Joy, Inc.

How We Built a Workplace People Love

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PORTFOLIO / PENGUIN

CHAPTER

SIX

The Power of Observation

Discovery is seeing what everyone else has seen, and thinking what no else has thought.

—ALBERT SZENT-GYÖRGYI,
Nobel Prize–winning Hungarian physiologist

One Saturday morning, I was out running errands and stopped by the hardware store to pick up a bag of topsoil. Loading my car in the parking lot, I was approached by the owner of the car I was blocking in. I was about to apologize for the inconvenience when he pointed at the logo on my T-shirt. It was the logo for Accuri Cytometers, one of our key clients. He exclaimed, "I use that product every day. I *love* that product."

"Oh, yeah?" I said. "We built the software."

"You guys did a great job. You made my life so much easier compared to the other product I used to use. Thank you."

I loaded the rest of the bags of topsoil and was on my way, with a joyful spring in my step. His response was a clear sign that High-Tech Anthropology worked, that our team had designed a usable program for the users.

The very essence of our joy at Menlo comes from the delight people experience in using the software we create. The goal is always the same: design and build software that is usable without manuals, training classes, or help text. We achieve this even in difficult domains where we have had no experience whatsoever.

A company doesn't exist to serve its own people; a company exists to serve the needs of the people who use its products or services. Thinking of joy in this context focuses everyone on a valuable external goal. Software delivery is hard. Coding is exacting, and getting to the right design takes patience and persistence. This is all really hard work and not necessarily happily done at every moment. We get frustrated, we're impatient, there are unexpected problems to resolve. Our joy comes from the outcome of all this hard work. We want to delight the people whose lives are impacted by the software we design and build.

You have a version of this joy in your work. Your job is to pursue that. If your company is an auto manufacturer, your joy might come in hearing drivers use the word *love* when they talk about their car. If you are a deli owner, your joy could come from the groans of satisfied lunch guests who rave about your corned beef on rye. If you are a doctor, you long to build caring, lasting relationships with your patients and keep them healthy and active so they can enjoy every ounce that life has to offer.

Is it possible to systematically get these kinds of wonderful results? Is there a way to organize observation, discovery, and "design" iteratively, so that when things aren't working the way they need to, the obvious and subtle problems are discovered early and promptly designed out of the system, product, or service?

Yes. In order to systematically pursue joy in the name of offering delight to your customers, you must learn to look at the world through a lens that sees problems as opportunities.

The Missing Link

At Menlo, our revelation came when we realized something fundamental was missing from most software teams. If our joyful goal was to delight end users, then we had to invent a new process that kept this end user ever present. We saw that most people, even if they don't work for a high-technology company, are still tortured by

software. Your company, like so many others, can't function without software. A service station can't sell gas without using software. A cable company can't offer hundreds of channels without software.

The problem is that there's a missing link when it comes to creating a great experience with software. To fully appreciate what is missing, we first have to understand that the source of this trouble is a fundamental misunderstanding between two vastly different cultures and their competing goals. Software users and software creators speak different languages. They live in different worlds.

The old view saw that one side of software was populated by people like me: *Homo logicus*. We know how computers work and we think they're fun. There is a CPU and RAM; there are hard drives and flash drives. There are SIM cards and USB ports. There is 802.11n and Ethernet. Have you heard of Ruby on Rails? It's the language that made Web 2.0 possible. A few of us are still on the fence about HTML5, but it does show some promise. If you learn to think as I do, all of this will make sense. Once you understand how to think as I do, the software you are struggling to understand will all make sense, too.

On the other side are those pesky users, the stupid users, the *Dummies*. Software creators have been in control for so long now that they have convinced nontechnical people to self-identify as stupid users. This self-deprecation becomes a common excuse when a Web site, or a smartphone, or a digital camera isn't working as expected: "Oh, I'm just a stupid user. I'm sure it's easy—I just haven't taken the time to learn it." Some users, though, begin to wonder why they must think like programmers to understand computers.

So what's missing?

Anthropology is the link. We need to study people in their native environment to figure out how to bring them utility and joy.

Anthropology is the science of humanity. It is concerned with social systems, artifacts, vocabulary, interactions across a community,

and the intersections of different groups within a community. Anthropologists need to understand history in order to better understand the present, and in order to do that they explore old historical artifacts; it is somewhat akin to the work of archaeologists. They want to understand people and their stories through a true and unbiased lens, to the extent that is possible.

