accompanying a participant on her shopping trip on an entrance-to-exit basis,
3. **Participant observation at home (30-120 min.):** describing the participant in the home-situation regarding storing, using, processing, and cooking purchased items, and
4. **Post-interview at home (30-60 min.):** debriefing what was not clarified during the previous steps.

We also required each informant to wear a heart rate meter to measure the informant's heart beat interval, so called r-r interval or RRI⁴, so as to infer informant's emotional state with uniform metrics. This is a precedent trial part of the digital-sensor observation that is described below.

As for the digital-sensor observation, we introduced five "SmartCart (Figure-1)," each of which was equipped with multiple sensors⁵ including a three-axle accelerometer, a two-axle gyrocompass, an RF-tag reader, three pressure sensors with a handgrip, and two digital video cameras. Corresponding to the RF-tag reader, about a hundred RF-tags, each of which emits its location-ID at every five seconds, were installed wall-to-wall within the store. As for the records of these sensor readings, we expected that we could infer multiple aspects of shopper's behavior (see details at Table-1). We assumed video data would be the key for analyses because it represents shoppers' integrated behaviors. When the other sensor readings would be analyzed with the video data, we could associate each extracted pattern from the readings with shopper's particular behavior with real-life meanings. We will explain the actual process next.

SmartCarts were open to the public from February to March 2006 for about a month. About 120 customers used SmartCarts during this period, and about half permitted us to use their data for analyses.

⁴ RRI is the time duration between two consecutive peak waves (R waves) of the ECG (electrocardiogram) and is an established index of variables to measure user's mental workload. In general, RRI decrease is more sensitive to increases in workload than is RRI increase.

⁵ These sensor units were chosen by referring to a number of previous studies in the area of context-aware computing. As a matter of fact, many researchers currently use all sorts of readings derived from these sensor units to infer a variety of user behaviors and contexts (for an overview of the area, see Chen and Kotz, 2000). In particular, angular velocity and pressure value (with the handgrip) could well contribute to our analyses described in the next section.

TABLE-1
Specifications of sensor units equipped with SmartCart are shown.

| type of sensor unit | num. of unit per cart | sampling rate | type of sensor reading | expected inference of shopper's behavior from collected data |
|--|--|---------------|--------------------------------|---|
| three-axle accelerometer | 1 | 100 ms. | acceleration | moving speed of the cart |
| two-axle gyrocompass | 1 | 100 ms. | angular velocity | orientation of the cart |
| RF-tag reader | 1 (100 tags throughout the store) | 5 sec. | relative position | position of the cart corresponding to 17 divisions in the store |
| pressure sensor (embedded in handgrip) | 3 (left, center, and right side of handgrip) | 100 ms. | pressure value (with handgrip) | use-state of the cart, i.e. whether the shopper being beside the cart |
| video camera | 2 | 10 f/sec. | video | precise shopper's behavior |

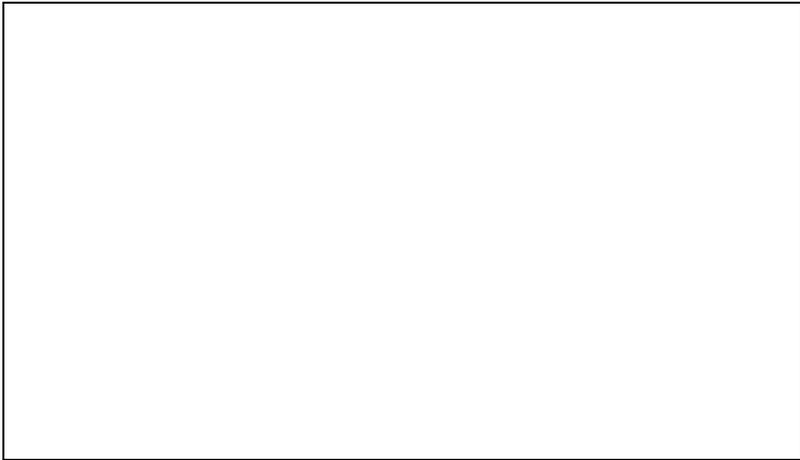


FIGURE-1 A SmartCart used for our digital-sensor observation is shown. Besides multiple sensor units, it is also equipped with content delivery functions, although a very limited number of these were activated during the study.

ANALYSES AND INSIGHTS

Although preliminary analysis was begun during the participant observations period, we started a series of full-fledged analyses after finishing the digital-sensor observation. We introduced a very simple analytical framework that consisted of reciprocal reflections: one for the participant observation, and the other for the digital-sensor observation. From the former we obtained qualitative interpretations by understanding meanings of shoppers' behaviors and utterances and such relationships. From the latter we learned the larger

context of relationships of behaviors situated in the process: as we have already stated, unified metrics of the sensors could help us understanding subtle changes and/or differences of them according to larger time-space scales. Through the iterative analyses, we actually yielded plenty of substantial insights into shoppers.

Here we bring in a discovery process called “Three-Phase Model,” or TPM, which was employed as our core user-model while we developed new media systems described in the next section. To put it bluntly, TPM is a shopper’s cognitive process in the course of his/her shopping trip from-entrance-to-exit basis. There are three consecutive phases in his/her trip, each of which has totally different characteristics with each other. As such we were able to reveal the secrets through the process of analyses described below.

1. **Noticing transformations of planned/unplanned purchase ratio:** Through the analyses of the participant observation data, we noticed that the planned and unplanned purchase ratio tended to change steadily as the informants’ shopping proceeded: planned purchase was likely to occur in the anterior half and unplanned purchase, in comparison, increased in the posterior half regardless of their shopping paths nor of items bought. It is rational that an informant uttered in her shopping, “I basically start shopping from what I don’t have to forget to buy.” (a homemaker in her 40’s)
2. **Discovering shopping process being consisted of three phases:** Then we tackled with the sensor readings and found that there were two common points of variation in behavioral patterns in shopping cart orientation (Figure-2) and state of handgrip pressure (Figure-3). As for shopping cart orientation, the value tended to continuously decrease⁶ for a certain time at first, then it stopped decreasing and kept a solid state for a while, to finally start increasing till the end, even though the shoppers’ paths varied. This means shoppers tended to move counterclockwise till the first point of variation. It was followed by the solid state and then switched to move clockwise after the second point of variation. As for state of handgrip pressure, there appeared to be two states of shoppers frequently and repeatedly grasping and releasing handgrips of the carts. (We can also see a third state after 20 min. at Figure-3 but it was excluded because it clearly corresponded to behaviors preparing for checkout which were less related to the process accompanying shopper’s decision making.) Figure-3 shows shoppers were apt to keep grasping handgrips until the first point of variation. This was followed by a period when they often unlinked their hands from the handgrips and then, after the second point of variation, they shifted to alternately grasping and releasing the handgrips for a longer time. Interestingly, the timings of when these two points of variation arose are very consistent in the both sensor readings. We then investigated in multiple samples of video data and found that there were different types of shopper-floor interaction in each of the three phases, which were divided at the

⁶ Decreasing value in shopping cart orientation meant the cart is rotating in counterclockwise direction, and the reverse meant clockwise rotation.

two points of variation. In the first phase, or Phase-1, shoppers had a tendency to stop at each floor for a short while and to choose items quickly. In the second phase, or Phase-2, they took a turn to stop at each visited floor for a longer period and to examine items carefully. In the third phase, or Phase-3, they were likely to go back and forth at the storefront and to reflect on items between aisles. These observations were accurately consistent with the patterns appeared in the two sensor readings.

3. **Understanding characteristics of each phase:** How different are the items bought in each of the three consecutive phases? We turned back to analysis of the participant observation data and broke down “planned/unplanned purchases” into five categories each of which was labeled with the informants’ intent based on actual usage of the items: these were 1) replenishment with a plan, 2) replenishment without a plan, 3) selection for main dish (dinner menu of the day), 4) selection for side dish (dinner menu of the day), and 5) other (e.g. impulse buy). When these labels (attributes) were applied to each informant’s shopping process, we could understand that most informants exhibited the patterns showed in Figure-4. That is, they were likely to fulfill the first intent (replenishment with plan) and to plan the dinner menu of the day⁷, especially for the main dish, in Phase-1, to fulfill the third and fourth intents (selection for main dish and for side dish) simultaneously in Phase-2, and to fulfill the second and fifth intents (replenishment without plan and other) simultaneously in Phase-3.
4. **Understanding shopper’s state of mind in each phase:** Through the analyses of RRI, we could know that each informant tended to decrease the rate of RRI as the phase proceeded. This implied shoppers got more relaxed with the proceeding phase. We could estimate that shoppers felt tense while performing two disparate tasks simultaneously in Phase-1, concentrated on items by performing two associated tasks in Phase-2, and felt relaxed to perform tasks without consistency and obligation in Phase-3 respectively
5. **Constructing TPM:** Synthesizing above analyses, we could obtain TPM which could adequately describe shopper’s cognitive processes in the course of her shopping trip at the storefront (see Figure-5).

⁷ In Phase-1, most informants expressed that they were thinking of their dinner menu and had not yet decided. Among interesting behaviors observed was that an informant directly went to the deli floor right after starting to shop, closely looking at some items, saying “they’re very helpful to plan my dinner menu as well as to know how to cook (the menu)”.

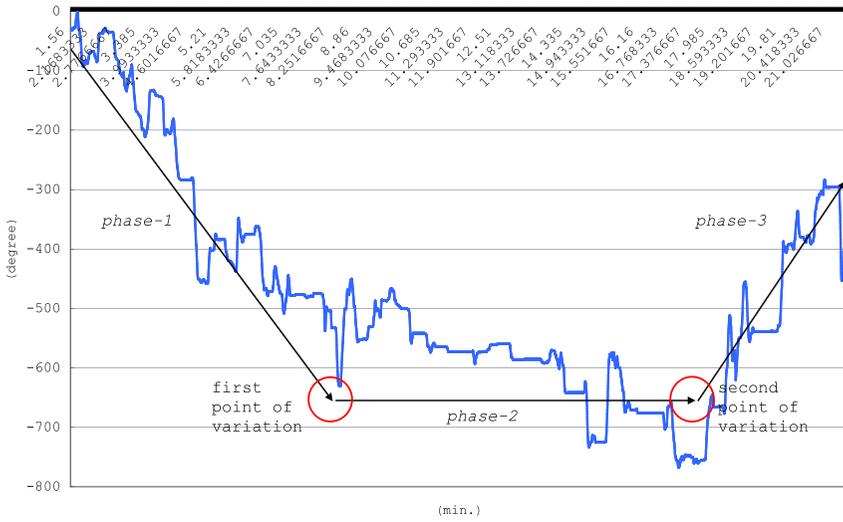


FIGURE-2 A typical transition of shopping cart orientation is shown.

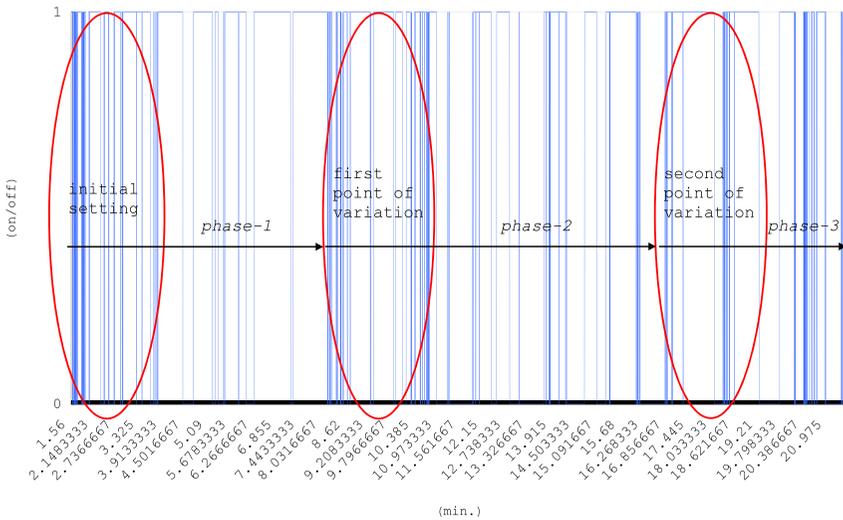


FIGURE-3 A typical state transition of handgrip pressure (two-handed) is shown.

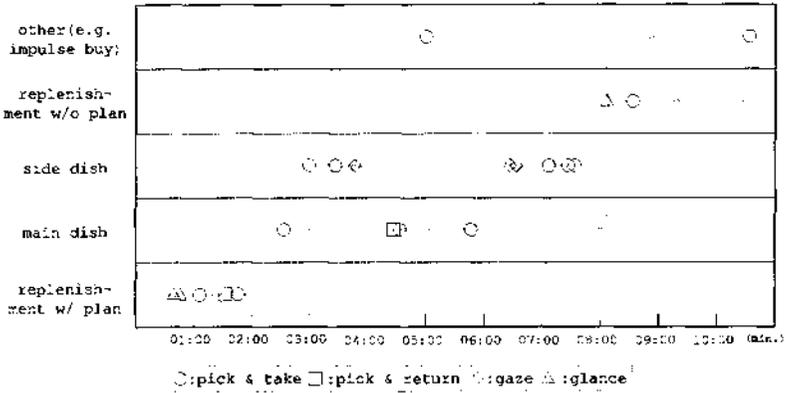


FIGURE-4 A typical shopping process consisted of five layers (categories) based on usage of the items bought/considered to buy is shown. Each mark denotes type of actions to the item: ○ denotes "picked it and put it into basket," □, "picked it but returned it to shelf," ○, "gazed at it," and △, "glanced it" respectively.

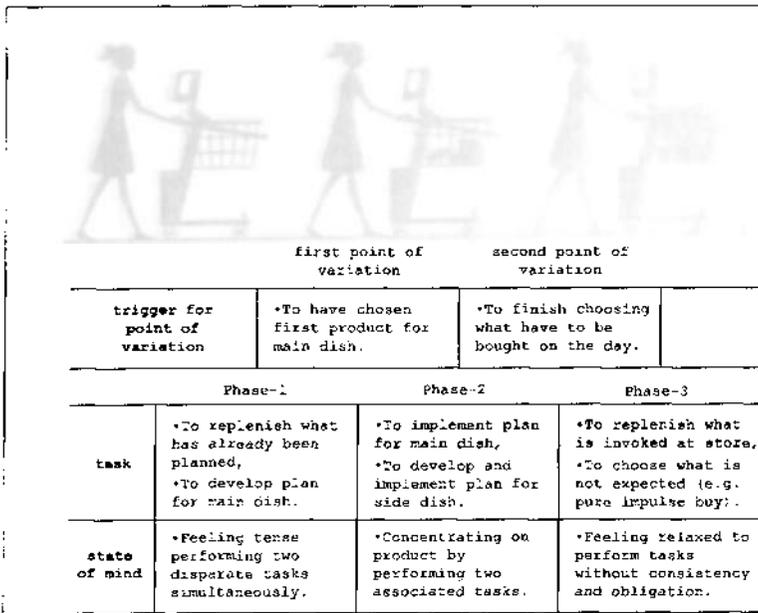


FIGURE-5 Three-Phase Model (TPM) as one of major discoveries from iterative analyses with our framework

INFORMING DESIGN

While we developed new media systems integrated with shopping carts, we, consequently, developed two service applications making use of TPM: as a shopper's context transforms, a particular service exerts never uniform, but should be dynamically shifted as well. We assessed the best allocation and configuration of the service types by examining when and how the each service type should be activated. The brief service concept of each is as follows:

- **Recipe Recommendations:** As recipes are effective information for a shopper's meal arrangement, they will tend to be used in an earlier part of the process. Since we knew that a shopper usually plans his/her main dish in the first phase and side dish in the second phase, an appropriate series of contents could be provided at each respective phase.
- **Product Recommendations:** Although product information seems valuable throughout the process, each phase will favor different kinds of information. In the first phase, information regarding a fresh food sale may help a shopper to develop his/her plan for his/her dinner arrangement, especially for his/her main dish. In the second phase, information that enables a shopper to compare prices, qualities, and features of an array of choices may help a shopper to fulfill his/her plan for a main dish and side dish. In the third phase, information regarding new and luxury articles may help a shopper to suffice his/her curiosity about grocery items.

In fact, these services could gain a welcome acceptance while the operational test took place at the store in the early autumn in 2006. Although I should withhold detailed results of the test here, one important lesson from the test was that these services were effective especially in the third phase. As we learned that a shopper tended to feel relaxed in the phase, he/she was likely to take new information as a part of his/her shopping experience during the term. We think it is an important implication and we have to think of new ideas to make shopping experiences more attractive.

FURTHER REFLECTIONS

We have reported our process in which we tried to build complementary relationships between participant observation and digital-sensor observation. Generally speaking, we recognized that our aim was successfully accomplished. Most of all, we could conduce shopper's latent behavioral patterns under longer time-space transition by introducing

digital-sensor observation, and we could further obtain deep insights by giving interpretations from the analyses on participant observation to the patterns.

Besides, we could also bring about instrumental outcomes. In the domain of system design, “design implication,” which has been a practical form of ethnographic outcome, has often left hard-to-traverse boundaries concerning design practices, i.e. it leaves unsolved problems to identify critical system parameters. However, our method includes the discovery of parameters into an ethnographic research preventing any sort of the boundaries arising. In fact, we could serve a location detector using RF-tags, a gyro compass, and pressure sensors with a handgrip as the system input for our specification.

On the other hand, problems regarding types of sensors to use still exist. Reflecting on the lessons to be learned from the research, we have come to believe that adequate choice, configuration, and measurement of sensors can go together with open-ended qualitative analyses by giving adequate research focuses based on a broad range of human perspectives. In that sense, concurrent collection of video data is a key factor, i.e. matching between recordings of behaviors and/or utterances of an informant and patterns included in sensor readings accommodates exhaustive investigation in human experience; although it brought us much more work as well! As a future technical contribution, a data mining method dealing with stream sensor readings and video data will play a critical role in the research process.

Our method is still in an early phase of development, and therefore, needs more time to be adapted to gain in our everyday lives from digital sensors. We believe however, that our aim is a valuable venture where ethnography praxis is likely to penetrate into the industrial world more deeply and reliably.

Acknowledgments – We’d like to extend our deepest gratitude to Bonrepas Corporation at first. Without its dedicated contribution including providing a store for our longitudinal research base, recruiting informants from her customer base, and gathering and editing vast product information, we could not realize the research. We’re also grateful for Yasuhisa Ito and Naoko Okuizumi, both of who are hard-to-find professional field-researchers in Japan. Due to their generous cooperation, we could blaze a trail to our research process. While working on this manuscript, attentive help from Rich Radka, our session chair of EPIC 2007, has been a mariner’s compass for us. We appreciate his thoughtfulness and patience.

REFERENCES

Chen, Guanling. and Kotz, David.
2000 *A Survey of Context-Aware Mobile Computing Research*. Technical Report: TR2000-381. Dartmouth College, 2000.

Food Marketing Institute

- 2006 U.S. Grocery Shopping Trends 2006, Washington, DC: Food Marketing Institute.
- Krafft, Manfred and Mantrala, Murali K. (eds.)
2006 *Retailing in the 21st Century—Current and Future Trends*, Berlin and Heidelberg, Germany: Springer Verlag.
- Reid, Rhona and Brown, Stephen
1996 *I hate Shopping! An Introspective Perspective*. Int'l Journal of Retail and Distribution Management. Vol. 24, No. 4, pp. 4-16, MCB University Press.
- Roussos, George
2004 *Building Consumer Trust in Pervasive Retail*. In Proc. of Int'l Workshop Series on RFID. Tokyo, Japan: Joint Forum for Strategic Software Research and System LSI Research Center of Kyushu University.
- Sorensen, Herb
2003 *The Science of Shopping*. Marketing Research Magazine. Fall, 2003. Chicago, IL: American Marketing Association.

Reflective probes, primitive probes and playful triggers

DARIA LOI

Intel Corporation

In this paper I present and discuss Reflective Probes, Primitive Probes, and Playful Triggers – derivatives of Cultural Probes that build off such work promoting multiple places for and uses of creative, inspirational and provocative artifacts in research and development endeavors. In the first parts of this paper I introduce the topic as well as providing relevant background details, briefly examining Cultural Probes from the perspective of their intended outcomes – what probes can enable. I then overview the three mentioned notions as well as emphasizing complications, implications and conclusions related to the deployment of these and similar tools. The paper offers a number of suggestions and questions related to the context, time, audience, producer, content, soul, purpose and form of these tools. Such suggestions have great implications within business contexts, where timelines, directions and multidisciplinary tensions can act as 'interfering agents', complicating how these tools can be designed and deployed by ethnographers operating within the industry.

INTRODUCTION

In this paper I introduce three tools – Reflective Probes, Primitive Probes, and Playful Triggers. Building on notion of *anomalous objects* and *odd experiences* (Loi & Burrows 2006), these tools are derivatives of Cultural Probes (Gaver et al 1999) that build off such work promoting multiple places for and uses of creative, inspirational and provocative artifacts in research and development endeavors. Cultural Probes, tools often including disposable cameras with instructions, maps, postcards, diaries, and stickers, were originally developed to address the methodological challenges posed by the study of home settings for the development of 'domestic technologies' (Hemmings et al 2002). The *cultural probes approach* offers an "alternative to more traditional methods of user research from the social sciences, such as questionnaire studies, focus groups, or ethnographies" (Gaver et al accessed 2007). These tools offer a practical and creative way of learning more about people's everydayness in a context (home) where, due to privacy as well as time constraints, is not possible to conduct full participant observations. Initially developed as evocative tasks to elicit inspirational responses and to gain insights into people's needs, dreams, and ways of negotiating their surroundings through a designed-oriented approach, the *Cultural Probes idea* has since been deployed by many researchers and designers in different ways and diverse contexts (outside the home).

BACKGROUND

Boehner et al (2007) recently discussed cultural probes' *uptake* in human-computer interaction (HCI) contexts and identified a number of 'X probes', providing five categories: probes as packets; as data collection; as participatory; as sensibility; and as citation. While I see benefits in this categorization, I here provide an alternative lens – combining an interpretation of HCI and non-HCI literature with lessons-learned through my design and research practice – that concentrates on the intended outcomes of probes adoption: what researchers want(ed) probes to enable. While Gaver et al (2004) state that probes were born to gather “fragmentary clues” about people’s “lives and thoughts” – tools to (1) inspire – others argue that they can be used to (2) provide relevant information; (3) gather empathetic data; and (4) get data on usability issues and design. I overview these four categories in the following sections.

Cultural Probes to generate inspirational data

The Presence (Hofmeester 1999) and Equator (accessed 2004) projects belong to this cluster, where cultural probes were primarily employed in concert with other ethnographic methods to generate inspirational insights. Presence used probes to explore technologies with the aim of increasing “the presence of the elderly in their local communities” by including them in the design process (Gaver et al 1999). Building on Presence, Equator used probes to investigate the “integration of the physical and digital worlds by developing innovative systems” (Gaver et al accessed 2007) to “enhance the quality of everyday life” (Equator Project, accessed 2004). Although Probes were designed similarly, the two projects had different foci: Presence aimed at generating new understandings of technology through design speculations, provocations and challenges, while Equator wanted to develop a series of concept proposals of responsive furniture systems that “emphasised existing behaviour to promote reflection or disruption” (Gaver et al accessed 2007).

Cultural Probes to gather relevant information

Projects like Digital Care (a sub-section of Equator) deployed probes as tools to get contextual ethnographic information (Hemmings et al 2002). The tools, pragmatically adapted to a sensitive research setting (psychiatric patients), helped to unobtrusively supplement ethnographic inquiry; gather information; engage effectively in a dialogue with the participants; “elicit new and different information” with the notion that they could “provide more substance to design ideas that had surfaced in the course of interviews or observational periods” (Hemmings et al 2002); and aid the development of a prototype for a self-medication device and some communication devices for staff.

Cultural Probes to gather empathetic data

Some researchers used probes in empathetic design¹, to gather empathic data in a flexible ways for inspiration and information (Mattelmäki 2003; Mattelmäki & Battarbee 2000 & 2002; Sanders 2001; Wensveen 1999) or as UE Probes – “user experience prototypes that are tested with users in order to get feedback before launching any early version of marketable technological systems” (Kankainen 2002). SonicRim² and MakeTools³ gather empathetic data using, among other strategies (what people say⁴ and what people do⁵), probe-like toolkits that concentrate on what people make⁶. Once responses to the toolkit are collected, the groups look for a convergence of various perspectives, delivering research findings and insights in many different formats⁷.

Cultural Probes to design and understand the potential for new technologies

The interLiving project, to develop technologies to “support communication among diverse, distributed, multi-generational families”, deployed Technology Probes (Hutchinson et al 2003), which differ from Cultural Probes that “tend to involve a single activity at a particular time and are not necessarily technologies themselves”. Technically simple and flexible to use, Technology Probes help establish which future technologies would be interesting to design by: installed in a real-use context; monitored over time; and reflected upon to gather information and inspire ideas for new technologies. Examples of this probe-category include a Message Probe – an application enabling “members of a distributed family to communicate using digital [sticky notes] notes in a zoomable space” – and a videoProbe which “provides a simple method of sharing impromptu images among family members living in different households” (Hutchinson et al 2003).

NEW TOOLS

In the following sections I overview three new tools – Reflective Probes, Primitive Probes and Playful Triggers – that promote multiple places for and uses of creative, inspirational and provocative artifacts in research and development endeavors.

¹ The notion of empathetic user data aims at creating “a holistic understanding about the users” (Mattelmäki 2003) to better support user-centered practices. Central to this concept is that by understanding the feelings of people design teams can empathize with their users (Sanders 2001) because “empathy takes beyond practical and behavioral to people’s inner experience” (Black 1998).

² <http://www.sonicrim.com>

³ <http://www.maketools.com>

⁴ Traditional market research relying on word-based activities including conversations, interviews, and web and email questionnaires.

⁵ Applied ethnography relying on users’ observation to gain a clearer understanding of their lives.

⁶ Participatory design enabling participants to make or create something and then tell a story about it to unfold their needs and dreams.

⁷ E.g. written reports, posters, presentations, immersive spaces, stories, videos, models, maps.

Underpinning these tools are notions of *anomalous objects* and *odd experiences*. As discussed in a previous publication (Loi & Burrows 2006), by playing with these notions it is possible “to dramatically expand creative and interpretive engagement between people, providing platforms where diverse interpretations can be generated”. In a number of projects⁸ we deployed common-everyday-materials-made-eccentric-and-anomalous-by-context-and-use to engender speculative and projective responses from participants – we worked with things that, while being ordinary and banal, create contexts where such things become the focus of attention and meaning-making. These attributes can be often found in the three tools I discuss in the following sections.

Reflective Probes

Reflective Probes (Loi 2004) create the conditions for *reflective practice* (Schon 1983) to prosper through activities that take the form of creative, ambiguous and inspiring artifacts. Reflective practice is about “creating a habit, structure, or routine around examining experience” that can vary in terms of *how often*, *how much*, and *why* reflection gets done (Amulya 2004). Reflection helps us “open up the possibilities of purposeful learning” and learning how to take perspective on one’s own actions and experience is central to reflection (Amulya 2004).

In the Document/Reflect/Create project (Loi 2004) I wanted to give direction, freedom and confidence for students to document and reflect on their learning while being able to create new meanings through their reflections as well as reflecting on their own reflections. I developed a Reflective Probe that was shaped as a brief asking each participant to undertake a series of tasks related to each class event. The brief was structured in its tasks yet totally open in its outcomes. Each event had to be ‘recorded’ on a page folded in two, to mimic a greetings card: on the cover each student had to document the learning associated to a specific event through an image and a short sentence; on the inside (left side) s/he had to document the same event in writing; on the inside (right side) s/he had to reflect on what they just documented; and on the back-cover s/he had to create something new out of their reflection. Students posted and received feedback to each card on a weekly basis – cards accumulated throughout the semester in individual custom-made letter boxes in my office. This exercise fundamentally asked students to ask themselves: *what was that event about? what does it mean to me? what will I do with what I have just learned?* Outcomes varied enormously – from more design concepts to poetry, action plans and games – but invariably augmented students’ capacity to reflect and use their reflections to generate new meanings. In the following figure, few examples of this project: on the left, an artifact illustrating a student’s feelings about what the term meant to her from a learning perspective; in the centre, a meta-object built by another student out of all his semester’s cards to illustrate how each week’s learning actively helped him shaping a greater understanding of his discipline; and on the right, a number of weekly cards from another student.

