The real act of discovery consists not in finding new lands, but in seeing with new eyes. —MARCEL PROUST

If I could choose just one persona, it would be the Anthropologist. I have the fervor of a convert on this one, because back when I joined the tiny firm that became IDEO, there were no Anthropologist roles. Experimenters, yes. Even a few Cross-Pollinators. But no one had yet adopted the persona that has since become the cornerstone of our work. When the notion of applying anthropology first came to IDEO in 1991, I wish I could say I was a visionary, instantly recognizing it as the future of the firm. In fact, the opposite was true. I remember saying to my brother David at the time, "Now here's a sweet job. All these bright people with Ph.D.s have to do is *watch* people. They take a few pictures while they're at it, maybe a video clip or two, and then come back and tell us about what they saw. That hardly sounds like work at all." Meanwhile, our engineers were hunkered down at their CAD machines, trying to create electronic products that could survive a four-foot drop onto concrete without breaking. Now *that* seemed like hard work.

But in the intervening years, I have come around 180 degrees on the role of the Anthropologist in our firm. Far from being some fluffy, esoteric process of questionable value, the Anthropologist role is the single biggest source of innovation at IDEO. Like most of our client companies, we have lots of great problem-solvers. But you have to know what problem to solve. And people filling the Anthropologist role can be extremely good at reframing a problem in a new way—informed by

their insights from the field—so that the right solution can spark a breakthrough.

So what makes Anthropologists so valuable? At IDEO, people in this role typically start with a very solid grounding in the social sciences, coming to us with advanced degrees in subjects like cognitive psychology, linguistics, or anthropology. But what's apparent when you work with them is not their academic knowledge so much as a sense of informed intuition, akin to what Harvard Business School professor Dorothy Leonard calls "Deep Smarts." Although no IDEO Anthropologist has ever given me a unified theory of their role, I have noticed half a dozen distinguishing characteristics. Some are strategic and some are quite tactical:

Anthropologists seek out epiphanies through a sense of "Vuja De."

1 **Anthropologists practice the Zen principle of "beginner's mind."** Even with extensive educational backgrounds and lots of experience in the field, people in the Anthropologist role seem unusually willing to set aside what they "know," looking past tradition and even their own preconceived notions. They have the wisdom to observe with a truly open mind.

2 **Anthropologists embrace human behavior with all its surprises.** They don't judge, they observe. They empathize. Lifelong students of human behavior develop a genuine love of watching and talking to people that cannot be faked. The skills and techniques of cultural anthropology can be learned by anyone, but the people drawn to this role usually find it intrinsically rewarding, which is another way of saying that they love their work.

3 **Anthropologists draw inferences by listening to their intuition.** Both the business-school curriculum at prominent universities and on-the-job learning in the corporate world focus on exercising our left-brain analytical skills. They sharpen our deduc-

tive reasoning powers, what Guy Claxton calls the "d-brain" in his intriguing book *Hare Brain, Tortoise Mind*, and what Daniel Pink calls "L-Directed Thinking" in his book *A Whole New Mind*. Anthropologists are not afraid to draw on their own instincts when developing hypotheses about the emotional underpinnings of observed human behavior.

4 **Anthropologists seek out epiphanies through a sense of "Vuja De."**
Everyone knows that feeling of déjà vu, a strong sense that you have seen or experienced something before, even if you never really have. Vuja De is the opposite—a sense of seeing something for the first time, even if you have actually witnessed it many times before. I first heard the expression from my friend Bob Sutton, a professor at Stanford, though I've also been told that it traces its origin to the comic George Carlin. Applying the principle of Vuja De, Anthropologists have the ability to "see" what's always been there but has gone unnoticed—what others have failed to see or comprehend because they stopped looking too soon.

5 **Anthropologists keep "bug lists" or "idea wallets."**
Anthropologists work a little like novelists or stand-up comics. They consider their everyday experiences to be good potential material, and write down bits and pieces that surprise them, especially things that seem broken. A bug list focuses on the negative—the things that bug you—while idea wallets contain both innovative concepts worth emulating and problems that need solving. Whether the idea wallet lives electronically in your PDA or is simply a low-tech index card in your back pocket, it can sharpen your powers of observation and your skill as an Anthropologist.

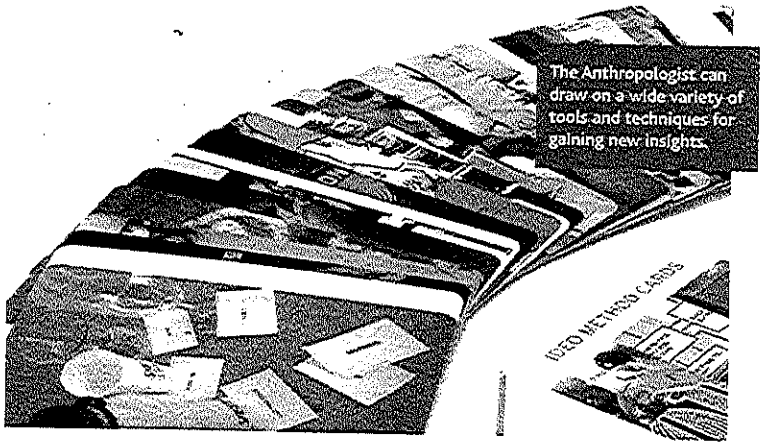
6 **Anthropologists are willing to search for clues in the trash bin.**
The Anthropologist looks for insights where they are least expected—before customers arrive, after they leave, even in the garbage, if that's where learning is to be found. They look beyond the obvious, and seek inspiration in unusual places.

Over the years, IDEO has developed dozens of tools for Anthropologists. We've documented fifty-one of them in a set of action-oriented cards called the *Methods Deck*. The interrelated methodologies are organized into the four categories of "Ask," "Watch," "Learn," and "Try." But our enthusiasm for anthropology began with observations. We do extensive fieldwork to begin a project, to move it along, and to breathe life into a team when a project slows down. The process is remarkably similar to that followed by an inquisitive scientist or ethnographer. We watch human behavior in people's native habitat. We track customers or would-be customers as they interact with a product or service.

"The way to do fieldwork," Mead said, "is never to come up for air until it is all over."

When we go out in the field for inspiration, we try to observe with fresh eyes. Adopting a Zen-like "beginner's mind" is easier said than done, of course. But doing so makes a world of difference in gathering fresh observations. Margaret Mead is a familiar example of the archetypal anthropologist, studying cultures of the South Pacific in a series of books that challenged stereotypes about the imaginations of children and the limitations of so-called primitive societies. Mead believed you had to be there, you had to observe firsthand. "The way to do fieldwork," she said, "is never to come up for air until it is all over." Great minds through the ages have urged this technique. Charles Darwin, for example, was a born observer. He began by studying the faces of his own children and included photos of infants expressing their discomfort through crying in his book *The Expression of Emotion in Man and Animals*. More famously, Darwin joined the crew of the HMS *Beagle* as the ship's naturalist for two years of remarkable observations that helped inspire his classic *On the Origin of Species*.

Observers talk with people others have ignored and travel to faraway worlds. They subscribe to Albert von Szent-Györgyi's belief that discovery "consists of seeing what everyone else has seen and thinking what no one has thought." The Anthropologist humanizes the



scientific method and applies it to the business world. But seeing with fresh eyes may be one of the hardest parts of the innovation process. You have to put aside your experience and preconceived notions. You have to drop your skepticism and tap into a childlike curiosity and open-mindedness. Without that sense of wonder and discovery, you're likely to be blind to the opportunities right before your eyes.

History tells us that routine often blinds us to the truths that have been before us all the time. Until Jane Goodall applied her rare combination of patience and bravery to the study of chimpanzees, no one seemed to notice how much those clever primates share our ability to make tools, kiss, tickle, hold hands, and even, yes, pat one another on the back. The truth was there all along, waiting for us to discover it.

We can't all be Jane Goodall (or Margaret Mead, for that matter). Nor, in the corporate world, do we need to be. But approaching field observations with a spirit of curiosity can make all the difference in the world in identifying new opportunities or solutions to existing problems. So what makes a gifted Anthropologist? Patrice Martin, a bright young IDEOer with a degree in industrial design from the University of Michigan, has found her true calling as a human factors specialist. Patrice has an uncanny knack for getting people to talk about

themselves. She looks even younger than her twenty-seven years and has a bubbling enthusiasm that's contagious. She might have been a star newspaper reporter in another life, because she quickly gets at the essence of a problem.

Why is she such a good observer? She truly enjoys meeting and talking to people. She asks probing questions that encourage people to reveal themselves. She projects a nonthreatening image that says it's safe to talk. She seems to have an intuitive sense of how to mine stories that unearth epiphanies into human behavior. For instance, Patrice recently worked on a project to develop healthy snack foods. Our client arranged for a series of interviews with doctors and patients—a perfectly reasonable approach. But Patrice took a less structured tack. She got permission to hang out in several pharmacies and talk with customers. Patrice made the initial contact, offering people discount coupons to encourage them to chat about healthy snacks. The men and women she talked to in drugstores were all over the dietary map: A middle-aged man looking for an energy boost while his wife was on the South Beach Diet. An elderly woman trying to combine two health drinks to meet all her dietary needs. A college student into natural foods, overwhelmed by the complexity of nutritional labels. A woman recently diagnosed with diabetes, confused about what foods would be best for her.

Armed with discoveries from her fieldwork in the pharmacies, Patrice next journeyed to the homes of a dozen people to learn more about food-preparation and eating habits. Spending time with people on their home turf not only makes them more comfortable, it also gives the Anthropologist a chance to look beneath the surface. For example, one woman in Patrice's field observations seemed to be the perfect homemaker, a virtual Betty Crocker. When Patrice arrived, she smelled the tempting aroma of a chicken baking in the oven. A healthy-looking green salad and steamed vegetables were already on the table. As usual, Patrice had brought a video camera along to preserve her findings, so she was capturing this domestic scene on tape. If Patrice had spent only a short time there, she would have come away with a distinct—though misleading—impression of the family's eating habits. A few minutes later, however, the woman's kids arrived home and expressed stunned amazement on camera—"Mom, you cooked!?"

