

*Essay*

## Fond Remembrances of Past Futures

*ken anderson (Intel)*

In January 2016 the World Economic Forum declared that humankind stands on brink of the Fourth Industrial Revolution. Like the last three, this revolution will be driven by technology and the lines between the physical, digital, and biological will become more blurred, if not indistinguishable. But the Fourth era will be distinct for its velocity, scope, and systems impact. Change has never happened as quickly or powerfully; it has never been so widespread.

Obviously, large-scale change—driven by technologies such as the Internet of Things, artificial intelligence, autonomous cars, nanotechnologies, ubiquitous high-speed networks, and robots—will affect how we work, live, play, and socialize. The promises can be great, but so are the economic and social threats. We’ve already seen ominous trends, including the centralization of power, decreasing economic security, and increasing public and corporate surveillance.

I was actively involved in the intersection of business, technology, and anthropology in the Third Rev—the digital one—specifically with personal computing devices. I’ll present some examples of challenges we faced, mistakes we made, where we were effective, and give you “pro tips” from life in the business technology sector during the 3<sup>rd</sup> Industrial Revolution. Then I’ll ask you to take stock: Do you want to be a change agent in the Fourth Industrial Revolution? Anthropologists working in technology innovation have to act as change agents, not only in

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companies but in society as well.

### **How I lost my soul and began a career**

Today, I work at Intel Corporation, a semiconductor manufacturing company where, quite remarkably, we make computers out of sand. Put another way, Intel is a global company of over 100,000 employees providing computing infrastructure for the digital era. The company is home to the oldest continuous group of anthropologists in the technology sector. Why? Intel engineers know a lot about shrinking the size of transistors to build faster processors. What they don't know is what people will do with faster transistors five years from now. This knowledge gap has given social scientists extraordinary license to explore people around the globe in a quest for business and technology innovation.

Intel wasn't my first foray into technology, anthropology, and business. I started in graduate school in the mid-1980s. Remember 1984? Apple had released its famous [Super Bowl commercial](#) in which society is saved from a dark Orwellian future by the Mac, which ushers in a world of creativity, joy, and life by giving computing power to the people. At that moment I was sitting in the basement of the Brown anthropology department with an Apple Lisa (pre-Mac Apple), on one side of me, and an IBM XT PC on the other.

Two forces put me there: intellectual and financial. Intellectually, I had hated PCs from the first time I had to use one. They were so literal, unforgiving, isolating, and impersonal. At the same time, it was clear to me that computers were going to be part of the future for everyone. I felt it was important to understand PCs and their effects on the social, cultural, and economic in order to create a better world—at least better than "1984." At the same time, my department couldn't fund all of its graduate students and I couldn't afford to be a student without financial assistance. Fortunately, a number of companies were offering research scholarships to study computing in education. For five years I worked on grants from corporate sponsors like Apple, GE, and IBM. To this day I remember site visits by the IBM corporate sponsor: yes, I had to wear a tie, and of course I had to hide my Apple Mac under my desk.

During this period, I studied Intermedia, an educational system that ran on a local network but otherwise replicated the linking and interactivity of the Internet. Intermedia was created by the computer science department and was being used on campus. I was part of a team of graduate and post-doc anthropologists studying its development and impact on teaching and learning. We examined how teachers taught in the classroom, what resources they used and how, their personal classroom styles, kinds of content—basically everything about teaching. We studied learning practices of students in and outside of the classes that used

Intermedia.

I worked, ate, and drank with computer science faculty and students. There was interdisciplinary camaraderie among anthropologists and techies; there was a lot of cheap beer and Chinese food. It was the '80s. It was also an introduction to a recurring theme: the engineers wanted us anthropologists to tell them what to build, or to create a point-of-view on the options they had established. On the other hand, our charter, as we saw it, was to study “impacts” or “effects” of their software, not to be involved directly in its creation. It seems striking to me now, but at that time, there was no language that provided easy translation between anthropology and engineers. We were the observers. They were part of what we were observing.

The other major project I worked on during that time was the networking of the second dorm in the USA. IBM-funded networked PCs for every freshman in one of the dorms on our campus. With a team of anthropology and sociology grad students and post docs, I studied the impacts that a computer network would have on the social and academic life of students. I lived with the freshmen in the dorm, observed the social dynamics, interviewed students, and monitored their PC activity. It was classic fieldwork: I was studying a village right in the backyard of the anthropology department.

All told, I had conducted five years of ethnographic research, including long-term fieldwork in one community on technology, social life, and education. Sounded like solid experience in the disciplinary tradition to me. The anthropology department, however, felt that for my dissertation research it would be better for me if I did not work on a team, did not focus on technology, did not do “applied” work, and did not do my fieldwork in the USA. These were expressions of what anthropology valued—or didn't—at the time.

About a dozen years later, at Intel we were hiring a social science researcher. Among the applicants were four anthropologists who had conducted their dissertation research on mobile phones in “modern” countries. The person we hired held a PhD from the very same department that tried to steer me in a different direction all those years ago. Anthropology as a field changes, but you have to take a very long view.

Twenty years after I sat in an anthropology department basement watching Apple vanquish our Orwellian future at the Super Bowl, Tracey Lovejoy and I were in Dallas, standing at the registration table at the Society for Applied Anthropology meeting. Two young volunteers pulled out our badges, emblazoned with our affiliations Intel and Microsoft, and gasped, almost in unison, “What are you doing here?” They couldn't understand what technology companies had to do with anthropology. I had set up a session around privacy with people from across more traditional SfAA sectors such as health and government. Tracey was there

for a session around design. It wasn't particularly new or strange to get reactions of surprise, or even contempt, from academic anthropologists; I'd been weathering it for over a decade, including at the AAA annual meetings. But that evening over cocktails Tracey and I decided to launch a conference specifically for anthropologists working in businesses to have a safe place to meet, exchange ideas, and develop careers. A year later we launched the first [Ethnographic Praxis in Industry Conference \(EPIC\)](#). In 2016, we are working actively with the AAA to offer the greater exposure of anthropology to the businesses world and business paths for anthropologists.

**PRO TIP**

*Never work alone.*

Even The Lone Ranger didn't work alone. Working alone can be a fine thing for an academic anthropologist, but anthropology in business needs a tribe to survive. There are many reasons for this, but one is demonstration of value. The innovation groups at Intel have tried to mitigate risk of the loss value by having a diverse portfolio of projects. By diverse I mean different in scope, scale, content, delivery times, and target audiences. Every year we need to demonstrate success as a team to continue the capability. There is no tenure. There is no accumulation of a record. Every year is a new thing, and especially after every re-org, we need to demonstrate value again, and perhaps in new ways. With a tribe, this is possible. Alone, it becomes an impossible task.

**Bringing the outside in**

I was sitting in One Infinite Loop in 1993. I was in a meeting at Apple Labs and introducing myself to people whom I would be working with on a project. Meetings happen a lot; introducing myself, and trying to explain what I do, also happens a lot, even these days. Going around the table I counted one industrial designer, two user interface designers, three interaction designers, and me. What was I? Well, I'm pretty good at spotting patterns, and "anthropologist" didn't seem to fit. So when it was my turn, I said, "Design anthropologist." It didn't really fit, but I hoped it would provide a way to understand what I did in relation to what their jobs were. I explained that I study what people do in their everyday lives and apply it to creating the future. It worked. Part of the problem we faced was we were bringing in a new set of research perspectives and skills to organizations. We had to create ways we fit into their already existing frameworks, but that were also different.

**PRO TIP**

*Have the 30-3-30, anytime, anywhere*

You never know when you will need a 30-second *spiel*. And if you don't have one, you'll never get to the three or 30-minute versions. I was walking out of the bathroom at Intel when a GM of a consumer group I recently began working with asked, "Are you new?" I told him in fact I was—less than a week! So he asked what I did. I said anthropologist. Eyes get puzzled. Why?! Having just introduced myself to the marketing department in the morning, I said I was there to help Intel understand its customers. The GM literally laughed out loud—"You're not going to last long. I was just out golfing with Michael Dell last weekend. I know Mike better than you ever will." He proceeded to walk away before I remembered my new 30-second intro was about knowing our customers' customers better than they did. 30-3-30 anytime, anywhere.

I was fortunate to be at Apple in the early 1990s. They had excellent facilities for studying people in labs, but had become interested in studying people in everyday life for opportunities where they could use new technologies. The field of Human Computer Interaction had already begun studying work practices, but hadn't moved onto people outside of work; it was natural to see what value anthropologists could add. Anthropologists would be part of the movement to realize that innovations could emerge from outside tech labs. Unlike HCI, however, instead of a capability as expertise, the person became the expert.

One time I spent four months or so doing field research in the homes of a wide spectrum of people in Silicon Valley about how they searched and found things. "Things" could be absolutely anything from yarn to tax records to toys to photos. I wrote up a white paper detailing findings about different practices of searching and filing stuff. In the process of writing the final report, I created a disk full of video recorded interviews, observations, photos, concepts for future products. It was created as a packaged version of the field that any designer or engineer could go back to in order to trace our work or discover new paths through our materials. To my knowledge, no one ever did. Instead, in the '90s, the field researcher became the go-to expert on his or her "people," and "the field" a special area of privileged knowledge and experience. By the end of the 90s we were occasionally taking market researchers, managers, and engineers out into the field with in an effort to create shared experiences for innovation, as well as having reference points for our eventual findings. We created multiple points of participation for others in the research process that somewhat surprisingly created a greater aura of expertise.

### **Business temporalities of value—the long and short of it**

I was talking over coffee with designer Sally Grisedale about just one small thing I had observed as part of a larger project—how a small set of people had arranged their icons to match how windows opened. Based on our conversation, Sally went away and created some user interface designs for a bar at the bottom of the screen to hold applications. Over the next couple weeks, we talked and she iterated on the design ideas. She added new colors and animations to the icons so a user could know where they were, and so on. Those led us to Gavin Miller, who was famous for creating the first realistic water animation. He built out a rough prototype of the concept and we did some quick user tests in-house. The observation the innovation was based on was not a deep understanding, but was still critical in creating the seed for an interactional design element in the Apple OS. Though our prototyping efforts were quick, technology change is seldom rapid. It took about two years before the concept would materialize as a product the Apple Dock.

Business anthropologists love to tell stories of deep ethnographic insight (there are plenty of these stories in the press), but deep ethnographic insight is not always how ethnographers deliver value. There are times and places where transformational shifts in corporate thinking are needed, but they can't be the only point of value for anthropologists. Further, companies can't make big shifts frequently, or something isn't right with the company. Finally, ethnographic work needs to build over time. It is rarely the case that one study will create a transformational change in a corporation. Usually, a small number of field projects have come before the tipping point for corporate change. In this process, we can demonstrate value by participating in a range of activities, like in this case of brainstorming a new UI design. Anthropologists and their teams need to structure a portfolio of work that has a variety of scope, scale, and audiences to assure continuous value.

What about external value? My academic anthropologist friends frequently ask why I don't submit papers to academic journals. Again, time—the typical time to press is around two years from submission. In the last two years *within* Intel I've worked in three different organizations and had four different managers, each with their own agendas. Publication in a journal paced outside of Intel's annual review cycle is unlikely to return value for my career. The yearly performance cycle is one reason why, when Tracey Lovejoy and I set up EPIC (Ethnographic Praxis in Industry Conference), we modeled publication after ACM and IEEE tech conferences that publish proceedings at the time of the conference.