⁸ See for instance the *Pea Project* (Loi, Burrows & Coburn 2002) and *A Surrealist Encounter* (Loi & Burrows 2004).



FIGURE 1 Examples of Document/Reflect/Create project (Loi 2004)

The above example is just one instance of how a Reflective Probe can help people to create a habit, structure, or routine around examining experience – to take perspective on one’s own actions and experiences. As probes often are, Reflective Probes are and should be contextual, so they need to be developed with the context to which they are aimed at in mind: the one-size-fits-all approach rarely works when developing these tools.

Reflective Probes have a great potential in corporate settings, building on the notion that awareness and reflectiveness are foundational traits in developing and preparing managers for what Lewis (2000) calls “organizational complexity and ambiguity”. Drawing from a range of corporate workshops I conducted over the past years, I argue that Reflective Probes offer organizations the opportunity to open up “zones of possibility for intellect and imagination” (Jipson & Paley 1997) – as through these tools people start from an equally obscure and ambiguous place, outside the “rubber stamps of conventional clichés” (Schachtel 1959). Reflective Probes can also facilitate a variety of ethnographic, user testing and co-design activities, when individual reflections on specific circumstances, uses or experiences can benefit the overall project. Each time I adopted reflective tools in activities such as workshops, focus groups or interviews, deep individual insights enriched the process while helping participants unwind in a reflexive space which is often characterized by openness and creativity. Good examples of such experiences include the *Pea Project* (Loi, Burrows & Coburn 2002) and *A Surrealist Encounter* (Loi & Burrows 2004).

Primitive Probes

As a less explored strategy, Primitive Probes are based on the assumption that tools such as Cultural Probes or Reflective Probes can be designed by participants – stretching the boundaries of who is entitled to design a probe and why/how. A Primitive Probe could be conceptualized as an ancestor of a Cultural or Reflective Probe which prompts, triggers and enables participants to design a probe and then to adopt it to probe oneself or to probe others (Loi 2004). Differently from a traditional Cultural or Reflective Probe environment, a probe-designer has here the role of developing a scaffold (Primitive Probe) for a probe to be developed and utilized by its final user.

Primitive Probes are open-ended tools that offer opportunities for reflective, creative and community outcomes, rather than probing participants for specific information, inspiration or emphatic data. They can provide such data through their use, but as a by-product, not as a primary intended outcome. These tools can vary in their open-endedness, from being closer to a specific context (for instance, a brief asks participants to design a toolkit to then probe their family members around their reading habits) to having a wider focus and target audience (as an example, a container is left on a footpath: inside, a number of playful activities ask passing-by people to co-develop a poster prompting other passing-by citizens to offer their insights on issues regarded crucial for the city they live in – the poster is built with materials included in the container and then affixed on a nearby wall). I deployed Primitive Probes within educational contexts to unleash multiple and unexpected ways of learning about oneself and others and to deepen topics part of the curriculum within learner-oriented contexts (Loi 2004; Loi et al 2004). However, these tools could find fertile grounds in both design and organizational contexts – to prompt creative endeavors, trigger innovative cycles, support design explorations and open up new unexpected areas to be explored.

Playful Triggers

Playful Triggers (Loi 2005) rekindle the possibility for people to play, wonder and learn and to discover (or rediscover) the pleasures and benefits of such experiences. Reflective engagement, fruitful communication, and improved collaboration are the major outcomes related to such experiences. These tools can be used to:

- gain inspiration on how to ‘read’ and understand a context and its inhabitants – to provide nuances and insights that a conventional process would fail to materialise;
- provide information about both space and people within a specific context – information that could complement and deepen data gathered via traditional means; and
- create a dialogue between the inhabitants of specific context – enabling relationships that could foster and sustain co-operative and collaborative practices.

The primary aim of Playful Triggers is to establish a bond – a collaborative practice – among participants: they focus on dialogue-creation, acting as communication (rather than ethnographic/empathetic) devices by activating *receptive modes of engagement* (Deikman 1973). Receptive modes differ from active modes (see Table 1) as they allow events to happen “instead of being verbal, analytical, sequential, and logical” as this mode of consciousness is “nonverbal, holistic, nonlinear, and intuitive” and emphasise “the sensory and perceptual” (Bortoft 1996). Deikman (1973) suggests that the active mode dominates the receptive mode due to the value placed on biological survival. Interestingly, he stresses that the receptive mode is functional during infancy and that the developmental preference for the action mode has made society consider it as the proper (or ordinary) mode, while there is a tendency to think that the more unusual receptive modes are pathological or regressive.

| | |
|-----------|---|
| active | <ul style="list-style-type: none">. focal attention;. objects-based logic;. intensified perception of boundaries;. a dominance of form over colour and texture;. a goal oriented state. |
| receptive | <ul style="list-style-type: none">. diffuse attention;. paralogical thought processes;. decreased boundary perception;. dominance of sensory over formal attributes. |

FIGURE 2 Receptive and active modes (Deikman 1973)

Playful Triggers aim at activating receptive modes of engagement, favoring sensory over formal attributes of that engagement. These tools generate receptive modes through their tactile, visual, mysterious, playful, tridimensional, poetic, ambiguous and metaphorical qualities and ask people to challenge taken for granted or conventional ways of doing, seeing and articulating things to co-generate shared understandings and collaborative practices. Playful Triggers should be designed according to four key notions: wonderment, playfulness, learning through making and metaphors. I based these tools on the idea that to make is to learn, to make requires playfulness, and to play is to learn. Learning occurs in the making of things and is an active experience which helps create and share new meaning – a knowledge-by-encounter that is intuitive and holistic. Playful Triggers facilitate people to make via playing with artifacts that make them wonder. Moreover, they extensively use metaphors to foster the capacity to see “from perspectives previously inaccessible” (Randee & Mealman 1999) and are “sufficiently ambiguous to permit latitude in that focus” (Clegg & Gray 1996).

Although I originally designed Playful Triggers to elicit collaborative practices within organizations, they have been since adopted in a variety of contexts, ranging from corporate workshops to interactive art exhibits⁹ (Loi 2007), co-design activities (Viller et al 2006), interviews to prompt communication among individuals belonging to the same discipline (Akama 2007) and pedagogical settings (Loi and Dillon 2006).

⁹ Refer to <http://www.darialoi.com/myo>



FIGURE 3 Examples of Playful Triggers (Loi 2005)

COMPLICATION(S) AND IMPLICATION(S)

In this section I would like to discuss further issues related to the context (*where should they be deployed?*), time (*when?*), audience (*who are the most appropriate recipients?*), producer (*who should design/ deploy them?*), content (*what type of ‘data’ can they provide?*), soul (*are they rational or ambiguous?*), purpose (*what is their function?*) and form (*how should they be designed?*) of the tools I overviewed and introduced in this paper.

Context. Cultural Probes were initially developed for domestic settings (Gaver et al 1999) but they soon expanded to a myriad of research fields, from sensitive settings (Crabtree et al 2003) to urban computing (Paulos and Jenkins 2005), demonstrating somehow the ‘malleability’ of this approach and its relation to context. These types of tools seem to be adaptable to many fields of inquiry and beneficial within a variety of research contexts. However, it is crucial one remembers that the relationship between them and their context plays a fundamental role, as these tools should be designed bearing in mind the contexts where they will be employed – in brief, a ‘one size fits all’ approach does not work. This has great implications within environments that have short deadlines and require fast turnovers, as this contextual-design requires more time, care and effort (and funding).

Time. Less has been discussed over the years on when, during a given process, these tools seem to work best. Some feel that these tools should be used during the initial stages of a new project (Stalker-Firth 2007). Others employ them “after an interview session with each participant” (Project Nightingale 2005) or “when you need to gather information from users with minimal influence on their actions, or when the process or event you’re exploring takes place intermittently or over a long period” (Gaffney 2006). I have employed these type of tools in different ‘phases’: to break the ice at the start of an interview, to follow up or deepen my understanding of issues discussed in a previous interview, to co-generate ideas, and to prompt creativity during workshops. Context context context – when a probe should be used is strictly related to where (and why) it will be used.

Audience. Not everyone finds these tools as engaging as one might think as not everyone is the same nor interacts similarly to similar situations. Again, context is key but one has to realize that these are not magic toys: sometimes they simply won't work, or better – they won't work the way one anticipated. In addition, they will fail in producing meaningful and deep result when used in isolation from other ethnographic tools, to get “quick and dirty insights” – quick and dirty approaches often produce quick and dirty outcomes.

Producer. When I discussed the possibilities offered by what I termed ‘primitive probes’ I implicitly opened up questions around who designs or should design these tools. Can everyone design and employ them? Purists would firmly shake their heads, yet the ‘probes wave’ seduced so many that the question feels almost redundant, as practice demonstrated that possibly everyone can. However, there are some questions around quality that I firmly believe should be asked, as the quality of a tool is strictly related to the capacity of its producer to design its content and form. This is where several issues start, as some can design the content and some can design the form of these tools but quite rarely a researcher can manage both well. In academia as in industry, they are often designed by multi-disciplinary teams instead of individuals, which appears like a great way to solve the issue of content/form design. However, the tensions typical of multi-disciplinary work (due to multiple epistemological and ontological orientations) are often evident in the design process adopted for creating these tools. In the industry this tension, together with tight deadlines and multiple interpretations of where a project should go, act as in *interfering agents*, complicating how the tools can be designed and effectively deployed.

Content. The open-ended and qualitative nature of these tools somehow ‘seduced’ several HCI and non-HCI thinkers/researchers with the promise of creative and deep results. Representing an interesting complement to traditional ethnographic tools, Cultural Probes and similar tools can bypass some limitations of traditional and prescriptive research methods, acting as effective communication tools and fostering innovation and creativity. However, while the warm information¹⁰ they produce is considered highly valuable by some researchers in some contexts, these tools are seen by others as unrepresentative of objective data, producing un-scientific material which is complex to filter, interpret and use. Gaver et al (2004) clearly embrace the “incomplete, unclear, and biased” nature of probes. Others are less impressed. Dourish (2006) stresses that within HCI research these type of techniques “are often proposed as alternatives to “full” ethnographic methods when time is at a premium” yet “clearly fail to capture what an ethnography captures, given that they lack the coupling of analytic and methodological concerns”, and “locate the topics of interest outside of the relationship between ethnographer and subject”. I believe that when these types of tools are adopted for ethnographic research they should never be used in isolation – as mentioned earlier, the use of these tools in isolation from other ethnographic tools will provide quick and dirty insights that are likely to develop into quick and dirty outcomes.

¹⁰ i.e. all those qualitative aspects such as personal feelings, insights, sensations, attitudes and ways of being which cannot be measured.

Concurrently, I believe in the effectiveness of the warm information these tools can produce when they are purposely designed, deployed, and analyzed.

Soul. Dourish (2006) points out that Cultural Probes are not simply “discount ethnographies” but more possibly “rejections rather than variants of ethnographic inquiry”. Gaver et al (2004) point out how Probes “embodied an approach to design that recognizes and embraces the notion that knowledge has limits” – an approach that values “uncertainty, play, exploration, and subjective interpretation as ways of dealing with those limits”. And this is where a first problem starts, as this initial artist-designer vision got increasingly rationalized-through-adoption by using probes to produce ambiguity-free data. While “inspiration, not information” was the motto evident in Gaver et al’s 1999 paper, their 2004 article shows palpable frustration: “people seem unsatisfied with the playful, subjective approach embodied by the original Probes, and so design theirs to ask specific questions and produce comprehensible results. They summarize the results, analyze them, even use them to produce requirements analyses”. As soon as the artist-designer vision has become main stream, over-rationalisations of these tools has diluted their initial appeal. I agree with Dourish’s (2006) portrait of ethnography, but I must admit that I am not totally convinced that the only way of looking at probes is to conceptualize them as rejection of ethnographic inquiry. Possibly that was among original purposes, but what are we left with now that probes ‘invaded’ some many realms? The artist-designer reminded us that “uncertainty, play, exploration, and subjective interpretation” can be valuable assets within ethnographic inquiry. I strongly believe that probes, embodying such *unscientific* features, can enrich data when and if used alongside more traditional ethnographic methods.

Purpose. In contexts where time is at a premium probes are used as alternatives to data collection and often morphed into fancy-looking questionnaires, where notions of uncertainty, play and exploration might be evident in the packaging or in the fact that participants are given ‘something playful’ to interact with – a fun activity to prompt further data to be expressed in a follow up interview. These are cases where the artist-designer vision fails as such a vision is used to ‘dress up’ conventional tools instead of engaging with knowledge creation and on how it can be challenged through creative endeavors. Somehow the by-probes seduction morphed into a seduction related to how data can be represented.

Form. When the above occurs, researchers adopting probe-like skins for their tools often forget an important aspect of Cultural Probes: their design. While the initial probes that seduced so many were based on aesthetic control where aesthetics is an “integral part of functionality” and pleasure “a criterion for design equal to efficiency or usability” (Gaver et al 1999) the probes of today are often poorly packaged replicas that often fail in demonstrating the designerly care so evident in their ancestors. Probes seduced many but it appears that not everyone has the aesthetic and design language to design probes.

CONCLUSION(S)

To conclude, I would like to re-emphasize some lessons-learned to prompt reflectiveness around discussed issues:

- a ‘one size fits all’ approach does not work – context is key;
- when a tool should be used is strictly related to where/why it will be used;
- these are not magic toys: sometimes they simply won’t work, or better – they won’t work the way one anticipated;
- the quality of a tool is strictly related to the capacity of its producer to design its content and form;
- these tools produce warm information which can be equally highly valuable or completely unrepresentative of objective data – their value is related to one’s view of what research is, should be and represents;
- there is something important to be learned from the artist-designer – these tools can enrich data when used alongside other ethnographic methods;
- these tools should be about engaging with knowledge creation and on how it can be challenged through creative endeavors; and
- they should be carefully and purposefully designed.

In this paper I provided a lens to read how Cultural Probes have been adopted since their inception, proposed three new tools, overviewed a number of issues associated with the *probes-approach* and listed some associated suggestions. Far from being an exhaustive analysis or a prescriptive proposition, this paper aimed at reviewing some learned-lessons, highlighting important issues that have been perhaps taken for granted over time, while we were all so busy playing with a new exciting possibility called Cultural Probe.

Artists have the capacity to make a lasting positive impact on people’s lives by helping them to see for themselves the dignity, beauty, and sacredness of the activities of their everyday life: the creative spirit, a powerful agent of transformation that lies within everyone. France Morin, 2000, p. 7

Acknowledgments - My thanks to my ex students at RMIT University, colleagues that helped through the years to shape my understandings of cultural probes, and EPIC reviewers and commentators. Disclaimer: Neither the author nor Intel Corporation represents or endorses the services of the service providers mentioned in this paper.

REFERENCES

- Akama, J.
2007 *Trust me: valuing human relationships in communication design practice*. PhD Research. RMIT University, Melbourne Australia.
- Amulya, J.
2004 *What is Reflective Practice?* Center for Reflective Community Practice. MIT.
<http://rcrp.mit.edu/documents/whatis.pdf>, accessed 8 March 2007.

- Black, A.
1998 *Empathic Design – User focused strategies for innovation*. New Product Development. IBC Conference.
- Boehner, K., Vertesi, J., Sengers, P. and P. Dourish
2007 *How HCI Interprets the Probes*. CHI 2007. San Jose, CA USA.
- Bortoft, H.
1996 *Authentic and Counterfeit Wholes*. In *The Wholeness of Nature: Goethe's Way of Science*. Floris Books, New York, 3-26.
- Crabtree, A., Hemmings, T., Rodden, T., Cheverst, K., Clarke, K., Dewsbury, G., et al.
2002 *Probing for Information*. 2nd EQUATOR Conference.
- Crabtree, A., Hemmings, T., Rodden, T., Cheverst, K., Clarke, K., Dewsbury, G., Hughes, J. A. and Rouncefield, M.
2003 *Designing with care: Adapting cultural probes to inform design in sensitive settings*. OZCHI 2003, 4-13.
- Deikman, A.J.
1973 *Bimodal consciousness*. Ornstein, R.E. (Ed.). *The nature of human consciousness: a book of readings*. W.H. Freeman, San Francisco.
- Equator Project.
The EQUATOR Interdisciplinary Research Collaboration. <http://www.equator.ac.uk>, accessed 11 June 2004.
- Gaffney, G.
2006 *Cultural Probes*. Usability Technique series. <http://www.infodesign.com.au/ftp/CulturalProbes.pdf>, accessed 2 May 2007.
- Gaver, B., Dunne, A. and Pacenti, E.
1999 *Cultural Probes*. *Interactions* 6:1, 21-29.
- Gaver, B., Boucher, A., Pennington, S., & Walker, B.
2004 *Cultural Probes and the Value of Uncertainty*. *Interactions* 11:5, 53-56.
- Gaver, B., Walker, B., Boucher, A., & Pennington, S.
Domestic Probes. <http://www.goldsmiths.ac.uk/interaction/probes.html>, accessed 11 June 2007.
- Hemmings, T., Crabtree, A., Rodden, T., Clarke, K., & Rouncefield, M.
2002 *Probing the Probes: Domestic Probes and the Design Process*. 11th European Conference on Cognitive Ergonomics.
2002 *Probing the Probes*. 7th Biennial Participatory Design Conference, Sweden.
- Hofmeester, K., Dunne, A., Gaver, B., Susani, M., & Pacenti, E.
1999 *A Modern Role for the Village Elders*. CHI99.

Harmony

- Hofmeester, K., & de Charon de Saint Germain, E.
1999 *Presence - new media for older people*. Netherlands Design Institute, Amsterdam.
- Hutchinson, H., Mackay, W., Westerlund, B., Bederson, B. B., Druin, A., Plaisant, C., et al.
2003 *Technology Probes: Inspiring Design for and with Families*. CHI03.
- Jääskö, V., & Mattelmäki, T.
2003 *Methods for empathic design: Observing and probing*. Designing Pleasurable Products and Interfaces Conference.
- Kankainen, A.
2002 *Thinking model and tools for understanding user experience related to information appliance product concepts*. Unpublished PhD, Helsinki University of Technology.
- Leonard, D., & Rayport, F.J.
1997 *Spark innovation through empathic design*. Harvard Business Review 75:6, 102-112.
- Lewis, M. W.
2000 *Exploring paradox: Toward a more comprehensive guide*. The Academy of Management Review; 25:4, 760-776.
- Loi, D.
2004 *Document/Reflect/Create - Cultural Probes in Teaching and Learning environments*. PDC 2004, Vol. 2, CPSR, Toronto, Canada, 123-126.
- 2005 *Lavoretti per bimbi: Playful Triggers as keys to foster collaborative practices and workspaces where people learn, wonder and play*. PhD thesis, RMIT, Melbourne, Australia.
- 2007 *Of Suitcases, Playful Triggers and Other Stories - Enabling Collaborative and Creative Practices in Post-Disciplinary Worlds*. Enabling Innovation in Organizations: The Leading Edge, Kansas City, MO, October 26-27.
- Loi, D. & Burrows, P.
2004 *A table, a box, friends and conversation: stimulating collaborative reflection*. 3rd Carfax International Conference on Reflective Practice - Reflection as a catalyst for change. Gloucester, England, June 23-25.
- 2006 *Magritte and the pea: anomalous artefacts and the contexts they create*, Working Papers in Art and Design, vol. 4 - The role of the context in the interpretation of artefacts and visual semantics in art and design research.
- Loi, D., Burrows, P. & Coburn, M.
2002 *The Pea Project - Design Stimulus*. Binder, T., Gregory, J. & I. Wagner (Eds) PDC02 - Participatory Design Conference 2002. CPSR, Malmö, pp. 415-417.
- Loi, D. and P. Dillon
2006 *Adaptive educational environments as creative spaces*. Cambridge Journal of Education, 36:3, September, 363-381.

- Loi, D., Voderberg, M., Liney, B., Marwah, S., Manrique, P. & Piu, G.
 2004 *'Live like I do' - a PD case study using Cultural Probes*. Bond, A., Clement, A., de Cindio, F., Schuler D. & P. van der Besselar (Eds), PDC 2004, Vol. 2, CPSR, Toronto, Canada, 191-194.
- Mattelmäki, T.
 2003 *VÄINÖ - Taking user centred steps with probes*. INCLUDE conference.
- Mattelmäki, T., & Battarbee, K.
 2002 *Empathy Probes*. Participatory Design Conference 2002.
 2000 *Feeling Good - a case study of empathic design methods*. NordiCHI.
- Morin, F.
 2000 *The Quiet In The Land: Resistance And Healing Through Art*, Art Journal, 59:1 Spring, 8-10.
- Paulos, E. and Jenkins, T.
 2005 *Urban Probes*. CHI05, ACM Press, 341-350.
- Project Nightingale
 2005 *User Centred Design*. Project Nightingale, University of Sydney, Australia.
<http://praxis.cs.usyd.edu.au/~peterris/?Design+Process/User+Centred+Design>,
 accessed 2 July 2007.
- Sanders, E.B.N.
 2000 *Generative Tools for CoDesigning*. In B.a.W.E. Scrivener (Ed.), Collaborative Design. Springer-Verlag London Limited, London.
 2001 *Virtuosos of the Experience Domain*. IDSA Education Conference.
- Schachtel, E.
 1959 *Metamorphosis*. Basic Books, New York.
- Schon, D. A.
 1983 *The Reflective Practitioner How Professionals Think in action*. Temple Smith, London.
- Stalker-Firth, R.
 2007 *Inside Your Users' Minds: The Cultural Probe*. A List Apart. March 27.
<http://www.alistapart.com/articles/culturalprobe>, accessed 15 May 2007.
- Univ. of Nottingham, Univ. of Lancaster & Univ. College London.
Digital Care. <http://www.equator.ac.uk/projects/digitalcare/>, accessed 21 May 2005.
- Wensveen, S.A.G.
 1999 *Probing experiences*. First international conference on Design & Emotion.
- Viller, S., Simpson, M., Vaughan, L., Yuille, J., Akama, Y. and Cooper, R.
 2006 *The object of interaction*. OzCHI'06, November 22-24, Sydney, Australia.

Listening with indifference

ALEX S. TAYLOR

Microsoft Research

LAUREL SWAN

Information Systems, Computing and Mathematics, Brunel University

DAVE RANDALL

Department of Sociology, Manchester Metropolitan University

In the following, we suggest that the product of ethnographies undertaken for commercial and industrial purposes is under threat of losing its integrity. The sorts of results furnished through 'applied ethnography' and those resulting from methods like focus groups, interviews, questionnaires, etc. appear largely of the same kind; they describe and codify the members of a setting and their behaviours, and differ, if at all, in terms of depth and detail. In short, it is not easy to distinguish between the product of applied ethnography and that produced from the many other methods available. This apparent dissolution begs the question 'what's left' for applied ethnography and, indeed, for its practitioners? We report on our efforts to take this question seriously and reflect on how 'the ethnomethodological policy of indifference' has offered a useful starting point. Having situated this policy in a disciplinary context, we offer brief examples of how its insistence on a distinct analytic sensibility has directed us to see and bear, as best we can, from the 'local's viewpoint'. It is the strong commitment to this, then, that we conclude may offer applied ethnography one opportunity to distinguish itself.

There is nothing heroic about indifference. It does not require an effort to purge the soul of all prejudice, or the performance of a technique that controls or rules out sources of bias. It is not a matter of freeing oneself of mentalities that are inherent in an ordinary situation; instead, it is a matter of explicating such situations with a full attention to their ordinary accountability. In other words, ethnomethodological indifference is not a matter of *taking something away*, but of *not taking up* a gratuitous "scientific" instrument: a social science model, method, or scheme of rationality for observing, analyzing, and evaluating what members already can see and describe as a matter of course. Lynch, p. 221 (emphasis in original).

INTRODUCTION

Dare we say it? The application of ethnography in industry is in danger of becoming mainstream. After working long and hard to introduce ethnography to our clients, businesses, organisations and so on and popularise its application, our efforts are steadily bearing fruit. EPIC is testimony to this. So too is the uptake of ethnography in unexpected sectors of industry. Not only are we seeing ethnographers increasing in numbers in technology-focused organisations such as Microsoft and Intel (by no coincidence the primary sponsors of EPIC) and the practice increasingly offered by small and large consultancies alike. Surprisingly (to us at least), marketing and advertising firms have taken on the methods and techniques that *applied-ethnography* (to coin a phrase) has come to be associated with. Our recent invitation to present our ethnographic experiences to Hakuhodo (Japan's second largest ad agency) demonstrates, for example, the interest advertising agencies are taking in fieldwork methods as a means to better understand the motivations and drivers associated with people's consumption patterns and "life-style choices". Indeed, the use of "ethnographics", as we've heard it called by marketing firms in London, indicates ethnography's incorporation into the arsenal used to 'know' the user, customer, market segment, etc.

So what's the danger? Isn't this what we've all wanted? Ethnography adopted *en masse*? Well perhaps, but the argued cost of this (and one many an EPIC attendee will be familiar with) is that ethnography is being dumbed down with its gradual, but widespread adoption. It's often hard to distinguish between the end product of the varied methods practitioners put into practice, including those of ethnography. The results, whether they be key concepts, reports, diagrams, charts, tape recordings, diaries, artefacts, or otherwise might differ in their substance and/or detail, but they contribute generally to the cataloguing and ordering of a context in more or less the same ways. In other words, ethnography is being used to "describe and codify" (*cf.* Button, 2000) the behaviours of those being studied in much the same way as other methods.¹ Many a reader, for example, will be familiar with the outputs of applied ethnographies that break down 'users' or 'customers' into established segments, pairing them with observed behaviours or needs. Evidence of detailed, qualitative fieldwork is critical here, usually in the form of "key quotes", but, in the end, the process remains one of sorting behaviours into categories and is more often than not judged on the basis of "how many people said so" (i.e., the dreaded issue of sample size). The final contribution of matrices or taxonomies of behaviours set against categories of people is thus similar to what we might see from focus groups, diary studies, semi-structured interviews, questionnaires and so on. To be fair, this picture might be a gross generalisation, but nevertheless the general trend points towards is a very real threat to ethnography's integrity in industry being

¹ Button (2000) distinguished between the kinds of ethnography done under the auspices of anthropology and what he called "scenic fieldwork", a fieldwork that merely describes and codifies. As the use of the term "ethnography" (in its loosest sense) has come to be the *sine qua non* to qualitative, in situ investigations of almost any kind (much more so, if anything, since Button's article), we have chosen not to make such a distinction.

eroded, and specifically questions raised as to the uniqueness of applied ethnography's product.

There is, of course, an argument in favour of this diluting of ethnography. Perhaps the message has been spread; aren't many now aware of the proposed benefits to studying people in the places they work, live, play, and so on—the study of people *in situ* as we say? Whether it's ethnography that enables this, some hybrid or something altogether different, what does it matter? There is also a good argument in favour of promoting a collection of methods that practitioners can mix and match to suit the work and/or research they are tasked with. Ethnography, from this viewpoint, is used when more depth and detail is required. The trouble, however, is that whatever the arguments put forward, they still frame ethnography as merely capable of contributing more of the same. The greater depth and detail gleaned from ethnographies merely places its methods along a continuum where they can dissolve into others. The use of quotes or observations obtained from the “field” as opposed to, say, numerical data to provide ‘evidence’, as it were, of categories does little to distinguish ethnography's contribution. In fact, on this basis, it simply offers more depth and less certainty. If this is the case, it's not clear what's left for ethnography (or, indeed, those practitioners who see themselves as plying the ethnographic trade). What, if anything, can those practicing ethnography claim to offer that's unique if the results of alternate methods are broadly of the same kind?

Picking up on the question of what's left, we want to suggest that with its gradual adoption of ethnographic methods, industry is in danger of losing something that is more fundamental to ethnography as an enterprise. What is possibly being overlooked in the turn towards methods like participant observation and its derivatives is ethnography's in-built sensibility or “analytic mentality” (Anderson, 1997) towards hearing and making sense of the voices of the people being studied. Yes, arguably focus groups, workshops, sorting tasks and even psychometrics aim to glean something of what the user or customer is thinking. Ethnography, though, gives special emphasis to how it is that meanings and understandings of the world are actively and locally constituted. That is, special attention is given to the *viewpoint* of those on the ground, so to speak, those established members of an office, home, village, tribe, culture, etc.