We believe anthropology must be applied to software design. Using anthropology and making it a vital part of our process helps end the frustration of both our frontline technical folks and those poor users. (Not to mention, it's good for our bottom line.)

The techniques and approaches we use can be applied to any kind of product or service; they have nothing to do with software specifically. My stories and examples will be software stories because that is what we do, but you will be able to extrapolate these stories into your domain.

The Persona

High-Tech Anthropology starts with understanding the people who are going to use the software we are creating. We have to find these people in their native environment, because design is contextual. Focus groups don't work for this because they quickly devolve into dominant personality disorder groups, with one strong voice drowning out all others. And you can't invite users into your office and ask them what they want, because they don't actually know what they want. It's not because they are stupid; it's quite the opposite. They are unconsciously competent at what they do all day, so they can no longer deliver the most important minute details simply because they are unaware of them. The only way to get around this limitation is through keen and patient observation.

Let's say you're a Menlo High-Tech Anthropologist asked to be part of a team that's building a wedding planning Web site, MyAwesomeWedding.com. One of the first questions our team will ask to find out who our user will be is, "What kind of people plan weddings?"

Quickly, you and your teammates would come up with a list: brides, mothers of brides, bridesmaids, sisters of brides, professional wedding planners . . . and *maybe* grooms, too.

The first job of the HTA team, which also works in pairs, is to find these people in their native environment. But where could you go? Churches and synagogues, banquet halls, bridal shows, the bridal magazine rack at Barnes & Noble, jewelry stores, cake shops, and bridal gown and tuxedo shops are all good choices. The team members would conduct casual observation and conversational interviews with people they meet, noting what they see and hear. They'd ask a variety with questions, starting with, "When's the big day?" and uncover whatever other information they could get.

Upon returning to the office, the HTAs begin distilling what they learned into groupings based on the different types of people they found. They encountered young, first-time brides, and women getting married for the second time. They found that mothers-in-law were sometimes involved, as well as sisters, even if they weren't bridesmaids. They also learned that this event might be slightly more important to Mom than to daughter. Once they distill their findings, they can begin to write stories in order to create an artifact called a "persona," which identifies the main user of the system. It might look something like this:

> Kathleen Tober is a fifty-two-year-old homemaker from Dexter, Michigan, who will soon help plan her daughter's wedding. She is active and enjoys various community interests and likes to kayak on the Huron River. She bought a new computer last year but doesn't use it as much as she thought she would . . .

Kathleen's goals are:

- Help plan the wedding of the century!
- Determine whether using her computer can save her time. She wants to discuss her computer accomplishments with her daughter.
- Avoid situations where people use terms she doesn't understand, as it makes her feel stupid.

Of course, there is no one person the HTAs met along the way named Kathleen Tober. However, there are elements of truth sprinkled throughout the Kathleen persona, based on what was learned about the audience through observation and interview.

The HTAs will create a couple of dozen personas based on all the different *types* of people they met. These personas represent the keys to the kingdom of joy for a software product. Or, better put, exactly *one* of these personas holds *the* key to the land of joy. The question is, which one?

This is the most difficult question of all, not because there is a right answer, but because the answer is "Pick *one*." At all costs, we must avoid letting our clients fall into the trap of not picking a persona. In forcing them to pick, we hear the same objections every time: "We want this software to work for everyone. We don't want to choose a single persona as the primary persona. We want to dominate this market." If you try to build any product or service to make it work for everyone, it won't work well for anyone in particular, and you will get killed in the market.

We write down all of the possible personas on pieces of card stock roughly the size of an oversized baseball card. Once complete, we hand the stack of personas to our client and walk them over to a large Foamcore board. The board has three concentric rings drawn