**PRO TIP***Get an agent*

A PR agent, that is. An intern gave me that advice. I didn't listen, but it works. External validation makes people more effective inside. It has worked for some of the more famous ethnographers who have worked at Intel, IBM, and XEROX. Once Anne McClard and I were featured in the *New York Times* for work we did at MediaOne. It was a typical enough PR story, the kind we've been seeing since the 1970s: Hey look at these anthropologists inside a corporation! An offshoot of that story was a little blurb on me in *Hemispheres Magazine* (the one in your United Airlines seat pocket). The next month the VP of my lab called a meeting to tell me the CEO wanted to set up a series of regular meetings with me. What happened? Turns out the CEO had been golfing with the CEO of a business partner. During the game the other CEO mentioned how incredible he thought it was for MediaOne to have anthropologists solving wicked problems. If your company has PR people, become their friends. If you are solo, hire your own.

**Anthropologists— the other.**

I wasn't hired as an "anthropologist" until I went to Intel in 2001. In the late 1990s I worked at a series of companies (US West, MediaOne, AT&T) that had no existing ethnographic competencies. At US West a team of us had made a pitch to develop this competency. It backfired. We held a two-day event to highlight our field research and brought in leading outside experts from noted consultancies and corporations. We created a story that "the cool kids" were *beginning* to have ethnographic practices in their innovation research. If we acted quickly, ethnography would provide us with a competitive advantage. Result? The Executive VP of the lab banned us from using the word "ethnography." She felt it required too much explanation—it came from a discipline not associated with technology research and so was suspect as a method. Fortunately, we were able to do low visibility work that had value for lab directors under her. Over time management changed and we had a portfolio of projects that had demonstrated value.

**PRO TIP***Keep Latour in the backroom*

Really, Latour is a nice guy; he won't mind. Same goes for Sloterdijk, Tarde, Strathern, or whatever theorists you use in the analysis. Good projects take full advantage of working through theories in the data analysis and having rigorous debate around

them and the data; just leave the jargon and citations out of reporting and recommendations. I remember going to a talk in grad school by a famous American academic anthropologist. During Q&A someone asked a long question with no possible answer, talked mostly about her own work, and quoted a passage from Derrida in French. This, my friend, will be you, if you start doing theory in readouts and reports. The job of academic anthropologists is to educate people. The job of business anthropologists is to be change agents. OK, occasionally you may need to do some performance art to demonstrate you are anchored in a discipline. But in a corporate context, you were hired to know your stuff so the management wouldn't have to. Think of theory like programming code. Senior management doesn't care what the code looks like. Users don't care what the code looks like. They care about whether or not the app works, the final result. Theory is somewhat analogous to "coding" in doing our work—critical but often invisible to our audience.

During these years I began almost every talk with a Malinowski quote about understanding the native's point of view. This established our general research approach and situated our work in a discipline that, even if it was unfamiliar to my audience, had deep historic roots.

Malinowski was also an important referent to the kind of work we were doing at this time. The bulk of it was what is commonly called "longitudinal" in business circles. We were studying physical communities and communities of practice over months and years. We would embed ourselves for a period, leave, and then return. Loosely, this was a corporate version of community studies. Capturing a baseline and subsequent changes allowed us to speculate on future directions. Like Malinowski, we had become the experts of "the other".

The growth of anthropology in business on this basis came at a price. It became increasingly common to hear our work being converted into language about "uncovering" or "discovering" or "capturing" the "deep insight" or "unmet needs" of the consumer or user—language around "the other." Like Malinowski and other colonial anthropologists, we were claiming to bring insights from exotic people and locals back to the corporate capitals where executives marveled at the "golden nuggets" in the research that would help the corporation. On the one hand, this was great for the ethnographers because it put us into a position of power, turned us into experts within the corporation. On the other hand, it simplified both the complicated nature of the research and analysis. We made it appear anyone could gather these insights with minimal effort. Further, it created a false understanding and distancing of our research participants and the corporation, even as we tried to create opportunities for global participation in projects with the corporation.