Various debates have raged, and no doubt will continue to do so, over the extent to which ethnographers have (privileged) access to insiders' viewpoints (e.g., Becker, 1967; Haraway, 1991; Harding, 1996). Much could be said to hinge on the different interpretations of reflexivity (Lynch, 2000; Macbeth, 2001). Rather than engage in these debates, what we want to do here is present one route we have been trying to follow in finding our way back to an analytic integrity. Specifically, we want to introduce and discuss our broad experiences with the *ethnomethodological policy of indifference*, a policy that prioritises a setting's members' ways of doing and seeing over and above the themes, theories and methods of social science. We will say more of ethnomethodology below. At this stage, we recognise the policy may be familiar to some and may possibly wrangle those that feel it misrepresents the broader theoretical and analytical underpinnings of ethnography. We introduce it, however, not in

defence of ethnomethodological posturing, nor as a critique of alternative perspectives, but, we hope, as a genuine attempt to work through how it might help in clearly distinguishing the kinds of things we should be especially sensitive to as ethnographers. What we want to suggest is that the policy of indifference reasserts ethnography's commitment to voicing the viewpoints of those members of a setting being studied and in doing so helps to distinguish ethnography's methods from others available to practitioners. Thus it establishes ethnography not simply as another method to be used alongside focus groups and the like, but as a distinctive approach to making sense of the social world. This has the potential to uniquely define ethnography's product; attention is drawn to how social order is locally constituted rather than imposing external orderings or categories. As will become evident, the lesson we want to draw from this position is a modest one, but nevertheless one we hope will offer some way forward for ethnography's application in industry.

INDIFFERENCE

In brief, ethnomethodology arose in response to a range of arguable weaknesses in sociology and more broadly social science. The seminal text, written by Harold Garfinkel in the 1960s, set out a comprehensive if densely written agenda for ethnomethodological studies.² Garfinkel sought to shift sociology's attention beyond identifying and explaining the reasons for different sociological categories through theorised frameworks, categories such as class, gender, culture and so on. Moreover, he refused to confer privileged status to any method, theory, subject position, or cultural/political standpoint. Instead, a strict program of research was outlined for investigations into how social order is made visible and understandable by and for the given members of any setting.

Given this backdrop, ethnomethodology has centred on an insistence that to take social phenomena seriously, a researcher must remain indifferent to sociology's and social science's programmatic views and formal methods, including their schemes of categorisation (Garfinkel and Sacks, 1970).³ In his inimitable way, Lynch (one of the more congenial ethnomethodologists, and there are a few) presents two simple but instructive examples:

When studying... the orderly production of automobile traffic, an ethnomethodologist examines how traffic patterns are "achieved" by local cohorts of drivers. This differs from trying to determine if specific orders of traffic are safe, efficient, rational, or democratic. Similarly, when studying conversation, ethnomethodologists investigate the production of routine sequential orders; they do not as a matter of policy

² For an accessible overview, see Livingston's *Making Sense of Ethnomethodology* (1987). For ethnomethodology's influence in applied design, see an article by Button (2000) or the recent *Fieldwork for Design* by Randall, Rouncefield and Harper (2007).

³ In *Do categories have politics?* Suchman (1993) discusses how the grafting of external schemes of categorisation onto real-world practice can have consequences for design.

set out to identify mistakes, offences, or imbalances, except in so far as they are locally accountable as mistakes, offences, or imbalances. (Lynch, 1999, p. 221)

Put in context, the *policy of ethnomethodological indifference* asserts that we would be remiss as ethnographers if we approached our field studies with the intention of studying power, gender, class, race, etc. or promoting any other particular *theory* of social order. To do otherwise would be to draw attention to our own disciplinary methods and thus miss the endogenous detail of just how people practically organise themselves. In other words, by rehearsing social science's methods, theories, models, categories and so on, we would lose sight of how it actually is that people competently act in the world and interact with one another.

Applied indifference

The seemingly nuanced and some might add obtuse policy of indifference probably feels far removed—if not a million miles away—from the concerns of practitioners' who ply their ethnographic trade in industry. In our own field research, however, largely oriented towards interactive system design (with a particular emphasis on contributing to *Human-Computer Interaction* (HCI)), we've found the policy to offer a useful guide to what exactly we should be attending to.

Our ongoing fieldwork undertaken with family households is hopefully illustrative. Over the past three years we have amassed a large quantity of field materials from our observations and interviews with a number of family homes in the UK. As well as offering general insights into family and home life, this project has also been used to help inform various directions in HCI and interactive systems design. Our work thus has a significant applied component, one directed at shaping future possibilities for interactive technologies in ways that are sensitive to real-world, human practices.

Naturally, there have been a host of possibilities available to us for analyzing and interpreting the materials resulting from this work. For example, in our papers and talks, we are regularly reminded of what we might call “topical concerns”. We find ourselves being asked whether we can generalise from our ethnographic materials so as to assert general interrelationships or patterns of social organisation. So, the questions go, “is it women that tidy family homes?”; “are teens' textual abbreviations the cause of falling rates of literacy?; “is family scheduling a middle class preoccupation?”; and so on. Occasionally, these queries are more pointed. A reviewer of a recent article we wrote, for example, exclaimed their astonishment at the lack of any reference to gender and power relations in our discussions of domestic work.

To be clear, we are hugely sensitive to such topics. The unequal sharing of duties in homes and the prevalence of what we have in the past referred to as “mothers' work”

(Taylor and Swan, 2006) has been evident in the admittedly small number of families we've spent time with.⁴ The point we want to make here, though, and that we believe has the potential to distinguish ethnography from its counterparts, is that there is something quite different to be had from our ethnographic materials; by returning to the policy of indifference, we are reminded there is something to our investigations that is much more to do with what goes on for a home's members day-in-day-out, as a matter of routine. In short, we are reminded of the commitment we have as ethnographers to come to terms with how places like homes are seen and heard from those who live in them, from, as it were, a native point of view.

The policy of indifference thus re-directs us so that we ask questions not of a disciplinary nature, but, instead, about what it is to live in a home. How, then, is it that homes come to be the places they are for those members who live (and work) there? What are the observable ways in which the home is *locally produced* by and for its members? How does the moral economy of the home play into the observable work of being a mother, father, or even child? Such questions might appear trite if not commonsensical at first, but on seeking answers to these *local problems* we find the home and life within it to be a worked-at accomplishment with quite particular properties. Indeed, it is precisely when we come across the commonsensical often tacit knowings and doings of a home that we feel we catch sight of what it is as a place.

It is with questions like the above then that our own attention has been drawn to the routine aspects of our homes' members. We have, for instance, given some might say inordinate attention to a number of ordinary and unremarkable features of family homes, one being, for instance, list-making (Taylor and Swan, 2005). With such attention, we find, unsurprisingly perhaps, that the making of lists is an example *par excellence* of how families routinely make themselves and their actions accountable to one another. By organizing themselves, their to-dos and events on the backs of envelopes, notepads, and papers pinned on fridge doors and kitchen pin-boards, we see how the ordinary comings, goings and doings of a home are managed and accounted for. The location of a list and its itemised content made-visible (or invisible) at once prescribe an ordering to the home: who is to do what, when.

A list from one of our studied family households is exemplary. The list is placed for all to see on an open page of a notebook, on the kitchen table (Figure. 1). The mother of the household, Luci, has instructed all family members including the two young sons to add what they want purchased on the next visit to the supermarket. Besides the school-boy handwriting and misspellings and its haphazardly arranged content, the scrawls and etchings

⁴ It is worth noting that we have continually struggled to strike a balance between expressing something of the apparent discrepancy in housework and childcare on the one hand, and veering away from slipping into a rehearsal of the disciplinary themes of gender and power on the other. As many will have recognised, this paper stands as an effort to work this balance out in our own minds as well as provide some hopefully useful points for its readers.

Harmony

read off like most shopping lists: “Fruit and veg”, “bananas”, “ero” (mis-spelt Aero chocolate bar), “toothpeks”, etc. We discover on further investigation, though, that despite the apparent democracy of this exercise, authoritarian rules are applied. The children add bacon and chewing gum to the list, periodically, to find that their requests are adamantly crossed out. The boys’ parents assert the time-honoured prerogative of laying-down-the-law: the home is a non-gum-chewing, vegetarian one. And so a “theory” of the home is produced, locally, through the grocery list made publicly available, the contributions inscribed into it and the authoritative deletions of what is not allowed. The home (as an orderly place) is not then miraculously brought into being (from somewhere outside), but, through its ordinary and accountable accomplishments, worked on and up to become the place that it is.

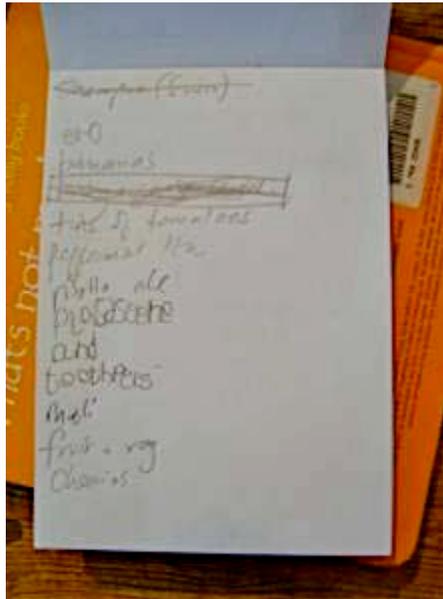


FIGURE 1 The shared shopping list in the kitchen table.

Household clutter may seem less amenable to such analytical scrutiny. Routinely remarked upon and present at least in some shape or form in every household we have studied, we felt obliged though to consider what if any part it held in the ideas our participants had of their homes. Clutter we found wasn’t made up of any old thing put in any old place. Bowls and drawers appeared the containers of choice for holding a loose assortment of things with uncertain status. Perversely, by attending to these clutter containers, we shed light on how homes sort and categorize their things, and how it is often just-good-enough methods that are devised to put the home in order, whatever that order is

(Swan, Taylor, Izadi and Harper, 2007). So, particular things coalesce where household members know others will (or won't) see them, where and when they may be needed, where they can be seen to be *en route* to somewhere else, or simply where there's nowhere better for them.

One household in our research thus had, in their kitchen, a junk drawer with a broken front (as if to emphasise its ramshackle content; Figure. 2). The drawer and its contained miscellany give emphasis to the ambiguity some objects have in the home, whether they be of practical or less certain status. The mother, Jane, of the household in question sums this up nicely:

This is where I just put things where I- you know where you think you really want to throw it away but you don't feel that you can. so it's a combination of those things and little things that I don't have a home for but I should have a home for, like the tape measure, and the rulers, and the paper clips, and things.

Evident here is that the drawer has taken on a known-about quality for Jane and her family; it is an acceptable place where uncertain things that fall outside of a clearly defined order can be “just put” without much thought. Disorder in the home, as it were, is permitted to reside within circumscribed sites, sites, we might say, of liminality. Seemingly banal features of homes like junk draws are then suggestive of the categorical orderings of family life, not in all eventualities, but in the practical business of sorting things out, sorting clutter from order, dirt from clean, and, one might imagine, all that belongs outside the home from that which belongs within.



Figure 2 The junk drawer in Jane's family kitchen.

Digging deeper, if you will, into Jane's junk draw, we catch sight of the workings of further systems of organisation. Going through what Jane refers to as the drawer's "layers", she recounts something of its content:

... torn up Yughio cards [tossing what looks like part of a card into a to-throw-away pile]. I think there are torn up Yughio cards because when sometimes the boys fight and they tear up each other's cards and I have to say: 'don't worry I'll fix it!' which of course I can't do, but I'll say that [laughs]... and then I'll put it in there [the drawer] and it gets forgotten about and then it's all alright because nobody cares and they won't remember.

The rights of just putting away, of sorting fixed from broken, order from mere junk, bestows a certain sort of status upon Jane. Here, she has the power not only to magically wish-away torn playing cards, but to disarm fighting boys. A moral economy of sorts, one that confers status upon those who sort tidiness from mess and clutter, is thus put to work in that most practical of problems caring for and placating children. The very doing of housework and childcare, as theorist and self-proclaimed housewife Martin aptly puts it, "entails control of *time*, *territory* and *resources* in the home." (Martin, 1984, p. 26, emphasis in original).

Following our noses, so to speak, our investigations have meandered their way through other mundane aspects of home life, including family photo displays, fridge doors, calendars, household planning, and so on. Admittedly, we cannot claim our work is complete or free of analytic choices. For one, our concern for design has predisposed us to questions of materiality and the role the properties of things play in the routines of home life. Nevertheless, our orienting device, if you will, has been one not of topic, method, theory, or standpoint, but of trying as well as we can to examine how the home is actively produced by and for its members. In short, the policy of indifference has served as a reminder to how we can sensitise ourselves to the sorts of (often taken for granted) work that goes on in places like homes and just how it is competently accomplished.

It is not then that we are insensitive to the broad themes and topics that sociology and social science might address in studying the home. The point once again is that they say or make little of ethnography's unique sensibility as they at once becomes implicated in doing or saying something else for someone else. That is, instead of a way into seeing and hearing from the local's point of view, ethnography becomes a method in itself for expressing a disciplinary or theoretical position. Indeed, we would argue it is when ethnography loses its purchase and becomes a method like any other that its results become indistinguishable.

SUMMARY

Above, then, we've tried to shed some light on how we might avoid losing ethnography amongst the host of methods used by practitioners in industry. We've suggested that ethnography has fallen victim to its own success in so far as its methods—distinguished by being largely qualitative and applied *in situ*—have become part and parcel of industrial

practitioners' stock and trade. This has been at the cost of losing the integrity of the ethnographic practice and, specifically, its output; ethnography's methods have merged with others and its product has become distinguishable only in terms of detail and scale.

Offering our own efforts to lay claim to an *analytic integrity* and to introduce a possible remedy to the dilution of ethnography, we've recounted recent investigations of our own into family and home life and the influence a policy of indifference has had on them. In doing so, we've purposefully avoided detailing the methods we've used (observations and interviews in their various guises—EPIC attendees will be familiar with them all). The point has been to look beyond our methods and consider what else is there?

The policy of indifference, we've suggested, serves two functions in answer to this:

- First, the policy promotes a strong commitment to local viewpoints. This is not the imagined exoticism conjured up by the “man from mars”—as if the man from mars might see, hear and know better (*cf.* Sacks, 2000). By observing a commitment to indifference, it is a matter of local voices being heard, in detailing *their* methods, theories, positions and so on and how they go about voicing them.
- Second, the policy reveals how there can be more to ethnography than description and codification. Beyond detailing the activities of the places we investigate and who does what, when, the policy encourages us to take seriously how such places are locally organised by and for its members. Our ethnographic investigations of homes have thus been aimed at gleaning more than whether families tidy their homes or make lists; who does so; or whether one system of organisation is better than another. It's not clear what ethnography's methods have over alternatives to make such claims. Ethnography's purchase, for us, lies in coming to terms with how people for all practical purposes pull off living in family homes day-in-day-out.

The successes of applied ethnographic investigations such as ours are notoriously difficult to measure or attribute any definite result to (*cf.* Anderson, 1994; Dourish, 2007). The policy of indifference contributes nothing more in this respect. It is not like we can claim it enables us to produce more valid design requirements, design better widgets, realise “product transfer” into our organisations, or increase sales for our clients. Our concern here though is not so much with our paymasters or the successes we might contribute to in our specific businesses. Rather our point has been to reassert an integrity to our work so that we might establish what kind of applied business we want ethnography to be. To avoid having ethnography dissolve into the raft of other empirical methods used in industry, our proposal has been that we lay claim to an *analytic sensibility*.

We're not proposing then that we all don our ethnomethodological hats (dread the thought) and subscribe wholesale to the policy of indifference, but rather that as ethnographers we think carefully about how we sensitise ourselves to the settings we find ourselves in and the ways in which those settings' members see, hear and do what they do. As Lynch writes in this paper's epigraph, “[t]here is nothing heroic about indifference”. It's a

Harmony

matter of taking seriously, above all else, “what members already can see[, hear] and describe as a matter of course”.

Acknowledgments – we are indebted to the families who participated in the field study referred to above. They have allowed us to see and hear anew. Our thanks must also go to Andrea Grimes and Richard Harper for their careful readings of this paper’s earlier drafts and their valuable suggestions.

REFERENCES

- Anderson, Robert J.
1994 Representations and requirements: the value of ethnography in system design. *Human-Computer Interaction* 9:151-182.
- Anderson, Robert J.
1997 Work, ethnography and system design. Pp. 159-183 in *The Encyclopedia of Microcomputers*(20), edited by A. Kent and J. G. Williams. New York: Marcel Dekker.
- Becker, Howard S.
1967 Whose side are we on? *Social Problems* 14: 239-247
- Button, Graham
2000 The ethnographic tradition and design. *Design Studies* 21:319–332.
- Dourish, Paul
2006 Design implications. Conference on *Human factors in computing systems, CHI '06* 541-550.
- Garfinkel, Harold
1967 *Studies in Ethnomethodology*. Englewood Cliffs, N.J.,: Prentice-Hall.
- Haraway, Donna Jeanne
1991 *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Harding, Sandra
1996 Standpoint epistemology (a feminist version): Social disadvantage creates epistemic advantage. In *Social theory and Sociology: The Classics and Beyond*, edited by S. Turner. Oxford: Blackwell, pp. 146-160.
- Livingston, Eric
1987 *Making Sense of Ethnomethodology*. London: Routledge & Kegan Paul.

- Lynch, Michael
1999 Silence in context: Ethnomethodology and social theory. *Human Studies* 22:211-233.
- Lynch, Michael
2000 Against Reflexivity as an academic virtue and source of privileged knowledge. *Theory Culture & Society* 17:26-54.
- Macbeth, Douglas
2001 On “Reflexivity” in Qualitative Research: Two Readings, and a Third. *Qualitative Inquiry* 2(1):35-68.
- Martin, Bernice
1984 ‘Mother wouldn’t like it!’, Housework as Magic. *Theory Culture & Society* 2:19-36.
- Randall, Dave, Richard Harper, and Mark Rouncefield
2007 *Fieldwork for Design: Theory and Practice*. Springer-Verlag London Ltd.
- Sacks, Harvey
2000 On Sampling and subjectivity. In *Lectures on Conversation*, Oxford: Blackwell, pp. 484-488.
- Suchman, Lucy
1993 Do categories have politics? *Computer-Supported Cooperative Work* 2:177-190.
- Swan, Laurel, Alex S. Taylor, Izadi, Shahram and Harper, Richard
2007 Containing family clutter. Conference on *Home/Community Oriented ICT, HOIT '07* 171-184.
- Taylor, Alex S. and Laurel Swan
2004 List making in the home. Conference on *Computer-Supported Collaborative Work, CSCW '04* 542-545.
- Taylor, Alex S. and Laurel Swan
2005 Artful systems in the home. Conference on *Human Factors and Computing systems, CHI '05* 641-650.

An Economy of Knowledge: Research, Architectural Practice and Knowledge (in) Translation

ANDREW MAHER

Spatial Information Architecture Lab, Department of Architecture and Design RMIT University Australia

INGER MEWBURN

Department of Architecture, Building and Planning, University of Melbourne, Australia

How does new knowledge 'flow' within an organisation? In this paper we report upon a case study in which ethnography is employed to render visible the 'knowledge transfer' (strategically redefined as 'knowledge translation') occurring between a PhD researcher and the members of the organisation in which he is 'embedded'. In this case the PhD student is located within an architectural firm and an industry context that is not accustomed to housing researchers in its midst. The path of knowledge flow, or rather its translation, is not found to be smooth. Knowledge 'flow' happens only in leaks and trickles through the organisation. We discuss the implications of this case for how ethnographic research in a business context might be communicated to an audience who do not necessarily value scrutiny of this nature.

“...I was soon struck by what seemed at the time the peculiar disadvantage under which architects labour, never working directly with the object of their thought, always working at it through some intervening medium, almost always the drawing...” Robin Evans (1997, p. 156)

INTRODUCTION

This paper reports on an ethnographic case study of an architecture PhD student who has been working within a professional architectural firm while undertaking his degree. This student is part of a project developed by Prof. Mark Burry at RMIT University with various industry partners and the help of an Australian Research Council (ARC) Linkage grant¹ from the Federal Government of Australia, to 'embed' a number of architecture post graduates in the professional context, both in engineering and architectural firms.

The purpose of the ethnographic research that we present here was to begin to investigate how the 'embedded' PhD students were working within the firms and what sort of knowledge creation was happening as a consequence of their presence. While undertaking this research we became particularly interested in how the students and employees within the firms understand knowledge as something that 'flows'; thus allowing it to be 'transferred' to

¹

More information on this particular funding scheme can be found at: www.arc.gov.au/

others. This 'knowledge flow' was seen by our participants as a way to help to develop new workplace practices and further new knowledge, even when the researcher themselves had left the scene. Through this case study we ask: How might this 'knowledge flow' operate? and What are the implications of this for how research is conducted, and communicated in professional architectural practice?

The Project

The project to 'embed' PhD students in architectural practice², begun in 2005, was in response to prior involvement in practice-based project research at RMIT University's Spatial Information Architecture Laboratory (SIAL). This prior research involved architects and engineers shifting isolated projects from their firms into the academy where experienced researchers tinkered with solutions. Some of the research outcomes from these previous projects – for example on one project the spin-off of an attempt to describe a geometrically complex structure was the development of a way to construct without drawings – suggested a serious gap in understanding innovation and workplace change (Maher, et al. 2003).

We observed that the innovations and insights that arose through these projects, while pertinent to the broader profession, did not result in workplace change when communicated via published work. Academic papers produced in the architecture field are traditionally not widely read or used in professional practice as most new knowledge in the industry is communicated through its preferred working medium: representations such as drawings and photographs (Manley, et al. 2001). In addition, research in architecture is often seen by the profession as unrelated to the *business* of architecture; in fact, the broader construction sector is not a demanding user of research output (Finch 2005). Therefore architecture firms are unlikely to sustain dedicated research and development programmes. However the ready uptake of the research services we provided to industry indicated there was indeed a need for architecture firms to take research more seriously. The intention of the embedded practice project was to reverse the process that we had set up in our prior transactions with industry. Instead of firms bringing projects to us as a research centre, we would place PhD students with the relevant architectural expertise within the firm's workplace, supervise their applied research practice and use government grants available to the academy to help fund them. It was hoped that in this 'embedding' process other issues such as workplace change and knowledge flow within these organisations could be uncovered and investigated.

From the outset we wanted to get the embedded PhD students to use ethnographic techniques to help them to explore issues of workplace change. As the PhD students were all architects, none of them had any professional background in these techniques, so a social science researcher was provided to train and advise them on the potential of ethnographic

² The research project is an Australian Research Council Linkage Grant entitled 'Technology Transfer through Embedded Research within Architectural Practice: the creation of an Australian practice-based architectural research and development network'. The chief investigator is Prof. Mark Burry, Andrew Maher is research associate. It runs until March 2008.

investigations to inform research into work practices. These social sciences practices provided (for us) a novel theoretical framework to analyse how the firms, as organisations, might change with the implementation of new methods, techniques and practices introduced by the PhD students.

The PhD students in this project all have professional architecture degrees; in that regard they are all 'insiders' to the processes and acculturation of their respective firms. With reference to Suchman (1995), we understood that the PhD students could make no claims to neutrality in their investigations. But this was seen as an opportunity rather than a problem because the intention was always that the research they undertook operated on two levels: both making things (such as software tools and representations) relevant to practice, and observing and investigating the specific workplace practice as a way to inform this making.

As an end result of this 'embedding' process we hope that the resulting PhD theses, the things they made and the case study research that we present in the second half of this paper, will act as ways to mobilize the research findings into the building industry as a whole. These PhD students are a test case for a different kind of professional doctorate than the 'reflection on individual practice' model that currently exists. The shift from an emphasis on the individual's own design practice, to reflection on the workplace as a whole, suggests a research practice that is perhaps more suited to the 'production' orientation of this industry.

Architecture and Engineering firms

In this section we will provide some information about the characteristics of Architectural practice in Australia in order to provide some background to the following case study. Architecture and engineering firms contribute 5% of the gross domestic product of Australia as a nation, amounting to tens of billions of dollars annually. Although there are large operators within the industry, most people are employed in small organisations. The Royal Australian Institute of Architects estimates that 84% of architects work for companies with 4 or less employees (IBISWorld 2007). The building industry is a highly competitive one, in which architects compete with many non professional building services for residential work. At most they perform only 15% of residential work, by value, in the sector. Even in the commercial and industrial sector this rises only to 50% (IBISWorld 2007). As a consequence architectural firms tend to operate on slim profit margins and seek to shift exposure to financial risk, which in turn has an effect on the propensity to undertake research in the sector (Rigby, et al. 2005).

Typically architects generate most of their project income (around 40%) from the production of documents which are used in construction contracts. This work can be described as the transferring of tacit knowledge of the designers into explicit documents which can be understood by other parties who construct the actual building. On larger building projects architects are often not equipped to do all the work 'in house' so teams form and then reform on a per project basis; in fact the sector can be viewed as a network of project-based organisations.

Project-based organisations pose special challenges to researchers; although new knowledge is generated within projects, little is transferred from one project to another or from projects back to the individual sponsoring organisations of the participants (Gann and Salter 2000). Research suggests that information and communication technology systems and organizational structures do not yet exist to enable or assist the transfer of new knowledge gained from projects across the relevant disciplines or through associated industries (Taylor & Levitt 2004). Lawson et al. (2003) found that even when architectural firms work for clients who repeat commissions, lessons learned on these projects are not channeled into similar projects, partly due to organisational contradictions between what the firm *intends* to do, and then what the members of the office *aspire* to and *actually* do on future projects.

THE CASE STUDY

We chose one of the four firms who had agreed to ‘embed’ a PhD student to conduct this case study because of their declared intention of dedicating the final year of the research project to ‘knowledge transfer’ between the PhD student and the employees in the firm. For clarity, in our case study the participants are identified as follows. The authors are the *researchers*. We conducted semi-structured interviews with three actors; a *director* of the firm (who is also a *Partner*), an *urban designer* in the firm and the *architecture PhD student* who was embedded within that firm. All our interviews and observations were conducted inside the office where the firm is located. During the PhD student’s tenure with the firm he developed a series of software tools for urban design projects. These tools introduced to the firm greater capabilities for scenario testing and analysis using modelling (3D) and change over time through animation (4D). These research outcomes served to critique the predominantly static bird’s eye planar views (2D) which are commonly used by planning and planners to communicate with clients and stakeholders³.

As with all architects’ offices, the building in which this particular firm is located presents the architects within with an opportunity to display their expertise and signal what sort of design firm they are. The entry to the office is located within an open concrete car park situated at the bottom of a renovated red brick warehouse building. The clever juxtaposition between the mundane car park and a stylish entry area, with its luxurious materials and impact lighting, immediately alerts the visitor that this is a firm which takes design seriously. A narrow return staircase leads upstairs; once at the top it can be seen that, although the warehouse has been refitted inside, many original features have been kept. The original roof trusses and wood paneled ceiling artfully display peeling layers of original paint. Derelict lifting machinery has been strategically retained for use as sculptural elements in the ceilings and occasionally the walls. In the reception area there is a large, white, textured desk behind which is a white wall where several large contemporary pieces by famous local artists

³ In construction 2D (two dimensions) refers to working on a plane – generally using drawings either in plan, section or elevation. Moving to the third dimension (3D) the reference extends to modelling and then the addition of time is usually referred to as 4D or a fourth dimension.

are hung. Through an unusual purple pivot door, the boardroom houses a large collection of degrees from the firm partners, awards the firms has won and presentation boards of recent design work. Sitting at this custom built table, surrounded by these artifacts of education and expertise, made us feel like we were in a place filled with interesting, talented and creative people. We imagine that this is designed to inspire confidence and excitement in the clients about their architect's abilities and the kind of design product they have to sell.

Behind the reception desk, hidden by the demure white wall, the production area of the office is of a markedly different nature to the cool stylish 'public' reception space. Most architects' offices we have been in⁴ have a problem with paper clutter and this one is no exception. Storage space is at a premium, all the desk surfaces are covered with books, drawings and files; tellingly there are even some box files stored up in the roof trusses. Once inside the production area it becomes clear that the office spreads through three adjoining warehouses; the open space office is divided by thick walls with small openings. According to our interviewees, the firm's hierarchy echoes the building layout in that it is divided between the disciplines of urban design, architecture and interior design. Each of the disciplines occupies one of the three warehouse spaces and the workers located within each partition report to a different director.

