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Digital ethnography: The next wave in understanding the consumer experience

by Davis L. Masten and Tim M.P. Plowman

In the search for market insights, Tim Plowman and Davis Masten maintain that the pathways to information should include PCs, cell phones, Webcams, global positioning equipment, digital cameras, and a growing number of other technologies. Structured creatively for self-reporting, passive observation, and participant observation, these media can yield facts businesses can analyze to shape individual and strategic design decisions.



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The increasingly rapid migration of technology across geographic and socioeconomic boundaries is a fundamental constituent of the times in which we live. It is a process that takes subtle and numerous forms. Parents can check in on their kids at daycare over the Internet by using X10 technology. Russian teenagers organize roving raves through globally oriented blogs. American teens use Pringle's potato chip cans to enhance the range of their wi-fi-enabled PCs and warchalk the location (that is, mark on walls and sidewalks to indicate wireless access areas). Students everywhere are learning to surreptitiously text-message each other in class using their cell phones.

With the ever-lower prices of chips, disks, and memory, the continuing

broadband revolution, and the development of new protocols, a new domain for the elaboration of self and culture has emerged, and it is worth studying. There has been considerable research on the social aspects of digital communication, online consumption, and the Web as a social phenomenon. Social scientists, marketing professionals, and product designers, however, have paid less attention to the opportunities presented by digital technology for understanding the lives of users and consumers.

We propose using the digital and wireless communication revolutions as platforms for rethinking ethnographic principles, methodologies, and analysis. Our goal is to produce new, deep, continuing, and rapid insights into people's

lives and needs. We call this convergence and updating of traditional methods with digital technology Digital Ethno. The tools on the customer side are as ubiquitous as cell phones, PDAs, email, Webcams, SMS, GPS, and digital cameras. For anthropologists and, specifically, for ethnographers, all these tools can fall into the class of remote sensing devices.

Remote sensing

According to Paul Saffo, the director of the Institute of the Future, in Menlo Park,

California, this is the decade of remote sensing. Computers and sensors are being embedded in many durable goods as a matter of course.

Appliance manufacturers are embedding computers into refrigerators and ovens and, with the imminent adoption of new

Internet protocols such as IPv6, many of these will be Web-enabled

and connected. As more and more of these tools are produced and used, the price inevitably plummets. Only a few years ago, the basic chip set for a hand-held GPS (global positioning system) receiver cost \$3,000 or more. Now, it's just a fraction of that price. With manufacturing costs this low, GPS systems are being built into many devices that we consider everyday tools, such as wrist watches and cell phones.

This cost/volume relationship holds true for a range of personal technology and sensing devices. Ubiquity and affordability make these technologies more realistic as research tools.

The Internet connection

Many of these devices have been designed for stand-alone and single-task purposes—meaning that when a motion-sensing plastic frog, designed in the US and built in Taiwan, calls out to you as you near the backyard pool, it is not connected to anything. However, many nations are moving into the deeply connected world of the global, networked economy. According to John Chambers, CEO of Cisco, the “wired”

countries will be the ones with the fastest-growing and most-productive economies. What this means is that many of the products and devices that we think of as stand-alone will achieve new functionality and utility by being connected to a network.

We are only just starting to see examples of this networked world. These days, you can email the pictures you take to anyone with an email address. In Hong Kong, your cell phone will notify you when you are within range of a Starbucks and offer you a discount on a cup of coffee. In this case, your phone is tracked by the cellular ground station antennas, which triangulate on your location. In a striking and recent example, T-Mobile Sidekick users are sharing their daily experiences via their hip-top devices and the Web site, Hiptop Nation (www.hiptop.bedope.com). As the Web and broadband capabilities become increasingly like the water and power utilities of today, remote devices and similar technologies will be built and connected into more and more commodities. And, as the world becomes increasingly wired, it will become ever easier to conduct the type of research we are proposing. There are already at least 35 million Japanese using cell phones that are Web-enabled.¹ Imagine if just one percent of them were participating in a sponsored contest to uncover the “next big thing” in street fashion, and as a result were engaged in collective trend-watching. Or imagine if another one percent emailed pictures from their camera phones to the local government and local media, visually and powerfully illustrating a safety complaint plaguing their neighborhood while they were currently describing it over the phone. The paring away of institutional and social distance and abstraction might have very positive effects in a variety of contexts.