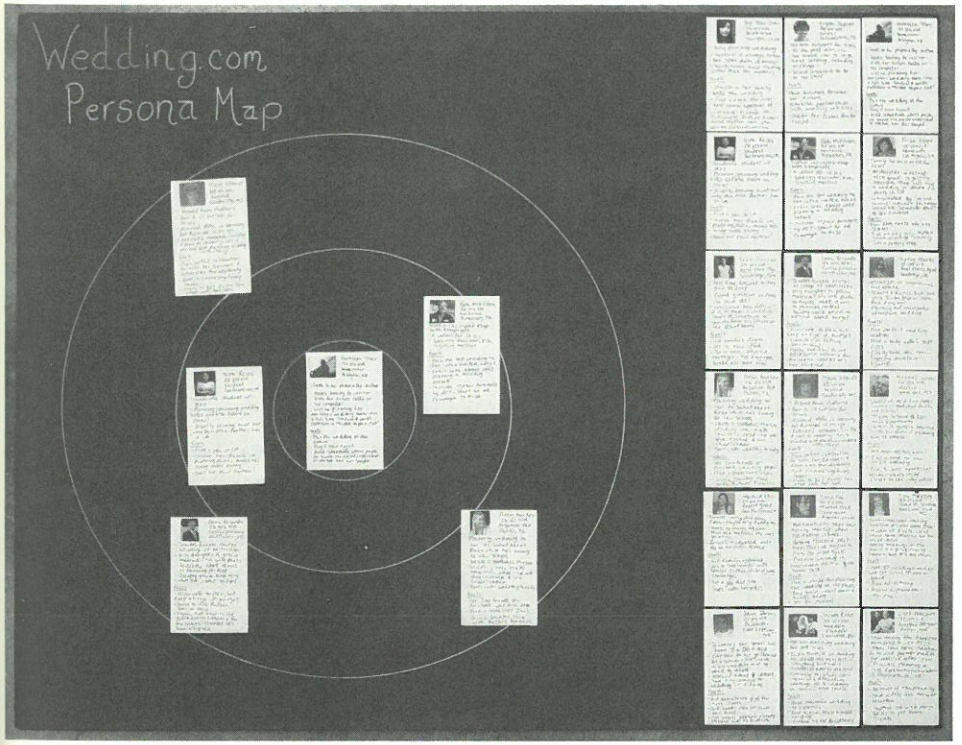
in the form of an archery target. We then ask the client to make a tough decision by identifying who the primary persona will be for our efforts. They need to pick the main person for whom we will design the planned system or product.

As they look through the cards, every customer has the same lament: all the personas should go in the bull's-eye portion of the persona map. They argue with us. They argue with one another. They try one and then change their mind. They argue some more and then, finally, choose a persona, and we tape it down in the center of the bull's-eye drawn on the Foamcore board. It usually takes hours to get to this point; it's that hard and that important. We then ask the client to pick two secondary personas for the middle ring of the target and three personas for the outside ring.

This persona map becomes the central artifact of our design efforts for that project. Any screens, any buttons, any reports, any features are all evaluated through the lens of the primary persona. We bring this person to life. In the case of MyAwesomeWedding.com, Kathleen Tober would be our primary persona. The marketing team for that Web site decided that it was Mom who controlled the budget and therefore the spending. Amy, the bride, is in the second ring and a secondary persona.

Now, when the HTAs are contemplating designing a button for the MyAwesomeWedding.com screen, they will ask, "How will this work for Kathleen?" If someone responds, "Oh, this feature is for Amy," that's okay, but then the question becomes, "How can we add this feature for Amy so it doesn't interfere with Kathleen's use?" Again, Kathleen is the primary persona. If it doesn't work for Kathleen, we don't have a design.

This kind of attention to our end user's persona makes our work personal, not abstract. We care deeply about how Kathleen will interact with our product and how it will help her life.



An example of a persona map, with the primary persona in the center of the target.

High-Tech Anthropologists Are Good for Business

One of our favorite HTA experiences occurred during the Accuri flow cytometer persona mapping exercise. Accuri really wanted to dominate their market. They were backed by almost $30 million of venture capital and needed to deliver great returns for their investors.

At first, the Accuri team wanted to put *all* the personas in the center. Of course they did. We pushed back. We told them they had to pick one. They grimaced and ultimately picked Emily, the lab director who currently used the competitors' products. They told us

that Emily wouldn't let her graduate assistant (a persona we named Brad) use the flow cytometers already on the market, as mistakes were routine and the cost of an error was too high.

We played a what-if game with them. We asked, "What if we made the software easy enough for Brad to use?" That touched off a firestorm of argument. First, they got angry with us. Emily wouldn't stand for it, they argued. She won't let Brad use it. She won't trust Brad to use it. After several hours, including an overnight time-out away from our team, the Accuri team came back and told us they'd come to an important realization: There were ten times as many Brads as there were Emilys in the market as potential users. Brad should be the primary persona. They made the switch, and we made the software easier to use for the Brads of the world.

In less than three years after the launch of the product, Accuri became a formidable competitor in the flow cytometry market. In February 2011, Accuri was sold to one of their largest competitors for $205 million. We like to think it's because they understood their users better, thanks to High-Tech Anthropology.

High-Tech Anthropologists Observe and Empathize

We were asked to design the user experience for a handheld touch screen for a diesel motor diagnostic tool. Our HTAs went first to the Ann Arbor Transportation Authority to watch Ken, a bus mechanic, do repair work on a bus. The first thing Ken did was put on rubber gloves. Our HTAs noted this and later asked Ken if he wore them all the time. He said that gloves were pretty much standard now for everyone who did this type of work.

This surprised our team. The device being built for Ken and his colleagues, as requested by the client, was going to be a capacitive

touch screen display (as on iPhones), which meant it wouldn't work for someone wearing latex gloves. Our customer was also quite surprised by this. Menlo had been in this domain for two hours and discovered something that would have killed the adoption of their product in the marketplace. This was something that the customer, with thirty years of experience in the field, didn't even know about. The problem was solved by switching to a resistive touch screen that responds to the pressure of a finger touch.

Dedicated and careful observation picked up this problem before we went too far into the design process. But HTAs aren't only there to observe physical interactions with our designs. People's work isn't all about going through the motions, after all. Our mental states and deep emotions are also key to understanding how we can build joy into our offerings.

At a county clerk's office for a systems redesign, our HTAs observed that there were picture postcards tacked up all around the office. They observed that the clerks didn't always have the best interactions with citizens, many of whom came in with a chip on their shoulder because they thought taxes in the county were too high. Of course, these clerks had nothing to do with taxes, but that didn't matter to the citizen-customers. The clerks used the postcards as blood pressure medication, imagining themselves in the idyllic beach scenes after difficult exchanges with belligerent customers.

Our HTAs noticed this and placed some of these beach scenes on the home screen of the design. They purposely added stress relief to the system the clerks used every day. Attention to such a small detail deeply touched the clerks. On seeing those beach scenes on their screen, some of the clerks became teary, saying no one had ever listened to them like that before.

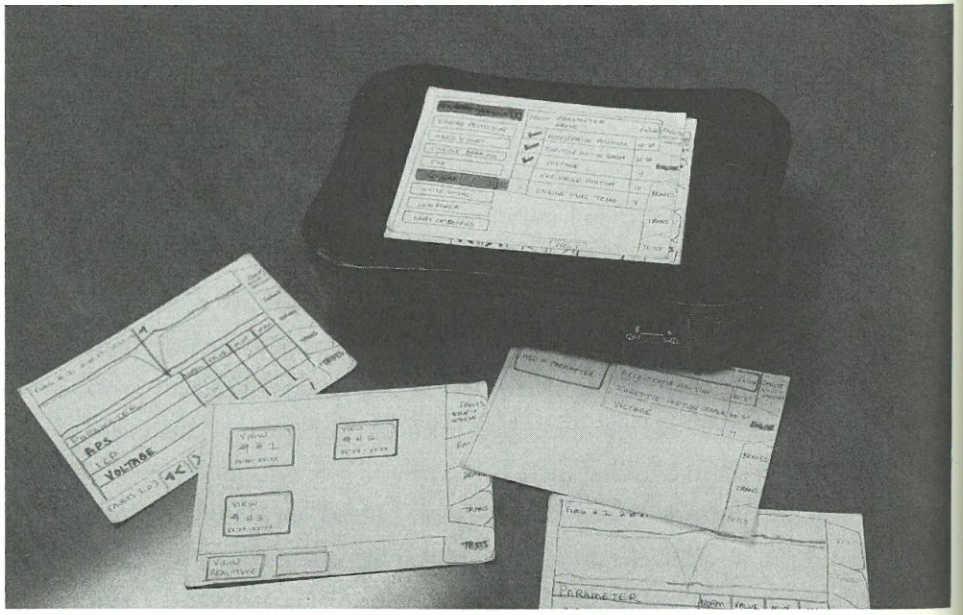
The clerks never asked for the beach scenes. But our team observed the way the clerks worked in their natural environment and thought it would be a nice addition to the software that acknowledged the human users of the system. And it really was.

Hand-Drawn Mock-Ups: The Artifacts of the HTAs

Perhaps unsurprisingly, our High-Tech Anthropology system comes with its own set of artifacts that are as important as our story cards and estimation sheets.