WHO'S THE BOSS? RESEARCH ROLES AND THE ROLE OF RESEARCH

From the outset we hoped to elicit an understanding of how our interviewees (the director, the PhD student and the Urban Designer) participated in research activities within the workplace. When we questioned them about their daily routines and interactions with others the participants would often offer unprompted, useful insights into their own work practice, the work of others, and the broader discipline of architecture.

The director we spoke to was the prime mover of embedding a researcher in the firm; he identified his motivation to be part of this project as stemming from a leadership course he had taken some ten years prior, at Harvard University. He reflected that it

"didn't matter what area you were, wherever there was a creative part of that business, the best firms were investing in research all the time, and often from outside their own direct area, and that's what interested me about this and what I'd been pushing the firm towards ..."

The director, naturally, is a very busy person; his routine involves working long hours and engaging the networks of consultants and clients through meetings and 'phone calls. The people who work for him have to be self reliant and able to manage their own work. In

⁴ Both authors have been practicing architects with about 20 years practice between them.

contrast to this usual relatively 'hands off' managerial style with others, the director placed the PhD student adjacent to his own desk. He gave us two reasons for this: the first was to give research "the right status in the company" and the second was to offer the PhD student a 'birds-eye' view of his and the firm's work routine by putting him in a position to overhear 'phone calls and casual conversations. The director saw this as a way of offering his managing practice knowledge to the PhD candidate: "if he sees what I'm doing and how I'm doing it, maybe that's part of what the role of ... well I thought, you know, this might be naïve on my part, but I saw a role ... that a senior practitioner could transfer to him"

The director emphasized to us that he tried to employ people for their intelligence, believing that skills could always be taught. The introduction of the PhD student from the 'outside' into this firm's 'inside' upset this standard practice and other assumptions normally held about the roles of 'boss' and 'employee'. The student was assigned to the office by the university rather than being selected by a job interview process. The director reflected on this as a potential source of friction, thereby highlighting the tightly controlled nature of the firm's office culture: "We've taken the biggest leap of faith because we haven't known the people that we've taken on... and you could get someone that is just dysfunctional within...just the wrong fit". But it was clear that, from the director's point of view, the intelligence of the PhD student offered a way to integrate him into the office culture.

If the integration of the PhD student in the office culture was seen as a matter of personal skills and attributes – which were potentially uncontrollable – the integration of research practice was, initially at least, seen as a smooth fit with the firm's routines. It was envisioned that the PhD student's research work and his participation on office projects would have a clear separation, with the research only occurring during the semester (26 weeks of the year split into two blocks of 13). The university holidays would then be set aside for the PhD student to work on office projects. However this framework did not have a chance of being implemented as, just before the project started, the PhD student was involved in a serious car accident. This delayed his start within the office and forced a rethink of how the research would operate. Although the student was house bound for a number of months, this period was regarded by him in retrospect as "a bit of a blessing" because "it set up that relationship (with the director) of I'm not working for you, I'm working on research, in your office, with you". The director, under no illusion as to the PhD student's apprehensiveness and sensitivity to being "used", described this hiatus as a period in which the participants could get to know each other outside the pressures of day to day work, allowing a relationship of mutual trust to develop.

Just as the accident managed to engender a level of trust as working relationships were negotiated, it also slowed down any pressure for the PhD student to engage with the production work of the office. The director explained this change of plans with his partners: "(I said) I don't want to give him any work that he has to do for the practice. But rather be an observer of the projects...the case studies we've got and pull (his research) out of that". This slow integration, and the ability of the director to be flexible in his ideas of how research could be put to work, enabled the student to make personal connections with the

director and the other staff members and, with their help, find his own way into the research projects and the firm's routine.

The informal and unruly nature of the subsequent knowledge work carried out by the PhD student was acknowledged by all the people that we spoke to as one of its most characteristic features. It seemed that the expectations about an orderly progression of research: question – hypothesis – research design – results, needed to be bent into a practice-based shape in order to be put to work. Bits and pieces of new ways to manage software and set up documents were developed and imparted to others in the firm on the spot, responding to locally contingent project factors. This sort of process is not unknown in the world of practice where, as Luis Araujo points out: "... problems are treated in a piecemeal manner and solutions are found in a pragmatic manner, following the path of easily accessible information and knowledge" (Araujo 1998).

The way knowledge and the act of research was constructed by different people within the firm that we interviewed was diverse and at times even contradictory. Through these people's views, which we came to think of as a series of 'lenses', we were able to begin to discern the nature of how the firm, as a group of 30 or so face-to-face workers embedded within much larger networks and organisations, learned and changed. We found that research in the firm was invariably linked, and often uncomfortably so, with its time allocation. Research was a managed risk and understood as an unknown quantity, even when undertaken informally. In the case of this research project, because it was funded through a government grant, the risk was significantly reduced – although not eliminated.

Throughout our interviews, and the time we spent in the office, it became apparent that for our participants the distinction between work, research and leisure was always shifting. Tracking these distinctions and how they were expressed was a revealing exercise which helped us to get at some of the processes of change that were happening in the organisation. At one point in our interview the director used the word 'inject' to describe the act of bringing a researcher into his organisation; by using the metaphor of immunisation he positioned research as a vital way of keeping up with the competition. However as we talked it became apparent that honing a competitive edge was contrasted with the tension of the need to be profitable and continue to keep the business afloat. In relation to the discourse around profit, research was (re)positioned as a luxury commodity. When describing his own research practices the director remarked: "the problem with architectural practice generally is time. That is - you don't have enough of it... where is your research time you know? It's not there unless you go away on holidays like I do". While on holiday practices of work, research and leisure were mixed to the point the act of taking a break from work was described by the director as a 'mini sabbatical'. He told us that while overseas he and the other directors actively seek out new buildings, take pictures and then write reports about them on their return. The distinction between work, research and leisure is collapsed further when this holiday research labour is presented to clients in order to help to maintain the firm's reputation as 'forward thinking'.

THE FLOW OF KNOWLEDGE: 'HEAVINESS' AND 'STICKINESS'

In our interviews, and the casual conversations we had with employees inside and outside of the office, we realized that most participants conceptualized knowledge as a 'flow' that passed from one person to another; usually verbally, but also with the aid of machines like servers and software like email clients. Along with its ability to 'flow', the movement of knowledge between people and was also seen as more or less 'sticky' depending on the circumstance. The constant use of the term 'knowledge transfer' alerted us to this idea. This term seemed to come from the director himself, but was used by everyone we spoke at the firm. From the director's point of view 'knowledge transfer' was important because skills training and further education for staff had had a chequered history; previously the firm had suffered by providing opportunities only to see the recipients "poached" by other firms, or even the academy. Individual, as opposed to organisational knowledge was therefore seen as 'risky': "There's a risk we're taking on anybody in teaching them anything. You've just got to say that you've got the knowledge transfer on the way through". These 'knowledge transfer activities' occurred within formal processes, such as information evenings organised by the PhD student, but the director was confident that the knowledge transfer would also happen in more informal ways through the presence of the student in the firm.

It seemed to us that machines and technologies were actively sought out as a way to mediate the flow of knowledge to achieve particular communicative ends – usually to do with transparency and openness. For instance, email was the way that the PhD student preferred to communicate with the other embedded PhD students who were located in offices around Australia. This was ostensibly because of its ease of use, "it's quicker just to bang out an email", but on closer inspection the preference for email seemed to be more to do with how the communication medium felt more like a conduit where "you can say anything" as opposed to a broadcast medium like the wiki⁵, where communication had to be "more polished" or "permanent". Email was also widely used within the office as a means to communicate and tap the collective knowledge of the staff. The urban designer stated "if there's a query that's just sent around the office, people will bounce back and just send a link to wherever that the information can be found." Fragments of this collective knowledge get decanted into email, but on the whole she notes that most knowledge was tacit: "in people's heads".

The ability of knowledge to 'flow' was linked to physical location. The PhD student and the urban designer noted that the firm's densely packed library was used a retreat from the bustle of the production spaces within the firm. The PhD student recounted having many productive conversations there, with the librarian who could offer another perspective on his research. The intimacy of the library as a space offered an opportunity to talk 'off topic'; whereas chatting in the open place office space might potentially interrupt the work of others. The student often chose to structure his research work so that less obviously

⁵ A wiki is a collaborative website. The students and participating firms have access to a wiki.

Harmony

“officey” tasks took place after hours at home. When asked why he preferred to read at home, the student replied:

“there were a few reasons. Just 'cause it's pretty noisy in here, it's sort of hard to concentrate on reading. But also there's sort of a, I guess it was a little bit political in that whilst everyone else is chugging away on projects, they've got this embedded researcher just kicking back, reading in the corner, smoking a pipe”

This comment also highlighted the ways that different activities were signed as 'work', 'not work' and 'research' when they took place in different contexts.

Talk was an important part of the knowledge transfer as the PhD student told us: “there's knowledge transfer happening from me sitting around gasbagging to people” (a gasbag being a colloquial way of referring to a boring person who talks a great deal about uninteresting topics). At the same time the PhD student's perception was that “gasbagging” would not necessarily be understood by others as a form of knowledge work in action. The urban designer though presented another view:

“If I have a problem with something, I'll ask him about it and then he'll berate me and tell me why I'm having this problem and how I should be doing it. And then we'll hold an info session for the office. He'll show how [particular tasks] are currently being done [in the office] and then how they could be done [in a more efficient way]. And then that's kind of spread, when people come up to me, not just for urban design, but also architecture, [and query] how I collate my reports and how it's done.”

A potential source of 'stickiness' in the knowledge flow was how it was understood to be an *exchange*. Some knowledge flow was relatively even – this seemed to happen when there was a clear alignment of interests, such as when the PhD student mobilised the director's professional network to gain feedback on his research, or when the PhD student taught undergraduate students in the academy using the software tools as they developed:

“I've continued teaching most of the way through, that's probably where if anything fed back to me, was sort of more in the teaching [because] they're getting more time to try out new things than in the office”.

However, sometimes the flow of knowledge was perceived as ‘asymmetrical’, which seemed to make knowledge harder to ‘shift’. It seemed to us that knowledge had some kind of ‘weight’: the more one had, the harder it was to transfer it. This was most apparent in the case of the PhD student. In the previous quote the Urban Designer demonstrated how she acted as a ‘translator’, able to leverage some of the PhD student's vast knowledge into workplace change by virtue of her position as a manager and her finely honed negotiation skills; as she commented to us: “I'm quite verbal. If I don't like something I'll complain and people will know about it. I won't berate anyone, I'll just say this is better because...”.

Also, it was noteworthy that knowledge seemed easier to 'shift', or translate, if it was moved in smaller 'chunks'. This can be seen in the example of the director giving knowledge to the PhD student in the form of a 'broadcast' of his everyday activities that the student could 'tune into' at will. Another example of this piecemeal approach to knowledge transfer was the strange advantage of the 'blindness' of staff to information about software in written form⁶ and the PhD student's ability to act as a mobile teaching and learning resource, able to help with a software problem at need. His on the spot instruction enabled others to learn from how he worked rather than what he knew. The urban designer thought the most important thing she learnt from working with the PhD student was an *attitude* towards solving software problems by experimenting and trouble shooting rather than reading manuals – which in turn allowed her to take on the role of 'mobile teaching resource'. We think it was in this way that the PhD student's presence served to interfere in the normal learning processes in the firm and to shift them into a higher gear. To us these various practices signal some of the real value of the way that knowledge is *translated* through daily activities: thinking about knowledge as 'leaking' or 'trickling' might be a more effective metaphor for this process.

Processes of Change and Innovation: uncovering changing workplace practices

Knowledge, as it was transferred did not necessarily remain constant – in effect knowledge became 'translated' when it was moved between one person and another. For example abstract knowledge of the inner workings of a computer program by the PhD student could become a new way of composing documents for a staff member. The urban designer we interviewed offered one of the most surprising insights into how knowledge is translated in this way when she mused about how the PhD student had personally affected her work practices;

“... most of us are just so inundated with work, we just can't ... we just don't have the time to sort of really learn it properly and, you know, I use some of it. I probably use about, I don't know, 15% ...”.

Upon hearing this we immediately began internally pondering whether 15% was a significant figure or not, when the urban designer clarified: “I use the 15% for about 90% of my work.” As it happened, it was not the three-dimensional planning tools that the PhD student was engaged in making that she was referring to, but rather the changes to production methods the PhD student had introduced which had resulted in a sharp reduction in the time it took her to make urban planning documents (one of the main 'outputs' of her workflow). Drawing on his general computer knowledge, the PhD student had devised a way for her to collate documents so that drawings within them remained 'live', allowing several people to continue to work on the drawings while the urban planning document was being produced. To us this example signalled how changing work practices

6

This 'blindness' was possibly a result of their intensively visual architectural training.

Harmony

did not solely rest on having good ideas, *aspirations* or *intentions* but necessitated intervention. And the risks are high when “time’s the one ... the main constraining factor”.

This example also demonstrated that an important factor is who the change agent is. In rapidly developing technological times undergraduate students are often the ones with the freshest knowledge of how to use software, but, as the urban designer told us, in this context (and we suspect in many others) “(changes) probably wouldn’t have come in unless we’d had an exceptional student with a lot of guts” to interfere with the work practices of the firm. By contrast the PhD student was empowered to make such changes because he enjoyed a privileged position within the firm and acted with the imprimatur of the director. While the most visible outcomes of this research project were the formally structured research tasks undertaken by the PhD student (existing in the form of tools, projects and as academic papers), underneath this – and perhaps more hidden – are the flows, trickles and currents of change that are going on as a result of the 'interference' by a member of the academy within the practices of this firm. We wonder if it is also happening in the reverse and see this as an exciting area for further research.

Our own location as authors, within an industry where images are the primary currency in the knowledge economy, prompts us to ponder on how this ethnographic research can be best presented. The key difficulty for us has been explaining to other stakeholders exactly how and why ethnography of value. Even the PhD student, despite his participation in the social science training, saw the primary value of ethnography as a “retrospective checking mechanism”, rather than a way that research could be furthered and generated (even though we would argue that he needed to be sensitive to the world around in an 'ethnographic way' in order to do the research at all). He was unaware until we told him, and was pleasantly surprised, that his research had had such an effect on the urban designer’s work. Perhaps the value of ethnography for him, and others, is in enabling the telling of such stories and the surfacing of voices that might otherwise not be heard. In this paper we show how ethnography can render the flow of knowledge visible – and thereby perhaps, more amenable to manipulation. Earlier we noted that publishing has not been an effective communication of research within the building industry, but on the whole people do love to read stories – especially about themselves. We plan on presenting this paper to a variety of audiences and hope that this will be an effective way to communicate the lessons learnt in this project, particularly those lessons about the potentials of ethnography as research practice within the parallel worlds of architectural practice – the profession and the academy.

Acknowledgments - We would like to thank Prof. Mark Burry, Dr. Anitra Nelson, the participating firm and the interviewees.

REFERENCES

Araujo, L
1998 Knowing and Learning as Networking, *Management Learning* 29(3):317-336.

- Evans, Robin
1997 Translations from drawing to building. Cambridge, Mass.: MIT Press.
- Finch, Paul
2005 The problem of architectural research. *The Architectural Review* 1305(11):31.
- Gann, David M., and Ammon J. Salter
2000 Innovation in project-based, service-enhanced firms: the construction of complex products and systems. *Research Policy* 29(7-8):955-972.
- IBISWorld
2007 Architectural Services in Australia. *In* IBISWorld Industry Report. Pp. 36. Melbourne.
- Lawson, B., et al.
2003 Intentions, practices and aspirations: Understanding learning in design. *Design Studies* 24(4):327.
- Maher, Andrew, Peter Wood, and Mark Burry
2003 Building Blobs: Embedding Research in Practice. 22nd International eCAADe Conference, Graz (Austria), 2003.
- Manley, K., J. Marceau, and K. Hampson
2001 Technology transfer and the Australian Construction Industry: Exploring the relationship between public-sector research providers and research users. *Journal of Scientific and Industrial Research* 60:919-928.
- Rigby, John, Paul Dewick, and Mercedes Bleda
2005 An Enquiry into the Economics of Research, Development and Innovation Funding in the UK Construction Industry. Pp. 97: The University of Manchester.
- Suchman, Lucy
1995 Making work visible. *Commun. ACM* 38(9):56-ff.
- Taylor, John, and Raymond Levitt
2004 Understanding and Managing Systemic Innovation in Project-based Industries. *In* Innovations: Project management research 2004. D.P. Slevin, D.I. Cleland, and J.K. Pinto, eds. Pp. 83-99. Newtown Square, Pennsylvania: Project Management Institute.

Teaching organizational ethnography

NOZOMI IKEYA

ERIK VINKHUYZEN

JACK WHALEN

YUTAKA YAMAUCHI

Palo Alto Research Center

In 2004 Fujitsu asked PARC to carry out an ethnographic investigation of their software business, focusing on their development processes, and while doing so to build an ethnographic capability in their own organization. One of our biggest challenges was to convince Fujitsu's system engineers — and the development organization more generally — of the value of ethnography for their business. They are used to translating what they hear from customers about the workflow into a standard framework of system requirements and specifications; it was difficult for them to see the relevance of putting any significant focus on understanding what is going on in the workplace at the level of everyday work practices. Moreover, in their work with customers, system engineers commonly proceed in a carefully planned and highly structured manner, where every activity is expected to yield predictable outcomes. For them, the open-ended nature of ethnographic fieldwork seemed dangerously chaotic and unpredictable. The lessons learned from our experience with both our initial teaching of the engineers and the organizational fieldwork we later did together helped us design a new ethnography-training course that incorporates the task of conveying the full value of organizational and business ethnography.

INTRODUCTION

Only recently has corporate or business ethnography — the labor-intensive method for investigating organizational life — gained in popularity; the establishment of EPIC has certainly contributed to recognition of our field by the business world. A number of organizations have added professional ethnographers to their research staff and many more hire ethnographers as consultants for internal projects or market research. But even with these achievements, the recent commitment by the management of Fujitsu's software and services organization to ethnography stands as remarkable. Fujitsu contracted with PARC to engage six researchers from our Computing Science Laboratory's 'Workscapes and Organizations' area in developing a significant ethnographic capability inside its software business. Initially, the target audience for the ethnography training was the twenty Fujitsu members of the project working with us directly. Two thirds of them were system engineers (hereafter SEs) and the rest were researchers from Fujitsu Laboratories. Later, when the value of ethnographic research for and with Fujitsu customers became clear, we were asked

to start training more SEs in the business units so that Fujitsu could make ethnography part of a new way of working with its customers. Training such a large group of young professionals in ethnography was not without its challenges, of course. In this paper we will describe our experiences, the results and the lessons learned. The outline of the paper is as follows. We begin with an overview of the project to set the context. Then we describe the initial training we gave and the challenges we came across. We used this experience when we later had to design the course aimed at educating a much larger group of SEs, and so we describe these courses in some detail. Finally, we describe how the organization has adapted fieldwork to fit in its own culture and ways of working with customers.

INITIAL TRAINING

Our project began in 2004 with two related goals: PARC was asked to use its ethnographic expertise to investigate Fujitsu's organization and we were to do so in close cooperation with a Fujitsu team (the Fujitsu members had been pre-selected before we started the project) (see Churchill and Whalen 2005). We were to also teach this team how to do such investigations on their own. This paper will focus on the latter of these.

The first challenge for us was how to train the Fujitsu members in ethnographic fieldwork methods. Reflecting on our own experience of learning how to do ethnography we realized that we had acquired our skill in (diverse) academic institutions through a mostly unstructured and, to be honest, self-directed process. We had taken a few courses in which ethnography was explained as method, read a variety of writings on the topic (mostly actual ethnographies), had the disconcerting experience of being sent out to a field site on our own, and had written field notes that, if we were lucky, an instructor might later comment on. We learned mostly through informal discussions with fellow graduate students and advisors. We tried to mimic at least some of these experiences in a week-long training for the Fujitsu members that consisted of a set of lectures and exercises and also provided the students with relevant papers on and by ethnographers they could read.

Although these lectures were received politely, we learned over the course of those first months that many of the members of the organization were only marginally convinced of ethnography's value as a method for their business. As it turned out, the problems that team members had with ethnography were actually quite profound; our method and way of conducting our research stood in marked contrast to what they considered sound working practices.

To understand the members' problems it is important to consider their different backgrounds. As we explained above, the project team was comprised of two groups, members of the solutions and services organization (i.e., SEs) and members of Fujitsu Laboratories (i.e., researchers). These SEs had diverse academic training; some had a background in the physical sciences, some had been trained in engineering, computer science, and still others had non-technical background: linguistics, communication studies, sociology, and the like (Japanese software companies often hire young people for their overall intellectual skills not necessarily putting the highest priority on their educational

background). Some of the SEs in our project team used to be in charge of managing projects, including such things as budgeting, scheduling, coordinating with subsidiaries and subcontractors, and managing the customer relationship. Others had led project teams. Software projects have clear development targets and phases, with their schedule ‘planned backwards’ from delivery (or cut-over) date using standard software engineering methods.

We explained to these SEs that one of the important principles of ethnographic research is that it is open-ended and that one cannot determine beforehand what the outcome of the research is going to be, and that therefore, there was little point in trying to create a terribly detailed project plan with a predictable trajectory. However, to SEs who had a highly structured approach to managing projects and developing software, this way of working – without well-defined and largely pre-determined deliverables at set time intervals – was not just unusual; it was a sign of poor project management. The reasons we gave for this approach were taken to be excuses or at least evidence of our unwillingness to embrace proper accountability standards (indeed, some thought our approach was irresponsible).

Many of the laboratory members felt similarly, but there was an additional aspect to their skepticism about ethnography. In their research, which had been overwhelmingly technical in nature, they always started out with a well-defined hypothesis and took a positivistic approach. Moreover, quantification was always preferred over qualitative description; without quantification there could never be any real ‘proof’. We repeatedly and carefully explained how this way of working, however valuable for other kinds of research, was at the end of the day incompatible with doing good ethnography. Although our arguments in this regard ultimately held sway and the project proceeded more or less in line with our strategy, it nevertheless became obvious that a number of members remained unconvinced. For instance, when we were preparing for field interviews they would persistently ask: “What exactly do we want to find out in this interview?” While this question in and of itself was not a problem for us, they expected the answer to it to then drive the interview process by creating a set of structured, quite specific questions. They had great difficulty with the way we wanted to carry out these interviews – relying on a set of open-ended queries with the goal being to let interviewees express themselves, to listen more than interrogate, and to normally raise specific questions only in response to what we heard (to clarify, for example) or when certain information was missing.

Another challenge for us was to convince the project team members of the need to go into the field as much as possible and to look at people’s work holistically, considering everything they see in its local context and without judgment. SEs commonly think in terms of the functionality of a system. They are used to working within a well-established paradigm in which they basically translate what they hear from meetings with the customer into their ‘system framework’. So SEs typically would seek just enough information to define the functionality of the system. The relevance of taking a first-hand look at an actual workplace, the physical environment, the way work is conducted and oriented to by people in the field, was not always apparent to them, let alone looking at other dimensions of the job or features of the site that were related to the work in question. Sometimes we were able to convince

them of the relevance of looking more holistically at work, but even if they could see the value of this they wondered about the efficiency of such an approach especially since we would insist that just what one would discover in this regard could not be specified in advance.

Another challenge was the way the team members made their observations. Whereas seeing and listening closely were skills with which they came equipped, the steps of becoming aware of what they are seeing even when those things are very ordinary and then to be able to articulate the observations does not come naturally to all. When the SEs would go to field the observations they would come back with would often contain judgments about the efficiency or efficacy of what they had observed. So when looking at a workplace they routinely assess which part of the work they observe is not efficiently done. Whereas passing such judgment is not problematic per se, we found that all too often project team members' judgment would prevent them from uncovering a deeper understanding of the workplace.¹ This situation was only exacerbated when the SEs went out to observe other SEs, i.e., when they saw people do 'their' work they were even less able to look for the underlying logic of their work practices but were always judging whether the SEs were doing their work well. In our analysis sessions with project team members we repeatedly told them that they should suspend their judgment while doing observation, and instead probe deeper into the actual work practices but, ultimately, we found that it was difficult to overcome.

Finally, one of the challenges we faced was the project team members' motivation. Whereas some were very motivated to learn and saw it as a new career opportunity, others were concerned about their career as SEs not knowing exactly what they could do with the fieldwork skills.

Lessons learned from the initial training

In part, the trouble we faced during the initial training had to do with the fact that we had to convince people of the value of ethnography for the organization. We had assumed that as the organization had hired us for our skills in ethnography the value of our approach and way of working would not be questioned (Jordan and Dalal 2006). However, we found that the members of our project team--who had been selected by the organization without regard for their interest in fieldwork (and without regard for their English skill) had to be convinced individually of fieldwork's value. Moreover, we had not yet been able to show them the effectiveness of ethnography within their own organization; we had only given them examples of our previous work in other organizations and not everyone found these examples compelling (the fact that they all came from our work with American organizations which many Japanese consider – rightly – to be a completely different culture certainly added to their skepticism). The main thing this taught us was that it was always necessary to

¹ For instance, when they found their fieldwork subject needing to search for a certain document in a stack of files they might write down that these documents could more easily be searched if they had been on-line, and did not pay much attention to how the searching was done, why the document needed to be found, what the significance of the document was, etc.

convince Fujitsu members of the value of ethnography, and that the ways in which we had successfully convinced many of our American clients and partners of the value of fieldwork did not necessarily transfer to the members of the this organization.

Ultimately, the thing that convinced most of our project members of ethnography's value was when they actually started doing fieldwork themselves. Experiencing first-hand being in the field, making observations, developing a relationship with people in the field, and especially thinking about how they could make a difference in these working people's lives was what turned out to be truly convincing. And over the course of the project, we were able to convince more and more members of the organization and the results of our internal investigations were met with some enthusiasm. Consequently, they asked us to train other SE students in doing fieldwork. So, how did Fujitsu then make use of (and culturally and organizationally adapt) ethnographic fieldwork in their business, and how did our training enable their efforts in this regard? The remainder of this paper addresses these questions in some detail.

NEW TRAINING COURSE

Increasingly, customers would come to Fujitsu with requests to solve business problems rather than just make a request for a specific kind of computer system. In these cases, the customer had learned that their internal IT department's knowledge of the possibilities for using new technologies to help solve such problems – formerly quite strong – was no longer sufficient, and so they turned to Fujitsu for help and guidance. This created a problem for Fujitsu as its SEs were trained to think primarily about technology and not about solutions to customers' business problems. As a result, Fujitsu decided it needed to develop new skills in a group of its most promising young SEs. These SEs would engage with customers as consultants before any system development project was started. In line with their waterfall software engineering methodology this phase of work was called 'super upstream'. The work in this phase is primarily concerned with understanding and perhaps re-designing the customer's work processes or business activities rather than just developing an information system.

We had just three days to teach this course, including the presentation of students' fieldwork results. Of course we knew that in such a short span of time we could not make professional fieldworkers out of them, but at least we could introduce them to the method. Most of all, though, we could try to convince them of its power, which was considered to be sufficient for they were not expected to immediately conduct fieldwork on their own. Our approach had four parts. First, as we had learned that the most convincing aspect of doing fieldwork was to have them experience fieldwork itself we designed the course around an exercise, and incorporated the presentation of fieldwork results to the manager from each site so that the students can experience what kind of effect fieldwork can bring. Second, as we had by then done some fieldwork in customer organizations, we invited a system engineer to give a guest lecture and talk about his experience of doing fieldwork. Over time, SEs from our own project led this lecture, as they gained more and more experience doing

fieldwork in customer sites. Third, we then allocated some time to have an informal discussion with the students on how they could incorporate fieldwork into their work. Fourth, we developed our lectures (in response to student feedback) to include more and more concrete examples on how to make observations.

LECTURES

As we had only the three days (including a half day presentation) and had to teach between eight to fifteen people at a time, we had to rely on classroom-based training for a large part of the course. We developed a series of lectures between 30 and 120 minutes long that we gave before and after the fieldwork exercise (the exact schedule of which is always fluid as it depends on the constraints and location of the organization that is willing to host the fieldwork). Below we provide a brief summary of the different lectures.