Patrice laughed as she told the story. "Her cover was totally blown. Later, we found pizza boxes and frozen-snack containers in the recycling bin." Patrice wasn't trying to bust this homemaker's meal-preparation skills, just get at her family's true eating habits. She found it easier to get the real story when she spent quality time with them at home.

Patrice asked a busy soccer mom to create a food map of everything eaten during the day. The woman wrote down three square meals and a couple of healthy snacks. Just to double-check, Patrice asked her, "You didn't eat anything else?" Without further cajoling, she admitted to a chocolate bar or two. Good Anthropologists paint a fuller picture. We're not looking for perfection, just authenticity.

One thing Patrice taught us about her experiences in cultural anthropology is that "life isn't typical." She never asks general questions, like "What's your typical diet?" In the process of generalizing, human nature causes people to idealize, which defeats the purpose of the observation in the first place. On this project, for example, she asked people what they ate that morning and the morning before. Says Patrice: "It's amazing how often people will say, 'Well, today was unusual.'" Today is *always* a little unusual. Life is messier than it is in a marketing brochure.

Patrice was looking for people's journey. She handed out "emotional stickers" bearing evocative words like *guilty, healthy, satisfied, balanced,* and *stuffed* to stick on their food map for the day. The words were meant to help express how people's food choices actually made them feel. Above where they described their meals was a separate line to put in what they wished they'd eaten. She also asked them to plot their energy throughout the day. The process created a series of richly textured food journeys that conveyed an individual and emotional sense of what people eat and aspire to in their daily routines.

It's amazing how often people will say, "Well, today was unusual." Today is *always* a little unusual. Life is messier than it is in a marketing brochure.

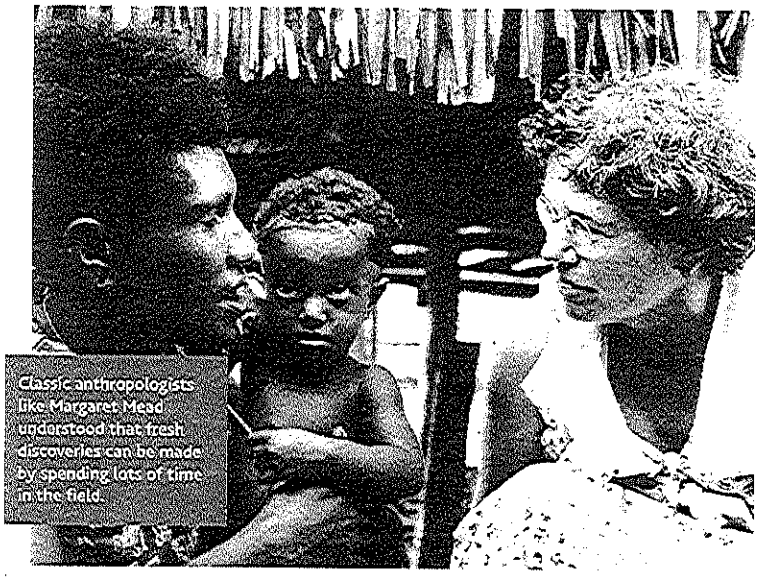
So how can you bake up some fresh inspirations? Enthusiastic Anthropologists are the yeast, skilled and interested individuals who actively seek out authentic experiences to observe. Trying to understand real eating patterns, Patrice wasn't satisfied just inviting people in for interviews. She sought out consumers where they shopped, and brought her camera and open-minded curiosity to people's homes. Patrice pushed to make her food maps more than just dry charts and statistics. They included emotional descriptors and a list of the foods people wished they had eaten. Her charts added a deeper human dimension to learning about the role of food in people's lives.

When you seek out field observations, remember: The more emotional breadth you gather, the better. The more human needs and desires you unearth for your experiential map, the more likely it is that they will lead you to promising new opportunities.

Human Extremes

Anthropologists have a knack for *not* falling into routines. There's a freshness to how they collect observations and dig up new insights. You've probably heard of "human factors," a technical term for the social science of observing people to gain an edge. But the term can be misleading, as it sounds slightly passive or academic. Human factors enthusiasts are highly proactive. They seek out the touch points of a situation—the key opportunities that have been overlooked or misunderstood.

If you want fresh and insightful observations, you have to be innovative about where and how you collect those observations. For instance, let's say you want to gain insight into improving a patient's experience in a busy hospital. Ask the doctors or nurses? Talk to lots of patients? Circulate a thoughtfully prepared survey form? All of these approaches sound reasonable, but IDEOer Roshi Gvechi opted for a more radical technique. She calls it *Extreme HF*—short for "extreme human factors." Though not as wild as the extreme sports you see on ESPN, it's not for the faint of heart, either. Roshi, who has a background in film and new media, decided to bring a video camera right into the hospital room. With the permission of the patient and hospital staff, Roshi and her camera essentially moved in with a woman undergoing hip-replacement surgery. Roshi set up her video camera in



Classic anthropologists like Margaret Mead understood that fresh discoveries can be made by spending lots of time in the field.

the corner to run a few seconds every minute for forty-eight hours straight. To get the full experience firsthand, Roshi stayed in the room herself for two days, occasionally squeezing in a catnap in a reclining chair next to the bed. Following Margaret Mead's admonition, she didn't "come up for air until it was all over."

So what did her forty-eight-hour cinema verité capture?

The time-lapse video caught the ceaseless intrusions into a patient's room. Lights flipping on and off, doors opening, commotion in the hallway outside, nurses on their rounds. More than anything, it caught the astonishingly high number of people who entered the patient's room day or night. Roshi's flick was a bit like watching a vintage episode of *Candid Camera* or MTV's pioneering *Real World*. The images revealed how hospital staff bent various rules—like the number of family members allowed in the room at one time, or the visiting-hour restrictions—in their efforts to make the patient more comfortable. The video also demonstrated the impossibility of rest, let alone sleep, at some times of

the day. Roshi edited down her forty-eight-hour time-lapse tape into an easily digestible five minutes—a powerful tool for understanding some of the problems and opportunities in a patient's room.

After seeing the video and talking to Roshi, I'm convinced that we're just scratching the surface for this novel technique. Digital video technologies have greatly advanced in the last few years, opening up many previously high-end capabilities to people without deep technical expertise. Though Roshi's media training helped her conceive, capture, and edit her time-lapse films, you don't need Steven Spielberg on your team to turn out evocative minivideos.

My advice is to pull out your video camera or find someone with a cinematographer's bent. What if you set up a camera to record the activity in a retail store? A lobby? A factory floor? Your offices? Not to spy on your staff, but to gain a better understanding of the ebbs and flows of your customers and your business. The next time you're looking for new discoveries, instead of holding a focus group, why not focus a lens on real customers, gaining insight into how people interact with your products, your services, your spaces. Body language says a lot. Imagine what you might learn if you could capture in images the circadian rhythms of your organization, the highs and lows of connecting to your customers. Imagine if you could use extreme human factors to gain new insights on what makes your customers tick.

Small Observations Pay

Picking up on the smallest nuances of your customers can offer tremendous opportunities. Recently, after giving a talk at the Food Marketing Institute conference in Chicago, I found myself surrounded by four large Polish guys who clearly had something they wanted to say. I was a little intimidated until one of them cracked a smile. It turned out that they all worked for a soft-drink company in Warsaw. They had cornered me because they wanted to tell me their own innovation success story. A few years back, they'd seen ABC's *Nightline* episode on "The Deep Dive" that illustrated IDEO's technique for learning from customers by doing field observations. After viewing the video together,

they decided, "Maybe we could do that ourselves." So they set out for local train stations to look for clues about how they could sell more soft drinks to the captive audience of passengers waiting for the next train.

As they observed the crowds, they noticed a recurring pattern: In the minutes before trains arrived, people would stand on the platform, look over their shoulder at the drink kiosk, glance at their watch, and then scan the platform for the incoming train. A casual observer might have missed the clue. But these budding Anthropologists realized that passengers were torn between wanting something to drink and not wanting to miss their train.

So what did they do? They created prototype soft-drink displays boasting clocks so large that passengers could simultaneously watch the clock *and* the drink display. The result? Sales shot up in Warsaw train stations. The clocks reassured customers that they had time to buy a cold refreshment. That simple success made believers of these Poles. All inspired by watching a thirty-minute TV show.

We've been advocating field observations and quick prototyping for a long time. Sometimes a breakthrough is one small insight away. A simple telling observation—like the train passengers glancing from their watches to the soda kiosks—can make all the difference. Make patient observation and quick prototyping part of your recipe for innovation. You might be surprised by the results.

Interns & Intergenerational Waffles

At IDEO, the annual crop of summer interns is a continuous source of renewal for the firm. Some people think it's a form of organizational altruism that causes us to bring in more interns than we really need. Insiders know better. Not only does the intern program give us a leg up on recruiting decisions farther down the road, but it helps us stay fresh with a steady flow of ideas and irreverence.

For example, Michelle Lee, one of this year's new interns, recently spent several months watching grandparent-grandchild cooking experiences as part of her master's project for the Product Design program at Stanford. You may have heard of generation-skipping trusts, but this

is generation-skipping in the kitchen. In a cultural anthropology program of her own design, Michelle noticed that the younger and older generations in some ways have more in common than the baby-boom generation in between. They live in the moment, not worrying about what they're doing next. They take time to savor the experience with all their senses, feeling the texture of the ingredients, smelling each new item, and liberally tasting the sweeter parts. Both young and old struggle with awkward or bulky items like heavy bowls and full bags of flour, and both seem extra attentive when their kitchen companion is handling a sharp knife.

Watching grandmas and grandkids sparked ideas for a line of intergenerational cooking products.

There are also times when the kids cover for their grandparents and vice versa. Grandparents have more knowledge, kids have sharper eyesight. Grandma knows what she's looking for, but her granddaughter can see it better. One cooking project Michelle watched while in

Anthropologist mode was a grandma making cookies with her four-year-old grandson and eight-year-old granddaughter. When it came time to read the recipe, Grandma had trouble with the fine print and the four-year-old had trouble with the words, so the eight-year-old stepped in to help out.