**PRO TIP**

*Tell your boss' boss what to do*

You've done all the research. You know what it says. You have figured out the implications. Now it's time to tell management what to do. Rookie mistake is to go into a meeting with senior management, present them with findings or a list of implications, and expect them to know what to do. These are busy people; they have million dollar deals to make, super-senior management making demands on them for more revenue, kids waiting to be picked up at school, alpacas waiting to be fed...the list goes on. They need answers. You've got them. Share. Then they can claim that the decision, which is the real power, was theirs.

**What was then, is not now; successes have become challenges**

Issues and strengths of doing ethnographic work in the early days aren't all relevant to the work going forward. Anthropologists have brought new ways of knowing and representing that knowledge into business and technology. We've expanded the realm of what counts as important for consideration by moving beyond the interaction of the user and the technology to a more holistic view of the person, and the often-invisible social and cultural forces in their lives. We've made the invisible visible, ironically, often through video and photography. Deconstructing artefacts (products), or capturing practices in images, became one powerful form of data in the ethnographic tool kit. There was nothing more compelling in the late 1990s than seeing research participants through these images. To get sense of a lived experience. I clearly remember showing a time-lapse video of people getting snacks from a refrigerator side-by-side with "snacking" on a broadband computer. As I showed this and told a story around changes in household dynamics, one could almost perceptually see frame changes happening in the minds of engineers, marketers, and management. If images were the new data of holistic research, narrative became the mode of communication we used to enable frame shifts. But we need to move beyond narrative and image modes. Stories and imagery are powerful; they have the kind of emotional, empathetic impact that is often necessary to move people out of a worldview to see a new framing, a new opportunity, a new disruption. They can get someone to say "ah hah!" But stories alone are no longer compelling.

Further, while ethnographic work was perhaps dominated by anthropologists for a part of the 1990s, this is no longer the case, especially in the areas of design and development. While few art or design schools routinely offered training in field research, today these same schools have required courses and programs in design research or user

experience research, including field research. Design Thinking, which includes field research, is *de facto* the corporate process for new product or service development. HCI training in computer science departments or information schools offer specializations in user experience research and social research. The graduate students coming out of these programs can spend as much time in field research as anthropology graduate students, and are as well-read theoretically. Based on the affiliations of editors of this volume, one can expect business schools to follow suit, especially in areas of pricing and strategy. The different fields bring new tools into the corporation like personas, customer journeys, and LEAN development. Anthropology has not kept up.

**PRO TIP**

*Just say YES!*

When ATT acquired MediaOne, the VP of the ATT lab came out and visited senior people in our labs. I was in a meeting with him when he asked: "Would you rather be right, or have impact?" It was clear you couldn't try the graduate student response: "Be impactful by being right." We had spent a couple of years trying to become more impactful in the corporation, so I said, "Impactful." He wrote my name on a list. I left the company shortly thereafter. Three years later I was at Intel where our group had a new lab director who asked the same question: "Would you rather be right, or impactful?" I answered, "Be right." It wasn't exactly true, but we had spent the previous two years trying to be impactful. He smiled. Three months later, I got a written reprimand from him because of a thank you note from the GM of our enterprise group. Why? We had been impactful. Our strategic recommendations about directions for China were well received in the Enterprise group. I didn't change my work, but I did publish two papers that year to demonstrate I could be right too. The work never changed, but outputs and audiences did.

Recently, Intel colleagues and I have been experimenting with new ways of knowing and representing ethnography. Particularly, we are trying to move beyond qualitative/quantitative data to hybrid data forms. One experiment in this direction was with the National Day of Civic Hacking (NDOCH). NDOCH was a government-supported event across the nation to try to stimulate use of open government data. We worked with the White House to develop the challenges used in NDOCH to create applications using public and personal data for good. The NDOCH incited over 95 events across the USA with over 11,000 participants. We participated at many sites (not all 95) to participate with people to understand what values they hoped were being created in the apps that

they and others would find valuable, and why. On the national scale, we were about to capture projects, concepts, and applications from all the sites, and analyze key themes, value propositions, and proposed business disruptions. After the NDOCH, we worked with fourteen winning teams as they spent a year developing their applications. These data of applications and business plans became an excellent measure of understandings around personal data—much richer than, say, survey—that also provides the authority of scale: we covered a country, which just the working with the fourteen teams in the incubator would not have achieved.