Fieldwork introduction

In this lecture we highlight the difference between fieldwork as a method for studying human behavior and other ways of conducting research --interviews, telephone surveys, and controlled experiments. We stress that fieldwork includes the doing of in-situ observation. We also give a short history of how the method was developed in early anthropology to study of foreign cultures, but then adopted by sociologists of the Chicago school to study local culture (city life in neighborhoods) and finally how some corporate research centers have started to use fieldwork to study people at work and PARC's leading role in establishing the use of fieldwork to evaluate and inform technology design, highlighting the work of Lucy Suchman (1987) among others. Fieldwork has been used to study cultures and to study the details of people's work practices. We also compare the advantages--it is the most 'real' access you can get to really understanding people's work--and disadvantages of fieldwork--it is very labor intensive and not necessarily best-suited when you are pursuing a more narrowly defined hypothesis. Finally we stress how fieldwork can be particularly important for SEs because designing a new system involves redesigning work, and so going into a system engineering project with an understanding of the current work practices heightens the chance that the system will be successful and accepted by the user community.

The fieldwork way

In this lecture we explain that the aim of doing fieldwork is to understand people's work from *their* perspective and give an example of the difference between describing things from an outsider's and insider's perspective. The example we use was inspired by a paper on fieldwork written by other PARC researchers (e.g. Jeanette Blomberg et al. 1993). Then we give a number of practical tips.

1. Stay close to the work. Being in the location where work takes place and directly observing people doing that work is what fieldworkers should strive for.
2. Do not dismiss anything as trivial or non-important. It is important to open one's mind and see, hear, sense and smell as much as possible and to record your impressions faithfully.

Harmony

3. Be an observer and stay out of the way. Know when to ask questions and when to shut your mouth.
4. Be an apprentice and take a learning stance. See the natives as teachers. It is helpful to consider what one would have to learn and what one would have to be able to do if one were to this job oneself.
5. There is always something going. Pay attention to whatever is going on even if it is not work.
6. Reflect on what you have collected. Resist the urge to just collect more data; instead take time to reflect; a little fieldwork goes a long way.

Fieldwork hints

This is a lecture with many practical suggestions for what a fieldworker could look at when studying people's work practices; the hints are both observational and analytic in nature. Perhaps the most common challenge for new fieldworkers is to determine what of the many things one 'sees' ought to be 'noticed'. Fieldwork does not appear to be much of a method when you don't know what you should be looking at especially since 'unmotivated observation' is what seems to be at the heart of the method. To help the trainees in making observations we developed a set of 'fieldwork hints' that contains a lot of examples of different aspects/themes of work and workplaces that a fieldworker can examine. The current list of topics includes the following:

1. *The organizational context.* One perspective to take on organizations is that they are social structures that pursue goals. To an extent, at least, organizations are designed rationally, and therefore one approach you can take when observing a particular person do a particular job is to consider what the function or role this piece of work has within the overall organization. Naturally, it is important to understand members' perspective in this regard: what they think their role function is, and where the section they belong to is located within the organization, e.g. a section which earns most, or a section which does not directly make business, etc.
2. *The division of labor.* Similarly to the organizational context just how the work is divided into different jobs was at some point a rational decision. The division of labor is the very thing that gives rise to 'an organization'. So one should always consider how this has been done, what the organizational structure is, and what a group's responsibility is. Then, one can consider whether this division and the rational for it still makes sense when one considers the way people actually collaborate.
3. *Working relationships.* Usually there are organization charts which represent different relationships among different groups and people in each section and in other sections. Yet, observation of how members relate to each other in the workplace can yield a more complex picture of the organization and how it actually works. How do colleagues relate to each other, how do they relate to their boss? Are there informal groups? Especially, how do people talk about themselves and others in the organization?
4. *Official vs. real work.* It behooves fieldworkers to pay special attention when workers have found ways around official procedures to get their work done and the rationale for not

following the official procedures (if there are, and we encourage people to collect as much as they can official documents that describe procedures).

5. *Organization of work.* When observing someone at work, a fieldworker should always consider: How do people decide what to do next? Often there is a certain rhythm to people's work. In some cases, members' work is reactive to the environment, i.e., in a restaurant waiters' and chefs' work is driven by the customers that walk into the door. In other work, the work can be self-organized and people are free to organize their own day to get their work done.
6. *Space.* How have people organized their workplace, arranged their tools into physical space, for doing their work. Oftentimes, the organization of their workspace is quite deliberate. We give an example of a worker in a call center, who has pasted a number of documents next to his computer within easy reach, has learned to use the mouse with his left hand in order to keep his right hand free to jot down notes while on the phone with the customer. We also give an example of how the design of a workplace can either impede or enable collaboration between workers and give an example from the research of Heath and Luff (2000) as well as our own work.
7. *Technology.* What technologies and tools are taken up in the course of work? Fieldworkers should consider how those tools support (or hinder) the subjects' work. Such consideration can lead to suggestions about how tools could be modified in order to better fit with the actual work practices. Documents are, in this sense, a special and ubiquitous technology in most workplaces but should also be considered technologies. We give some examples, including the affordances of paper (Sellen and Harper 2002).
8. *Troubles.* Troubles are especially helpful for fieldworkers because they often reveal the hidden, normal organization of work. Therefore fieldworkers should pay special attention when troubles occur (although when they do it is also especially important not to interfere with the subjects' work).
9. *Local language.* One aspect of the language in a workplace is the jargon, specialist words with particular technical meaning. However, the local language is more than jargon; quite ordinary words may be used in a different way in a worksite as well. Understanding the local language is so important because it teaches a fieldworker how members organize their experience.
10. *Local knowledge.* Consider what the members need to have learned in order to do their work. Often, even simple jobs require an enormous amount of local knowledge, knowledge about people, their relationships, about the members' work and its relative importance, about the organization's history, etc.
11. *Organizational culture; values and norms.* An organization can promote certain values and norms and these are reflected in the actual actions of the organization's members.

We end the lecture with some general guidelines for doing fieldwork, which is to use one's own experience as a backdrop for understanding the particularities of an organization. And to try to understand the local nature of human actions by subjecting them to the ethnomethodological question of "why that now".

Data session

This is an exercise in which we use a short piece of video and guide the students in making observations. We have used video data we recorded in a call center some years ago. Using multiple video cameras we recorded the phone-call between the telerep and the customer as well as the ambient sound in the call center, the interaction with the computer system, and a wide-angled shot which captures the telerep in his cubicle environment. We provide the students with a transcript and play the video several times. We prompt them to make observations, giving hints if they have difficulty. The video has several key points. For instance, the telerep reads a wrong line, which a casual observation cannot reveal. We guide the students to notice the mistake by reviewing the video carefully and then let them state analytically the practical reasons – pushing them to think further than to attribute the mistake to the rep’s lack of capability—such as pressure not to keep the customer waiting, the design of the system and various documents, which the rep had to use quickly and sequentially.

Ethnographic interviewing

This is a lecture on how to conduct ethnographic interviews (as opposed to the more formal, highly structured – and thus more serially interrogative – kind). SEs may be familiar with doing interviews, but if so those interviews are conducted to specify what kind of functionality the customer requires, rather than focusing on the work per se. We stress that the goal of the ethnographic interview is to get the interviewee to talk – an ethnographic interview is about the interviewee not about the interviewer. Although you must prepare an interview guide with topics and perhaps even specific questions, interviewers should be flexible and it is a good practice to base next questions on what they just heard from the interviewee rather than doggedly following the prepared list of topics. In ethnographic interviews it is better to ask broad, descriptive questions, which will naturally lead to the interviewee giving longer answers that the interviewee him/herself can design. Using a transcript of an interview that one of us conducted we illustrate how to conduct interviews to get rich information by being ‘persistent but polite,’ asking for more detailed descriptions from the interviewee. Finally, we talk about some practical matters such as how to set up interviews, how to do a proper interview introduction, to bring recording devices and how to ask for permission to record, and to write field notes as soon after the interview as possible because many details will fade from memory quickly.

Fieldwork planning

This is a lecture containing some practical tips for planning a fieldwork engagement. First, we remind the trainees of the advantage of fieldwork over other methods and techniques which may be used to persuade members of an organization that fieldwork is a good idea. Since organizations are hierarchical, it is usually a good idea to start by doing interviews with higher level manager and work your way down until you come to the level of the people that are the target of observations. In getting an introduction to the organization it is very helpful to get a manager to give you a ‘Grand tour’ in which they walk you through the organization and introduce yourselves to various members. When creating a fieldwork

schedule you should consider how much time you have, how many people you can 'sit' with, and who those people should be. It is important to allow for enough time to write field notes and do analysis and not just fill one's time with making observations. Finally, we talk about how to report back to the organization and how it is important to protect individuals by not revealing their identities even if it means not telling your strongest stories. We remind them that fieldworkers are not there to debunk the organization they investigate, but to be neutral and take an ethnomethodologically indifferent attitude.

Co-design

This is a lecture on the approach to organizational interventions. Since our audience was SEs who develop new systems we also developed a lecture on co-design: the process of working closely with users to design new technology. In the lecture we talk about the rationale for co-design as well as its principles. We argue that a system designed by the users may well be better suited to their work than a system the designers come up with and more readily accepted and adopted. We elucidated some of the principles for co-design inspired by literature in participatory design such as the work by Schuler and Namioka (1993). As we do not normally have sufficient time to illustrate the many techniques of participatory design, we use Muller, Wildman, & White's taxonomy (1993) to refer the students to literature where they can learn about different techniques.

Writing field notes

In this short lecture we make a distinction between writing while doing fieldwork and writing field notes afterwards. The prime purpose of writing in the field is to jot things down so that they can be remembered later; there is no need for elaborately written down observations. We urge the trainees to make detailed notes about the environment and to record conversations as literally as possible. Also, we talk about when it might be wiser to refrain from making notes (when your subject is telling you something potentially embarrassing, for instance). When returning from the field the first stage of writing field notes is to get as much down as possible and not to worry about the readability of your notes for other people, these are notes that capture your own observations, so it does not matter that not everything coheres. For more 'finished field notes' different styles can be used (van Maanen, 1988).

Fieldwork exercise

In order to let the students experience the value of fieldwork we designed the exercise to mimic the situation they would face if they conducted fieldwork in a customer site. We sought cooperation from different organizations within Fujitsu, focusing on organizations whose work was quite different from the work of SEs. We did fieldwork in the mailing room, the security offices, with secretaries, and the kitchen staff in the cafeteria. The students were divided into small groups of 4-5 students who had to work together during the analysis and presentation parts of the exercise. The level of access the students had to the subjects varied greatly as some organizations did not want the students to interact with the subjects at all, a situation we have tried to address with only limited success. We

accompanied the students to the field and answered any questions they might have and sometimes even did some fieldwork themselves.

After the fieldwork, which lasted for about two to four hours, the students would write up their field notes individually, and then do analysis in small groups. We would sit in on these groups and work with the students and help them develop their analysis. On the third day of the course, the students would develop presentations of their observations and present them to managers of the organizations whose members they had observed. The requirement that they present to a manager created considerable pressure for the students and they invariably took the fieldwork exercise quite seriously. Invariably, these managers would be impressed with the detail of the things the students had observed and this reaction helped us considerably in convincing the students of the power of ethnography.

RECENT DEVELOPMENTS

The cadre of SEs we initially trained in our project is to carry out fieldwork at customer sites and then present to the customer how work is actually done at these workplaces, as well as what kind of problems the customers' organization needs to solve in order to improve their current performance. While they expect their findings will eventually lead to customer orders for information systems they try not to narrow their observations to members' use of technology.

As they accumulate their experiences, they started customizing fieldwork into a more systematic method in order to cope with constraints they have on the overall schedule. To help them we participated in these customer engagements at first, but as they gained more experience we started to review only the results of their work. The challenge was for them to go beyond merely recording their observations to deeper analysis, a skill that only comes with practice (and talent, certainly). Nevertheless, they have developed a quite effective way of doing team ethnography. Further, they have also now taken over teaching our course on ethnography to other members in the organization. As they accumulated experience and cases, and the fieldwork service continued to take shape, it became obvious that students should learn what they will be expected by customers to do, based on Fujitsu's most recent experience.

CONCLUSION

Naturally it is expected that the professionals in one area would react to a new method, especially if the particular method comes from a different discipline. There are genuine differences in the approach to work between ethnographers and system engineers. These differences do not just have to do with introducing a novel method to their work, but have to do with what is considered competent work in the different communities; they are deeply moral issues that cannot be glossed over lightly. In our experience, the most successful way to overcome these differences is to have the system engineers experience first hand the value ethnographic observations can yield for their own work. Ultimately, the experience of teaching ethnography helped us understand system engineers work better and helped shape

our message when we reported our ethnographic results; it helped us to be heard by the organization.

Inspection of projects at the maintenance and operation phase was another area where Fujitsu applied fieldwork methods (Obata et al 2007). This made it possible to look at projects operating in this phase more closely and understand why certain troublesome issues persist that may escape the standard checklist based inspection method. Thus fieldworkers were able to make managers reconsider the existent policies when they were presented with some compelling fieldwork findings. In both cases, it was SEs and Fujitsu Laboratories members who customized the fieldwork method in order to meet their own needs. It was a very positive development. After all, they know far more than we about SEs' work and are therefore in the best position to decide how to implement fieldwork methods within their own work environment and practices. For this reason, fieldworkers in Fujitsu should be in a very good position to overcome some of the issues frequently raised in the CSCW community about making an effective bridge between design and workplace studies (Plowman et al 1995; Dourish 2006). As far as we know Fujitsu is the only software development business to train and operate a fieldwork team inside the business itself, staffed and managed by SEs (versus by researchers in a laboratory organization that must then find some way to cooperate with and effectively support the business side). We believe this is a huge step forward for ethnographic praxis in industry.

REFERENCES

- Blomberg, J., Giacomi, J., Mosher, A., and Swenton-Wall, P
 1993 *Ethnographic Field Methods and Their Relation to Design*. In D. Schuler & A. Namioka (Eds.), *Participatory Design: Principles and Practices*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Churchill, E. F., and J. Whalen,
 2005 *Ethnography and process change in organizations: methodological challenges in a cross-cultural, bilingual, geographically distributed corporate project*. In *Proceedings of EPIC, 2005*, Seattle, WA. November.
- Heath, Chr. and Luff, P.
 2000 *Technology in Action*. Cambridge, Cambridge University Press.
- Jordan, Brigitte and Dalal, Brinda
 2006 *Persuasive encounters: ethnography in the corporation*. *Field Methods*, 18(4).
- Muller, M. J., Wildman, D. M. and White, E. A.
 1993 *Taxonomy of PD practices: A brief practitioner's guide*. *Communications of the ACM*, 36(4):26--28.
- Obata, A., Yamada, S., Harada, h., Ito, S., and Hirata, S.
 2007 *Ethnographic inspection: identifying project risks*. *EPIC 2007*.

Harmony

Plowman, L., Rogers Y., and Ramage, M.

1995 What are workplace studies for?,' in H. Marmolin, Y. Sundblad, and K. Schmidt (eds.), *ECSCW '95. Proceedings of the Fourth European Conference on Computer-Supported Cooperative Work, 10-14 September 1995, Stockholm, Sweden*, H. Marmolin, Y. Sundblad, and K. Schmidt (eds.), Kluwer Academic Publishers, Dordrecht, 1995, pp. 309-324.

Sellen, A.J. and Harper, R.

2002 *Myth of Paperless Office*. Cambridge, Mass. MIT Press

Suchman, L.A.

1987 *Plans and Situated Actions: The Problem of Human-Computer Communication*. New York: Cambridge University Press.

van Mannen, J.

1988 *Tales of the Field; On Writing Ethnography*. Chicago: University of Chicago Press.

Research to Reality: A Business Perspective

Daja Phillips

Ricoh Innovations, Inc

Ricoh Innovations discovers unmet customer needs and designs and deploys hardware, software and service solutions to those needs through an interdisciplinary design process predicated on active customer participation. Some of our findings lead to new value propositions on which Ricoh planners investigate entirely new businesses. We attribute our success to our ability to translate our findings into actionable, risk-sensitive business cases tested and improved with active customer participation. We collaborate closely to weave our activities into critical product planning milestones, but retain ownership for the process of site selection, research, synthesis, business modeling and transfer to ensure success. As a result, Ricoh launched a new product line based on our research, in less than a year and our methodology is now used by other Ricoh research groups to serve Ricoh's European and Japanese markets. The first half of this paper outlines the organization and methodology used to identify customer needs, and prove the associated value of a customer-design solution. The second half comments on some of the techniques we use to filter and package our results for optimal impact on the product groups.

Customer-Derived Innovation Methodology at Ricoh Innovations

Four years ago we recognized that coupling ethnographic based field research with participatory design and rapid prototyping would be an exciting new way for Ricoh to identify and meet latent customer needs. Understanding that this would entail sensitivity to both research and business concerns, Ricoh tapped a business person to head the new team and championed the initiative through the support and protection of a senior corporate executive. Based on the “customer-driven” culture of Ricoh we knew there would be immediate interest in the rich customer data we would provide, however we also knew that a solution design would not be enough to inspire a product planner to implement our ideas. In addition to a solid design we would need to prove: 1) customer value, 2) purchase intent, 3) profit potential and 4) delivery and support ideas (if it was a software or service Ricoh did not currently offer in North America).

Informed by these insights, we created a core multi-disciplinary team of eight people and created a methodology defined by six major phases, that when laid end to end, last roughly six months. Our philosophy is to engage in many short research projects, so that we can gain insight from many customer settings, and develop a rich tapestry of actual customer insights, that can be used in conjunction with other demographics, to clarify the actual customer need for markets that Ricoh marketing teams have deemed commercially viable. Figure 1, outlines the steps of our process in an ideal order and provide concrete examples to illustrate each step.

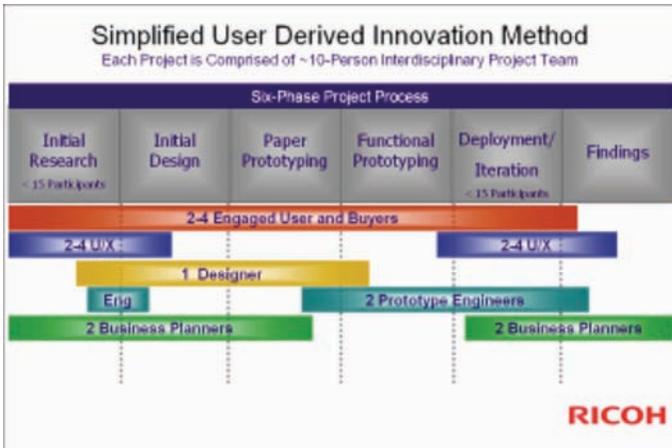


FIGURE 1 A Six-Phase Project Process Is Completed By a Ten-Person Project Team

Our methodology begins with a month-long phase of contextual inquiry and ethnographic research. Ten-person project teams are responsible for accurate data collection, idea synthesis, design origination (then used in participatory design sessions with the customer site), prototype development, numerous prototype iterations, development and collection of both qualitative and quantitative metrics, and last and most importantly, business-centric conclusions. In order to address this array of tasks, our multi-disciplinary teams include at least two user researchers trained in ethnographic-based contextual inquiry, an intern, an external contractor, an interaction designer with skills in solution visualization, two engineers, and from 2-5 customers - which includes active collaboration with both users, buyers and management.

We keep team size at eight to ten people. Otherwise, team creativity and spontaneity diminish under the weight of coordination burdens. Keeping the core team of a project small allows all team members the ability to immerse themselves in the rich user data, as well as maintaining the ability to visit the research site frequently. We surround each team with “supporting team members” from technical research, product planning and other interested internal groups who shadow the project and deepen their understanding of the customer perspective as they support the team. Occasionally supporting team members are contractors that we bring into the project because of their technical, subject matter or other type of expertise.

Of the ten member team, the three to four most senior members run the project and take on a dual role as 1) subject matter experts for their discipline, and 2) “meaning-makers” that synthesize the findings into actionable results. The team’s results manager, is responsible

for identifying the right product planner or business planners to whom the results will be targeted. Our Results Manager is always a seasoned product planning employee from Ricoh Japan who already has existing relationships with the product planners in Japan, the United States and Europe. The research team members, who are deemed “meaning-makers”, work with the Results Manager to tailor research results to the needs of the receiving planning groups.

The initial research phase, labeled “initial research” in figure 1, leverages the anthropological roots of ethnography as a means to describe how customers understand and perform their work today and identify unmet needs. We use a codename for the site, and titles, instead of names, for the users, so that we may share the information about the site, while keeping the customer site confidential. Each project creates a rich set of data and so provides an unedited view of “work” in a customer’s setting. Photo diaries, short videos and customer quotes are highly valued by our overseas corporate office. We are expanding to meet internal demand and are always looking for better ways to categorize and present the information on our “findings” website that is available corporate-wide.

The needs from the customer site are then filtered to identify the ones that are important to the site, within the core competency of Ricoh, and reflect an adequate market opportunity. We try to get as many team members involved on the site as possible in the work of describing what is happening at the site, and observing unmet needs. We find that by participating in the fieldwork all members (and most especially supporting non-core members) gain a fresh perspective on what “work” really looks like on the ground and can actively participate in creating the list of unmet customer needs.

During the “initial design” phase we document our understanding of the customer’s specific situation and deepen this understanding through workflow charts, photo essays, etc that are instantly available on our project wiki. Once we have a clear idea of what the customer wants to achieve, we then discuss the myriad ways of solving it and also identify the corresponding value for Ricoh.

The customer’s role in this process depends greatly on the individual. Some customers act as grounding points by which ideas are weighed for merit and critiqued for improvement. Others dive right into the collaborative process and communicate directly to us how they themselves think things should work. In either case, we gain insight into the best design, as well as why and how solving the issue is perceived as valuable for the customer. We learn the right vocabulary for expressing the issue in its industry-specific context and we capture all of this information on our internal wiki.

At this point we move into a paper-prototyping phase where we sketch out the workflow understanding or build cardboard 3-D designs, or create a visual story. Listening carefully to customer reactions provides the most telling information. Each question or confusion regarding a prototype reveals a mismatch between our mental models as designers and the customer’s understanding of their work. These mismatches help us refine our

Harmony

models of work as we probe to understand priorities and identify trade-offs. Over the course of a few meetings, we usually get to the stage where we all agree on the scope of the project and what metrics need to be captured in order to obtain both a qualitative and quantitative assessment of our research.

Once a functional prototype has been developed, we deploy that to the customer site for three to eight weeks. Early on in the deployment, we make an effort to not intrude on the customer's workflow. Our team notes the discovery process through software logs as well as observing use patterns. This phase usually lasts between two days and two weeks.

Once we have gathered as much as we can from the discovery process and initial use, we flow into a month-long process of iterating the solution design with the customer, and, sometimes literally over night, we improve and re-deploy the prototype. Each step of this iteration process provides useful information for other groups focus on designing products and developing use cases. Past projects on our wiki serve as a visible reminder than no matter how smart and talented a team one has, and no matter how many customers one involves, version 1.0 of any solution is a long way from perfect. It is not uncommon for our prototypes to go through twenty iterations from final design through deployment completion.

In typical practice, projects rarely proceed in this perfectly ordered six-step fashion. Innovation based on ethnographically-based research is always intriguing and never the same twice. We adapt to our customer requirements, so it is not unusual to hear "we're trying something new at this site"- which usually involves jumping on serendipitous opportunities, creative scheduling, condensed deadlines, spur of the moment brain-storming sessions, and project changes based on good old-fashioned luck.

Initially our results were met with great interest from the product planning groups, but none of our findings or design concepts directly informed a new product offering. After a tumultuous first year of work, in which none of our efforts transitioned into commercial product plans, we began tailoring our research needs to the needs of individual planners who were interested in our work. Specifically, we augmented our research reports with a one-slide summary of the core business value of our work, and added a short video to every report, that explained our process as well as our findings in the context of the customer's environment. Applying the learnings in the second half of this paper, our results now meet with great success. This new innovation method for Ricoh continues to evolve, even as it is being institutionalized and used at other Ricoh research centers around the globe. We have completed almost twenty projects and with each new project requests for specific information on sites and projects continue to rise. Over the past three years its has catalyzed three new solutions, two new business cases and one additional service idea that other groups in Ricoh are in the process of commercializing.

On Being Heard: Lessons Learned

Our experience reveals that when delivering good user research, it is not enough to be “heard”; rather, it requires transforming findings into actionable results and working with other business units to achieve them. Our success is as much to our skill in filtering, packaging and relating our results in ways that are readily actionable by Ricoh group as it is to the rich and valuable findings. The remainder of this paper discusses the extensive efforts in communication required to ensure your research findings fall upon fertile ground. Successfully transferring our findings, requires as much time and attention to identify the right “catcher” as we spend identifying appropriate research sites. At Ricoh that means providing each product team with only what is relevant to their project, and packaging it in a way that is applicable to the current planning stage.

We’ve studied the internal groups who rely on our findings, just as we study our research subjects, in order to glean what are their hidden needs. Since all planning groups are designed to move products through the planning process, it is safe to say that they always need actionable concepts. The hitch is that the definition of actionable concepts changes depending on the stage of planning at which each group is currently. Through a series of trials and failures over a four year period, we honed our process and deliverables to precisely match the needs of the receiving product or new business group. Successful transfer of research results is predicated upon tailoring the findings so that they were both clear and actionable for the receiving group. Our research team has to think like an entrepreneur, and balance both the needs and desires of the customer with the economic realities of running a business. When we simply focus on our research activities, our hard work typically is misunderstood because the corresponding recipient organization is not ready or able to incorporate our work into their current task. Five elements emerge from our experiences which others may find useful. These elements are explained below:

Element 1: Cultivate a team culture

One of the most challenging issues faced by our multi-disciplinary approach is the potential for factionalism among the four major disciplines: business, engineering, interaction design, and ethnographic-based user research. Each discipline is steeped in its own perspective, luminaries, and methodologies which must be melted together with the objectives of the team to create a consistent view of the customer's problems across two different perspectives.

The ethics of protecting the research site from exploitation, and concerns for confidentiality form the foundation upon which notions of process and completeness are hammered out and layered. No discipline has the upper hand in decision making. The customer needs and the customer’s willingness to participate are paramount. We do not monetarily compensate our research sites. They volunteer to be researched, and understand well that whatever we jointly build and test will be removed from their site at the end of the project. Their reason for participating is an expectation of valuable insights they can apply to their business. It is the very same expectation we have at Ricoh. Every team member, including the customers, is willing to participate to learn insights.

This often involves “bending”, and occasionally “breaking”, disciplinary taboos. Our business people have to create business cases in weeks, not months. Our user research team must provide insights in weeks, not years. Our interaction designers must forego beautiful visual design, and concentrate on use experience. Our engineers must cobble solutions in any way that will actually work, all the while, thinking through how they would explain the correct way to approach the issue when asked. Fostering this culture of collaboration and expedience is critical to success and yet largely juxtaposed to the culture of more traditional research labs.

Element 2: Transform “researchers” into “change agents” who own responsibility for the end success

Like most of companies, Ricoh judges research value in terms of business results: profits, enhanced customer relationships, and increased revenue. This means that we cannot expect others who are not intimately involved with our research to make the proverbial leap to innovation. We have to do it – and so we have to be the change agents who will convey the message to the company as well. Paul Horn, who oversees research at IBM, stated in an interview with *The Economist* last year that: *“the idea devalues over time, if you don’t get it to market quickly. Everything we do is aimed at avoiding a ‘handoff’- there is no ‘technology transfer’. It is a bad phrase at IBM. Research teams stay with their ideas all the way through to manufacturing.”*¹

At Ricoh, our research team succeeds by carefully listening to the objectives of the product divisions, and crafting our results so they fit easily into the product specifications and market requirement documents of the receiving groups. Much as if I tell you that the word “Nitrogen” can be re-arranged to spell a multi-billion dollar business that didn’t exist ten years ago, I have left you with a puzzle, rather than a solution. If instead, I simply tell you that through research we have identified the “Ringtone” business that leverages core elements of our Nitrogen business, and describe how the elements can be re-arranged, I have given you a potential solution to consider, and a means of pursuing it. More often than not, this type of exercise requires our team to help the product planning group unlearn some assumptions they have made along the way. The case study below describes how researchers can proactively changed one marketing manager’s mind about the value of user experience research by contrasting it with the experience provided through the current offering.

¹Eric Schmidt, *Out of the Dusty Labs*, www.economist.com/science/displaystory.cfm?story_id=8769863 (Jul 2007).