As her research continued, Michelle focused in on making waffles, a simple, rewarding process that all kids—and their grandparents—seemed to enjoy. The result is a line of product ideas she has for fun waffle-making. For example, all kids seem fascinated with breaking the eggs, but many struggle with the mechanics of getting that step just right. A fun, foolproof egg breaker that doesn't drop shells into the batter seems like a tool that these intergenerational cooking teams would buy in a minute. And that one idea may be just the tip of the iceberg for grandparent/grandchild products and services. The potential market seems huge, and grandparents seem willing and able to spend freely on such precious moments. So keep your eyes open for small insights in your field that can lead to new market opportunities. And in the meantime, never underestimate the power of an intern.

Kate's Seven Kid Secrets

We believe it's critical to observe and talk to kids. The freshness of their insights can't be found elsewhere. They see things adults skim right over. And there's no way to fudge their perspective. For one thing, you're not a kid anymore yourself. Your sense of childhood—and your view of the world—are filtered through layers of memory and shaped by the lens of adulthood. "I believe that kids have a certain kind of 'sixth sense' you don't find in most adults," claims Kate Burch, a designer who started her IDEO career in our Zero20 group—a team that gets its name from the age range of its favorite customers. And Kate reminds us that every generation's world is unique. "What it was like when I was eight is not even close to what it's like today. Kids today have a whole new set of opportunities—and a whole new set of pressures."

FIXED OPPORTUNITIES

If you take a close look at your world, you'll notice clever people playing the modern-day role of fix-it man. We've all seen the Post-it note with a helpful little instruction on top of the photocopier or the handwritten sign taped to the front of the reception desk. Perhaps you've been served by a resourceful salesperson or customer-service rep who doesn't do things by the book when the rules don't make sense. People can be ingenious and flexible when things don't work as advertised. They adapt technology and systems to fit their needs. At IDEO, we seek out these human touches in the field, these grassroots efforts by people to soften the sharp corners of the world, to offer a hand to help people along. They're signs that a product or service is incomplete. But they're also opportunities for future innovations.

Some opportunities are more obvious than others. To see how many exist in your world, try this exercise one day. Write down every fix you see at work, at home, or out on the town. Watch for things that have been duct-taped or bolted on. Look for add-on signs that explain what's broken or how a machine really works. You'll be surprised at how many you can spot. For example, enter most any urban taxicab and you're likely to see several little modifications added by drivers who spend their days and nights behind the wheel. And this quest for alterations and "fixes" is no idle exercise. Give it your serious attention and you'll have taken an important first step toward sensing the rough edges of many current offerings. You'll have a better understanding of why some products or services truly sing. And you'll learn to recognize when a product—or even a whole category—is crying out for improvement.

Kate has a natural, easy way of working with children. She makes it look effortless. What are her secrets? "It's all just common sense," she says. But from my experience, her gift is not that common. After reflecting for a bit, she comes up with one of the techniques she uses, and then another, and finally the ideas start to tumble out:

1 **Ask them about their shoes.**
Almost every kid has an opinion about their shoes. A big height difference is a barrier to communication, and a good Anthropologist wants to learn as much as possible. Get down on their level and talk.

2 **Offer something about yourself.**
Tell them a little about your day or your interests, especially something that shows your vulnerabilities; it will make you seem more human and help open new lines of communication.

3 **Ask them to invite their best friend along to talk.**
Even shy kids open up in the presence of a good friend, and they will provoke one another's storytelling. Sometimes, best friends will launch into an absorbing conversation on a subject and ignore you completely, which can be a remarkable thing when you're doing cultural anthropology.

4 **Remind them (only if it's true) that the project is "top secret."**
Even for kids who can't successfully keep a secret from their mother or their best friend, a little secrecy adds drama to the conversation and underlines the fact that you believe their ideas are important. We believe they're important, too.

5 **Ask for a house tour.**
Interview kids in their homes to gain fresh insights about the toys and things they like and dislike. Once they understand that Mom and Dad say it's OK, most young kids love to show you around. They'll jump from the macro tour of their home to the micro focus on the stuff in their room in five minutes or less. The house tour quickly becomes a window into the world of childhood.

6 **Ask kids what they would buy with ten dollars. Or a hundred.**
This question is an indirect but very effective way to find out what's hot and what's not. Ask a teenager about the latest gear and you may just raise their defenses. But ask them what they'd spend a hundred dollars on and you'll get the real answer. What they'd buy is what's current, what's cool, what's top-of-mind for kids of that age.

7 **Make them laugh.**
Kids having fun have more to say. In a serious interview, they'll be on their best behavior, saying what they think you want to hear. But if you get them laughing, they're more likely to let you in on their real feelings, their real preferences, and give you the inside story on what it's like to be a twenty-first-century kid. They do less self-editing than the average adult, which is part of why interviewing kids can yield such insights. There's a lot you can learn from them.

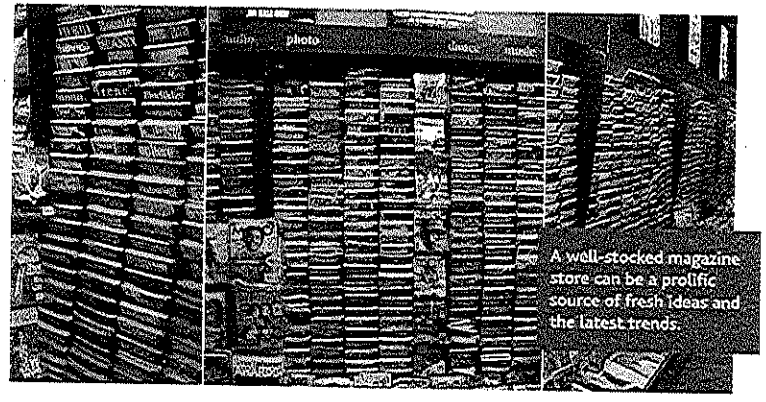
Instant Observations

Even the most gifted Anthropologists sometimes lack the time or resources to do intensive observations. What can you accomplish when you're looking for a ready source of new ideas, fresh images, a sense of what's happening beyond your corner of the world?

At IDEO we believe in the quick provocation and information value of magazines and new books. We have an entire wall adjacent to my office filled with popular and edgy magazines for staffers to peruse, from *BusinessWeek* and *Fast Company* to *Dwell*, *Stuff*, and *Zoom*. They're not hidden away in some be-on-your-best-behavior style corporate library. They're placed in a big open room that's near one of the busiest thoroughfares in the firm. We believe that simply flipping through new magazines is a serious and productive practice for any organization interested in innovation. You might even find that it prompts your own publishing efforts. Our Consumer Experience Design group at IDEO (known internally as CxD) periodically produces booklets they call "Thought Bombs" to inspire the team. The Thought Bombs I've seen have been a fascinating collection of trends, concepts,

and provocative ideas, mostly inspired by recent material from unusual print media sources.

To anyone who feels immune to the energy field around magazines, let me offer a suggestion. Drop by the Universal News and Café on Eighth Avenue in New York City. Imagine a generously sized bookstore, except that the more than 7,000 different titles reaching high up the walls are not books but glossy magazines. The intensely considered photography and arresting headlines of thousands of magazine covers in one place are so stimulating that they almost force you to deal with the store one section at a time. Even so, each of the store's categories has more titles than the total number of magazines you're likely to find at your local supermarket. I counted seven floor-to-ceiling rows—well over a hundred titles—just for science. One hundred and sixty auto magazines. More than a hundred and fifty on the subject of art and design. Separate international and foreign-language sections, each with dozens of titles in French, German, Italian, Spanish, as well as an entire row devoted to Africa. Universal News and Café is brimming with information, and the combined imagery of 7,000 titles has a certain magnetic quality that makes the store hard to leave. I'd venture to say that a few hours spent within its walls—there's a café to fuel you with ample food and drink—could tell you an awful lot about the trends and emerging vocabulary of just about any subject you care to research. There's no



A well-stocked magazine store can be a prolific source of fresh ideas and the latest trends.

skimping even on the hours: 5:00 A.M. to midnight gives you nineteen potential hours for intensive information retrieval every day.

What if you don't have a chance to drop by Eighth Avenue? Most major cities have a couple of stores similar in approach if not size to Universal News. Hollywood's World Book and News has 5,000 magazine titles. City Newsstand in Chicago tops out at around 6,000. In Miami's South Beach, there's the News Café. The major bookstores aren't bad, either—the biggest might even carry upward of a thousand magazine titles. Even if you don't spend an hour browsing—most of us have been conditioned *not* to—there's one piece of meta-learning you can pick up in the first five minutes: that there's more going on in the world than you can possibly keep up with. And *way* more magazines than you could possibly imagine. Spend some time looking at covers, flipping the pages, and, yes, even reading. You're likely to find some new ideas, not to mention a few new magazines you should subscribe to today.

First Look

Executives love to say that their company listens to its customers. In a world where there's always room for improvement, listening is mostly a good thing, but it's better at assessing the present than foreseeing the future. So even though detailed questionnaires can be really useful for assessing customer satisfaction, we don't really believe that the best breakthrough innovations come from asking customers.

Most customers are pretty good at comparing your current offerings with their current needs, and they're all in favor of something a little faster, cheaper, or easier to use. But they're not so good at helping you plan for new-to-the-world services, and they won't give you many clues to creating new business models. Asking them how to reinvent your service offering is a bit like asking someone on the street what NASA should do after it retires the space shuttle. Or even what product not currently on the market will change their lives in the next ten years. Those aren't the kinds of questions customers are well equipped to answer. There are just too many unknowns. Customers usually can't tell you how to create disruptive innovations.

But spend a day with them and watch what happens. Then you may actually start to get somewhere. If you're interested in making something new and better, you've got to watch people struggle and stumble. Take note of the people who pass by a shop because the entrance doesn't invite. Watch how would-be customers use your competitor's offering to see why they seem to prefer it. Some of the strongest clues to new opportunities can be found in the curious quirks and habits of people navigating their ever-changing world: how they respond to their environment, or exploit a novel situation, or adapt objects for their own use—often in ways the creators of those objects never anticipated. Some of these clever human adaptations are quite intentional, while others are almost unconscious. Jane Fulton Suri, IDEO's thought leader for our human factors work, calls these coping and response behaviors "Thoughtless Acts," and she has assembled a collection of her favorites into a book by the same name. Some of the insights you gain observing such thoughtless acts among your customers may be mere curiosities, but others may indicate a latent need that you could profitably serve. If you've got an open mind, these "acts" can spark your thinking—and maybe, just maybe, push you toward something new and authentic.