Another tool we experimented with to move beyond the quantitative/qualitative distinction was a networking science tool. We were starting a project that asked, “What would it take to create a world where data worked on behalf of us—the creators of that data—in new and multifaceted ways that reflect the complexity and multiplicity of our lives, instead of just configuring us merely as eyeballs for advertising?” We instantly had twelve ideas about how to do that in our group. Instead of debating for days amongst ourselves, we experimented with an [online tool](#) created by Eric Berlow at Berkeley. We used it to bring together 50 experts from around the world to work through 6500 linked possibilities around 90 problem areas to identify four grand challenge areas for research. Network science appreciates the fact that the world is made up of organized complexity, that there is interdependence that’s missed when we talk about things like market segments. Further, it was a tool that enabled us to engage the community, another of our recent research goals. We aren’t the experts; the community is. Further, the platform provided a way for everyone to see their own contribution and enabled key insights to emerge. The process was easy to visualize, which made it compelling as data to our partners in management. In the end, it had analytic, visual, and persuasive value.

Our experiments may or may not be paths to success, but what is clear is that the tools and paths to success, as anthropologists entered into the tech-business world, are not as apt today.

**PRO TIP**

*In Batman vs Supergirl, be Supergirl*

Ethnographic vendor companies, aka consultancies, are like Batman. Some VP, equivalent of Police Chief Commissioner Jim Gordon, flashes the bat light up in the sky signaling the company is in distress. We need a super hero to come and save us. Batman comes rushing in with his special gadgets and techniques to reveal “unmet needs” and golden insights from users/consumers to save the company. Once the company is safe, Batman heads back to the bat cave and his millionaire lifestyle until the company needs rescuing again. Of course, given that it is some VP hiring this caped

crusader, whatever they did would have had to be a success or the VP would be looking for a new job. Meanwhile, Supergirl, working inside the company, has to put up with all the office politics, cafeteria food, and uncomfortable cube chairs, but never gets credit for actually saving the world. Tiny everyday acts are hardly ever as impressive as a big one at the moment, but over time, that is where lasting culture change often occurs.

### **The Tech Business Anthropologist Transformation Opportunity**

Business anthropologists have been active change agents in the Third Industrial Revolution. We started off small, but our numbers have grown as we've been embedded in corporations like Microsoft, Google, and Intel. The need for anthropological understanding is greater than ever before as technology enters, often invisibly, into more aspects of our society and lives. Imagine the Fourth Industrial Revolution as an opportunity to create a society where principles like liberty and justice are deeply rooted in our technology philosophy and design, where businesses can profit alongside flourishing communities, where ecological restoration is valued over ecological destruction. To achieve sustained prosperity in the Fourth Industrial Revolution, we must transform corporations and revitalize communities. Business anthropologists have the potential to be key change agents in this revolution, but only if we continue to grow, change, and adapt how we practice anthropology. Are you ready to be a business anthropologist and bring in the new future?

#### **Pro Tip**

##### *Lay low or fly high*

Working under the radar or up there with executives—these have been my two primary strategies in the business world. Senior management support has certain advantages in terms of visibility, job security, and value of the work; however, senior management has a high turnover rate. With management change comes house cleaning, replacing a predecessor's footprint and establishing a new order, including anthropologists. Flying under the radar offers freedom of research; the downsides are getting others in the company to care and being the most expendable at layoff time. So make the most of where you are—the grass is always greener on the other side. Value the people you work with and do good work.