Case Study- Transforming researchers into change agents

In one of our projects our team explored the need for quick, cheap, personalized marketing brochures. Through a mix of market research and contextual inquiry, we described the opportunity to create software-as-service that would deliver a vastly superior custom brochure printing experience, without the need for the customer to leave the office. We described how, through participatory design, we had identified a way for customers to print beautiful, professional quality custom brochures from our existing line of printers and copiers. The marketing manager retorted that Ricoh had already tried “that” and it hadn’t worked. “That” being the marketing manager’s general concept of what we were talking about: customized direct mail. We learned Ricoh had once resold an existing print package to their copier and printer dealer that was not well accepted. Thus, the marketing manager had learned the wrong lesson, and was convinced that since their package hadn’t sold, there was no market need.

In an effort to catalyze change, our research team member then offered to compare our customer-driven approach with the existing print package, and to return with the results. The comparison afforded us the opportunity to clarify for the marketing management the stunningly bad use experience of the product they selected. It had failed for very different reasons than he originally thought. By building a use story and walking him through the entire use experience, the manager gained an appreciation for the richness of an ethnographic approach, and the distinction between solution value and market relevance. In this case, the product they had selected wasn’t relevant to the market opportunity of interest and did not match the customers work practice or underlying needs.

Using less than twenty slides, we educated the marketing manager to the value of user research by dissected the current product interface and revealing the difficulty with discovery as well as the two wizards and twelve other steps needed for the user to conclude that they could not accomplish their initial goal.

This level of explanation, placed in the context of a business plan, clarified the market opportunity we were highlighting, and ultimately gain the support of the business unit to explore new product ideas in this particular market segment.



FIGURE 3 By Walking the Product Manager through the Discovery and Workflow Challenges, the Value of User Research became evident.

Element 3- Summarize findings in terms of business objectives - use business language

It is our job to craft our communication with business groups so that they have a means of talking and thinking about our ideas. When we first introduce a project to selected, diverse, corporate managers, we make sure the message is simple, clean and meaningful to the group as a whole. We have found that we must provide an overview of our work, in a sound bite they can mull over and communicate to others. In this way, when we return with more insights and findings, they have informed the right people. As in the example below, we provide a one-slide overview of each current project, where we state our research objective, it’s potential relevance to Ricoh’s business, and our main findings (if any) so far.

FIGURE 5 A One-Slide Project Summary Gives the Audience an Overview of the Project Objective, Common User Need and the User Setting

The example above is the initial one slide summary given for studying massive multi-player online gaming. We retain a large amount of space for a picture (of the theme, or the prototype - if it has been built). Especially since we are communicating across cultures, we find photos to be essential.

In our monthly research update, we restate the project objectives and suggest which product groups might want to “join” our project team through our wiki. On our wiki site, each project is laid out with the same eight steps, and rich user data as well as our discussions about the findings area are accessible. All project materials, including photos and video, are indexed so they can be easily searched.

The wiki site is where all the research findings reside for corporate management to access them at anytime in the future, thus becoming part of phenomena Chris Anderson called the “long tail” in his book of the same name.² By placing our findings on an internal server that can be searched by any planning person, the value of our findings can stretch over many years, instead of only a few months. It is not uncommon for a planning group to reference a project that is over three years old to review vertical workflows or the identified customer needs.

Element 4- Clearly Identifying Customer Value Reduces Business Risk and Gets “Heard”

No matter where on their perspective lifecycles your industry and technology are, it is paramount to remember business units are built for action. Employees are measured on concrete results, usually in terms of revenue, profit, objectives or a combination thereof. In order to ensure your ideas get “heard”, it is important to champion them until you have a few working examples that prove their market validity. This type of proof can take the form of short user case studies, product experience contrasts, Return on Investment (ROI) profiles, adoption rates (for new trial network services), etc.

Our wiki site also has an area dedicated to common unmet customer needs, and the industries where the need has been confirmed. Customer surveys and survey results are nestled with the reports, and linked with the market research completed by past product planning teams that referenced the same industry, or product. However, the most useful form of executive communication appears to be short video clips that are three to ten minutes in length and depict:

- The common unmet need, in a realistic user setting (Figure 6).
- The current market offerings (if not well-understood in Japan already).

² Chris Anderson, *The Long Tail: Why the Future of Business is Selling Less of More*, (New York: Hyperion, 2006), p. 10.

Harmony

- The user-derived solution result of our research.
- The metrics used to prove both qualitative and quantitative value (Figure 7).
- A short caption by the highest ranking customer (typically a decision-maker) involved in the research project.

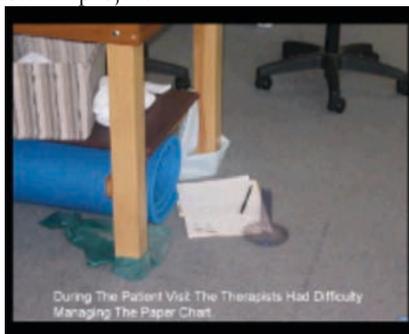


FIGURE 6 This Photo Aptly Sums Up The Issues with Paper Forms in a Clinical Setting – They Provide No Value During An Examination And End Up on the Floor

Short videos allow product planners to witness what a customer site is like, and also to empathize with the many real-world issues that occur. We keep these videos rather rough, because if they are too professionally done the audience may mistake them for commercial product case studies. We try to keep these video vignettes to less than 10 minutes, and we use them to convey the “feel” of the customer site, our project goals, and our project metrics. We save our actual findings for the smaller audience of individuals who can act upon them.

The example below illustrates our research in a health care clinic environment. Figure 6 demonstrates the drawback of using a paper charting system in the clinic environment. Figure 7 depicts the summary of results achieved by working with the end customer to derive a user-centered system with benefits for Ricoh as well.

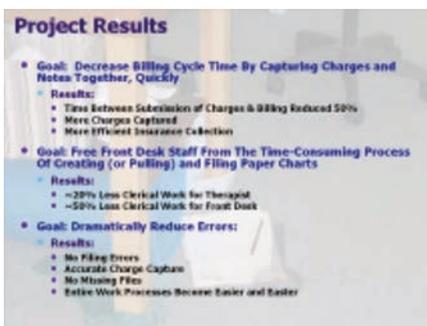


FIGURE 7 Project Results Show How Project Goals Were Achieved

Element 5- Pick Your Battles: Avoid Situations Where User Research Does Not Match The Business Cycle

During the evolution of a market, innovation shifts from technology to customer experiences. This implies that creating new value for customers requires shifting from technology research to the type of customer based design process described here. We have identified three cases where dislocations between research and business naturally occur, and take care to avoid them.

Situation 1- The “Just Ship It” Focus to Gain Market Share Trumps Product Improvement When a Market is Young

As companies move from the emerging stage to adolescence, the business focus naturally shifts away from technology innovation and toward market share capture. Researchers at this stage may have problems getting heard because growing companies are focused on the inevitable race for market share. Geoffrey Moore, in his book Crossing the Chasm, outlines the myriad challenges faced by young technology companies as they grow. He sums up the objective of juvenile companies as “just ship it”.³ The key factor for success is gaining market share as customers make their initial adoption. The market share race in the 1980s between the database vendors like Oracle, Informix, Sybase and IBM is one such example. It seems counter intuitive, but Moore makes a well-researched argument that gaining market share is a critical success factor at this stage in the market lifecycle. A company must first gain a customer, before they can improve the customer experience. Once most buyers make a purchase a move to the customer category, they are loathe to admitting they purchased the wrong product, and are motivated to derive value from it. Only once the company has run the initial rush for market share and established itself, will it have time to consider user research to improve its products.

Situation 2- Profit Potential Plummets as Market Matures – No One is Listening to Research

As products offerings mature, the underlying technology matures. The business unit responsible for maintaining the steady growth curve demanded by Wall Street, no longer has the time, attention or investment dollars for research. The product line undergoes ever-increasing pricing pressure. As the market matures further, and commoditization of production occurs, a new set of competitors arise, and exponentially increase pricing pressure. Margins begin to erode, and the business strategy shifts. The product group that once devoured your research may milk its market position for cash required to dominate other growing markets. In this case, research efforts might be better utilized by shifting the focus to a new product (and technology) in the business portfolio.

³ Geoffrey A. Moore, Crossing the Chasm, (New York: HaperCollins, 1991), p. 74n.

Situation 3- Misalignment between Customer Needs and Corporate Capabilities

As we explore customer needs, and derive valuable ways of solving them with the customer, we sometimes leverage new technologies or paradigms that have yet to become main stream in corporate engineering environments. For example, in order to best solve a customer need for customized direct mail that could be created, stamped and folded for mailing in-house by the front desk clerk, we leveraged web services architecture. Ricoh had made announcements about offering web services, but had none in operation at the time of this project. Consequently, support from upper executives, and enthusiasm from the channel were not enough to transfer our design concept to product development. There simply was not a services planner available with the background and skill needed to translate our design and value propositions into a commercial web service. Thankfully, because our materials were searchable on Ricoh's internal network, these particular findings are now seeing revived interest within Ricoh.

Conclusion

The experience of the Ricoh Innovations research team suggests that a wide audience of executive, marketing and sales people can benefit from an accurate and empathetic portrayal of the actual customer workflow. The value of findings is directly proportional to their fit with current marketing needs. Moving from description to prescription requires critical thinking to understand the context in which they will be used. Understanding and connecting with the audience who will take the next steps is paramount for success and an exercise for the entire research team. To ensure the appropriate understanding and connecting, ethnographic practitioners need to gauge success by the amount of buy-in and personal ownership for the product's success you find in the receiving organization. We must acknowledge that the business people are experts at execution and that many factors such as channel readiness, compensation plans, channel conflict, related product launches, etc. will impact the success of the final product that embodies your ideas. Only through strong collaborative efforts can research impact commercial product reality.

Not Lost in Translation: Maximizing Impact in Marketing Ethnography through Bivocality

AMY MAISH

MAGDA WESOLKOWSKA

in-sync

The bivocal approach is a systematic research and strategy framework that leverages marketing professionals' and social scientists' unique perspectives in order to develop brand, consumer and cultural insights relevant to the business challenge. Thus allowing all voices to be heard equally and clearly: that of the social scientist and the marketing professional, that of culture, consumer and brand. It results in an explanation for the forces at play on the brand or business questions and acts as a cultural GPS for the brand. The explanatory nature and consistent connection between brand, consumer and culture allow for a highly grounded, and we would assert, more powerfully informed set of actions, including, when, how, and why brands/products are used or could be used by consumers.

INTRODUCTION

“What’s wrong with ethnography?” Martin Hammersley (1991) asked this question as a double-entendre in the context of academic research, and we see the need to revisit his question due to the current dramatic interest in ethnography in marketing environments¹. Dimensions of this question in our context might include: Why do clients sometimes feel ethnography under-delivers? Why do they have such great difficulty judging what ‘good’ ethnography looks like? As social scientists in a marketing and branding strategy consultancy, we routinely engage these questions and want to share some problems identified with ethnography in a conventional marketing model and provide a possible solution we call the bivocal approach.

The bivocal approach is a systematic research and strategy framework that includes ethnography (among other methods) and integrates marketing professionals’ and social

¹ We define marketing ethnography as ethnography carried out to solve business problems such as brand strategy (e.g. positioning, communication, etc) and brand innovation (e.g. platforms for innovation and opportunity areas for brand growth).

scientists² unique perspectives at each project phase, from project proposal to client debrief. The bivocal approach involves a marketing professional³ and a social scientist actively collaborating throughout a project. Each of their distinct perspectives are heard and understood. The marketing strategy relationship to culture⁴ is created by the deep and consistent shared experiences and responsibilities throughout a project. In our environment, we focus on meeting the challenges of marketing within the context of human understanding. Marketing research and strategy is about gathering insights on consumers' unmet needs no matter how created (i.e. culture, functional needs, etc), and identifying insights that provide solutions to marketing problems.

Accepting the primacy of culture is a central tenet for powerful marketing solutions in the bivocal approach because it envisions the consumer as embedded in cultural forces (e.g. changing notions of masculinity or tensions around image). The brand interacts with, and is susceptible to, the same cultural forces. Brand managers can, in-turn, use cultural knowledge to connect with or provide a compelling point-of-view reassuring to the consumer. Marketing ethnography marked by bivocality is a strategic framework that enables and shapes powerful brand opportunities by acting as a 'cultural GPS' for the brand that results in highly actionable insights. It also induces clients to become consumer advocates and share our passion for human cultural understanding.

In this paper, we first discuss the limitations of conventional approaches to marketing ethnography, then the framework of the bivocal approach and its underlying processes, and finally, some benefits and challenges.

EMERGING LIMITATIONS OF CONVENTIONAL MODELS OF MARKETING ETHNOGRAPHY

Beginning in the 1980's, marketing departments began harnessing ethnography as a consumer insight tool in the hopes it would enable them to overcome the limitations of more conventional marketing research such as focus groups and surveys⁵. These methods'

² At our consultancy, both roles are called Strategists.

³ The term marketing professional includes roles such as Brand Strategist, Consumer Insights Strategist, etc.

⁴ In anthropology, culture is a contentious concept. It is usually accepted as either 1) "...[as] that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (Tylor, 1871: p 1); or 2) "... [b]elieving that man is an animal suspended in webs of significance he has spun, (...) culture [is] those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning" (Geertz, 1973: p 3). We agree with Tylor's and Geertz' classic definitions, and add that it is an understanding of how disconnections between cultural norms, values and the sociopolitics of everyday life create cultural tensions and opportunities for unmet needs (Holt, 2004).

⁵ Parallel shifts were seen in the product development and design environments.

main limitation was they did not explore the actual lived experience of consumers, something ethnography did. However, in the past thirty years, little consensus emerged as to what great ethnography looks like, and who should be doing it in the context of market research and strategy. Ante and Edwards (2006) summarize the disarray in the field in the often-cited *Business Week* article, “The Science of Desire,”

“Practitioners caution that all the attention ethnography is getting could lead to a backlash. Many ethnographers already complain about posers flooding the field. Others gripe that corporations are hiring anthropologists to rubber-stamp boneheaded business plans.”

Clearly ethnography has not yet reached full maturity in this context. In its current adolescent phase, ethnography is seen as a palliative for poor consumer understanding. Clients often see it more as a marketing research method or tool that brings “Aha!” in-home consumer insights, and less as a theoretical approach able to garner understanding about consumers and the cultural processes in which they are embedded. These issues point out three inherent problems with conventional marketing ethnography models where social scientists are part of the research team⁶: 1) marketers and social scientists use very different conceptual frameworks to inform their ethnographic work; 2) marketers and social scientists use different analytical approaches to ethnographic data; and 3) marketers and social scientists are often siloed in most marketing-centered organizations.

Differences in conceptual frameworks

Due to their vastly different training and experience, marketing professionals and social scientists draw on unique conceptual disciplinary frameworks to inform their ethnographic work. In marketing ethnography, the marketing professional seeks unmet needs and possible solutions to problems people tackle themselves, while the social scientist looks for behavior that reflects culture and in turn shapes that culture. For most social scientists, it is rather a leap to understand culture in terms of people’s unmet needs. For the marketing professional, it is an equal leap to link consumer behavior to broader cultural theories.

These divergent perspectives create a series of inherent biases and assumptions, which underlie how each role approaches a problem using ethnography, as well as how they conduct and analyze research. In a conventional marketing ethnography model, ethnography is typically primarily envisioned as an observational technique, where social scientists are expected to deliver on one goal – providing the ‘real picture’ on consumers’ lives. They answer questions such as what happens at the dinner table or while families watch television. The social scientist is virtually confined to creating discrete data sets about how to reach a new market segment, or find a solution to an observed problem if the social scientist is invited to participate in the creation of a solution at all. In this model, where ethnography

⁶ More and more marketing research companies are now employing social scientists, but many still do not, thus this is not a given situation.

privileges situational observation over larger cultural explanations (and where marketing management limits ethnography to glorified storytelling about the consumer), the social scientist's unique training⁷ and experience as experts in culture is not leveraged. In the end, the social scientist is mostly isolated from larger strategic project goals. Thus they may find patterns across informants, but be stymied from reaching beyond the immediate data sets.

Meanwhile, the search and identification of unmet needs (or problems people tackle themselves), brand insights, the articulation of brand strategy, brand meaning and the definition of brand attributes that guide strategic brand opportunities informs the conceptual framework of the marketing professional. Their role in ethnography is to identify and select the insights that provide the best solution for the client. Most of the time, even if the marketing professional participates as a member of the research team, they only go so far to extrapolate findings to potential unmet needs and strategize solutions. The issues we mention above show that in a conventional marketing research context, the conceptual frameworks are divergent and not shared, and communication between the two voices can be difficult. This type of isolation greatly limits the power of ethnography in a marketing research context.

Differences in analytical approaches

A second problem with a conventional marketing ethnography research model is marketing professionals and social scientists use different analytical approaches when looking at ethnographic data. Although the consumer's voice might be heard by these two distinct roles participating in a project, this voice might not be heard accurately if the ethnographic data is not analyzed against the context of brand and the cultural forces within which the consumer and brand are embedded. This raises three issues. First, finding meanings behind consumer behavior requires systematic and rigorous analysis of the highly detailed observational and interviewing data about consumers generated by ethnography. Social scientists are trained in the analysis of large data sets and are adept at applying and understanding cultural theory. This provides them with the ability to draw patterns from the data sets and across projects, and to relate these beyond the immediate data sets to other observations. (e.g. their own theoretical and academic knowledge). However, social scientists working in other corporate environments to whom we spoke note that all too often current ethnographic marketing models leave those skills largely untapped. Marketing professionals coming from other work settings also observe that ethnographic data is usually left in the hands of practitioners who simply do not have the skills that naturally orient them to relate data to cultural theory. Thus, it is not about being a social scientist *per se* to perform this type of analysis, but about having their conceptual and analytical framework.

Second, finding strategic implications in the course of a project requires a different type

⁷ Social scientists train both to bring understanding to the cultural underpinnings that influence people's perceptions and behaviors, and to be self-reflective (recognizing their own biases and assumptions).

of analytical and strategic skill. Marketing professionals are able to bring together what seem like disparate elements of a project, relate them to clients' needs and the brand, draw out strategic implications and provide clear business opportunities. Social scientists on the other hand are not academically trained to solve business problems and thus to prioritize insights and draw strategic implications from these. Sometimes all insights might seem relevant to a project and a business opportunity might simply not be visible to them. Usually, this means that in a conventional marketing model, as mentioned above, social scientists are not heavily involved in providing solutions.

Third, ethnography in a business context is generally used as a tool for generating single-use insights about consumer behavior. However, most ethnographic research generates what Grant McCracken (2006) called "extra data." One limitation of the conventional approach is this data frequently is not revisited once the project is finished because brand managers (or marketing professionals in consultancies) focus on solving immediate problems. They are not necessarily thinking broadly about the information they generated or beyond immediate project needs. Often this means little acknowledgement of how this extra ethnographic data may fuel other opportunities for the client's brand. Furthermore, insights identified through the analysis of cultural and social theory (which is in the public domain) also are not revisited, even though they could become foundational knowledge for a consultancy, preventing it from reinventing the wheel each time they receive a project on a related subject or consumer group⁸.

If either analyzes the data poorly or in isolation from the other, they will fail to fully account for the social norms that produce the behavior or perceptions identified during the ethnographic study (the voice of the consumer and culture is misunderstood), and hence they might come away with missed strategic opportunities (the voice of the brand is misunderstood). Thus, differences in analytical approaches by these two roles create a risk of misinterpretation of data and thus missed strategic opportunities for both the social scientist and the marketing professional. That is a risk we are not willing to accept.

Organizational silos

The third problem with a conventional approach to marketing ethnography is marketing professionals and social scientists are usually siloed within organizations. In typical marketing research environments where ethnography is used, the marketing professional and social scientist are created as discrete roles, which only communicate at certain key project specific phases or moments of translation of the ethnographic data. Organizational silos create two problems for marketing ethnography. The first is isolation of knowledge, expertise, and ideas. The second is not having a common language, which may produce a

⁸ We acknowledge that who owns the insights at the end of a project or what can be repurposed project to project may be a contentious issue with most clients and consultancies. We think insights obtained through the analysis of information found in the public domain (e.g. academic research) can be repurposed from project to project. Insights that are brand specific belong to the client.

lack of confidence on the part of the marketing professional and anxiety on the side of the social scientist.

The effects of this lack of confidence can be manifold. For example, social scientists possess valued social and cultural knowledge pertaining to the consumer, but marketing professionals and clients may not have confidence in them to translate complex socio-cultural theory into brand-specific or strategically relevant and usable insights that apply to the marketing problem, and realistically, they may not be good at it. This lack of confidence might be borne out of meetings where the marketing professional did not know what to do with the insights identified by the social scientist, finding them legitimate but not usable. The opposite is true of the marketing professional. Social scientists have anxiety towards them to deliver around issues relevant to the brand and translate those to clients, but social scientists do not have confidence in them to deliver around issues pertaining to the socio-cultural context of the consumer and the brand. Further, the social scientist may feel anxiety that the opportunity they see (through the cultural lens) might not be realized because the marketing professional is being too tactical. It is easy to imagine a cross-functional team meeting where the marketing professional thinks, “Get to the point!” because they inherently believe the social scientist failed to distinguish business from non-business-building insights. It is just as easy to imagine the social scientist thinking, “They are missing the point!” Thus organizational or project related silos can negatively affect communication between the marketing professionals and the social scientists. Arguably, and most important in this context, organizational silos limit the predictive and actionable capabilities of marketing professionals’ strategic recommendations (what is driving behavior) because these strategies cannot be placed in explanatory cultural models or frameworks. This may inhibit the potential of marketing ethnography to bring fresh new insights about what drives behavior, and thus limit marketing opportunities. This is controversial, but it is what every brand manager wants, to understand human behavior and be more predictive.

These three problematic areas forced us to ask ourselves, how do marketing professionals and social scientists ensure they leverage the power of ethnography to its greatest potential? What specifically can each bring to marketing ethnography? How can the field of marketing ethnography maximize insights and consider the cultural context in which consumers and brands are embedded? How does the discipline take a strong perspective on where ethnography can most powerfully inform strategic brand positioning and/or overall business strategies? The existence of EPIC implies a need and desire to find answers to these questions. We assert that a bivocal approach is a key way to overcome both internal/role-related struggles and allow marketing ethnography to reach a more complete potential.

THE BIVOCAL APPROACH

Defining the bivocal approach

Traditional uses of the term bivocal are found in the disciplines of logic, linguistics and music. In each instance, the term refers to a relationship that exists between two different

classes and shares each other's elements. For example in music, bivocal refers to two accapella voices creating harmony and dissonance as they follow each other along the storyline. Here we use it similarly, to refer to the relationship between marketing professional and social scientist, and take it further to refer to a specific approach integrating the two perspectives. As defined earlier, the bivocal approach is a research and strategy framework that employs ethnography and other social science research methods, and leverages marketing professionals' and social scientists' unique perspectives and conceptual frameworks at each project phase, from project proposal to client debrief. The marketing professional and social scientist actively collaborate throughout a project in the bivocal approach. The collaboration between the two roles allows each one to build on the other's core area in order to find strategy/innovation.

Project challenges and brand opportunities

While any marketing project has unique goals and quirks, for our consultancy a positive outcome typically depends on successfully meeting four distinct challenges. First, we must hear the client's needs (including their goals and means to achieve them, such as internal commitment and brand equity). Second, we must hear the voice of culture, if you will, through a detailed initial analysis of relevant anthropological and sociological studies and then through the collection of informants' voices via fieldwork. Third, we interpret informants' voices against the backdrop of identified cultural processes. Fourth, we must collaborate internally, and then externally with the client, to develop brand and innovation based on the voice of the brand, consumer and culture.

At our consultancy, we have a strong set of beliefs that inform and underpin our bivocal approach. We believe brand opportunities stem from three key needs areas: unmet human needs originating from everyday life (e.g. Swiffer and the elimination of pail and mop); enduring or functional human needs (e.g. build a better mousetrap); and needs originating from cultural tensions, such as for example the dissonance caused by fluctuating social norms and values (e.g. new spaces for the expression of masculinity).

The bivocal ethnographic process

The bivocal framework finds answers to the typical four project challenges by allowing both the social scientist and the marketing professional to contribute differently but complementarily to each project. In order to maintain consistency project-to-project as well as to manage expectations and aid project efficiency and efficacy, we developed and implemented internal processes to outline the *primary* responsibility for each role throughout a project⁹. Figure 1 shows how in our bivocal model the responsibilities of the marketing professional and the social scientist are divided during the application of these eight typical project phases. Multiple individuals might embody each role.

⁹ This means that each is sensitive to collective project goals however, each ensures s/he delivers on his/her areas of responsibility.

Figure 1. An overview of the roles of the marketing professional and social scientist in a bivocal ethnographic approach at different project phases

| <i>Project Phase</i> | Approach/ Template | Social Scientist | Marketing Professional |
|---|---|--|---|
| 1. Proposal response and creation of research design | <ul style="list-style-type: none"> • Collaborative meeting/ brainstorm • Research design framework | <ul style="list-style-type: none"> • Recommends research design and cultural themes and hypothetical implications that best address the strategic research questions | <ul style="list-style-type: none"> • Translates business questions into strategic research questions • Participates in research design |
| 2. Desk-based research | <ul style="list-style-type: none"> • Written report filtered through series of analytical question templates | <ul style="list-style-type: none"> • In-depth research by mining sociological, anthropological and historical literature • Analyzes this information by asking several key questions: is this new? So what? Have we seen this elsewhere? What is the underlying core social science concept? What is the opposite view? • Distills this information into template and shares with other social scientists for feedback • Uses the insights to generate tentative hypotheses and research questions for fieldwork | <ul style="list-style-type: none"> • Gives feedback and redirects |
| 3. Selection and prioritization of cultural insights | <ul style="list-style-type: none"> • Collaborative meeting/ Brainstorm | <ul style="list-style-type: none"> • Defends, where needed, the relevance of the cultural insights • Develops hypotheses to take into the field | <ul style="list-style-type: none"> • Challenges and helps refine cultural insights • Considers exploration of hypotheses in other research areas beyond ethnography if relevant |
| 3. Fieldwork | <ul style="list-style-type: none"> • Loose field guide template • Topline phone-in or notes | <ul style="list-style-type: none"> • Writes field guide • Conducts fieldwork <i>mostly</i> with eye to socio-cultural issues and consumers' lived experience. • Shares with lead strategist right after each field an insights topline or notes | <ul style="list-style-type: none"> • Reviews/refines field guide • Conducts fieldwork <i>mostly</i> with eye to strategic brand issues and consumers' lived experience. • Shares with social scientist right after each field an insights topline or notes |
| 5. Analysis | <ul style="list-style-type: none"> • Field report template filtered through highly relevant analytical questions | <ul style="list-style-type: none"> • Analyzes data using standard qualitative methods • Selects and prioritizes insights as relevant to strategic business questions • Begins to consider list of unmet needs/strategic opportunities | <ul style="list-style-type: none"> • Analyzes data using standard qualitative methods • Selects and prioritizes insights as relevant to strategic business questions • Begins to consider list of unmet needs/strategic opportunities |

| <i>Project Phase</i> | Approach/ Template | Social Scientist | Marketing Professional |
|--|---|--|--|
| 6. Collaboration | <ul style="list-style-type: none"> • Collaborative meeting/brainstorm | <ul style="list-style-type: none"> • Actively collaborates with marketing professional (lead strategist and other project team members) in order to elevate and prioritize insights through several iterative meetings | <ul style="list-style-type: none"> • Actively collaborates with social scientist, explaining and challenging each other, in order to elevate and prioritize the insights as they relate to strategic brand issues and the other insights generated through the other methods |
| 7. Strategic opportunity ideation | <ul style="list-style-type: none"> • Integration brainstorm with project team • External collaborative meeting/brainstorm with client | <ul style="list-style-type: none"> • Ensures there is a consistent powerful connection between the marketing professional's emerging strategic direction and culture • Is a powerful advocate for the consumer | <ul style="list-style-type: none"> • Brings together full project team beyond just ethnography • Creates list of opportunities to be discussed in a larger brainstorm • Tells the client what we found and solicits participation in the suggested framework • Draws on client expertise and knowledge to elevate the strategy |
| 8. Strategic exchange with client | <ul style="list-style-type: none"> • Debrief Template | <ul style="list-style-type: none"> • Is advocate for culture and the consumer as they relate to brand opportunity • Makes sure the client takes those insights without decoupling them from culture • Helps create deliverables | <ul style="list-style-type: none"> • Reviews insights from all methods to date • Selects and refines hypotheses and implications for business questions • Ultimately creates overall strategy |

THE BENEFITS OF THE BIVOCAL APPROACH

A bivocal approach brings multiple benefits because it creates real synergy and translation between the unique perspective and conceptual frameworks of the social scientist and marketing professional. There are four classes of benefits. The first class of benefits is process related. From the outset, as we create the project research design, we find that if we factor in knowledge of cultural processes, then we reach a new place with our proposal. For example, a healthcare client wanted to explore the patient relationship with a recurring condition associated with the kidney. The social scientist proposed an exploration of the historical and culture nature of indulgence also associated with the illness. Such an approach deepened the scope of the project and provided greater understanding, meaning and depth to the research and strategic output of the project resulting in a suggestion to reframe current thoughts of the illness and focus more on the role of the kidney. Bivocality also contributes critically to fieldwork itself as often both a marketing professional and a social scientist are in the field, or at least one or the other helps shape the fieldwork guide and/or analysis. For example, a client wanted to reposition their snack brand. Both the marketing professional and the social scientist conducted fieldwork simultaneously, however they diverged in what they heard and observed and how they analyzed the data. Thus, the

marketing professional observed and heard mothers lament their family situations, specifically noting in their behavior a fragmentation of what constituted family, and family time. The social scientist saw and heard a struggle between old and idealized definitions of family togetherness and what was actually happening in these women's lives. If the marketing professional were alone on this project, they might simply provide a strategy mainly based on their fieldwork data and analysis, where mothers are given more moments of family togetherness. However, with the social scientist on board, through collaboration and sharing of fieldwork data and analysis, they were able to leverage the social scientist's insights that allowed a redefinition of togetherness and quality family time based on socio-cultural theory. In this case, the simultaneous fieldwork as well as subsequent collaboration around the analyses produced a more rounded perspective, which eventually led to a more precise strategy.