Practical Observations

Jane has helped me to see how anthropological fieldwork can be a disarmingly simple source of innovation ideas. Why do so few organizations practice this technique? Perhaps many just fail to act on the insights received. Good observations often *seem* simple in retrospect, but the truth is that it takes a certain discipline to step back from your routine and look at things with a fresh eye. I think organizations would send a lot more teams out into the field if they understood just how many business opportunities or cost savings simple observations can bring.

Part of what I've learned from Jane and other dedicated Anthropologists is that this work requires curiosity. How can you get better at it? Find a field that commands your interest. For me, it's travel. I do an awful lot of it, and by focusing on what works and what doesn't, I think I've become better at observations for a broad range of industries.

Not too long ago, for example, I literally stumbled onto an opportunity after a flight across the Atlantic. I was giving a talk outside of Paris, and like most overseas visitors to the City of Light, I flew into Charles de Gaulle Airport. My guidebook suggested heading into town via the urban train that connects the airport to the Paris Métro subway system. The train is superb, but it makes a pretty painful first impression. After buying a ticket for 7.50 euros, your first experience with the train station is to pass through the turnstiles on the way in. And that's where the trouble begins.

What fact did the architects—or, more likely, engineers—overlook? That nearly all passengers arriving on international flights would actually have *luggage*. The entrance did not seem to recognize the possibility of travelers carrying bulky suitcases, and the scene was so ridiculous that I stuck around for a while just watching people struggle. Not to take satisfaction in the suffering of my fellow travelers—for I had the same problems and sympathized with their plight—but just to observe human behavior and adaptive problem-solving.

As you attempt to enter the station, first you squeeze in toward a narrow turnstile. Once into that funnel-shaped space, you can't even

This turnstile near Charles de Gaulle Airport is easy to use—*unless you have luggage.*

carry *one* piece of luggage at your side, let alone the standard two. Since I travel light, with a twenty-two-inch black rolling carry-on bag and a briefcase piggybacked on top, I managed to squeeze through the first part of the station's unintentional obstacle course. But the classic three-pronged spinning stainless-steel turnstiles were like high hurdles for anyone with luggage. Those carrying two full suitcases were hard-pressed. While holding both of your bags at shoulder height—one in front of your body and one behind—you then have to slip a little purple ticket into a slot at the front of the gate and—worse yet—pick it back out of the forward slot at exactly the same time that you are spinning through the turnstile. Most passengers were dumbfounded at first, but they were motivated by the line backing up behind them and the desire to get to Paris. I saw "teamwork solutions" where husbands passed bags to wives on the other side. I watched individuals toss their bags over the barrier and then follow along. I witnessed balancing acts worthy of The Flying Wallendas. But I did not see a single person with two bags sail through easily on their first try.

Any good architect, engineer, designer, or machinist could come up with a host of simple solutions, but if and only if someone took the time to *notice* the problem in the first place. I only hung around for five minutes of field research and general entertainment, but presumably there are people who've been working near those turnstiles many hours every day for *years*. I'm sure most of these people must have witnessed this calamity hundreds of times. I suspect it's just considered to be "the way things are," something they'll fix in a decade, maybe when they expand the station or put in new electronic turnstiles. If only they'd first done a prototype—or even just considered that international travelers carry suitcases. Take the time to watch people or anticipate their needs, and I daresay they are less likely to get stuck.

Start Young

Anthropologists aren't valuable only for helping you understand today, they can also give you a glimpse of the future. For a look at *tomorrow's* mainstream markets, look at teenagers *today*.

A FASTER HORSE

A few years ago when IDEO was working with the Mayo Clinic on innovation, we had a small office in their Department of Medicine. I happened to visit the space one day and was struck by a Henry Ford quote the team had posted on the wall. "If I had asked my customers what they wanted," said the inventive Mr. Ford, "they'd have said a faster horse." Ford had a point. Don't expect customers to help you envision the future. Make that mistake and you're likely to get lots of suggestions for "faster horses."

Ford achieved many of his best breakthroughs in the early years of the twentieth century, but imagine you worked for a consumer electronics company that manufactured videocassette recorders in the first years of the twenty-first century. If you'd asked people what they wanted in a VCR, and let the question hang in the air awhile, they might eventually have suggested something like "super-fast rewind." You can imagine a customer saying, "When I am done watching a movie, I want to take it back to Blockbuster as soon as possible, so please give me faster rewinding!" How could you fail by listening to your customer? You might set out to create the fastest-rewinding VCR in the world. But just as you released your fancy new model, you would have been blown away by the arrival of the first DVD players—which, along with sporting superior image quality, sound, capacity, and improved reliability, require *no rewinding at all!* And as the pace of innovation accelerates, I hope everyone associated with the DVD format is preparing for subsequent innovations involving downloadable movies or video on demand, which will inevitably eclipse the same DVD players that had previously disrupted VCRs.

Of course, good companies still make a habit of listening to their customers. Just don't confuse that proven business practice with how you go about hunting up the next big breakthrough. That's not likely to come from asking people what needs improvement or fine-tuning. It's probably going to be something your customers haven't even thought of.

We've talked about extreme human factors. Central to these techniques is the idea that it pays to look at people who are a little different. People who love or hate a new product or service. People with opinions and biases who aren't afraid to express their feelings. Sound like a teenager you might know?

Teens try stuff constantly, check it out, and love it or chuck it. Prototyping at its very best. Kids ride the latest new technologies and fashions like the break at Waimea Bay. And when they do love something, their enthusiasm can help make it a hit.

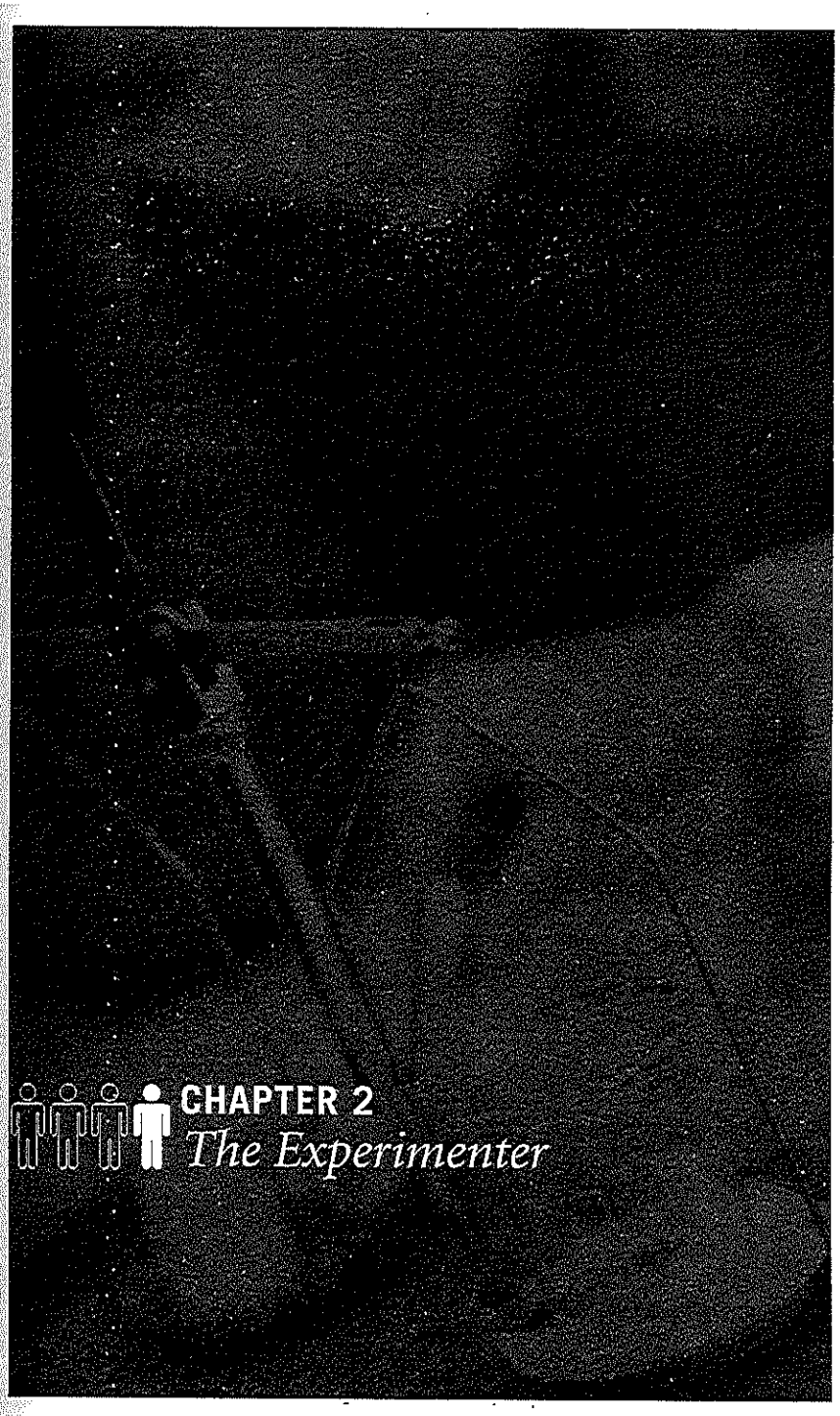
Think of blogging, gaming, instant messaging, and MP3 file sharing. Teens helped drive all of these trends, and they're driving more as we speak. Pay attention to toys. They often inspire products that later captivate adults.

Kids are no strangers to IDEO. Indeed, our "lookout" space perched over San Francisco Bay with its racks of fun reading material and ever-shifting group tables sometimes feels a bit like a kindergarten classroom. And the common area of what passes for our management offices has a cluttered array of interesting objects and a full set of video gaming options that some days makes it resemble a teenager's room. It seems like every other week we're inviting kids to play with new toys and educational products to see what connections they make.

Of course, the toy-development portion of IDEO's Zero2o group has tapped into "kid power" for years to test out its countless toy prototypes. And get this: Founder Brendan Boyle discovered almost by accident one day that he could get more kids to show up on time if he charged a minimal hourly fee for playing with the prototypes. Moms were happy to pay (it was cheaper than babysitting), and the fee somehow triggered a psychological response that made them arrive early so as not to miss any of the valuable session.

Why do we watch and try to learn from kids and teens? They just soak up novel ideas, whereas grown-ups often spend a lot of time pushing back, telling you why it won't work. Text messaging, for instance, isn't necessarily the most efficient communication medium. But it spoke to teens' insatiable need to gossip and chat, and it wasn't long before adults lumbered on board too.

The Anthropologist has to start somewhere, and I can't think of a better place to begin than with the young. Whatever you do, in whatever industry you find yourself, make sure you watch and talk to teens and kids. We all know children make us younger in spirit. They can also help you see what's next.



CHAPTER 2
The Experimenter

I have not failed. I have merely found ten thousand ways that won't work. —THOMAS EDISON

The Experimenter may be the most classic role an innovator plays. Great inventors come to mind when we think of experimenters, men like da Vinci and Thomas Edison. But when it comes to innovation, Experimenters don't need to be geniuses. What Experimenters share is a passion for hard work, a curious mind, and an openness to serendipity. Like Edison, they strive for inspiration but never shy away from perspiration. We celebrate the Wright Brothers' success at Kitty Hawk, but we often overlook the fact that they tested more than 200 wing shapes and risked their lives crashing seven different flying machines in pursuit of a practical airplane. Few people stop to consider where the name for the ubiquitous spray lubricant WD-40 came from, but it refers to the thirty-nine failed experiments in coming up with the perfect water-displacement formula before the company finally achieved success. And British entrepreneur James Dyson reports that he built 5,127 unsuccessful prototypes of his cyclone vacuum before he hit on the design that made him a billionaire.

Experimenters love to play, to try different ideas and approaches. They put roller skates on the scientific method. They make sure everything's faster, less expensive, and hopefully more fun. Speed is an Experimenter's best friend. Experimenters embrace little failures at the early stages to avoid big mistakes later on. They work with teams of all shapes and sizes. They invite in colleagues, partners, customers, investors, even kids to try out their works-in-process—all the possible stakeholders who might have insights that could make the prototype better.

Who exactly is an Experimenter? At IDEO, we think it's someone who makes ideas tangible—dashing off sketches, cobbling together creations of duct tape and foam core, shooting quick videos to give personality and shape to a new service concept.

Experimenting in our world typically means prototyping, and prototyping is central to the IDEO tool set, as essential as a hammer is for a carpenter. Without the discipline of prototyping, we couldn't put flesh and bones on many of our new ideas. We've been prototyping so long that it comes naturally. That said, in the last few years we've learned a few more things about the art of prototyping.

First, you can prototype just about everything. Today, we prototype services as well as new products. Virtually every step along the ideation path can be prototyped—not just at the development stage, but also marketing, distribution, even sales. We've also learned not to be precious about prototyping. There was a time when we made a lot of beautiful prototypes. But prototypes don't have to be fashioned in machine shops or by designers. We cycle through prototypes, and our first prototypes can be pretty darned crude.

In the last few years, we've opened up the range of what we consider to be a prototype. Take proposals. We prototype them too. Recently, a major American professional sports league asked us for a proposal. We wrote up a standard document and got nowhere. But Experimenters recognize that the best time to try something really new (and risky) is when you have nothing to lose. After our initial effort was rejected—or simply ignored—one of IDEO's market-savvy Experimenters reminded us that a dry, colorless document seldom goes beyond its initial recipient, whereas a lively piece of digital content can go "viral" as it spreads like wildfire. We thought about how low-resolution video clips—usually some form of parody of current events—seem to race through a corporate grapevine. Although we had never used a video in this context before, everyone was game to give it a try. We created a simple, funny thirty-second video (accompanied by a one-page proposal) for the national sports league, capturing our own enthusiasm and the energy of the game. The video didn't take long to shoot and was so low-resolution that it could easily be e-mailed around. It turned out to be the perfect icebreaker. Just as we had hoped, the first league exec-

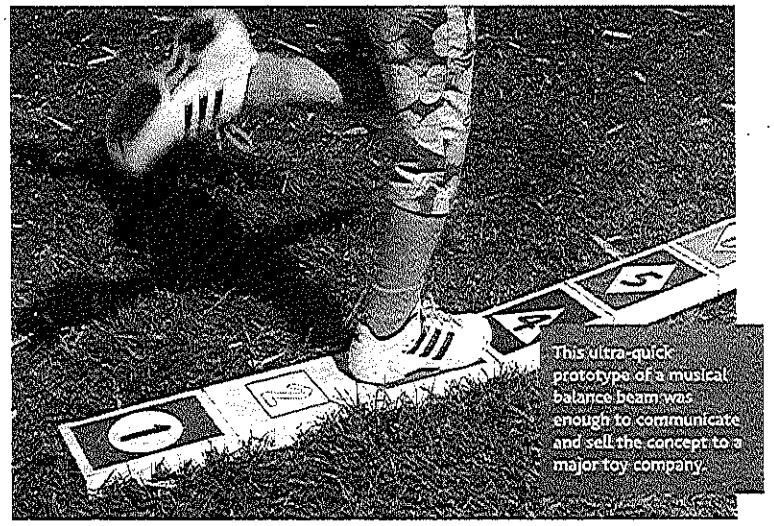
utive forwarded it to some of his colleagues, and they in turn forwarded it again. Within about ninety minutes, our fun little video reached the desk of the league commissioner. The low-cost experiment paid off, and we are currently involved on a collaborative project that we hope will score for the league.

Brendan Boyle and his Zero2o gang are natural Experimenters for the simple reason that it's central to the group's business. Brendan's team develops a wide range of products and services for kids and teens, prototyping hundreds of new ideas every year. And if the sheer quantity of prototyping has taught the team anything, it is this: Celebrate the process, not the tool. Sometimes you might shoot a quick video prototype. Sometimes a drawing will do the trick. Sometimes a rough storyboard will be enough to illustrate a multistep process. For physical objects, there are a host of digital prototyping tools like stereolithography or selective laser sintering. Other times all you may need is a simple piece of painted wood, enhanced with the wonders of computer graphics and video.

Experimenters delight in how fast they take a concept from words to sketch, to model, and, yes, to a successful new offering.

Experimenters delight in how fast they take a concept from words to sketch, to model, and, yes, to a successful new offering. One morning Brendan's group was engaged in its daily brainstorm session when out popped an idea. What about a musical balance beam for kids to walk across? The idea was so simple and resonant—they immediately saw the parallels to the memorable scene of Tom Hanks dancing on the giant piano keyboard in *Big*—that they got right down to prototyping. They sawed off a two-by-six for the beam, painted the "musical sections" of the board in bright colors, and videotaped a young volunteer dancing sprightly on the beam. Then they polished up the video with some computer graphics, carefully matched musical tones to each footstep on the beam, and they were ready to go.

Total production time: a few hours making the physical prototype, and a day and a half producing the video. Within a month of the original brainstorm, a well-known toy giant bought the idea and started readying the product for market.

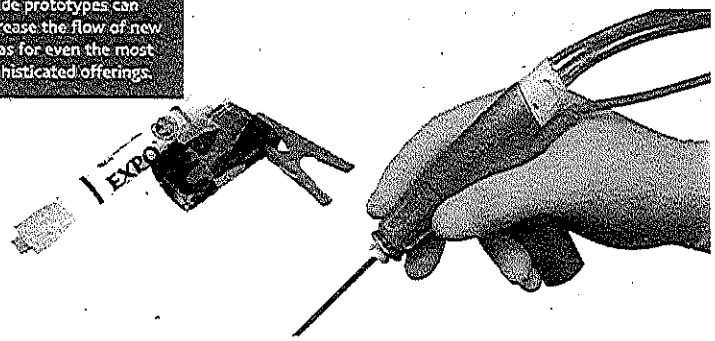


This ultra-quick prototype of a musical balance beam was enough to communicate and sell the concept to a major toy company.

That spirit is at the heart of an Experimenter. Not the tool, but pushing ideas into a more tangible, visual form as quickly as possible. What I'm suggesting is that you work to create an environment where it's OK to present less-polished prototypes. Serving up low-fidelity prototypes to your managers or clients requires a certain confidence. Crude prototypes require more courage than polished ones.

A good example of this happened in the first week of a project at IDEO Chicago for the surgical tool company Gyrus ENT. One of the early meetings brought us together with the company's medical advisory board to discuss desired features for a new nasal surgery device. We try to be on our best behavior in a room full of surgeons, knowing from experience that you need to treat them with respect. That said, our staff also understands that innovation relies on the free expression of even the most embryonic ideas. As the group described the not-yet-invented product, there was a lot of gesturing and hand-waving without much progress. Then one of our young engineers had a flash of inspiration and bolted from the room. Outside the conference room, seizing on the "found art" of materials lying around the office, he

Crude prototypes can increase the flow of new ideas for even the most sophisticated offerings.



picked up a whiteboard marker, a black plastic Kodak film canister, and an orange clothespin-like clip. He taped the canister to the whiteboard marker and attached the orange clip to the lid of the film canister. The result was an extremely crude model of the new surgical tool. Five minutes after his mysterious departure, he returned to the meeting and handed his kindergarten-quality prototype to a respected surgeon. He asked, "Are you thinking of something like *this*?" To which the surgeon replied, "Yes, something like THIS!"

That initial crude prototype got the project rolling. Amazingly, the sophisticated Diego Surgical System—today used in thousands of operations annually—traces its origins to that initial model. There's even a front rotating control ring reminiscent of the original marker cap. Had our young engineer subscribed to the "never show a half-baked idea to an important client" doctrine, he might not have taken that first leap of prototyping faith. He might have lost the opportunity to crystallize the insights of the surgeons. By taking a chance with a low-fidelity prototype, he was able to jump-start the project.

The lesson I learned from the Gyrus team was the value of lowering the bar for prototyping. Make it culturally acceptable to show off ideas at their rough, early stages and you'll see a whole lot more ideas. Incidentally, the first time I showed the image of this prototype to a business audience, a senior executive from Dallas asked me, "What if my company doesn't have the kind of creative people who can make

this kind of prototype?" I looked at her, looked again at the prototype, and asked, "You're kidding, right? What part couldn't your people do? The Scotch tape?"

That's the beauty of lowering the bar. Literally anyone in the organization can float a trial balloon. I work with a group of talented designers who can whip up a drawing worthy of a magazine cover or render an object so realistically that you think it's a photograph. But they don't laugh at me when I go to the whiteboard and sketch an idea with my crude drawing skills. They just look for the idea inside.

I encourage the executives . . . to "squint" a little—to ignore the surface detail and just look at the overall shape of the idea.

This openness to low-fidelity prototypes may seem soft and intangible, but I believe that the social ecology of most organizations is extremely effective at communicating such subtle cultural clues. When a creative individual shows their boss—or even their colleagues—a good idea that's still a little rough around the edges, people pay close attention to what happens next. Does the organization build on the idea or ridicule it? Does management focus on the imperfections or the promise?

I encourage the executives of the companies we consult with to "squint" a little—to ignore the surface detail and just look at the overall shape of the idea. The informal communication system will spread the word quickly. If the "people who matter" in your organization learn to squint in this way, it will send a message to all the budding Experimenters that it's OK to try new things. In a culture of prototyping, you get previews of lots of ideas—even those not quite ready for prime time.

Extreme Prototyping

Remember I said you can prototype just about anything?

We had a team working to improve the life-changing experience of giving birth at a hospital. The problem at this hospital was that the maternity ward and postpartum floor were out of sync with each other. Though thousands of babies were born at the hospital each

year, it was as if the two departments were not part of the same birthing continuum.

We decided we needed a firsthand experience of just what an expectant mother—and father—go through at the hospital. So we went undercover. We had a pregnant woman—who happened to be a member of the client's team—admitted to the maternity ward. Her husband wasn't available, so an IDEOer stood in. Amazingly, our ruse worked for large parts of the experience. The "couple" was able to go through the standard initial meetings with doctors and nurses—without anyone being the wiser. We skipped the actual birth process because the woman wasn't due for a month or so.

But that didn't really matter. We were seeking inspiration into how the transition from the maternity ward to postpartum floor could be improved. Our "undercover mother" was wheeled out of her maternity room on a gurney into the hallway and up several floors in the elevator. "Dad" cradled the baby—a plastic doll—in his arms.

Incredible as it sounds, the nurse in postpartum didn't seem to notice at first that the baby was a doll! The fake patient got away with it for a while, too, until the nurse pulled up her gown and looked at her with a puzzled expression. "Why do you have your pants on?"

After our client explained the elaborate experiment, the nurse sighed in relief. "That's good, because your baby looks really weird."

Our work led to a series of service prototypes that helped ease the transition for patients and improved communication and "handoffs" between the departments. Radical prototyping like this can do wonders for a project. Our client literally experienced the maternity ward and postpartum floor. She lay on the wobbly gurney and experienced what it felt like to be a patient. The maternity ward seemed in a big hurry to pass her on to postpartum. She experienced the separateness of the two departments, how they seemed to compete for resources, and how vulnerable and lost a new mother could feel in the transition.

Critics might say that good observers could see all this simply by watching and talking to new mothers. But innovation projects, especially those involving services and complex experiences, rarely take hold without collaboration and experimentation. If the client is literally on the gurney—feeling and seeing and thinking what a real mother goes through—that's worth a thousand interviews.

Experimenters engage the stakeholders in the prototyping process. They turn up genuinely useful observations. They start making the emotional connections necessary to bridge the gap between today's routine and tomorrow's innovation.

Implementation by Experimenting

Designing and implementing a service for multiple locations is fundamentally different from designing a product. You can't just churn out a new service in every city or town like identical cars rolling off a conveyor belt. The success of franchising in America might make one think this isn't so. It's easy to look at a superbly run restaurant franchise and think that, hey, if they could replicate the experience, why can't we? But here's what we've learned in the trenches about service innovations: They're ultimately about people and teams. They're about earning the respect and allegiance of the people who make or break a great new service.

Let me give you an example. At one point, we dove into a major collaboration with the flagship property of a major hospital network, generating a number of valuable service innovations at "headquarters." The traditional franchise model would be to stage a rollout of those new services at the satellite locations. But Peter Coughlan—head of IDEO's Transformation team that helps client companies grow a culture of innovation—points out, "Rollout sounds an awful lot like rollover." There's an inherent tension between systems and innovation. We believe in the importance of methodology and standards of service, but when you're dealing with entities with a level of independence—like the disparate offices of a large corporation or high-end hotel chains—you can't simply steamroll them with new ideas.

On this project and others, we've discovered that innovations developed at the flagship facility often require some translation to be successful at outlying locations. Peter often advises that we introduce

the new services by asking the other locations to "put on an experiment." The reason has to do with how change occurs on a human and organizational level. Opposition can be fierce if an idea hasn't been invented or adapted willingly in the local system. "You want each location to be an R&D arm," says Peter. "If they're facing a new problem, you want them to come up with novel solutions."

Pressuring people to adopt outside approaches can stir up hostility and resistance. Instead, we invite the locations to prototype key concepts. We prototype two or more approaches for each solution, to make it abundantly clear that there's no single solution. That lets the local staff experience "what's in it for us." They can adapt a basic idea—say, a superior staff shift change—to the nuances of their local team. Most important, they're given the time and space to make the new changes their own. There's a certain honesty in making them integral to the prototyping process. We call it "implementation through experimentation." After all, they're the individuals who are going to have to make the new services a reality in what will to some degree always be a unique environment and set of circumstances.

Try making ongoing experimentation a part of your approach to creating services. Embrace experimentation and prototypes and say good-bye to the rollout. Be open to learning from successful experiments wherever they happen in your organization. You may be surprised. Not only will major initiatives you've undertaken be more likely to take hold, you're bound to encourage initiative in multiple locations that will keep your systemwide innovation momentum rolling.

Experimenting in Real Time

No company I've come into contact with lives the mantra of "implementation through experimentation" more than the Silicon Valley–based Tellme Networks. You may never have heard of Tellme, since they don't have much name recognition with consumers. But if you've used a voice-powered phone system, whether it's making a flight reservation on American Airlines or calling national directory assistance, you've probably used their intelligent voice-recognition software. I visited Tellme last year with Don Norman, an expert in user-friendly design. Three days earlier, Don had tried out their software by booking a flight to Los Angeles on American's voice-recognition telephone reservation system, and mentioned to a Tellme executive that the system failed to recognize "L.A." as the almost universal verbal abbreviation for Los Angeles. When we met with Tellme president Mike McCue, Don said, "I was very impressed with how well your system worked, except for that little hiccup about recognizing 'L.A.'" "Oh, that?" asked McCue with a surprised tone. "We fixed that already." I couldn't believe it. Could a gigantic real-time system, operating live in the national telecommunications network, have software written, tested, and released in three days?

"That's nothing," Tellme's VP of Caller Experience, Gary Clayton, told me later. "We can be much faster than that." He then told the story of a Silicon Valley dinner with executives from UPS while Tellme was wooing them as a client. Over prime ribs at the Sundance Mining Company, one of the UPS execs mentioned that they had rebranded the company recently and that they were no longer the United Parcel Service—just "UPS." "Your directory assistance system still says 'United Parcel Service,'" she noted. "It may not seem like a big thing, but it's important to us." Gary got up a moment later to make a phone call. Before they were finished with dessert, he handed the UPS exec a mobile phone. "Try it again," he suggested. "I think you'll like what you hear." Sometime between the main course and dessert, Tellme's software wizards had done a quick software update and patched it into their live system, getting the UPS name just the way they wanted it on Tellme's network services. It will come as no surprise that UPS is now a Tellme client.

The lesson of this story applies to all kinds of companies—from finance to manufacturing and retail. If experimenting is part of your culture, you can respond in hours or days, changing your offerings to meet market shifts and customer demands. Quick reflexes and fast turnaround can be part of what sets you apart from the pack.

Flushing Away Mistakes

"Fail often, to succeed sooner" is an old IDEO axiom. It's rooted in our philosophy of rapid experimentation. When your culture embraces the notion of lots of quick prototypes, you'll make lots of little mistakes that are really critical steps on the road to success.

Unfortunately, some people and organizations have been beaten up so many times over little mistakes that they have developed a fear of failure. And it's self-defeating. Fear actually makes failure more likely and experimentation nigh impossible.

So what can you do? A nationwide group called the Positive Coaching Alliance—started a few years ago at Stanford University—has learned that one big reason some kids don't enjoy sports is a fear of making mistakes. To combat the natural fear of failure, the Alliance advocates introducing what it calls a mistake ritual.

Think of it as a *success* ritual. The goal is to clear away mistakes to make room for success. Positive Coaching Alliance board member Dr. Ken Ravizza recently had a chance to put the ritual into practice at Cal State Fullerton. The school's baseball team had a losing record. Ravizza, a renowned sports psychologist and professor of kinesiology, set out to change the way the Titans thought about mistakes. If players struck out, hit into a double play, or had any other kind of morale-zapping failure, they'd come back to the dugout and literally "flush away" the mistake with a palm-sized, realistic-looking (and -sounding) toy toilet. At bat, they'd carry an image of the mini toilet in their minds. After a bad swing, they'd step out of the batter's box and mentally "flush" to clear their mind.

They had a group ritual too: After a tough loss, they'd circle around, strip off their jerseys, and toss them on the floor—to expunge the game. They even let go of that most American of pastimes, blaming the umpire. After a horrendous call, the new Titans would turn to the ump and thank him for calling a strike.

Suddenly, the Titans started winning. The team "flushed away" its 15–16 mediocre start and went on a tear, winning thirty-two and losing just six, and then, incredibly, rising out of the tough losers' bracket at the College World Series to win the national championship.

Could you come up with a symbolic way of letting go of mistakes at your company, or within your division or team? It can't hurt, and it just might turn your team into a winner, too.

Paper-Thin Prototyping

Many of us think of prototypes and innovations as massive, coordinated efforts, but I'm constantly amazed and encouraged at how little it takes for a good prototype to work. Sometimes the secret lies in figuring out how to address a single question—how, for instance, to make room for your product or service in a customer's already crowded life. For example, remember when the first wave of large forty-two-inch flat-panel TVs came out? Falling prices by themselves weren't enough to interest many families in buying the first wave of product. Retailers faced yet another hurdle. Large flat-panel displays eat up *lots* of wall space.

Consumer electronics marketers tell me that the physical differences between flat panels and old TVs alter the family decision-making model. They say old TVs fall into the "technology" category that was often the husband's domain, while slim new flat-panel displays fall into interior design, where the female decision-maker typically rules the roost. The geometry is so different that many people have a hard time imagining where—or whether—the new TVs would fit in their homes.

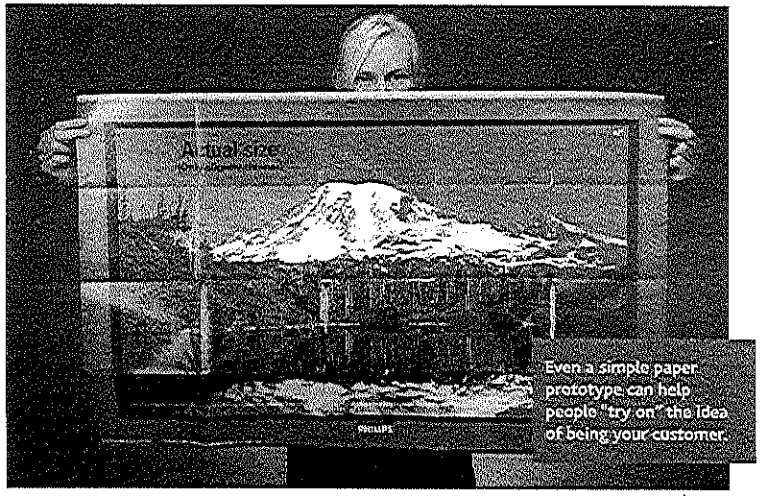
Mary Doan, head of marketing and advertising for The Good Guys electronics retailer, told me a great story about an experiment she came up with to overcome this barrier. During a trip to New York, she became intrigued by the cool fold-out "Z-card" maps she saw there, and wondered whether some new twist on the elaborate fold-outs could help her store sell flat-panel TVs.

That inspiration led to a clever Good Guys fold-out advertising piece, small enough to fit into a newspaper or magazine, that unfolded into an actual-size image of a forty-two-inch flat-panel TV—though, of course, this full-size prototype formed a *very* flat panel. When I saw

the ad, I imagined thousands of households with the paper-thin flat-panel TV taped up on the living room wall, and someone saying, "See, honey, it could go right here." In fact, that's pretty much what happened. Sales of the flat-panel TVs bumped up the following month at The Good Guys, and one store manager reports that half a dozen customers came in one day saying they already had the paper version of the new TV taped to their wall.

The simple paper prototype was just enough to create a tangible vision and spark demand among people previously uncertain whether they had room for the new technology. My favorite story from Mary was about a single dad in Venice Beach who came home from work one November day to discover that his kids had taped the forty-two-inch ad up in their family room. "Dad, that's what we want for Christmas this year." And Dad reports that he was no match for the power of a paper-thin prototype.

How might you make it easy for potential customers to envision and prototype the idea of using your products or services? Could you use an inexpensive prototype to chip away at whatever is holding them back from becoming your loyal new customer?



Even a simple paper prototype can help people "try on" the idea of being your customer.

Multiple Prototypes

Experimenters believe more is almost always better when it comes to prototypes. One prototype is like having a single rabbit: It has some value, but two can be more interesting, and can start you down the path to more and more. The trouble with a lone prototype is that if you show someone your one-and-only bright proposal and ask expectantly, "What do you think?" their answer is muddied by what they think about *you*. If they're a friend, they'll likely shower you with encouragement regardless of the idea's merit. But suggest an idea to your nemesis, and you're bound to be met by a withering "I don't get it!?!" At IDEO, we always try to present more than one prototype to guard against such fruitless responses. Battle-hardened Experimenters know that a variety of options makes possible a much more frank and positive discussion about the pros and cons of a prospective idea.

Here's an example from outside the business world that may have a familiar ring. After dinner one evening, my wife says, "Honey, I bought a new outfit today," and disappears into the next room to try it on. A few minutes later, she returns in the new dress. "Well, what do you think?" Of course, it's a charged question. You've gotta love that dress, right? It's still a prototype, since the sales tags are still on it, and it's still fully returnable, but that's not the point. She's asking about the dress—with her in it. She picked it out, tried it on, paid for it, and brought it home. I've gotta like that dress, because she's already committed to that choice. With only one option on the table, I'm either on her side or I'm not.

Experimenters recognize the value of introducing multiple prototypes. They transform the situation. Imagine that instead of just seeing the one chosen dress at the end, you have a chance to see seven dresses earlier in the process, as your wife hauls them into the department store dressing room. On the way in, she pauses to ask what you think. This time, flipping through the options, you can pick out the same exact dress and say, "Honey, I don't think this one will look good on you." Explain why it's not the ideal if you like, but that's rarely necessary. You're not saying she might not look great in one of the other dresses. Why can you speak the truth? Because you're not trapped in

an awkward situation where someone you care about has already put all their eggs in one basket. Likewise, it's seldom a good idea to put your boss (or your client) on the spot. Don't demand a love-it-or-hate-it answer. Customers are rarely in a take-it-or-leave-it situation with one option to choose from. They're accustomed to weighing the pros and cons of multiple offerings and expressing their preferences.

Offer as many prototypes as possible within the limits of your budget and schedule. You'll avoid some awkward conversations. You'll get more honest, genuine feedback. And you'll learn from each prototype so that the finished result can be smarter, better, and more successful than the prototypes that got you there.

Some readers will doubtless think, "Sure, we'd love to have more prototypes—but we can't afford a bunch of costly experiments." And that's exactly why you have to lower the bar, making prototypes quicker and cheaper than ever before.

Chunking Risk

The value of making little experiments is especially important in a business that entails service or an experience. At Brigham & Women's Hospital in Boston, we encountered a bottleneck that snarls many a large corporate office. At lunchtime, the elevators were sometimes so swamped that foot traffic slowed to a crawl. In most organizations, you might look upon this as an inconvenience or inefficiency. At a hospital, it's a real problem. Family and friends, not to mention doctors, had trouble getting to see patients. We quickly brainstormed possible solutions. While the main elevators were swamped, the service elevators, reserved for moving patients and equipment, were underused. What if they put a guard on the service elevator to make better use of it without sacrificing the hospital's ability to quickly transport patients? To test the hypothesis, Brigham assigned a guard to that task for a couple of days. In the meantime, the team tackled the problem from a different angle. What if they could encourage more people to use the stairs? Simply ordering the staff to use the stairs seemed unlikely to produce results. So what did the team do? They sponsored a stair-climbing contest.

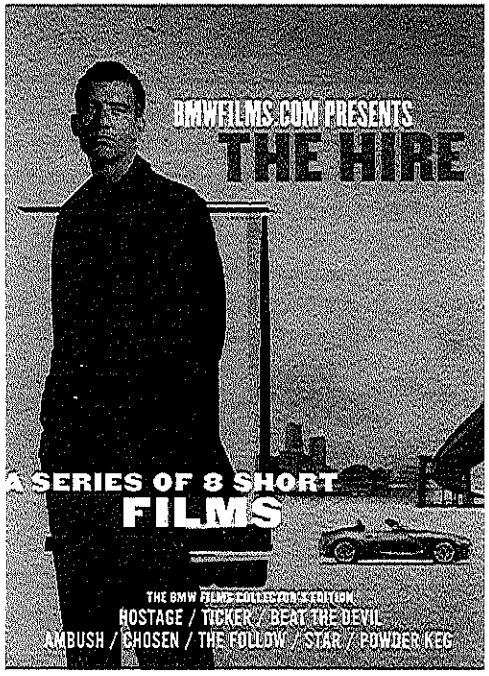
"Did You Take the Stairs?" read a prominently placed colorful poster board. There was a list of nurses, doctors, and technicians with stickers to affix next to their name for every time they took the stairs. Guess what? An awful lot of nurses (and some docs) caught the fever and the lunchtime elevator crunch eased. The contest worked on several levels. It developed awareness about elevator usage. It gave team members a chance to do their part, to pull together. Equally important, it signaled that it's OK to run a little experiment. To take risks.

That's the heart of an Experimenter, someone who loves to prototype. London-based IDEO designer Alan South calls it "chunking risk." Breaking down seemingly large problems into miniature experiments to the point where—lo and behold—you've generated system change without even knowing it. The power is in making lots of little steps at the same time, building momentum and optimism, the sense that one or a combination of approaches will deliver the necessary improvements.

The next time you're facing a complex bottleneck, give it a try. "Chunking risk" works.

Breaking the Rules

Sacred cows, cardinal rules, call them what you may. There comes a day when Experimenters need to break new ground by challenging some key assumptions. A few years back, the Minneapolis-based ad agency Fallon McElligott was trying to create the next television ad for BMW. But instead of "playing by the rules" by filming the industry-standard thirty-second commercial and placing a giant media buy to run it repeatedly in all the major urban markets, BMW commissioned some of the world's best independent directors to film eight-minute dramas dubbed "The Hire." The films defied the very definition of a commercial by *never appearing as a paid TV ad*—debuting instead online at bmwfilms.com. No standard commercial. No media buy. Great marketing buzz as BMW got free press and TV coverage around the world and car aficionados started a de facto chain letter as they passed the URL to all of their friends. Freed from the small-print rules of engage-



bmwfilms.com was a daring experiment that succeeded in generating terrific marketing buzz for the carmaker.

ment for TV advertising—like the obligatory notice that you're viewing a "professional driver on a closed course"—BMW got a chance to show off its cars' high-performance capabilities. And it was an ideal match for the emerging multimedia capabilities of broadband Internet access. After each new BMW production was released, the IDEO network almost visibly slowed down for a few days as, one by one, what seemed like all 350 people in the firm watched a streaming video of the edgy films.

The movies did more than drive tremendous traffic to BMW's Web site—over 50 million people have seen the films online, and I've even seen them show up on in-flight entertainment systems. The campaign was all about experimentation. The auto firm took a chance and was rewarded with record sales for two years running.

Prototype Selling

Today, it's not enough just to dream up a great new product. You've also got to figure out how to sell the darn thing. That can be the most important prototype of all. In the coming years, companies will need to be increasingly innovative about how they seed and sell their products and services. There's no assurance that what worked yesterday will work tomorrow. The first wave of Web-based selling—from Dell's efficient direct-to-consumer sales, to Amazon.com's one-click ordering, to Charles Schwab's online trading—all offered their innovators an early lead, which some maintain to this day. And the emerging use of unpaid "buzz marketing agents" today is a controversial—but so far successful—new way of using local thought leaders and trendsetters to smooth the adoption of new products.

Consider the classic story of Tupperware. Earl Tupper fashioned the eponymous Tupperware at DuPont from the leftovers of the oil business—polyethylene slag. Tupper quickly figured out how to refine and manufacture the material into a variety of potentially useful shapes. Selling his innovation would prove much trickier. In 1947, plastic had a lousy public image. Though Tupper developed a line of kitchenware tasteful enough to one day end up in the Museum of Modern Art, sales were poor. To begin with, the invention for which Tupper received his patent, the airtight seal, wasn't so easy to demonstrate. Prospective customers could rarely generate the distinct "burp" that was audible proof of product.

By chance, a friend gave a woman named Brownie Wise a piece of Tupperware. Wise practiced her "burping" skills, and was impressed when she dropped a container and it didn't leak. Though Wise worked as a distributor for another company, she asked if she could have a go at selling Tupperware. Her remarkable idea? She came up with the novel approach of giving home parties, inviting an ever-widening circle of new devotees to demonstrate the wonders of the new product. The rest, as they say, is history. Wise was soon racking up more than a thousand dollars a week in sales. Earl Tupper promptly caught on, dumped his shops, and hired on more Brownie Wise demonstrators to sell Tupperware directly to consumers. Sales exploded.

Today, companies still face this essential question. What's the best way to spark sales and build early buzz? A lot of turf is already staked out, so it's critical to experiment, to find the right medium to deliver your distinctive message.

Video Prototyping

At IDEO, we now frequently find ourselves prototyping in the world of experiences rather than in creating discrete objects. We're moving toward a theater where we're designing and harmonizing complex environments on video that encompass technology, architectural elements, and, of course, people. Not long ago, for instance, we were asked to investigate concepts for a line of spas. There was a time when the approach for such a project might be to do a lot of industry research and deliver a bound report to the client.

Here's what we did. We interviewed women—and men—in their homes about the subject of beauty products and salons. We toured and researched spas, talked to a range of people who might be spa users, and sought out interesting industry experts. We found a gentleman in Connecticut with a salon that resembled a classy wine bar and picked his brain. Girlfriends would go together to get manicures, as if it were a social outing. After we'd culled insights from a number of interviews and research, we started developing a vision of how our new spa concept might look and act.

How did we prototype the proposed salon? We wrote a script for a video prototype. We began with simple storyboards and brought in a freelance writer to help polish the short script. Our designers roughed out a futuristic computer graphics background of the prospective spa. The format was pretty straightforward: interviews with an owner and his customers. We actually auditioned an actor for the part of the salon owner, but it came off like acting, so we turned to our video guru, Craig Syverson, who by chance had the right voice, hair, and attitude. Craig looked and sounded the part of a hip salon owner, and he spoke with authority about what the new spa concept did for his business and clientele.

Most folks watching the short video for the first time would think there really *was* a chain of these start-up spas. The whole video was a prototype, of course, built on our observations and interviews with real people. It gave a face and a voice to our client's aspirations. We played the video on a big-screen display for our client and burned them dozens of CDs.

The video had the advantage of speed and economy. Sure, we could have built a prototype salon, but the time and expense would have been enormous. Even then, it wouldn't necessarily have given us a sense of the experience of a salon. The video prototype was a quick and extremely visual way of expressing how a salon might look and feel.

On another project, for Vocera, a promising Silicon Valley start-up offering voice-powered campuswide wireless communication, our video prototype ended up serving multiple purposes. Not only did it help visualize a new-to-the-world product/service combination, but it also helped them win a product design award and—much more important—win over new investors.

Any company can do their own video prototyping, but the approach used when you're in the Experimenter role is noticeably different from the one you might use for the Anthropologist. In Experimenter mode, videography is not a data-gathering or input tool. It's all about the output of sketch-quality communication, with just enough fidelity to get the idea across. And whereas the Anthropologist turns on the camera without a specific agenda, just to see what they will discover, the Experimenter prototypes with a point of view and a list of ideas they want to communicate. For that reason, it often makes sense to write out a script, and even storyboard the scenes in your video prototype. Given the ever-shortening attention span of corporate audiences, we'd suggest you keep your homemade video under six minutes in length (under three is even better, if you're up to the challenge), which means a script of no more than about a thousand words. After you've captured your scenes, edit them ruthlessly until just your core idea is there and is clearly, concisely communicated even to someone who doesn't know all the gritty details of your work. Think about the best possible case, in which your video gets passed up the corporate ladder a few

rungs or—better yet—gets shown to an "insider" contact from your distribution channel or customer base. There's no need to polish it (you can always do that in the next iteration, if necessary), but make the tone and content suitable for audiences beyond the immediate one. So if you aspire to be an Experimenter, add video to your prototyping toolbox and you'll be able to have a bigger influence on the innovation process.

Play Time

I've already touched a little on how teens and young adults can help inspire new products. More and more, IDEO and our clients are realizing how critical the insights of the younger generation are, and not only for products solely targeted at their age group. We've done a lot of work educating our clients about tweens—what the *New York Times Magazine* recently called "those 8-to-12-year-old sophisticates with wallets." We consider tweens an entirely separate group, recognizing the often conflicted desire of these youths to be both independent and close to their parents.

It's not enough just to read about the nature of these tweens and teens. Our Zero20 group brings young people into the experimenting phase in all sorts of ways. Kids of all ages test our toys and products, and as I mentioned earlier, we often go to their homes—with parental approval—to see how they really play and act.

You can learn a lot by simply letting kids express themselves. More than a few books, stories, and movies have understood this basic truth. Think of *Willy Wonka and the Chocolate Factory*, a classic children's fantasy film (updated in 2005 as *Charlie and the Chocolate Factory*) that's enlightening for those who believe in innovation. Willy unleashes the creative potential of his Alice in Wonderland–style chocolate factory by inviting kids to help stir up the brew.

Letting kids express themselves isn't just fooling around. Listening to your youngest customers can really *pay*. Consider Danisco, a Danish food giant that claims half of the world's ice creams contain

at least some of its ingredients. Danisco traditionally develops new products and then invites kids in to taste the results. In late 2001, however, the company flipped that process on its head. Much like Willy Wonka, the firm ushered a troop of children into its Copenhagen offices, gave the kids access to a roomful of ice cream and wild ingredients, and asked them to dream up new frosty treats. Many of the ideas were pretty wild, including a cow-shaped ice cream. Then, in one pivotal moment, a kindergartner asked, "Why don't you make some frozen jelly on a stick?"

Danisco's food wizards jumped on the idea. Rather than using the usual gelatin formulas, Danisco's scientists hit upon a unique combination of natural bean products and stabilizers. Even so, making their special new frozen jelly required a delicate process of first heating and then quick-freezing the ingredients. Prototypes were explored by a tiny specialty ice cream maker in Italy, which helped add and perfect natural flavorings.

And the new jelly pop did something unexpected. More precisely, it *didn't* do something. It didn't drip. And so the marketers at Danisco introduced the pop as the "nondrip lolly" and quickly gained the attention of consumers and the European press. I love the idea of a giant food company being humble and smart enough to invite kids in to dream up sweets. Off-loading some of the prototyping to a tiny ice cream maker in Italy. Stumbling onto something even better than the original idea. And probably having a lot of fun in the process.

Sometimes kids can provide the catalyst for a successful experiment.

Let Them Hack

The fact is that kids often make something out of what parents or companies would otherwise discard.

SMS, or Short Message Service, for instance, has been around for more than a decade. SMS was crudely designed as a text messaging system built into mobiles, originally intended for internal maintenance purposes only. Mobile phone companies "knew" it couldn't possibly be sold as a service. Cryptic and cumbersome, SMS was used by network technicians to troubleshoot problems.

Then irrepressible hackers discovered SMS. They invented their own abbreviated code to punch out messages. Hip teens caught on, and soon "C U L8er" meant "See you later" and a whole new wireless idiom developed. Part of the appeal was that the grown-ups were completely clueless. Indeed, the mobile companies didn't even know how to charge for SMS at first because the technology wasn't part of their business models.

So who were the Experimenters who prototyped this new service and made it into a vast multibillion-dollar international business? Hackers and teens.

The world's major cellular firms just knew that SMS would never go mainstream. Which, of course, helped make it a wild hit. Kids loved SMS like they once loved walkie-talkies. Lo and behold, SMS's popularity built like a wave, moving into mainstream markets and appealing to people of all ages.

So who were the Experimenters who prototyped this new service and made it into a vast multibillion-dollar international business? Hackers and teens.

Virgin Mobile hasn't missed this lesson. They've taken that same sensibility and moved it upstream to teens and twentysomethings. As recently reported in the *New York Times,* Virgin has made its young customers part of the development cycle. Some 2,000 Virgin Insiders were asked their opinions on white or red versions of the V7 Flasher phone. They rejected both and instead favored blue with silver interior trim. Virgin went with the youthful choice. Next, some Insiders got to play with prototype phones, and the company soon learned that the kids were more interested in uploading photos to their blogs than the picture album they'd spent so much time building into the phone. Out went the picture album and in went streamlined uploads.

Call them teens, tweens, or plain old kids. They're probably not on your payroll or part of your business. They may drive you nuts at times. But listen carefully. They just might spur you to come up with a product or service you never imagined.

Life as an Experiment

Treat life as one big experiment and you'll start building a framework for continuous learning. And having a learning organization is part and parcel of a culture of innovation. The Experimenter helps keep the organization fresh and is willing to take calculated risks. Trace the history of any great innovation and chances are you'll find the footprint of an Experimenter. Sure, a few lucky souls have an apple fall on their heads or get a flash of enlightenment sitting under a tree, but for the rest of us, experimentation is one of the best ways to push toward the next breakthrough. So don't wait at the starting line trying to figure out the whole race. Just get moving and start trying things out. Along the way, you might discover a new way to win.