Business discovers ethnography

During the past five years or so, ethnography has been widely embraced (and to a degree uncritically co-opted) by the business world, and various attempts have been made to reconfigure its techniques to suit business purposes. But because these reconfigurations are still based upon the ethnographic methods of anthropologists like Franz Boas, Bronislaw Malinowski,

1. Source: www.nttdocomo.com.

We propose using the digital and wireless communication revolutions as platforms for rethinking ethnographic principles, methodologies, and analysis

Alfred Kroeber, and A.R. Radcliffe-Brown—practitioners whose work is nearly a century old—innovation within commercial ethnography is limited to its application in novel contexts. Moreover, commercial ethnography as it is traditionally practiced means large-scale, complex projects, usually involving a multidisciplinary team made up of ethnographers, technologists, psychologists, and the like. These projects are typically done for short periods of time, given that it is very costly to establish behaviors and accompanying analyses over periods of much longer duration. Although Cheskin and a few other firms are fortunate enough to be involved in large-scale, global ethnographies, these studies, often done simultaneously in numerous countries, are frequently impractical for the industry at large.

After developing a thorough inventory of ethnographic techniques appropriate to business-based ethnography, Cheskin divided them into three categories of data-gathering: self-reporting, passive observation, and participant observation. We then developed digital equivalents to these traditional methods, as well as entirely new methods of data capture.

Introduction to Digital Ethnography

In essence, Digital Ethno is the modern, digital equivalent of traditional, Malinowskian ethnographic forms. The critical distinction is that while traditional ethnographers physically immerse themselves in distinct places and their cultures, digital ethnographers capitalize on wired and wireless technologies to extend classic ethnographic methods, like participant

observation, beyond geographic, as well as temporal, boundaries. This method is ideally suited to documenting the fluidity and flexibility already distinguishing contemporary cultures and communities. Participants communicate their experience via the Internet and other digital technologies. Digital ethnographers gather these details, whether they're in the form of words, images, or audio files, and determine their significance as they are played out in the context of participants' lives.

Despite the fact that there is now a growing academic literature and practice of what has been called hypermedia ethnography or cybersociology, we have largely had to forge our own way in developing Digital Ethno.² Much of this previous work concerns online ethnography using data-gathering methods such as site perusal and online interviewing. These are generally text-based techniques transplanted on to the Internet. They are not inherently digital.

Digital Ethno concentrates more on how ethnographic data gathering can be extended to the Internet and wireless communication devices in new and creative ways, especially in light of recent software, hardware, and protocol adoption. An extranet and WLAN can be key components in the task of data gathering and analysis. An extranet, for example, can serve as a place to download and upload data quickly and easily and provide a virtual locale and repository

2. Notable exceptions do exist—for example, the Digital Ethnography Workshop at the University of California at San Diego, run by Edwin Hutchins (see <http://hci.ucsd.edu/dew/html/index.htm>).

Privacy

Many people with access to the Internet are already engaged in elaborating their identity through new media: putting their lives on display in both textual and visual terms. This combination of cultural and identity politics and new media has produced some interesting new cultural forms. Extreme examples include performance-art Webcasts of surgeries, births, and other intimate moments of people's lives. A more mundane example might be pictures of a wedding. Digital photos from family vacations are published on the Web every day.

On a more dubious note, the spread of "reality-based" entertainment, such as "Survivor" and "American Idol," as well as the continuing proliferation of confessional and sensationalistic talk shows, coincides with the advent of technology adept at documenting and disseminating people's most intimate life details.

Amid the confessional and identity-constructing activities occurring through digital media, the question of privacy forcefully emerges. There are still many issues to be sorted out with these new technologies, not the least of which is the question of the protection of our privacy. In using and advancing Digital Ethno, it is clear that the respondents have the rights to data outside our very limited uses. Their lives are their own; we are only visiting with their permission. However, we are just at the beginning stages of determining what is appropriate around the world, and issues concerning respondent privacy are being formally worked out, with reference to guidelines set forth by privacy organizations.

for the project at hand.

One complaint frequently heard about the potential of Digital Ethno is that the bandwidth is too narrow and thus, researchers miss the critical aural, gestural, and kinesthetic cues of face-to-face interaction. As the price of remote sensing devices has fallen, so too will the barriers to getting at content-rich data. And this will happen sooner in commercial ethnography than in academic ethnography. The innovations that are occurring on the data-gathering end are equally present in terms of deliverables:

The potential for integrating visual and written media within the same technological environment carries significant implications. It allows ethnographers to make the step from thinking of the visual merely as illustrative of argumentation spelled out through the printed word, to seeing it as itself constitutive of meaning. This is an observation that visual ethnographers have been trying to press home for years.... In fact, we need to consider seriously what hypermedia can do that a well-illustrated book or a well-produced film cannot. There are potential gains to be derived from exploring how ethnographic representation can simultaneously be a verbal and a pictorial, a visual and an aural activity.³

While the above paragraph focuses on academic ethnography as product, there is no reason why similar innovations cannot take place with regard to data gathering for commercial purposes. The market is awash with software and shareware that lends itself to the process (MacroMedia, NVivo, Shockwave, PhotoShop, Media Maker, Director, iMovie, CoolEdit, and so forth).

Valentine's Day: A case study

In February 2000, Cheskin piloted the first non-proprietary Digital Ethno project that was done for public consumption. The project focused on Valentine's Day—a common cultural event, one shared by North Americans throughout the United States and yet often hotly contested in its cultural meanings and personal significance. In order to test the method, we selected eight people from the San Francisco Bay Area—six involved in relationships and two unattached—in order to digitally observe their Valentine's Day preparations and practices. In particular, we focused on participants' attitudes toward and behaviors associated with contemporary Valentine's Day icons:



"A basket full of socks, given to me by my girlfriend: a practical, if last minute, gift. I think she must have been wrapped up in some Valentine's Day survey and forgot about Valentine's Day."

hearts, candy, flowers, and kisses.

The team included two ethnographers. We used a wide variety of techniques including email, cell phones, digital cameras, chatrooms, online questionnaires, and digitized audio diaries, among others to gather the data. While such a study would have been highly appropriate for Tokyo or Rio de Janeiro, where distance and time differences are major components, we decided to keep the complexity to a minimum and scaled the project accordingly. A week before Valentine's Day, we asked the respondents to fill out an online questionnaire gauging their reactions to the four icons. We then sent them prompts via email over the course of the next week that asked them to engage in numerous activities documenting their Valentine's Day experience.

Ethnography participants were required to have access to email, a desktop computer, and a cell phone. At the outset of the project, each was given a digital camera to help gather critical visual data. All these tools were used by Cheskin to relay project-related tasks to the participants and for the participants to submit their findings, visu-

3. Bruce Mason and Bella Dicks, "The Production of Hypermedia Ethnography." Retrieved from <http://www.wordcircuits.com/htww/dicks1.htm>.



"I found a cupcake and a box of heart-shaped chocolates on my desk when I arrived at work. The cupcake was from a co-worker who bakes something for every holiday; the chocolate came from my manager."

"I chose this heart picture because of the temporal nature of the hearts presented—not because of the larger temporal nature of romantic love, but because if I found myself celebrating Valentine's Day, it would be with just such a gesture, and not by buying things."



al and textual. At no point did the researchers meet face-to-face with participants. All interactions were conducted via email, telephone, or cell phone. The study proceeded as follows:

Day 1

- Online Web survey of attitudes regarding common Valentine's Day symbols and icons
- Email prompt for participants to locate and digitally photograph (or download from the Web) their ideal versions of the Valentine's Day icons and email them back, with brief descriptions, to Cheskin

Day 2

- Impromptu telephone interview via cell phone asking participants to share memories of Valentine's Days past and the roles of the Valentine's Day icons

Day 3

- Email prompt to photograph the Valentine's Day icons in their common contexts and email these back with descriptions to Cheskin

Day 6—Valentine's Day

- Email to prompt participants to phone in a verbal description of their Valentine's Day experience and any Valentine's Day icons they used or observed

Day 7

- Repeat of the original online survey to tally attitude change
- Online chatroom to discuss findings and insights on Valentine's Day practices and icons

After Day 7

- Email survey asking each participant to reflect on his or her experiences of the study

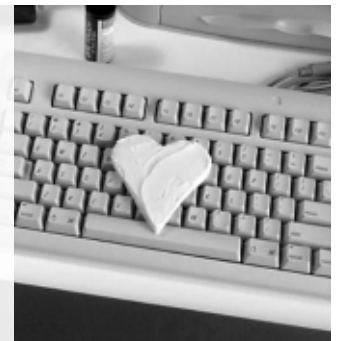
Summarized results

One noteworthy aspect of this study was the extent to which the respondents engaged in their own analyses of Valentine's Day. Participating in the study forced them to think perhaps more deeply than usual about the significance of the holiday. Accordingly, the study not only captured respondents' ideas about Valentine's Day, it also influenced their observations of the holiday. Moreover, the use of Digital Ethno techniques made the respondents true partners in the data collection process—more consultants than respondents. While respondent partnership was a clear goal in this particular project, digital ethnographers will need to manage for this type of interaction in the future. It is easy to imagine people using their digital camera/cell phone at the behest of a permission-based, randomized digital prompt, without knowing why they are taking the pictures, thereby avoiding the respondent bias.

Despite the small number of respondents and the experimental nature of the methodology, Digital Ethno was able to provide rich insights into people's experience, allowing the team to form notable conclusions. In brief, Valentine's Day is a paradox. It is seen as offering a means by which we may demonstrate affection and true sentiment, but the very symbolic tools with which we are provided generally undercut any meaning to our sentiments by virtue of their clichéd and commercial character. Thus Valentine's may be regarded as simultaneously trivializing love and enabling it.

Those who celebrated the holiday generally found creative ways to circumvent the holiday's

"... the heart-shaped cookie [Rich's] wife made. He gave us all these adorable cookies with pink frosting. He said he tried to help out but he botched them up and she asked him to leave the kitchen. It's probably a way for his wife to stay in touch with his career/workplace while also doing something out of the ordinary. They looked cute, but I didn't think they tasted really good."





"As it stands, I work in a very creative environment. This picture refers to the first Valentine card I received from one of my co-workers. She made some cards by hand and gave them out. I won't throw this one out."

"over-commercialized" sensibility. They made their own objects or gave unusual ones. They essentially reinvented the holiday for their own purposes and to some extent ended up taking ownership of the holiday. Thus, those who rejected the celebration of the holiday did so on two levels: they rejected the commercial version, and they also refused to reinvent the holiday. Those who were inventive in their celebrations (for example, "I hide candy in my boyfriend's sock drawer") were regarded by others as providing tips on how to take control of the holiday and make it their own. The chatroom discussion allowed "rejectors" to see how the holiday might be made more meaningful through small acts not usually associated with Valentine's Day.

Benefits of Digital Ethno

By putting the power of participant observation in the participants' hands, Digital Ethno enables participants to convey the real-time richness of their own lives and environments. In the Valentine's Day study, we saw how a broken bowl of oatmeal soured one respondent's subsequent Valentine's Day experience, which he recounted the next day in a long, tragic digitized voicemail. To capture the meaning of a kiss, another respondent photographed herself kissing her cat, Buster, which, she explained, "...is more relevant than any other nonfamilial kiss as he has outlasted many relationships." Two days later, we learned she had just parted with her boyfriend.

Digital Ethno also realizes the possibility of remote and simultaneous research. Researchers can conduct the projects from a centralized location while the participants fan out into their environments to observe their own practices, as well as the practices of those surrounding them. Likewise, researchers can remotely observe all participants at essentially the same time, in the case of our project, during the week prior to Valentine's Day. In this way, Digital Ethno is

scalable, even to transnational proportions. Time and place, not research constraints, identify the opportunities.

The opportunity for scalability should be underscored here. While immediacy and contextually fueled reporting is a clear result of the technology and methodology, it can also provide ongoing deep behavioral observation that was not efficient or even possible before due to the physical constraints of the research observers. For example, highly-focused, longitudinal studies might be designed around regular product innovation cycles for a relatively low investment. In other words, the digital nature of the data collected can allow for deeper and richer analysis. Companies can develop Digital Ethno databases for their consumers, which can provide wonderful guidance for innovation over the long term.

In addition, Digital Ethno has the capacity to inform strategy and design decisions at a more fundamental level. Companies routinely find ethnography useful because it provides context-sensitive insights regarding existing processes, products, or services. One advantage of Digital Ethno is that it further enhances the benefits of those insights by allowing a company to invest in comprehensive research further back in the product development process. Beyond an initial project investment and equipment costs, Digital Ethno allows for radical expansion of scope with prototypes and stimuli at varying levels of fidelity. Typically, ethnography is expensive and labor-intensive. Digital Ethno enables a broader understanding of factors such as culture, geography, and life-stage differences because of reduced field costs. A company can use Digital Ethno to

"Interpretation: There's something about flowers in a steel washtub that appeals to my sense of the absurd. Maybe people grow flowers in steel washtubs. I don't know. I like hokey combinations like this. What does it say about human beings/love/Valentine's Day? Perhaps this arrangement appeals to people seeking a "down home" look for Valentine's Day, something that's not too pretentious. Homely, like a stray dog? A little bit of class, a little bit of "Hee-Haw"?"



"I found it difficult to capture kisses. They are very intimate in general. This is a picture of me kissing my cat Buster. I must kiss him at least three times a day, and we've been together 10 years. This is a whole lot of kissing! My kissing him is more relevant than any other nonfamilial kiss, as [he has] outlasted many relationships. And I love him a bunch, so it's definitely appropriate."



robustly refine segmentations or even develop a powerful segmentation from scratch around a low-fi prototype in order to inform design strategy at a point well prior to commercialization. For example, embedded sensors and other unobtrusive data-gathering tools could be used for a very large group of life-stage-differentiated alpha testers to see how people are interacting with a "product" on a continuous basis. This means deeper insights sooner rather than later.

Finally, Digital Ethno brings the participant back into the research process. Rather than simply acting as sources of data, participants actively share their findings and their insights on the topic at hand. They become invested in the outcome and, as a result, become more-active contributors to the project.

There are some drawbacks to Digital Ethno. Until consumer digital technology products like cellular phones, faxes, and digital cameras become common household items, we will tackle a steeper learning and logistics curve bringing the participants into the research process. Likewise, by putting the tools into the hands of the participants, critical privacy issues must be tackled as they arise in each distinct context (see sidebar).

In an era in which mass production is giving way to mass customization and personalization, the benefits of Digital Ethno are evident. Increased consumer input into the design, product development, branding, and marketing

processes will lead to greater production efficiency, more frequent innovation, competitive advantage, and perhaps even more responsible consumer, as well as corporate, behavior. The sooner the inevitable merging of citizenship, politics, and consumption is recognized, the better off we will all be—in our personal, as well as our professional, lives. Digital Ethno will only enhance the process whereby people vote with their dollars for designs and products they like. Those not listening to these new, more-relevant polls will be left behind in the marketplace. ■

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Suggested readings

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