The second benefit is better solutions for projects. The bivocal approach consistently reinforces the centrality of ethnography as a business method. It allows businesses to understand why consumers do what they do or don't do. Rather than just asserting something "is" it provides an explanation for the forces at play on the brand or business questions. The explanatory nature and consistent connection between brand, consumer and culture allows for a highly grounded, and we would assert, more powerfully informed set of strategic recommendations, including, when, how, and why brands/products are used or could be used by consumers. Perhaps it is more eye-opening to clients to embed their brand in a world of norms, and values, etc. Thus, bivocality fosters a precision of strategy that is valuable especially considering how much brand strategy tends to the generic.

Clients find this highly attractive and it allows them to get excited about the socio-cultural underpinnings in the business problem areas where they are either currently acting or seeking to operate in. For example, during a brand-positioning project, a marketing professional and social scientist conducted fieldwork in physicians' offices and both recognized temporality (i.e. how informants engage with short versus long-term effects of a chronic illness) as a key physician-patient exchange issue. However, each perceived and analyzed temporality differently. The marketing professional "heard" this behavior was at odds with the client's current brand strategy; the social scientist "heard" the primacy of the present over the long-term was unlikely to shift, given current cultural precepts around pain and immediate gratification. Taken together, the two perspectives created significantly different strategic recommendations than a single perspective could, or even two, operating in relative isolation.

Third, a bivocally informed strategy may also anticipate market changes by identifying how the contexts in which their consumers, products, brands (and even employees) are changing. Again, this goes beyond trends and looks to emerging patterns in culture (e.g. consumption, work, family, identity, etc). This provides longevity to immediate strategies for brand managers, even though these may emerge from socio-cultural theory and cultural contexts that seem removed, distant and or even difficult to grasp.

Fourth, there are benefits that accrue to the organization which relate to institutional relationships and to internal and external communications. In terms of the institution, the bivocal approach creates an internal respect for the value of answering why observed behaviors occurs, and ultimately fosters institutional belief that one needs to understand the cultural underpinnings to understand behavior. For the social scientist and marketing professional it creates an environment warm to both perspectives and that values the voices they represent enough to make them equally central to business practices. Furthermore, the social scientist is routinely exposed to business, innovation and strategic questions and the marketing professional is exposed to ethnographic theory and practice, ultimately creating better skills on both sides and allowing for a more strategically sound application at each project stage. Moreover, it ensures everyone on the project truly digests the needs of the client and understands the client's brand or service is the means through which human needs are addressed.

In terms of internal and external communications, the marketing professional and the social scientist work together to ensure the insights are analyzed and communicated in a consistent manner and in language the client "gets." We find this particularly important in light of the way ethnographic stories permeate a team or an organization. On many occasions new clients within an organization for which we previously worked refer excitedly to previous ethnographic observations from other projects. In our opinion, ethnographic fieldwork creates highly tangible facts and pieces of information and one must manage these pieces of information carefully to avoid misperceptions or insights easily taken out of context. By using the bivocal approach, we ensure these stories allow understanding of the insights' greater cultural context and brand relevance rather than interesting quips for happy hour. Overall, we believe these multiple benefits confer a competitive advantage to companies who use it.

BIVOCAL CHALLENGES AND PITFALLS

The bivocal approach is not without its challenges. Multiple voices at each project means more to hear, learn and digest while reaching for a common goal. The chorus of voices heard throughout the bivocal process is sometimes more time-consuming and may require more resources. We typically find that project-to-project we must tackle new questions. We do not answer these questions and their resulting issues perfectly, but we develop strategies to minimize problems and maximize benefits.

For example, how can we successfully create a common understanding and how do we manage this issue? In a project-based environment strapped for time, creating a common understanding between social scientist and marketing professional where each retains their disciplinary knowledge but also reaches into each other, is an immense challenge. In the bivocal approach, it becomes more problematic with more to understand, and truthfully, typically asks more of the social scientist, as they are "on the hook" to deliver insights and their implications distilled into concise client-friendly language. The organizational structure of the bivocal approach creates and embraces an open intellectual exchange, but the social

scientist frequently enters the environment with minimal marketing knowledge and, initially, their contributions may be a pastiche of Marketing 101 and a doctoral thesis. The marketing strategist and social scientist need assistance and the initial communication gap creates frequent impasse points, especially in the data analysis phase. We manage this difficulty by creating a common understanding through recruiting, exposure and education. We recruit people with one dominant perspective but an ability and interest in the other. External marketing training courses and copious exposure to internal processes and templates through partnered participation with another social scientist are powerful for quick learning on the marketing and consulting environment. This in turn enables the social scientist more nimbly to educate and expose the marketing professional to the social sciences. The marketing professional becomes empowered with principles of social science (e.g. insider/outsider view, etc) and receives direct training (e.g. shadowing in the field, lunch and learn sessions). To manage these issues, we created templates for each project phase application, whether during proposal and research design or the analysis of insights. Templates ensure accurate translation of information between the marketing professional and the social scientist. The templates act more as guidelines to help frame insights or questions in a similar manner rather than fill-in-the-blank tools (See Fig.1).

Second, how do we retain knowledge between projects so we do not continually reinvent and repetitively explore the same territory? We try continually to build upon and improve our strategic output, as well as streamline our internal processes. In our efforts to do so, we have created a Knowledge Bank. It is an internal searchable project database that allows quick access to completed projects. This internal project is ongoing and ultimately we would like to be able to search for cultural areas previously explored as well as academic references tied to these, since we find that the necessary social science information is not easily searchable or traceable and much time and energy is wasted when it could be easily avoided. The idea will be to index key references and make note of the main reasons they were helpful for the marketing strategy or innovation it informed. This type of database will allow insight layering and create additional depth or contrast for a new project or with which to seek patterns across a diversity of projects and ultimately yield depth to strategic outcomes. However as we work towards this end, this database raises questions around the repurposing of insights and cultural knowledge, especially if two different clients want to explore key information on the same group or cultural issue. Presently, insights generated from the public domain (i.e. academic anthropological, sociological theory, historical interpretations) may remain with our consultancy, however specific insights related to a project belong to a client. Our ultimate goal is to be able to own all insights generated from a project while the client owns the strategy.

Third, we have to ask ourselves: can one person fulfill both roles successfully? And what would this person be? Would they require a different type of work experience and training than traditional social scientists and marketing professionals already receive? Do they require a specific type of instinct for solving business specific problems? Seemingly, the answer to the first question is yes, as there are clearly examples of such persons in the EPIC audience. There are big challenges to learn the ropes on the opposite side of the fence and

one must be willing and ready to jump into unfamiliar territory and balance the demands of a discipline different than their own while not losing sight from where they came. But even if the same person can fill both roles, should they in the bivocal approach? Our answer here is most likely no. Complete fluency in the two areas allows for quicker elevation and determination of results during each project phase and eliminates the aforementioned translation difficulties. Such bilingual individuals are highly valuable, but two individuals in the two roles add intellectual rigor and balance to the approach. Without it the approach loses its checks and balances and assumptions may create dissonance in the project process or outcomes. Moreover, it may not be the goal or interest of a marketing strategist or social scientist to become the other. Rather, we recognize their individuality, and their mutually complementary value.

CONCLUSION

The bivocal ethnographic approach consistently reinforces the centrality of ethnography as a business method valuable to strategic outcomes. In this paper we present the bivocal approach as a systematic research and strategy framework that leverages marketing professionals' and social scientists' unique perspectives at each phase of a project in order to develop brand, consumer and cultural insights relevant to the business challenge. Thus, the bivocal approach allows all the voices to be heard equally: that of the social scientist and the marketing professional, that of culture, consumer and brand. Furthermore, the bivocal approach ensures that biased assumptions (created by either marketing or social science) are called out. The bivocal approach allows the strength of each to thrive through an ethnographic process that mandates inclusion, communication and collaboration at all stages while bringing out what is strategically important to the brand or key business questions. The bivocal approach allows businesses to understand why consumers do what they do (or don't do) and how they make sense of their world in relation to their brand. Rather than simply asserting something "is", it provides an explanation for the forces at play on the brand or business questions acting as a cultural GPS for the brand. The explanatory nature and consistent connection between brand, consumer and culture allow for a highly grounded, and we would assert, more powerfully informed set of actions, including, when, how, and why brands/products are used or could be used by consumers.

Acknowledgments – We wish to acknowledge Janet Winkler and Lisa Reichenbach for critically reviewing our drafts and our many colleagues at in-sync in Toronto, for their various insights and contributions while crafting this paper. We want to also thank Rich Radka for his judicious comments and editing suggestions that helped us greatly along the way.

REFERENCES

- Ante, S and Edwards, C.
 2006 "Science of Desire." *Business Week*, June 5, 2006.
http://www.businessweek.com/magazine/content/06_23/b3987083.htm (last

Harmony

accessed September 2007)

Geertz, C.

1973 *The Interpretation Of Cultures*. New York: Harper Collins.

Hammersley, M.

1991 *What's Wrong With Ethnography?* London: Routledge.

Holt, D.

2004 *How Brands Become Icons: The Principles of Cultural Branding*. Cambridge, MA: Harvard University Press.

Mariampolski, H.

2006 *Ethnography for marketers*. Thousand Oaks, CA: Sage.

McCracken, G.

2006 "Keynote Address; Ethnography and the "Extra Data" Opportunity." *EPIC 2006 Conference Proceedings*. Sep 2006, Vol. 2006, No. 1: 1-3.

Tylor, E.B.

1871 *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art and Custom*. 2 vols. London: John Murray.

Closing Keynote Address: Design Research: Processes and Provocations

BRENDA LAUREL

California College of the Arts

Even as our profession gains skill and experience in using ethnographic methods as part of our design research process, we must weave our way through academic critiques, denunciations of many flavors, and institutional thick-headedness. While stepping through a design research process that focuses on human-centered methods, along the way we encounter questions about our credentials, methods, and the value of our work to design enterprises. By engaging various critiques of our work, we will investigate ways to frame what we do that are personally and professionally satisfying.

WORKSHOPS

Virtual Ethnography

JEFFREY BARDZELL
SHAOWEN BARDZELL
WILL ODOM, Facilitators
Indiana University

The emergence and sustained growth of Web 2.0 platforms, such as YouTube, NewGrounds, and MySpace, offer expanding terrains for users to share amateur social multimedia content. Producers and consumers of this content represent a key population of young, early adopters and thought leaders who are shaping the current and next generations of Internet use.

As mainstream culture begins to take notice of these communities, academic and corporate stakeholders alike are struggling because traditional ethnographic and other research approaches, such as surveys and focus groups, shed little light on the role of social, professional, and micro-cultural networks in the burgeoning areas of amateur cultural production.

After a multimedia overview of a number of major examples, participants will share and explore ways that ethnographic approaches can be adapted to study these communities productively.



Giving Voice to Our Value

MARTHA COTTON
HLB

TODD CHERKASKY, Facilitators
Sapient

It is our experience that ethnographers struggle with expressing their value in traditional business “language” and metrics (ROI, sales impact, channel penetration, etc.). Many of us have been asked (sometimes repeatedly) to quantify our value and measure our direct impact on the bottom line. We’ve long understood that the most compelling way to express our

value and, ultimately, impact, is through stories -- the consumer insight that led to a creative spark that led to a new product, process, business model, etc.; the reframing of a client's challenge that led to a shift of business strategy that led to a whole new way for our client to do business.

Can we augment or replace metric-driven success criteria with compelling stories? This workshop will strive to answer this question and define how we give voice to "value stories" in a way that will resonate with our clients. Giving Voice to our Value will explore ways ethnographers have replaced metric driven success criteria with compelling stories.

The purpose of this advanced, participatory session is not to "present" the answer, but to provide a forum for an interactive exploration by experienced practitioners into how storytelling can be a valid means of expressing the value of ethnography. During the session we will outline some evolving best practices for relaying the value of ethnography, elicit stories from workshop participants on ways they have dealt with this problem, collectively generate a framework for powerful value-based story telling, and have a discussion about the future—how to better control the way we, our clients, business writers, and others define our success.



Being Heard – Making the Business Case

KEN LAUER, RUSS WARD

IMP

KATLEEN DETHIER, Facilitators

Kesyoni

The purpose of this workshop is to create a voice that will be heard by business leaders. We'll address a common complaint by many social science practitioners that they have a difficult time finding clients. We believe part of the problem is that there is a lack of understanding and appreciation of business needs by the practitioner and the business leaders need to understand what value they will get from the use of qualified and talented ethnographers. In this forum we will share our experience in being heard by business leaders, overview what business leaders need and provide an opportunity for you to develop your portfolio.



I'll Show You Mine

NICK LEON, Facilitator

Naked Eye

This workshop aims to provide a lively and intensive forum for those ethnographers using video/film techniques, particularly in commercial ethnography, to share, learn and enjoy each others insights, observations and, on occasion, mistakes. Participants are encouraged to share novel and innovative applications for ethnographic filming under the following two themes:

- New or revisited methodologies that have application for video based ethnography
- Techniques from related documentary genres or other disciplines outside of ethnographic research that have application to commercial ethnography.

Participants may choose to present their work individually, in pairs or in a small group of 3. Everyone should try to contribute something no matter how inconsequential it may seem. If a participant does not have a film to screen they could for example tell the group of an inspiring ethnographic film that demonstrates an interesting technique or share news of a recent new technology that may help video ethnographers think about techniques in new ways.



Who Are You, Really?

LAURA NUGENT

MIKE GRIFFIN, Facilitators

Ricoh

Helping employees understand why we do workplace ethnography Workplace ethnography poses unique challenges. Spending considerable time in a workplace environment allows for a much deeper understanding of how people actually work, one that goes well beyond what can be collected from customer site visits and in-depth interviews.

In many cases, ethnography is a key way of identifying pervasive workplace needs that have yet to be addressed in the marketplace. But observing people going about their work can understandably raise suspicions about why we're actually there, in particular, the question of "Who are you really?" In this participatory workshop, we'll brainstorm about ways we can gain trust with workplace participants, and discuss how we can help them understand what we do (and what we don't do) as researchers.

We'll address questions such as: how do we present ourselves to employees so that we're not perceived as "efficiency experts" who are evaluating them, but as collaborative researchers who learn from what they do? And how can we give participants a voice in this process of being observed?

As a group, we'll share stories of past successes and mistakes, and come up with tangible, actionable ways in which to address common issues that arise when conducting ethnography in a workplace setting. We'll also explore ways to give workplace participants more agency in the process of ethnography, including methods of gathering data that move beyond just our being the observer, and their being the observed.



When Anticipation of Use Fails

MATT RATTO

HUMLab

DAWN NAFUS, Facilitators

Intel Corporation

People are frustratingly creative. There are limits to what ethnographers or anyone else can predict about what they might value about an object, or what they might do with it. Often there are unanticipated markets quite different from the original target. The question this workshop addresses is what new ways of working would be necessary if ethnographers were to work against the urge to anticipate use.

How could we, as a community, encourage design for the unanticipated, and yet still deliver our traditional value of helping companies focus their attention on users of their products? This workshop will concentrate on thematizing pragmatic ways to explore how people redesign their material environment in unexpected ways--to "hack" the everyday. We will literally go out into the conference space and document everyday hacks.

"Hacking the everyday" reminds us that hacking is not just a rarified technical activity but is instead a foundational human practice. We believe such a rubric holds out great promise in extending the relationship between designers and users in ways that value and support human activities of critical thinking and critical making.



Participatory Design

ROBERT SUAREZ
AME ELLIOTT
GABRIEL TRIONFI
SUZANNE GIBBS HOWARD

Ideo

KEVIN SCHMIDT
PREETHAM KOLARI, Facilitators

Sonic Rim

Designing with People, IDEO, and SonicRim are consultancies that help their clients innovate through user-centered design. In addition to using ethnographic-style methods to understand human needs, both organizations also continue relationships and conversations with the people they have observed in the field, involving them in the dialogue as design teams create initial concepts and iterate potential design solutions. IDEO and Sonic Rim emphasize participatory design and co-creation methods as a means for helping both the designers' values and the end users' values to be heard.

In this workshop, the companies will collaborate to share their co-creation methods with the workshop participants. The purpose of this workshop is to foster an open discussion across organizations about methods for more deeply involving end users and other stakeholders in the design process. They will share past examples of co-creation methods, discuss factors that help make this co-creative approach effective in terms of “being heard,” and consider how these themes might be pushed even further.

The workshop will involve active participation and consist of a practical exercise exploring a sustainability theme in small groups. Website Links: www.ideo.com , www.sonicrim.com



Modeling and Conceptual Sketching

SUSAN TODD

VIKRAM BAPAT

MONTY HAMMONTREE, Facilitators

Microsoft

Design research models play a vital role in moving design thinking forward by both simplifying and enriching our understanding of the users and potential solution alternatives. A common characteristic of effective design research models is that they convey stories that re-hydrate the richness of the data behind them. At their best, they become the shorthand of the design team's shared knowledge. In this workshop, we will discuss our iterative process of distilling, framing, and modeling design research.

Workshop attendees will critique our approach and provide examples and stories of their modeling experiences. The outcome of the workshop will be shared notes of best practices and hopefully a model that wraps them together!

ARTIFACTS

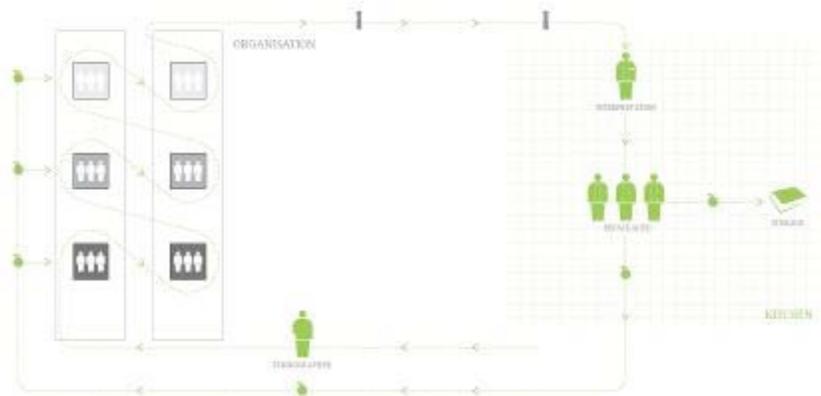
Viral Ethnography

TOKE BARTER
RÉ DUBHTHAIGH
Radarstation

The theory & approach of Viral Ethnography is derived from a one-year research project at the Royal College of Art exploring a service-based approach to embedding design-led innovation practice into organisations. This approach is described in the book 'Food for Thought' by Ré Dubhthaigh & Toke Barter.

Viral ethnography turns from the study of the outside world to the inner workings of organisations – to capture, distribute and inspire people through powerful design-led formats.

The approach borrows traditional ethnographic tools such as user interviews, shadowing and observation to gain insight into the skills, processes and knowledge contained within departments, teams and individuals. Insights are carefully packaged and redistributed back into the organization as designed artifacts and interventions. These create a common language cross-pollinating ideas and knowledge and helping people form new networks and constellations. This approach helps foster innovation across teams and break down the internal silos hampering it.



Viral Ethnography





Hy-Tech: Getting Cozy with Technology

JONATHAN BEAN

Domestic Designs and Technologies Research, Intel Corporation, and PhD Student, University of California, Berkeley, Department of Architecture and Berkeley Institute of Design

Hygge is a Danish concept that merges feelings of contentment, simple pleasure, and enduring familiarity. One might hear that hygge "just arises," or that hygge simply must be experienced to be known. I wondered what hygge really meant to contemporary Danes, and what relationship might exist between hygge and technology. For this project, I conducted interviews in eleven Danish homes. To start each interview, I explained that my job was simply to document the Danish home. Then I asked for assistance. Participants were offered a video camera or a still camera and capture "important" things, objects, or spaces within their home. Further and more explicit probes included the use of Polaroid cameras and cognitive mapping exercises to document where in the home hygge took place. I discovered that hygge is intrinsically linked to broader cultural themes, including pairing and possibility, and that the ideal of hygge sheds light on how material objects come to be perceived as ugly.



Accelerating the Diffusion Of Innovations: A “Digital Diffusion Dashboard” Methodology For Global Networked Organizations

EPIC 2007 | Artifacts

TARA EATON
 KEN RIOPELLE
 Wayne State University, Detroit, Michigan, USA

This project is a three-year National Science Foundation study (SES-0527487) that represents an interdisciplinary collaboration between the fields of engineering, anthropology and communication to combine expertise in information technology, ethnography, and semantic network analysis to study diffusion networks and give voice or ground truth to the actual ways innovation is diffused within an organization. The study will advance the practice of organizational change and help accelerate the diffusion of innovations in global networked organizations by investigating, documenting and validating a new methodology using existing information technology network infrastructure, and by developing techniques to dynamically plan, monitor and manage the diffusion of innovations and organizational change in real time. Simple, clear and reusable indicators for a "digital diffusion dashboard" will open a new frontier for both scholars and practitioners alike. Our research partners include Ford Motor Company, General Motors Corporation, and Chrysler LLC.

**ACCELERATING THE DIFFUSION OF INNOVATIONS:
 A "DIGITAL DIFFUSION DASHBOARD" METHODOLOGY FOR GLOBAL NETWORKED ORGANIZATIONS**
 NSF Award #: SES-0527487 September 2005 to August 2008

Research Team: Julia Okuniewicz, Ken Riopelle and Tara Eaton (Wayne State University) and James Dapuntski (University of Illinois at Chicago)

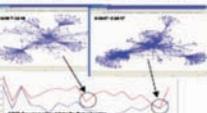
This project represents an interdisciplinary collaboration between the fields of engineering, anthropology and communication to combine expertise in information technology, ethnography, and semantic network analysis to study diffusion networks and give voice or ground truth to the actual ways innovation is diffused within an organization. The study will advance the practice of organizational change and help accelerate the diffusion of innovations in global networked organizations by investigating, documenting and validating a new methodology using existing information technology network infrastructure, and by developing techniques to dynamically plan, monitor and manage the diffusion of innovations and organizational change in real time. Simple, clear and reusable indicators for a "digital diffusion dashboard" will open a new frontier for both scholars and practitioners alike. Our research partners include Ford Motor Company, General Motors Corporation, and Chrysler LLC.

Network Analysis

Potential COINs: A strong indicator for the emergence of an innovation team?



Two 'troughs' in the Centrality Plot correspond to periods of high activity



Ethnography

To corroborate what the dashboard displays, we are using targeted ethnographic interviews to do a partial network analysis and "shadowing" of individuals in the network as they go about their daily work to observe their communication patterns and media use. It is important for us to understand the context of each action. In this way, ethnography becomes an essential tool with which to both validate data gathered using automated means and to allow (via voice or hearing) to what's missing in the digital network display and semantic network analysis.

Methods

Primary methodologies include:

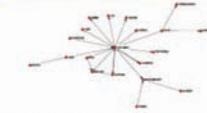
- Collecting email from innovation team members in real time, displaying the dynamic communication network and the content of messages about the innovation as it occurs, measuring the properties of diffusion curves, network structure, and changes in message content.
- Conducting ethnographic research, including interviews and observation of interactions among innovation team members, to validate and augment data gathered using automated means.
- Creating the interview and network (including web) periods, team collaboration centers, blogs and what to display web-based diffusion network structure and content.

Initial Findings

The project team is just beginning to analyze data. Our initial findings from one of our global innovations include:

- Significant diffusion events in the company are reflected in the content and structure of the email communication networks about the innovation. For example, the merging of innovation teams in Europe and the U.S. can be seen in the changes in frequency of word pairs that emerge in comparing emails generated at two different points in time.
- There are indications of cultural differences in preference for face-to-face and email correspondence among members of the global team. This initial finding will be explored further as data collection and analysis continue.
- Group responsiveness centrally provides a marker for change in group structure and indicates appropriate time spans for more in-depth analysis.

Semantic Network Analysis



Method 2: Network Graphs of Companies

| Company | Nodes | Edges | Centrality | Clustering | Modularity |
|-----------|-------|-------|------------|------------|------------|
| Company A | 100 | 150 | 0.8 | 0.9 | 0.7 |
| Company B | 120 | 180 | 0.7 | 0.8 | 0.6 |
| Company C | 110 | 160 | 0.9 | 0.9 | 0.8 |
| Company D | 130 | 190 | 0.6 | 0.7 | 0.5 |
| Company E | 140 | 200 | 0.5 | 0.6 | 0.4 |
| Company F | 150 | 210 | 0.4 | 0.5 | 0.3 |
| Company G | 160 | 220 | 0.3 | 0.4 | 0.2 |
| Company H | 170 | 230 | 0.2 | 0.3 | 0.1 |
| Company I | 180 | 240 | 0.1 | 0.2 | 0.0 |
| Company J | 190 | 250 | 0.0 | 0.1 | 0.0 |



Bright Green: Sustainable Living as a Lens for Technological Innovation

JAY HASBROUCK
 ALLISON WOODRUFF

This study used ethnographic methods to gain a deep understanding of the values and priorities of 35 “green” households whose occupants have made significant changes to their homes and behaviors in order to be more environmentally responsible. Field locations were chosen to represent areas that have strong activity in environmental sustainability, as well as diversity of climate, culture, and economic conditions (Portland and Bend in Oregon; the San Francisco Bay Area, Santa Barbara, and Los Angeles in California; and Taos and Albuquerque in New Mexico). Research consisted of home visits and semi-structured interviews, interviews with experts (architects, planners, designers, builders, contractors, etc.), projection and visualization exercises, contextual research, and cognitive mapping. The focus was on strategies that green homeowners have used to live more sustainably so that we can develop technologies that enable growing interest in sustainable values and behaviors in the broader population.

WEB RESOURCES

http://download.intel.com/pressroom/kits/research/poster_Bright_Green_Sustainable_Living.pdf



Little Brinkland: A Documentary from 2012

ANAB JAIN *Helen Hamlyn Research Centre, Royal College of Art, and Colebrook Bosson Saunders, London, UK.*

The project [‘Little Brinkland: A documentary from 2012’](#) is a design research project exploring scenarios around the future of work and the workplace, done at the Helen Hamlyn Research Centre, Royal College of Art, in collaboration with Colebrook Bosson Saunders, London. The project raises the question: What might it be like to live with new emerging ubiquitous technologies in the near-future? How might these technologies play into our rhythms of working life against a backdrop of a rapidly ageing workforce and growing environmental fears? I adopted elements of critical design to explore the kind of “new design spaces” that might arise to accommodate the jobs of the future when demographic and scientific forecasts have come true. Based on extensive research around people’s current work practices, and conversations with futurists and technology experts, I created personas of three ‘protagonists’, projected them into the future and invented new jobs for them. The resulting scenarios are brought to life using the medium of film as you are transported into ‘Little Brinkland’, year 2012.