The High-Tech Anthropologists work in pairs to create simple, low-fidelity, hand-drawn screen mock-ups for the product they're working on. If the design is a Web site or app, then the mock-ups are drawn on paper that is the same size as the screen of the typical device, whether it's a computer monitor, an iPad screen, or an Android phone. If the client is building special hardware, say, for a diagnostic tool, we often start our projects when the imagined hardware is nonexistent except as a blueprint specification. In this case,

A paper-based prototype for our "Dragonfly" project.



our mock-ups will include physical prototypes, sometimes made out of duct tape and cardboard.

These paper-based, hand-drawn, user experience design prototypes are then tested against real-world users. The High-Tech Anthropologists have the users play with the prototype. Rather than ask them what they think about the draft design, we ask them to use the prototype to complete a task while we observe this use. For example, with the diesel motor diagnostic tool we helped design, we handed a diesel motor technician a duct-taped physical prototype along with a paper-screen mock-up properly positioned on the model and asked him what he would do to perform an initial diagnostic test. We were looking to see whether the end user would know how to use it without help. By using simple, often crude physical prototypes to simulate hardware and hand-drawn screen mock-ups to evoke the display, virtually everyone we test with will play with these nonthreatening examples.

You might be surprised that we are a software company that relies so heavily on paper-based systems. One Menlo visitor sternly told me he lost all faith in us based on this "compromise," because he saw our use of paper to plan and do our work as a failure of our software acumen.

It's not that simple. We choose the tools we believe work better for the humans. Sometimes electronic is best, but often it is not, particularly for a team whose members all sit in the same room together. Humans are visual creatures with a high preference for tactile tools—and paper is still more tactile than touch screens. It would cost millions of dollars in hardware and software development to match the flexibility and scalability of our paper-based systems, and it still wouldn't be as useful or effective. Our democratic ideals play into these paper-based tools as well. Uncomplicated tools that are easy to learn invite wider participation by all stakeholders.

Design for Living

Whatever you do for a living, design plays a role. A restaurant should have a great menu and customer experience. A university should make it easy for students to apply, register for classes, and pay their bills. An airline should make it easy to reserve a seat and print a boarding pass.

To succeed in design, a company must define its target audience and be very specific. If you look back at the persona for Kathleen, reflect on the fact that her goals have nothing to do with technology; rather they have everything to do with her as a person.

Kathleen's goals:

Help plan the wedding of the century!

She wants to create a wonderful memory for her family.

Determine whether using her computer can save her time. She wants to discuss her computer accomplishments with her daughter.

She wants meaningful conversations with her daughter.

Avoid situations where people use terms she doesn't understand, as it makes her feel stupid.

She doesn't want to feel stupid through any of this because that negative feeling would last a lifetime.

In order to meet your persona's goals, you need to iterate your designs: make a small, simple design, test it with real users, refine, and repeat. You don't need to have design intuition to win with

design. You simply need to be a keen observer of human behavior, stay humble when your brilliant designs don't work, and be willing to adjust your designs as often as needed to get to a joyful user experience.

Scouting a High-Tech Anthropologist

Many wish to know where we find our High-Tech Anthropologists. Well, not in the anthropology department at universities. It's not that we wouldn't look there; we just haven't had a lot of luck doing so when we tried. We actually find HTAs in every walk of life. Those who have worked for us have had quite varied backgrounds: elementary school teachers, journalists, floral department managers, housekeeping managers, industrial operations engineers, film majors, to name a few.

What do we look for? In addition to the standard kindergarten talents already discussed for all Menlonians, HTAs must also possess a wide range of talents including:

- Great observation skills
- The ability to sit quietly at times
- A "make mistakes faster" attitude
- User interface design skills
- Ability to draw with crayons and markers
- Ability to use Post-it notes
- Expertise in Photoshop (ironically, a very complicated piece of software from Adobe)
- Empathy
- Ability to deal with ambiguity and abstraction
- Ability to create with specificity and exactness

Knowing how to code is not a requirement.

There's no way to test for these skills, so we use our best discernment during Extreme Interviewing, pair them with our best teachers while doing real work, and see if they have what it takes. No one is training High-Tech Anthropologists for us. We had to develop our own. By introducing anthropology into your work, you can, too.

CHAPTER

SEVEN

Fight Fear, Embrace Change

Fear is the mind-killer.

—BENE GESSERIT, "Litany Against Fear," from Frank Herbert's *Dune*