Acknowledgments – Special thanks to Peter Bosson at Colebrook Bosson Saunders and Jeremy Myerson at the Royal College of Art.



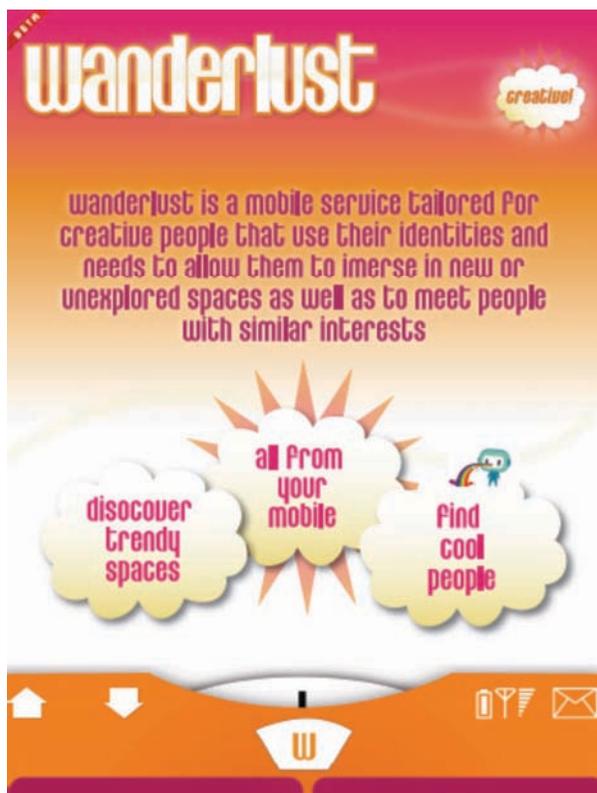
Wanderlust: favorable to you!

HECTOR OUILHET

Mobile Experience Lab, Massachusetts Institute of Technology

Wanderlust is a mobile service tailored for creative people, enabling them to become immersed in new or unexplored spaces and to meet people with similar interests. Wanderlust enhances community behaviors by providing suggestions through ad-hoc networking. The main focus is to enhance community values: communication, cooperation, endorsement and mediation. It is aimed at frequent travellers, especially backpackers in Europe. Wanderlust uses a knowledge management & social learning framework and information from existing web services via timely delivery of abbreviated information to a mobile.

The design process included user research about travel-related issues followed by a second phase looking at the subtleties of having a known person in a city, and the role that person takes to make the stay more enjoyable. Wanderlust is supported by research in the following areas: Knowledge management & collaborative learning, location-based mobile experience, social networking and mobile communities & space.



Acknowledgments – very special thanks to Federico Casalegno, Miss Alie Rose, Heather Martin, Alex Wiethoff, Hayat Benchenaa and Victor Cuevas



Hear My Voice: A System to Capture Personal Ethnographies from African Mweethyas

S. REVI STERLING
JOHN K. BENNETT

ATLAS Institute, University of Colorado at Boulder

If women could talk on Community Radio, what would they say? Advancement through Interactive Radio (AIR) enables women to “talk back” to their local Community Radio stations in order to more positively

affect programming, station management, and community development. AIR devices are hand-held, portable radio communication devices that store women's voices and asynchronously deliver spoken content back to community radio stations. AIR devices form an ad-hoc, delay-tolerant, store and forward networking mesh to accomplish this objective. AIR offers women the opportunity to participate in community radio broadcasts as citizen journalists, who, by discussing issues of concern in the virtual space of radio, may gain both the information and status to affect positive change in their actual communities. Through monthly meetings with participants, and ongoing participatory research and evaluation, we are evaluating the hypothesis that increased interactivity in community radio is a strategy for gender empowerment.

Acknowledgments – AIR is funded in part by a Microsoft Research Digital Inclusion Grant; Sterling is a Microsoft Research Graduate Fellow.



Small Slice of Life: Documentation Stickers; Understanding Purikura behavior as life documentation by mobile generations

AICO SHIMIZU *Keio Research Institute at SFC, Keio University, Japan*

In Japan, with the penetration of mobile phones, the internet, and the popularity of the camera phone, ordinary people's documentation of everyday life through mobile phones receives more and more attention from many different fields. On the other hand, Purikura (print club) pictures and its related practices, which have long been earning stable popularity among high-school girls for a decade now, could also be understood as a form of life documentation gathered by ordinary people.

In this project, we focus on Purikura as an analog / location based life documentation in contrast with digital / mobile life documentation such as mobile phone, blog, SNS. We tried to (re)consider how the meaning and the method of life documentation will change in the near future; going back and forth between the analog and the digital/mobile society.

Acknowledgments – This project was supported by Nokia Research, the DoCoMo House design cottage at Keio University Shonan Fujisawa Campus, and the Annenberg Center for Communication at the University of Southern California. Special thanks to Mizuko Ito from University of Southern California, Jan Chipchase from Nokia Design, Daisuke Okabe, Kunikazu Amagasa from Keio University and inspiring Japanese high-school girls who supported this project as a respondent.



The Digital Youth Project

CHRISTO SIMS

DAN PERKEL

University of California, Berkeley – School of Information

MICHAEL CARTER

Monterey Institute for Technology and Education

PATRICIA LANG

University of Southern California, Annenberg Center for Communications

The Digital Youth project is a three year, multi-site, ethnographic study of how, and to what effect, young people use digital media. The project, one of the first funded by the MacArthur Foundation's Digital Media and Learning initiative, is a collaboration between researchers at the University of California Berkeley and the University of Southern California's Annenberg School for Communications. Thus far the team has conducted over 400 interviews and over 3000 hours of observation at over 20 online and offline sites. Some of the emerging themes from our work include: diversity in genres of online participation; performing identity and relationships online; hanging out in networked places; youth entrepreneurship and mobilization; amateur culture and knowledge production; contextualizing media and information literacy; transnational flows and imaginations. To learn more about our project, please visit: <http://digitalyouth.ischool.berkeley.edu>.

CONTRIBUTORS

ken anderson (ken.anderson@intel.com) is at Intel Research where he conducts ethnographic research of human cultures and social practices to inform corporate strategy and technology development. His specialties are in globalization, identity, and urban studies. His current work focuses on mobilities, time, and transnationals in and between urban environments.

Elizabeth Anderson-Kempe (Elizabeth@rbyd.com) is a founding partner of Artemis Research by Design, a Los Angeles-based consultancy that helps companies develop new products and services rooted in insights generated from ethnographic research. A cultural historian by training, for more than a decade she has been applying her qualitative research skills to business problems and design solutions. Prior to founding Artemis Research by Design, she was a research director in Sapient's London office, and a manager at E-Lab.

Toke Barter (Toke@radarstation.co.uk) is a founder & director of Radarstation that delivers design-led service & strategy futures. He holds a degree in interactive media (Denmark) and interaction design from the Royal College of Art (London) where he recently held a research position exploring innovation practice. He regularly lectures on design-led processes and tools at various colleges throughout Europe.

John K. Bennett is the Director of the ATLAS Institute and the Archuleta Professor of Computer Science. He is the former Associate Dean of the College of Engineering and Applied Science, and the current president of the national Governing Board of Engineers Without Borders-USA

Mikkel Brok-Kristensen is a senior consultant at ReD Associates, Copenhagen. He primarily works on projects within the field of medical anthropology, with a current focus primarily on the lives of people living with diabetes and their interactions with the health care system.

Jacob Buur (buur@mcj.sdu.dk) is professor of user-centred design with the Mads Clausen Institute for Product Innovation at the University of Southern Denmark. Prior to the present position he established and managed the Danfoss User-Centred Design Group for 10 years.

Melissa Cefkin (mcefkin@us.ibm.com; PhD Anthropology, Rice University) is a researcher in a group in IBM Research dedicated to research on services, service interactions and service design.

Michele F. Chang (mfc@redassociates.dk) is a Senior Consultant, ReD Associates, Copenhagen. Her research interests are convergence of mobile technologies in public spaces

and the critical relationship between research and design. She has a Masters of Interactive Telecommunications from New York University's Tisch School of the Arts

Martha Cotton (mcotton@hall-and-partners.com) is Research Director and ethnography practice lead for Hall & Partners, a brand and communications research firm.

Brinda Dalal (bdalal@parc.com) is a corporate anthropologist at the Palo Alto Research Center (PARC), where she co-founded the Cleantech initiative. Prior to a PhD in Social Anthropology from the University of Cambridge, she worked on micro-credit and low-cost housing programs in Bombay.

Mark Dawson (mark@jumpassociates.com) is a Senior Strategist and Competence lead at Jump Associates. He works with projects teams developing products and strategies for growth for clients as diverse as Wrangler jeans, GE Plastics to Hewlett-Packard and more.

Rogério de Paula (Rogério.dePaula@intel.com) is in Emerging Markets Platforms Group at Intel Corporation Brazil where he conducts ethnographic research of everyday practices and life of low-income people to help design new technological products. His specialties are in design ethnography. His current work focuses on education and urban areas in Latin America.

Dorothy Deasy (info@ddeasy.com) has twenty-five years of qualitative research experience with particular emphasis on indirect methods and ethnography. She is the founder of ddeasy inc, a research and consulting firm located in Portland, Oregon.

William Dowell (bill_dowell@hermanmiller.com) is the director of research at Herman Miller. He leads a research team that examines and evaluates Herman Miller products as they are developed as well as explores future trends. He is a Certified Professional Ergonomist, and a member of the Human Factors and Ergonomic Society.

Tara Eaton (t.alcordero@wayne.edu) is the Research Manager and Business Anthropologist for the Institute for Information Technology and Culture at Wayne State University in Detroit, Michigan. She also teaches Culture and International Business at the University of Michigan Dearborn. Her research includes IT outsourcing, virtual teaming, organizational culture and U.S./Asian business relationships.

Ame Elliott (aelliott@parc.com) is an ethnographer and interaction designer on the research staff of the Palo Alto Research Center (PARC). She has PhD in Architecture from the University of California, Berkeley, where she studied Human-Computer Interaction. Prior to joining PARC she worked at Ricoh Innovations studying image communication.

Susan Faulkner (susan.a.faulkner@intel.com) is a Research Scientist and Video Ethnographer in Intel's Digital Home Group. She holds an MA in documentary film and video production

from Stanford University and a BA in comparative literature from Brown University. She began working as a video ethnographer at Interval Research Corporation in 1993.

Julia Gluesing (j.gluesing@wayne.edu; PhD Anthropology, Wayne State University) is a research professor in Industrial and Manufacturing Engineering at Wayne State University whose research and teaching is dedicated to collaboration processes in global work and the role of IT technologies in work process.

Gretchen Gscheidle (gretchen_gscheidle@hermanmiller.com) is a lead researcher at Herman Miller. Educated as an industrial designer, she has been the research link in the company's seating introductions beginning with the Aeron chair in 1994. Her research focuses on laboratory studies of pressure distribution, thermal comfort, and kinematics, as well as field ethnography and user trials.

Hiroaki Harada is a senior research fellow at Fujitsu Laboratories LTD. His research focuses on knowledge management and organizational learning based on ethnography.

Jay Hasbrouck (jay.hasbrouck@intel.com) is a Social Anthropologist in Domestic Designs and Technologies Research within the User Experience Group at Intel Corporation. Jay joined Intel in January of 2006 and has conducted fieldwork in Mexico, Egypt, Germany, South Korea, Brazil, and the United States. He holds a Ph.D. in Social Anthropology and an M.A. in Visual Anthropology, both from the University of Southern California. His research interests include sustainability and the role of technology, social networks, visual culture, domesticity and cultural landscape.

Sadayo Hirata is a system engineer at Fujitsu Limited. Her research focuses on knowledge management and organizational learning based on ethnography.

Seisuke Ito is a system engineer at Fujitsu Limited. His research focuses on knowledge management and organizational learning based on ethnography.

Anab Jain (mail@anab.in) Anab Jain is educated in India, Vienna and London, with an MA in Interaction Design from the Royal College of Art. Currently working at Microsoft Research, Cambridge, Anab is interested in exploring the implications of emerging technologies in our everyday lives through a people-centered approach to design.

Xueming Lang (MA) ([xueming.lang\[at\]intel.com](mailto:xueming.lang[at]intel.com)) works at Intel as part of a global research team studying emerging markets. His field work primarily focuses on PRC. His MA is in engineering psychology.

Patricia G. Lange (plange@cinema.usc.edu) is a Postdoctoral Fellow in the School of Cinematic Arts at the University of Southern California. She is researching the semiotics of video production, sharing, and reception practices on YouTube and in the video blogging community for a MacArthur-funded study on digital youth and informal learning. Her video

blog can be seen at: anthronlog.com , and her project website is located at:
<http://digitalyouth.ischool.berkeley.edu>

Brenda Laurel (blaurel@tanzero.com) is a designer, researcher and writer whose work focuses on interactive narrative, human-computer interaction, and cultural aspects of technology. She currently serves as chair of the new Graduate Program in Design at California College of the Arts. Her career in human-computer interaction spans over twenty-five years. She holds an M.F.A. and Ph.D. in theatre from the Ohio State University. Brenda was one of the founding members of the research staff at Interval Research Corporation in Palo Alto, California, where she coordinated research activities exploring gender and technology, and where she co-produced and directed the Placeholder Virtual Reality project. She was also one of the founders and VP/Design of a spinoff company from Interval - Purple Moon - formed to market products based on this research. She has worked as a software designer, producer, and researcher for companies including Atari, Activision, and Apple. She served as Chair and graduate faculty member of the graduate Media Design Program at the Art Center College of Design in Pasadena, California, and also worked as a Senior Director and Distinguished Engineer at Sun Microsystems Labs in Menlo Park, California.

Laura Leenhouts (laura_leenhouts@hermanmiller.com) is a researcher at Herman Miller. She supports Design and Development with research regarding trends, new technology tools and the future of work. She holds a both a master's degree in architecture from the University of Michigan and has worked as an architect and furniture designer prior to joining Herman Miller.

Daria Loi (daria.a.loi@intel.com) - With a background in architecture, design, publishing, education and research she is Research Scientist in the User Experience Group at Intel Corporation. Her practice revolves around Participatory Design; Practice-Based and Arts-Informed Inquiry; Playful Triggers; HCI; post-disciplinarity; collaborative environments; constructivist pedagogy; Product-Service Systems; and Management Consulting.

Erik Lucken (erik_lucken@gensler.com) is the global communications manager for Gensler's workplace practice. In this role, Erik provides strategic and creative direction in support of Gensler's position as the world's leading designer of work environments. Erik holds a Master of Architecture degree from Iowa State University and resides in Chicago.

Christian Madsbjerg (cm@redassociates.dk) is a principal at the Copenhagen office of ReD Associates.

Amy Maish (amaish@in-sync.biz) is a Strategist at in-sync.

Nathaniel Martin is a research ethnographer in the Xerox Innovation Group. He has worked in Artificial Intelligence research and as a Computer Architect. His ethnographic

work includes studies of authoring and publishing, scanning workflows and support engineers. Currently he is studying workflows in healthcare.

Jay Melican (jay.melican@intel.com) is a Research Scientist and Design Researcher in Intel's Digital Home Group. He holds a BA in semiotics from Brown University, an MFA from Rhode Island School of Design, and a PhD from Illinois Institute of Technology. His recent research has focused on mobility, social networking, and user-generated content.

Dawn Nafus (dawn.nafus@intel.com) a research anthropologist Intel. She holds a PhD in Anthropology from Cambridge University, and was a research fellow at University of Essex. She has published widely on communication technology and society. Her recent work has focused on communication technology and its relation to time, mobility, and gender.

Akihiko Obata (Obata.akihiko@jp.fujitsu.com) is a senior researcher at Fujitsu Laboratories LTD. His current research focuses on knowledge management and organizational learning based on ethnography. His research interest also includes CSCW, and human interface.

Héctor Ouilhet (mrbector@mit.edu) is a [passionate interaction designer](#) with a technical and artistic background. He studied for a diploma in fine arts for 3 years, continuing with a BCS in Computer Engineering at the Universidad de las Americas Puebla. Then he did a MA in Interaction Design in a dual course taught by Interaction Design Institute of IVREA and Domus Academy in Milan, Italy. He has worked in Mexico City, Vancouver, Milan, Turin and Boston. Currently he is working at the MIT Mobile Experience Lab in Cambridge, MA as an interaction designer. He is fascinated by social behaviors, technology and design.

Rich Radka (rich@nestnyc.com) is a founding partner of NEST – the home lab, a design, research, and strategy consultancy that creates and improves products and services that are used in people's homes. His focus at NEST is to manage the innovation process and ensure that the work is conceived, executed, and communicated to address our clients' objectives, both spoken and unspoken.

Dave Randall is principal lecturer in the department of Sociology at Manchester Metropolitan University. He enjoys watching other people work and has published widely on that theme. *Department of Sociology, Manchester Metropolitan University, Manchester, M16 5LL*

Dr Nimmi Rangaswamy (nimmi@Microsoft.com) is an Associate Researcher with Microsoft Research Labs, India. She holds a PhD in Social Anthropology, 1999, from the University of Mumbai, India. She has taught graduate course at the Delhi and Mumbai Universities, 1988-1999. She was part of the editorial team for the journal, *The Economic and Political Weekly*, Mumbai, 2000-2001. Some of her recent papers can be found at <http://research.microsoft.com/users/nimmi>

Bridget Regan (bridget.regan@avenuea-razorfish.com) is a Senior Researcher at Avenue A | Razorfish in New York City. She has conducted ethnographic research into a wide variety of

experiences for a wide range of clients, most recently Ford Motor Company, Capital One, and XM Satellite Radio. She has previously worked as a Senior Experience Modeler with Sapient as well as an Independent Consultant for numerous design research, advertising, and branding projects.

Ajay Revels (ajay.revels@avenuea-razorfish.com) is a Senior User Researcher at Avenue A | Razorfish in New York responsible for work studies, process mapping and usability testing for clients such as Merrill Lynch, New England Journal of Medicine, Lionsgate and MTV. Prior work includes “ketari” studies in Japan and research for The Webby Awards and Qualcomm.

Ken Riopelle (kenriopelle@wayne.edu) Ken Riopelle is a Research Professor in the Industrial and Manufacturing Engineering Department at Wayne State University in Detroit, Michigan. He has served as a professional research consultant for over 30 years in the Automotive Industry.

Tony Salvador (tony.salvador@intel.com) directs product definition and development research for the Emerging Markets Platforms Group (EMPG) at Intel. Before being demoted to management, he was a Research Scientist and co-founder of Intel’s People & Practices Group.

John W. Sherry (john.sherry@intel.com) joined Intel Corporation in 1996 as a founding member of what was to become the People and Practices Research Group. In 2005 he joined Intel’s Digital Health organization as director of the social science research group.

Aico Shimizu (aico@sfi.keio.ac.jp) (MA., Media and Governance) is currently working as a visiting researcher at Keio research institute at SFC, Japan. Her [research interests](#) include: user experience design, socio cultural impacts of new technology design and interaction, and the relationship and the development between qualitative research methods and design fields.

Larisa Sitorus (larisa@mci.sdu.dk) is a PhD researcher with the Mads Clausen Institute for Product Innovation at the University of Southern Denmark. Her PhD topic is “Tangible Configuration based on Installer Ethnography”.

Mary Ann Sprague is currently a research ethnographer in the Xerox Innovation Group in Webster, NY. She has worked on product development, architecture, user interface architecture and tools. Her current work is focused on electronic and paper document usage to understand operators’ uses and needs for Xerox products and solutions.

S. Revi Sterling (revi.sterling@colorado.edu) is a doctoral candidate in the ATLAS Institute, focusing on the intersections of gender, technology and development. She spent a decade at Microsoft, leading the company’s efforts in gender equity and women’s impact on technology.

Tamami Sugasaka (sugasaka.tamami@jp.fujitsu.com) Researcher, Fujitsu Laboratories Ltd. Received BS (Computer Science, 1988) from Waseda Univ. She has researched broad-ranging applications of artificial intelligence including neural-network, software agent, and intelligent robot. Her current interest focuses on bringing emerging technologies into society. She is a core member of User-study Forum at IPSJ since 2006.

Laurel Swan is a PhD student at Brunel University in London. She has spent several years thinking about the everyday practices and routines of family life, and what makes a home a home. Her research interests include lists, fridges, clutter, photos and most recently robots. *School of IS, Computing & Mathematics, Brunel University, Uxbridge, UB8 3PH, UK.*

Alex Taylor is a member of the Socio-Digital Systems Group at Microsoft Research, Cambridge (UK). He has undertaken investigations into a range of routine and often mundane aspects of everyday life. For instance, he's had an unhealthy preoccupation with hoarding, dirt, clutter and similar seemingly banal subject matter. *Microsoft Research, 7JJ Thompson Ave, Cambridge CB3 0FB, UK.*

Hiroshi Tamura (tamdai@userstudy.org) Research Director, Hakuhodo Inc. Received BA (Cognitive Psychology, 1994) and MS (Interdisciplinary Information Studies, 2003) from The Univ. of Tokyo. He has researched creativity support systems as an interdisciplinary study of artificial intelligence, cognitive science and interaction design. He co-chairs User-study Forum at Information Processing Society of Japan, or IPSJ, since 2006.

Suzanne L. Thomas (PhD) ([suzanne.l.thomas\[at\]intel.com](mailto:suzanne.l.thomas[at]intel.com)) works at Intel researching emerging markets, from China to India to Mexico and beyond. Prior to this she worked in international ethnographic market research and marketing communications and spent too much time reading Hong Kong martial arts novels and watching PRC martial arts soap operas.

Patricia Wall (wall@xeroxlabs.com) is a Research Ethnographer and Manager of the Work Practice & Technology Area in the Xerox Innovation Group. She has been applying ethnographic-based methods in research, product design and services contexts in Xerox. She is currently studying customer practices and applications associated with the dynamic creation and use of document content.

Jennifer Watts-Perotti is a Cognitive Engineer in the Xerox Innovation Group. She has worked as an ethnographer, user interface designer, and user experience researcher for Microsoft, Apple, NASA, Kodak, and Xerox. She is currently studying production printing systems. She received her Masters and Ph.D. from The Ohio State University.

Magda Wesolkowska (mwesolkowska@in-sync.biz) is an Associate Strategist at in-sync.

Andrew Wong (andrew.wong@telenor.com) works at TRICAP on communication theory and behavioral practice of the low income segment in the emerging markets. Prior to the current position, as a research manager in IDC, he worked across the Asia Pacific region include Malaysia, Thailand, Philippines, Indonesia, Sri Lanka, Bangladesh and Pakistan.

Allison Woodruff (allison.woodruff@intel.com) holds a Ph.D. in Computer Science from the University of California, Berkeley, an M.S. in Computer Science and an M.A. in Linguistics from the University of California, Davis, and a B.A. in English from California State University, Chico. Her research interests include sustainable technologies, domestic technologies, computer-mediated communication, and information visualization. She currently works at Intel Research Berkeley.

Peter Wyatt-Brandenburg is a Senior Program Manager in HP's Design team. He works with business leaders and designers across HP's three core businesses developing design strategy, the design practice and design assets.

Shigeru Yamada is a researcher at Fujitsu Laboratories LTD. His research area is from Organizational Development and Self-organized Meeting, Combination of Coaching and Ethnography, Usability Engineering and User Interface to Product Design.

PARTICIPANTS

Annette Adler
ken anderson
Elizabeth Anderson-
Kempe
Luis Arnal

~

Humanur Bagli
Vikram Bapat
Shaowen Bardzell
Jeffrey Bardzell
Raymond Barnes
Toke Barter
Allen Batteau
Dawn Batts
Jonathan Bean
Robin Beers
Nancy Bell
Genevieve Bell
Andrea Benka
Carol Berning
Anna Beutler
Kathy Beymer
Thomas Binder
Martha Bird
Christina Bolas
Francoise Bourdonnec
Mikkel Brok-Kristensen
Peter Bromka
Vanessa Brown
Francoise Brun-Cottan
Jacob Buur

~

Jennifer Cardew
Michael Carter
Melissa Cefkin
Michele Chang
Todd Cherkasky
Elizabeth Churchill
Laurence Claeys
Melissa Cliver

Valeria Corna
~
Brinda Dalal
Jenna Date
William Davis
Michael Davis-Burchat

Mark Dawson
Rogerio de Paula
Dorothy Deasy
Dave Decelle
Henry Delcore
Katleen Dethier
Anna DeYoung
Monica Diaz
Karen Dubin
Nick Durrant
E Paul Durrenberger
Cynthia DuVal
German Dziebel

~

Tara Eaton
Ame Elliott

~

Antonella Fabri
Susan Faulkner
Dana Fell
Donna Flynn
Shannon Ford
Sara Frailich

~

David Gilmore
Julia Gluesing
Amy Goldmacher
Laura Granka
Mike Griffin
Gina Grumke

~

Monty Hammtree
Christy Harper
Jay Hasbrouck
Roberto Holguin
Mark House
Suzanne Howard

~

Nozomi Ikeya
Hironori Iwasaki

~

Marlo Jenkins
Rachel Jones
Brigitte Jordan
Pradeep Joseph

~

Magnus Kempe
Phillip Keys
Koji Kishimoto
Johannes Koomen
Aya Kubosumi

~

Apala Lahiri Chavan
Xueming Lang
Patricia Lange
Kenneth Lauer
Brenda Laurel
Matthew Lawrence
Kathy Lee
Nick Leon
Kirsten Lewis
Edward Liebow
Carolina Lobo Guerrero
Arenas
Daria Loi
Gerald Lombardi
Mazyar Lotfalian

~

Christian Madsbjerg
Andrew Maher
Sarah Mahler
Scott Mainwaring
Amy Maish
Andrew Manning
Wendy March
Eliana Martella
Robin Martin-Emerson
Eric Matis
Chad Maxwell
Maryann McCabe
Anne McClard
Jay Melican
Christine Miller
James Moed
Mohammed
Mohammed
James Mullooly

~

Dawn Nafus
Craig Neely
Sumaru Niida
Mads Nipper
Laura Nugent
Maura Nunez

~

Cece O'Connor
Akihiko Obata
William Odom
Martin Ortlieb
Hector Ouilhet
Min Ouyang

~

Julie Peggarr
Patricia Pena
Dan Perkel
Wayne Pethrick
Daja Phillips
Carsten Pingel
Girish Prabhu
Simon Pulman-Jones

~

Rich Radka
Nimmi Rangaswamy
Tye Rattenbury
Matt Ratto
Bridget Regan
Ajay Revels
Stephanie Richards
Kenneth Riopelle
Rick Robinson
Jennifer Rode
Laura Rodwan
Alie Rose
Lynne Russell
Sean Ryan

~

Tony Salvador
Peter Savigny
Jean Scandlyn
Dennis Schleicher
Dara Schoenwald
Johanna Schoss
Sabrina Scott
Ari Shapiro
Lillian Shieh
Aico Shimizu
Christopher Sims
Larisa Sitorus
Keren Solomon
Mary Ann Sprague
Sarah Sterling
James Stewart
Perri Strawn
Barbara Stucki
Robert Suarez
Patricia Sunderland
Laurel Swan

~

Hiroki Takeshita
Hiroshi Tamura
Kaoru Tanaka
Rodney Tanner

Christopher Tarnowski
Alex Taylor
Kathleen Terry-Sharp
Suzanne Thomas
Alex Thompson
Susan Todd
Inga Treitler
Gabriel Trionfi

~

Kim Van Eyck
Olga Vargas
Brian Veazey
Christine VeLure
Roholt
Erik Vinkhuyzen
Joan Vinyets

~

Roxana Wales
Mary Walker
Patricia Wall
James Walz
Karen Ward
Todd Warfel
Christina Wasson
Peter Wendel
Maria Wesolkowska
Jack Whalen
Pamela Whitney
Gill Wildman
Susan Wilhite
Lip Soon Wong
Christina Worsing
Qiawen Wu
Peter Wyatt-
Brandenburg

~

Ali Zewail
Melissa Zlatlow

EPIC2007 Sponsors:

Platinum:



Microsoft



Gold:

Silver:



Bronze:

blue.zēbū
consulting

HLB
Meaningful Design™

PitneyBowes
Engineering the flow of communication™

pacific
ethnography

applied field research
— anywhere

Organizations:

