

LEAP

FROM PLANNING TO ACTION

If you had met Akshay Kothari or Ankit Gupta in their first week of graduate school at Stanford, they might not have stood out against a background of other aspiring engineers and computer scientists in their class. Both were self-described “geeks”—bright, deeply analytical, and definitely on the shy side. Akshay had majored in electrical engineering at Purdue, and Ankit earned a degree in computer science at the Indian Institute of Technology. They had both studied hard and excelled in their undergraduate work before moving to Silicon Valley.

When Ankit arrived on campus, his course load consisted mostly of programming classes like “Logic, Automata and Complexity” and “Machine Learning.” So when Akshay told him about Design Thinking Bootcamp, the d.school’s introductory class, it sounded like a fun diversion from the densely technical

world of computer science. At first, Ankit admits, he felt a little daunted seeing the proliferation of colorful pixel-like Post-its filling the walls at the school, hearing the cacophony of voices in free-flowing dialogue, and witnessing the fearlessness of students and professors as they messed around with pipe cleaners and glue guns. But soon enough, he was immersed in the class, and what had started as a fun diversion turned into an eye-opening experience. "The new way of thinking about creativity and design freed my mind," Ankit says. "Since there was no single 'right' solution, you could have as many ideas as you wanted and ask 'why?' a lot."

Meanwhile, Akshay also found himself in unfamiliar territory. "It felt unnatural," says Akshay, compared to his engineering lecture classes, where he listened to the professor, read the textbook, and relied on his math abilities alone to solve problems. "I was suddenly thrown into this world that was really interesting but kind of crazy—it was a shock." His first class included a hands-on observation/prototyping/storytelling experience called "the ramen project." Students set out to "design a better ramen experience" in one week, using the human-centered design process. Akshay completed each of the steps but felt he had a lot of room for improvement. "I saw how ordinary the concept I created was compared to all the other design solutions." Akshay says that his idea (a celebrity-endorsed ramen) "was kind of obvious . . . something you might come up with off the top of your head." At the same time, he was inspired by how amazing his classmates' concepts were—for example, a really big straw to slurp up noodles and soup together, and a clever container that made it easier to eat ramen while walking. He was determined to keep at it, and by the next project, he could feel that his ideas were already a little fresher. He started making a stronger link between unmet or latent customer

needs and his proposed solutions. He raced through more iterations to learn from each round. He got better at blending his own ideas with the diverse viewpoints of his multidisciplinary team.

For both Ankit and Akshay, the empathy part of the design cycle—understanding a product from the vantage point of the end user—offered a new perspective. Ankit confides that “before the d.school, we would never have consulted any humans about our product.” The year before, he had worked on starting a company with some friends in India and managed not to think about—let alone talk to—a single potential customer. “We spent almost all of our energy working on the API—the tool set that other developers would use to interface with our product,” he says with a laugh.

The idea of engaging with users face to face initially made Akshay more than a little uneasy. On his first design research field trip for a class project, Akshay did most of his “observation” while trying hard to be invisible at the back of the local grocery store. “I was looking around, trying to copy how the other students were doing it,” he says. “I saw empathy as a required part and didn’t understand the value of it yet.” By the end of the class, however, he had witnessed firsthand the power of talking to potential customers to spark new ideas and explore new avenues of thought.

The culmination of Ankit and Akshay’s d.school experience was a course called “LaunchPad,” taught by consulting associate professors Perry Klebahn and Michael Dearing. Most design thinking courses are intense, but LaunchPad shifts the experience into overdrive. During the class, you start a company—a real one—from scratch, and incorporate before the quarter is over. No small challenge. And the pair confesses that in the beginning they weren’t convinced that they could do it.

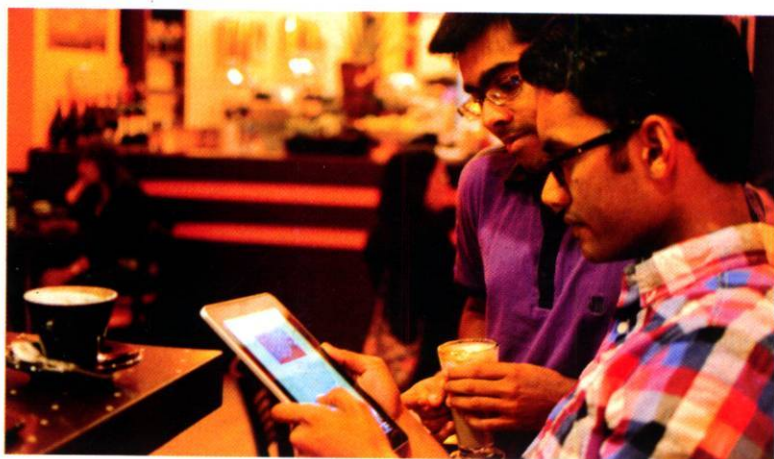
In the Darwinian tradition of Silicon Valley venture capital, if

you want to enroll in LaunchPad, you first need to pitch a fledgling business idea. And if your pitch doesn't make the grade (either on content or passion), you don't get in. Akshay and Ankit kicked around many ideas, but they knew they could move forward with only one. They decided to work on the experience of reading the daily news by creating an application for the then-recently-announced Apple iPad. While some of the other ideas they had generated seemed sexier, the ten-week deadline compelled them to choose one that lent itself to rapid feedback.

After they pitched successfully, they soon grasped just how much of a sprint the class would be and how quickly thought would have to translate into action. Their first assignment: build a functional prototype in four days. "That really pushed us," says Ankit. With no time to waste, they set up camp in a café on Palo Alto's University Avenue. Spending as many as ten hours a day there, they realized that—besides the amazing rent deal—their de facto office came with another powerful advantage for their embryonic business: sitting in that cosmopolitan café, they were immersed in a sea of future customers, all sipping their coffee and *reading the news*.

They started with quick, rough prototypes, getting feedback from café patrons every step of the way. At first, they used a series of Post-it notes to simulate the flow of the user interface for their news app. Later, with actual software mockups on an iPad, it got even easier to gather input. "The iPad had just come out, so people were really curious about it," says Akshay. "We used this to our advantage." He would keep one out on the table, and when a passerby inevitably stopped to ask whether it was in fact an iPad, he would hand it over with the latest prototype version of their app open and then watch them interact with it. "We said

nothing,” Akshay explains, “just observed what they did. This was huge for us, unearthing usability flaws.” To maximize their speed, Akshay led user research while Ankit banged out new software versions to keep up with what they were learning. “On any given day, we would make hundreds of small iterations,” says Akshay. “And I’m not exaggerating—we changed everything from interaction patterns to the size of a button.” The process worked: “In two weeks, we went from people saying, ‘This is crap’ to ‘Is this app preloaded on the iPad?’”



Ankit and Akshay brought the Pulse news reader app to market after thousands of quick prototypes.

The result of their intense effort, rapid iteration, and relentless action was Pulse News, an elegant news reader launched in 2010 that aggregates stories from both traditional and emerging publishing sources. It was so successful that a few months after launch—while Ankit and Akshay were still students—Steve Jobs showed off Pulse from the main stage of the Apple Worldwide Developers Conference, focusing global attention on the two

introverts and their app. Today, Pulse has been downloaded by more than twenty million people and stands as one of the original fifty apps in Apple's App Store Hall of Fame. And recently, Ankit and Akshay accepted an offer of \$90 million from LinkedIn for the company they built with design thinking.

Looking back on those first couple months of Pulse, the founders got a lot of things right:

- They started with a “do something” mindset and were not content to merely comply with the standard requirements of their graduate programs.
- They minimized planning and maximized action, knowing that the results of early experiments might quickly render even the best-laid plans obsolete. They started interacting with potential customers right away.
- They prototyped quickly and cheaply, fueling thousands of variations that ultimately resulted in their wildly popular final product.
- They thrived in spite of—maybe even because of—their time constraints, spurred on by necessity to develop creative ideas at a blistering pace.

Those elements in Pulse's story demonstrate how imperative action and iteration are to innovation and creativity, both for individuals and organizations. “I learned that creativity is always in hindsight,” says Ankit. “It's not about just coming up with the one genius idea that solves the problem, but trying and failing at a hundred other solutions before arriving at the best one.”

To embrace that level of experimentation, don't get stuck in the planning stage. Innovation is all about quickly turning ideas

into action. That necessity for getting things moving has its basis—at least metaphorically—in the fundamentals of science. Isaac Newton's first law of motion suggests that "a body at rest tends to stay at rest; a body in motion tends to stay in motion." Newton was describing the motion of objects, but we see his principle of inertia at work in individuals and companies too. Some people remain stuck in place, sitting at the same desks, next to the same people, going to the same meetings, serving the same customers, as a changing industry climate trends away from them. Others move forward, but at a familiar linear pace, sticking to the same multimonth planning cycle, following the same review-and-approval process, or continuing the same workflow steps, even as the world accelerates around them.

To overcome inertia, good ideas are not enough. Careful planning is not enough. The organizations, communities, and nations that thrive are the ones that initiate action, that launch rapid innovation cycles, that learn by *doing* as soon as they can. They are sprinting forward, while others are still waiting at the starting line.

THE "DO SOMETHING" MINDSET

One of the qualities we admire most about people with creative confidence is that they are not passive observers. Even in tough situations, they don't act or feel like pawns or victims. They live in the active voice. They write the scripts of their own lives, and in doing so, they have greater impact on the world around them. While the path of least resistance is usually to coast along in neutral, people with creative confidence have a "do something" mindset. They believe their actions can make a positive difference, so they *act*. They recognize that waiting for a perfect plan or forecast

might take forever, so they move forward, knowing they will not always be right but optimistic about their ability to experiment and conduct midcourse corrections further down the road.

John Keefe, a senior editor at Manhattan radio station WNYC, one day heard his colleague lament about how often her mom was left waiting at city bus stops, not knowing when the next bus would arrive. Just pause for a moment, and ask yourself the following question: If you worked for New York City Transit and your boss asked you to solve that problem, how soon would you promise to get a system up and running? Six weeks? Ten? John, who doesn't even work for the transit authority, said, "Give me till the end of the day," converting a colleague's passing comment into a personal mission. Within twenty-four hours, he created a working prototype of a service that allowed bus riders to call in, input their bus stop number, and hear the location of the next approaching bus (even without a smartphone).

To bring the idea to life in such a short time, John had to get creative about using existing services. He bought a toll-free phone number for a dollar per month from Twilio, a service that connects a telephone number to web-based programs. He wrote a small program that sends the bus stop code to the NYC Metropolitan Transit Authority site, accesses real-time location data, and then converts the answer from text to speech. A few seconds later, the caller hears a message like this: "the next bus to arrive at Fourteenth Street and Fifth Avenue heading north is nine stops away." He did all that in a single day. And when we called the number a year later to check it out, John's little hack was still working.

John applies the same fearless attitude to his work at WNYC. "The most effective way I've found to practice design thinking is by showing, not telling," he says. "Rather than explaining what it

is . . . I say: 'I can get you results next week.'" WNYC has taken the lesson to heart. In 2008, it partnered with d.school students to generate ideas for a morning news show that was under development. Concepts that were conceived and generated by students in California on Tuesday were tested on-air in New York City that same week.

If John Keefe's empowered attitude sounds like it's uniquely his, don't underestimate the contagious qualities of his creative energy. Just days after hearing John's bus stop story, Tom experienced his own epiphany. He was riding his bike home one evening and noticed that an aging bus stop in the city of Menlo Park had been torn down, replaced with a forest green solar-powered bus shelter. The good news of that civic improvement, however, was tempered by the fact that the bus shelter had been installed in the wrong place. Unlike the old shelter, this one stuck six feet out into a popular walking path that serves as the thoroughfare for a veritable army of young fourth-graders riding their bikes to a nearby grade school. Tom couldn't help thinking that once classes began in the fall, a thousand pounds of green metal sticking halfway into the path would wreak havoc with the grade schoolers' daily commute.

He might have been tempted to simply continue on his way, shaking his head at the mistake and writing the situation off as hopeless because "you can't fight city hall." But with John Keefe's story fresh in his mind, Tom pulled his bike over at the side of the road and snapped a few pictures with his phone. Reaching out to an elected official for the first time in his life, he sent an e-mail to the mayor's office that evening, uncertain whether he'd even hear back. But by 10 a.m. the next morning, the mayor had sent an upbeat response, pulling her public works director into the conversation. And a week later, when Tom was en route to

work, he spotted a large crane repositioning the bus shelter into its proper place.

Our point? The first step toward being creative is often simply to go beyond being a passive observer and to translate thoughts into deeds. With a little creative confidence, we can spark positive action in the world. So the next time you start to say “Wouldn’t it be great if . . . ?” just take a moment, remember John Keefe, and tell yourself, “Maybe I can finish it by the end of the day.”

KEEP A BUG LIST TO FIND CREATIVE OPPORTUNITIES

We are surrounded every day by products that don’t work well, services that slow us down, and setups that are just plain wrong: the website that requires ten clicks to accomplish what should take only one or two; the projector that stubbornly resists linking up with your laptop; the machine at the parking garage that makes paying so difficult. Noticing that something is broken is an essential prerequisite for coming up with a creative solution to fix it. Making “bug lists,” which Tom described in *The Art of Innovation*, can help you to see more opportunities to apply creativity. Whether you use a piece of paper in your pocket or record ideas on your smartphone, keeping track of opportunities for improvement can help you engage with the world around you in a more proactive way. The running list can serve as a useful source of ideas when you’re looking for a new project to tackle. Or you can make a bug list on the spot.

Write down the things that bug you, and you’ll start being more mindful of them. It may seem like you’re focus-

ing on the negatives, but the point is to notice more opportunities to do things better. And while many of the items on your bug list may be things you won't be able to fix, if you add to it regularly, you'll stumble onto issues you *can* influence and problems you can help solve. Almost every annoyance, every point of friction, hides a design opportunity. Instead of just complaining, ask yourself, "How might I improve this situation?"

STOP PLANNING AND START ACTING

With a more proactive mindset, you will start to see more opportunities for action around you. But seeing is not enough. You still need to act.

Many of us get stuck between wanting to act and taking action. The uncertainty of the uncharted path ahead can be daunting. Sometimes it feels as if circumstances are conspiring against us, and we find ourselves riveted in place.

In corporate cultures, that hesitation can translate into what professors Bob Sutton and Jeffrey Pfeffer call the "knowing-doing gap": the space between what we know we *should* do and what we *actually* do. It can lead to company paralysis when talk becomes a substitute for action.

After learning about the knowing-doing gap, we began to see it everywhere. For example, we witnessed it firsthand at the Eastman Kodak Company. On a cold spring day in the mid-1990s, an IDEO team traveled to Rochester, New York, for an audience with the Kodak executive team. We found a group of leaders with deep

expertise who at least *intellectually* understood that the future of photography was digital.

Looking back, business historians may be tempted to suggest that Kodak's leadership was naïve. But that was not the case. In fact, we had to race to keep up with CEO George Fisher's agile mind. And no one could say Kodak lacked knowledge of digital photography. They had actually invented the digital camera in 1975 and later pioneered the world's first megapixel sensor. Kodak had a head start that should have yielded lasting advantage. So why didn't all that knowledge and first-mover advantage turn into decisive action?

For starters, tradition got in the way of innovation. Kodak's glorious past was just too alluring. Kodak had essentially owned consumer photography for a hundred years, with market share in some segments as high as 90 percent. By contrast, digital ventures all seemed so risky, and Kodak wasn't providing enough "soft landings" for managers willing to take career risks in those new areas. Facing strong global competitors in the digital market, Kodak knew that it would struggle, and fear of failure transfixed the management team.

Caught in the knowing-doing gap, Kodak clung too closely to the chemistry-based business that had been so successful for them in the twentieth century, underinvesting in the digital world of the twenty-first. What we saw at Kodak was not a lack of information but the failure to turn insight into effective action. As a result, one of the most powerful brands in America lost its way.

No company that falls behind the competition is guilty of standing completely still. But sometimes our efforts fail because of the level of commitment to change. "I'll try" can become a halfhearted promise of follow-through rather than decisive action.

The d.school's academic director Bernie Roth demonstrates this idea with a brief exercise that his students say delivers a lasting message. He holds out a water bottle and asks them to try to take it from him. Facing gray-haired Bernie, a fifty-year veteran of the Stanford Design Program, students usually hesitate as they try to grab it from him. Their initial efforts yield nothing. His grasp just grows more ironclad as the strapping twenty-year-olds and powerful CEOs try to wrestle the bottle away from the octogenarian.

Bernie then reframes the exercise. He says to stop *trying* and *just do it*—take it from him. The next person strides forward and successfully wrenches the bottle away. What changed? As Bernie explains it, a subtle excuse lies in the idea of “trying.” It’s as if today is for attempts, and the real action will happen at some vague future moment. To achieve your goal, to topple the barriers that stand in your way, you have to be focused on getting it done *now*. Or as Yoda, another wise and seasoned change master, put it to Luke Skywalker in *Star Wars*, “Do or do not. There is no try.”

Many who have witnessed Bernie’s exercise have taken his message to heart. An editor for a prestigious international business journal who had struggled for years to find time for her true passion—writing fiction—was spurred to begin work in earnest on her new novel. A psychology professor planning to spend a year “gathering more information” on his research topic scrapped that plan and initiated a series of workshops to quickly prototype the final version of his work. And a computer graphics researcher who has been dabbling on and off with a music technology project switched from saying “one day . . .” to saying “*today*.” He wrote a proposal and met with an international development foundation that funds music initiatives.

Sometimes despite the determination to jump in, the enormity

of an important task can stop you in your tracks, especially at the beginning. Getting started can be hard. The writer faces the blank page; the teacher, the first day of school; businesspeople, the launch of a new project.

Bestselling writer Anne Lamott famously captures this idea in a childhood story from her popular book, *Bird by Bird*. Her ten-year-old brother had been assigned a school report about

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birds and hadn't started on it until the night before it was due. "We were out at our family cabin in Bolinas, and he was at the kitchen table close to tears, surrounded by binder paper and

pencils and unopened books on birds, immobilized by the hugeness of the task ahead. Then my father sat down beside him, put his arm around my brother's shoulder, and said, 'Bird by bird, buddy. Just take it bird by bird.'

We both summon that phrase "bird by bird" when confronted by an intimidating task, sometimes actually saying it out loud. Those three words remind us that, no matter how large the chasm, we can narrow the knowing-doing gap one step at a time.

In other words, to ultimately reach a creative breakthrough, you just need to *start*, regardless of small failures that may occur along the way. It's unlikely that your first try at anything will be a success. But that's okay. It's hard to be "best" right away, so commit to rapid and continuous improvements. The messiness of such trial and error may seem uncomfortable at first, but action allows most of us to learn at a faster rate; it's almost a prerequisite for success. Otherwise, the desire to be best can get in the way of getting better.

This lesson was brought to life for us in a story from the insightful book *Art & Fear*. A clever ceramics instructor divided his pottery class into two groups during the first session. One half of the students, he announced, would be graded on *quality* as represented by a single ceramic piece due at the end of the class, a culmination of all they had learned. The other half of the class he would grade based on *quantity*. For example, fifty pounds of finished work would earn them an A. Throughout the course, the “quality” students funneled their energy into meticulously crafting the perfect ceramic piece, while the “quantity” students threw pots nonstop in every session. And although it was counterintuitive to his students, you can guess how his experiment came out: at the end of the course, the best pieces all came from students whose goal was quantity, the ones who spent the most time actually practicing their craft.

It is a lesson applicable to a much broader range of creative endeavors: if you want to make something great, you need to start *making*. Striving for perfection can get in the way during the early stages of the creative process. So don’t get stuck at the planning stage. Don’t let your inner perfectionist slow you down. All the overplanning, all the procrastinating, and all the talking are signs that we are afraid, that we just *don’t feel ready*. You want everything to be “just right” before you commit further or share something with others. That tendency leads us to wait rather than act, to perfect rather than launch.

When we tell the people we teach or work with to be “sloppy,” to do a quick experiment instead of polishing, it makes them uneasy at first. Our colleagues and students tell us that they have to remind themselves that the front end of innovation is supposed to be messy. But it can be liberating in the long run. You might

be surprised by how well the process works—and by how good it can feel.

Another behavior that holds us back is procrastination, a failing that seems universal to the human condition. But we've both been inspired by what author Steven Pressfield calls the "war of art." In his book of that title, Pressfield not only captures the essence of procrastination but also gives new hope of beating it. Part of the trick is that he seldom even uses the word "procrastination." He speaks, instead, of *Resistance*. "Most of us have two lives," says Pressfield. "The life we live, and the unlive life within us. Between the two stands Resistance . . . Late at night, have you experienced a vision of the person you might become, the work you could accomplish, the realized being you were meant to be? Are you a writer who doesn't write, a painter who doesn't paint, an entrepreneur who never starts a venture? Then you know what Resistance is."

Pressfield's sleight of hand, substituting the word "resistance" for "procrastination," is more than just semantics. In giving the phenomenon a different name, Pressfield redefines the enemy. Procrastination seems like a form of personal weakness. But Resistance is a force we can do battle with. Mentioning procrastination is a reminder of our failings. But invoking Resistance is a call to arms. It's an obstacle we are challenged to overcome.

There are dozens of reasons why our plans do not come to fruition. Too often tasks get left simmering on the back burner until they evaporate completely. It is easy to let inertia, distraction, and fear keep you from getting started on an endeavor.

Perry Klebahn tells business professionals in the d.school's executive education program, "Don't get ready, get started!" What project, initiative, goal, or dream has been stymied by your

own internal Resistance? What can you do *today* to begin to make it happen?

ACTION CATALYSTS

Sometimes you need to give yourself a little nudge. To get over the natural propensity for inaction, figure out what is holding you back and tackle that in some way. Here are some catalysts we use to get started:

1. GET HELP. Hire somebody or recruit a willing colleague for a short period to help you. Make your problem someone else's for a while; share the burden to see if they—or you—come up with a new way to make progress.

2. CREATE PEER PRESSURE. David has found that he needs someone else in the room to get started. Even if the person doesn't give feedback or add ideas, they provide social pressure to make David show up, the first step to getting something done. For example, using a personal trainer helps motivate David to go to the gym. Even when he's not feeling energetic, he still turns up for his workout because he has made a commitment to his trainer.

3. GATHER AN AUDIENCE. Find an attentive listener to move an idea out of your head and into the real world. Talk your ideas through to get your creative juices flowing. And if your audience can give

you feedback or food for thought, that's an added bonus.

4. DO A BAD JOB. Suspend judgment of how well you are doing it. Just get something out there. We've found over the years that one way to get traction at the beginning of an innovation project is to write the "bad ad" first: a quick, sometimes even corny advertisement that describes whatever the finished product will be.

5. LOWER THE STAKES. If the problem you are working on feels so important that everything hinges on it, make it less important. Thinking of the perfect place for your team's next offsite meeting might paralyze you with indecision. But if you just list a dozen possible places, you might have the "perfect" location before you know it.

USE CONSTRAINT TO FUEL CREATIVE ACTION

Although "creative constraint" sounds like an oxymoron, one way to spark creative action is to constrain it. Given a choice, most of us would of course prefer a little *more* budget, a little *more* staff, and a little *more* time. But constraints can spur creativity and incite action, as long as you have the confidence to embrace them.

When we talk to executives about implementing new innovation processes in their organizations, they often don't seem to know where to start. But if we ask them what they could do in a week with a shoestring budget, you'd be amazed at the great ideas

they come up with. After an executive education workshop, a vice president at Fidelity Investments told us he was going to try a crazy time constraint on his next project to open up thinking and force rapid iteration. The kickoff meeting for a six-month project was the following Monday. In the “business as usual” schedule for a new web-based customer offering, his team would have roughly two months of planning, two months of making wireframes (outlining the basic page layouts, navigation, functionality, etc.), and two months of preparing the customer-ready version. This time would be different. “When my team meets on Monday,” he said, “I’m going to tell them we have *today* to do the whole project.” And at the end of the day, he planned to give the team “extensions” of a week and then a month. He was confident that if they spent more time iterating through many ideas rather than trying to plan for a perfect one, the finished product would be more robust and more innovative.

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A few boundary conditions can spur more creativity, not less. How long would Akshay and Ankit have taken to launch a product without the “impossible” ten-week time constraint imposed by their class? John Keefe gave himself just a day, which forced him to do some scrappy hacking, using services and tools that already existed in order to get it done. Constraints also help when framing challenges, as we discussed in the last chapter.

Francis Ford Coppola, the famous director of both blockbusters like *The Godfather* and spartan “indie” films, recognized the benefits of constraints. “The lower the budget for my film, the more chances I can take,” Coppola explained when he and Tom

crossed paths one day in Buenos Aires. He described a recent lean, low-budget film project that sparked huge creative energy in his production. During one scene set in Malta, the screenplay called for a right-hand-drive taxi (since they drive on the left there). But Coppola was filming in Romania, where all the available taxis had steering wheels on the left side. In a big-budget movie he'd simply have requested a vintage right-hand-drive taxi and had it flown in from Britain. But a passionate director financing his own movie must be more creative. Coppola asked the makeup team to part the actors' hair on the opposite side for that day of shooting. He then asked the props team to make up a taxi top light and a license plate printed backwards. When the cameras rolled, he shot the entire scene and then later simply reversed the image. We doubt that a single filmgoer noticed his clever—and ultra-low-cost—"special effect."

So try embracing architect Mies van der Rohe's maxim: "Less is more." What constraints make your job "impossible"? Can you use those constraints as a source of creative license, as permission to think differently?

Here are a few ways to use constraints to leap into action:

1. **TACKLE A "DOABLE" PIECE OF THE PROBLEM.** To get under way, work on the easiest part first. One technique we use for finding the easy part of a challenge is by constrained voting. At the end of a brainstorm or ideation session, there may be a hundred ideas represented by Post-it notes covering the wall. Instead of simply voting for our favorites—usually done by sticking a colored dot on them—we sometimes focus our attention on the bite-sized

chunks. For example, the project leader will say “Put a dot on the ideas you could explore within the next two hours” or “Pick ideas that you could prototype by the end of the week.” We constrain our options by looking at how we can make progress *right now*.

2. **NARROW THE GOAL.** Curing world hunger is too big. Set smaller, achievable goals you can act on. Work in a soup kitchen in your local community. Sponsor a child in Cambodia. Narrow the scope until you can see how to get started.
3. **CREATE A MILESTONE (AND CONNECT IT TO A SOCIAL CONTRACT).** When we work on a long innovation project, it helps to build in a series of check-in sessions, peer reviews, and interim milestones to create a “drumbeat” of activity. Project teams tend to experience a surge of enthusiasm and productivity whenever a deadline looms. So instead of establishing one big deadline, build in as many “mini-deadlines” as possible to keep the team’s energy up throughout. We risk losing focus in the middle of a three-month project. But if you set up a phone call every Tuesday with your peer advisors or a quick presentation every Friday with the client/decision-maker, you get more than twenty peaks of intensity rather than just one.

So if you’re working on a big presentation, schedule a walk-through or a dry run with your team a few weeks before. This live prototype will show what’s working and what’s not. Then schedule a second “dress rehearsal” the week of the presentation.

EXPERIMENT TO LEARN

What's the best way to make progress toward your goal? In our experience, it's to build a prototype, an early working model that has become a key tool of design thinkers. If you show up at a meeting with an interesting prototype while others bring only a laptop or a yellow pad, don't be surprised if the whole meeting is centered on *your* ideas.

The reason for prototyping is experimentation—the act of creating forces you to ask questions and make choices. It also gives you something you can show to and talk about with other people. We often build physical prototypes. But a prototype is just an embodiment of your idea. It could be an array of Post-its to simulate a software interface, like the ones Akshay and Ankit made when they first started developing Pulse. It could be a skit in which you act out a service experience, such as visiting the emergency room at a hospital. Or it could be a quick version of an advertisement describing a product or service or feature that doesn't yet exist.

Some failure is unavoidable. So you need to relentlessly seek out clever new ways to create low-cost experiments. The best kinds of failures are *quick*, *cheap*, and *early*, leaving you plenty of time and resources to learn from the experiment and iterate your ideas. There's an art to prototyping in deciding what to create and how rough it should be. If you're interested in whether the flow of a piece of software makes sense, you may just need simple wireframes of each step—quick hand-drawn sketches of screen layouts. But if you have questions about the feeling the experience evokes, creating a screenshot with the right styling may be more important. Eric Ries, author of *The Lean Startup*, calls such a prototype a minimum viable product, or MVP—representing the least amount of effort needed to run an experiment and get feedback.

Several years back, an IDEO team wanted to illustrate new electronic features for a luxury European car company. The automaker was planning to build intelligence into both the key and the car, and the team wanted to demonstrate how the driver's enhanced experience would look and feel. First, the team filmed someone driving an existing car while acting out the new interaction. Then, using a combination of quick physical props and simple digital effects, they made the new features come alive. The finished video clip simulated the appearance and functionality of a future dashboard with new digital displays and interactions.

The result was nothing like the sophisticated special-effects wizardry you'd see from Industrial Light & Magic. But it only took a week to create, and it captured the team's vision well enough for the car company's executives to decide whether the feature set was headed in the right direction. "I love this idea," one of them said. He didn't mean the new features, but the process for testing it. "Last time we did something like this, we built a full system into a dashboard, spent many months and almost a million dollars. Then we took a video of it. You skipped the car and went straight to the video," he said with a laugh.

Besides speeding up that process of experimentation, prototypes are easy to throw away when they fail. Creativity requires cycling lots of ideas. The more you invest in your prototype and the closer to "final" it is, the harder it is to let go of a concept that's not working.

Prototyping quickly and cheaply also allows you to keep multiple concepts alive longer. So instead of making a big bet on one approach based on gut feeling (or what your boss says), you can develop and test multiple ideas. When you do pick a direction, you

will be making a more informed decision, increasing your chances of success in the end.

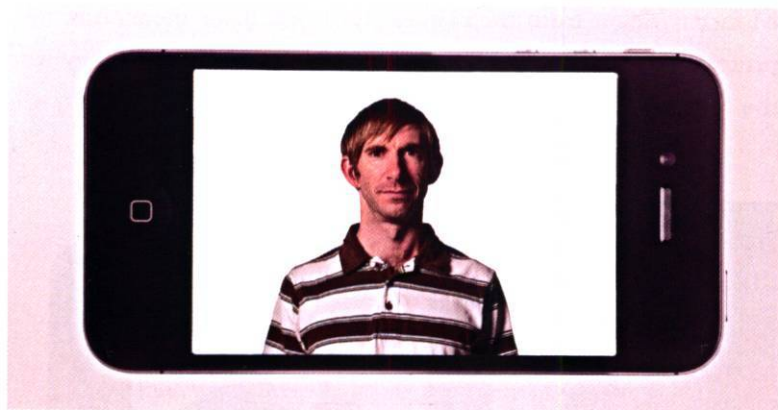
Multiple alternatives also encourage good, honest feedback about your ideas. If you go in with only one prototype, it limits your options. With multiple prototypes, you can have a frank discussion about the relative strengths and weaknesses of each.

THE ONE-HOUR PROTOTYPE

People let potentially great ideas slip away every day. Sometimes we assume that acting on them would take too long or require too much effort. Other times we fail to convince our boss or key stakeholders with words alone. Experiments are one way to lower the bar in trying out an idea. And the faster the experiment, the more likely you are to try.

Just how quick is a rapid prototype? Sometimes time is very short, and every minute counts. Not long ago, toy inventor Adam Skaates and gaming expert Coe Leta Stafford were halfway through a project with Sesame Workshop to develop Elmo's Monster Maker—an iPhone app that leads young children through the process of designing their own monster friend. They had an idea for a new dance feature in which kids could guide Elmo through different dance moves in sync with a simple music track. The two were enthusiastic about the idea, but the rest of the team was dubious. So the feature was in danger of being cut from the final product.

An hour before a conference call with Sesame Workshop, Adam and Coe Leta decided to prototype the feature with whatever materials they had on hand. Working quickly, Adam printed out an oversized image of his iPhone using a giant plotter, mounted



A prototype iPhone app, as captured by the webcam.

it on a sheet of foam core, and cut out a rectangular window where the screen would be. He then stood behind the “phone” so his body appeared in the “screen.” Meanwhile, Coe Leta set up her laptop in front of the crude prototype, pointing the webcam toward Adam. Putting the camera into record mode, she then moved her hand into the scene, using her finger to simulate how children would interact with the app—like touching Adam on the nose to make him start dancing. From the point of view of the webcam, the iPhone looked almost real, and Adam danced and reacted as he envisioned Elmo would. A single take, a quick edit, and the video clip was sent off to the Sesame Workshop team members just a few minutes before their meeting.

Adam and Coe Leta’s quick video was fun and endearing. It was also much more persuasive than just talking about their ideas would have been. They subscribe to Boyle’s Law (named after one of IDEO’s master prototypers, Dennis Boyle): never go to a meeting without a prototype. Today, if you download Elmo’s

Monster Maker from the iTunes store, you'll see the feature they prototyped in an hour that morning. By acting quickly, they won the team over with their creative idea.



A behind-the-scenes look reveals the secret of creating this quick, low-tech prototype.

TIPS FOR QUICK VIDEOS

Our Toy Lab team is a prolific producer of quick videos both for prototyping and for storytelling. They use such videos to communicate new inventions to toy companies all over the world. Over the past twenty years, Toy Lab founder Brendan Boyle has learned that a compelling video doesn't have to be a high-cost, time-intensive product. A cleverly crafted, engaging video clip can make up in authenticity what it lacks in expensive production value.

Here are the Toy Lab's seven tips on how to make a video prototype sing:

1. WORK FROM A SCRIPT. Don't try to wing it. Memorable sound bites stick because you've carefully chosen those words. A well-edited script will save time in the end and ensure you cover all of your important story elements.

2. USE VOICEOVERS AS A SHORTCUT. For a fast-paced video, a voiceover is the quickest way to convey meaning or "backstory." Voiceovers also streamline editing because it's often easier to add video footage to spoken audio than vice versa.

3. GET ORGANIZED WITH A SHOT LIST. Think through each shot you want in your video: close-ups, wide shots, still images, and so forth. Make a list and cross them off during your shoot to make sure you don't miss any.

4. PAY ATTENTION TO LIGHTING AND SOUND. If you have anything beyond a shoestring budget, decent lighting and a remote microphone are worthwhile investments. Both will help distinguish your final cut from the average home video.

5. BE MINDFUL OF VISUAL RHYTHM AND PACING. A mix of camera angles and styles helps keep the video moving. Don't stay too long in one camera position; a single take can get stale after a few sec-

onds (unless what's happening is really important for the viewer to follow).

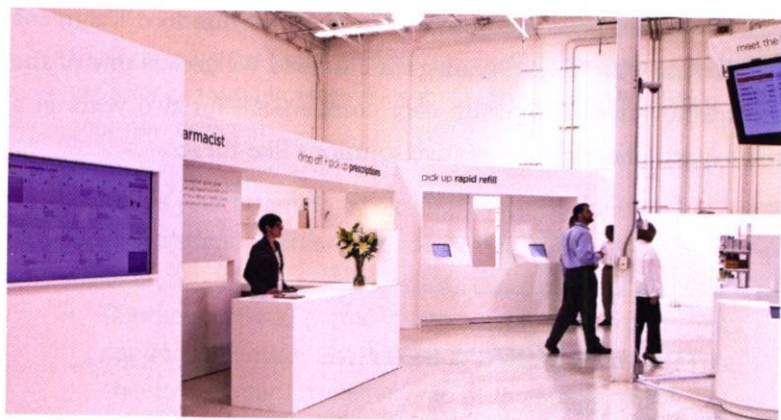
6. GET EARLY FEEDBACK. Show rough edits to people new to the content. See what they notice and where they get lost. Have them point out when they get confused. Look for big-picture feedback—is your message getting across? Check by asking them to summarize the video in one sentence.

7. SHORTER IS BETTER! Think of your video as an elevator pitch rather than a documentary. Most Super Bowl spots are only thirty seconds each. If your video is longer than two minutes, you risk losing an impatient audience. If you are struggling to find a place to cut, try watching the video ten times in a row.

PROTOTYPING A SHARED EXPERIENCE

Good prototypes tell a story, and if you can get the audience to become part of that story, the prototype can be even more persuasive. Take, for example, our collaboration with Walgreens, the largest drugstore chain in America. Tasked with rethinking what it means to be a retail pharmacy in the twenty-first century, the team came up with concepts for making Walgreens a more trusted source of advice and support on health and wellness. One part of the design centered around getting pharmacists out from behind the counter so that they would be more accessible to customers.

To build internal support for the concept, the team con-



A foam core prototype of Walgreen's new pharmacy layout made the concept come to life.

structed an ambitious full-scale prototype made out of foam core. Hundreds of white panels were cut and glued into a simplified three-dimensional representation of the proposed store layout. Taking up an entire floor of a building, the prototype showed off the redesigned space and set the stage for team members to act out new service roles. "The prototype made the new vision of the customer experience so tangible," says a designer on the project. "Walking around in the space made it clear the difference that bringing a pharmacist out front would make." At a fraction of the cost of a full build-out, the prototype gathered consensus for an idea that might otherwise have met resistance, winning crucial executive support that pushed the concept forward to implementation.

In the new Walgreens "health and daily living" store format, internal studies showed that pharmacists quadrupled the number of customers they counseled. That full-scale interim prototype was a pivotal tool for turning the concept into a reality that, three

years later, has been incorporated in over two hundred Walgreens stores. And *Fast Company* magazine named Walgreens one of the most innovative U.S. health care companies—for two years in a row—partly because of creative solutions like these.

STORYBOARDING A SERVICE



Whereas products can be prototyped with machine tools or 3D printers, new services are prototyped using other methods. One simple approach is to create the kind of storyboard traditionally used by Hollywood movie makers and Pixar animators to map out the flow of a scene. You portray each step of service delivery and each element of the customer experience with a series of comic-book-like frames showing action and dialogue. Don't worry about your drawing ability—stick figures are fine. The point is to

think through the steps and start to make your idea or the experience tangible. Here are some hints for storyboarding your new concept:

- Focus your attention by picking a specific scenario to prototype or an experience to map out.
- Capture each key moment with a quick sketch and caption. We often use individual Post-it notes or sheets of paper for each frame of the storyboard. Separate sheets make it easier to rearrange the order or to add and delete steps. Try not to spend more than half an hour on your storyboard.
- Once you have a first-draft storyboard, write three questions it raises about your idea. List any new issues that emerged. Identify elements of the experience that are still unresolved.
- Find someone to walk through your storyboard with. Watch closely for nonverbal reactions and listen carefully to their responses. Use the feedback to refine your service idea—and your storytelling.

GETTING ON BOARD WITH EXPERIMENTATION

One of the “secret ingredients” in a culture of experimentation is getting your team to defer judgment long enough to let an idea evolve. Sometimes the craziest ideas—what we call “sacrificial concepts”—can lead to valuable solutions. If you suppress those

seemingly impractical ideas—critique them too early—you may inadvertently stall out the process that leads to practical innovation.

Here is an example of how openness to experimentation yielded breakthrough innovation recently at Air New Zealand. Because of its relatively isolated location in the Southern Hemisphere, the airline flies some very long routes (including a twenty-four-hour journey from Auckland to London with a fueling stop in L.A.). And if you've ever sat through even a few hours in a coach-class seat, you know that there's plenty of room for improvement. But airlines have been stuck in the not-so-comfortable status quo for a long time, balancing customer satisfaction against factors like seat cost, weight, and passenger revenues. "With the world's longest hauls, we had a greater obligation than any other airline to give passengers more," said Ed Sims, then Air New Zealand's international airline group general manager. "We were in danger of benchmarking ourselves against competitors and just tweaking around the edges."

So Air New Zealand CEO Rob Fyfe challenged his team to rethink the customer experience on its long-haul flights—including the seats. He made it clear that a risk-averse operational culture shouldn't stop experimentation in the commercial and product parts of the business: "I am quite comfortable with making the odd mistake, if it comes in the pursuit of new opportunities and new ideas," Fyfe says.

With license to exercise their creativity, Air New Zealand managers joined forces with our team for a design thinking workshop aimed at generating breakthrough ideas. They brainstormed and prototyped a dozen unconventional (and some seemingly impractical) concepts, including harnesses that hold people standing up, groups of seats facing one another around a table, and even

hammocks in the air. Because everyone was actively participating, no one was afraid of being judged. "It was liberating getting on the floor with cardboard, polystyrene, and paper, cutting out seat concepts," said Sims. One concept the team developed was to include bunk beds for passengers to sleep in. Although the idea initially sounded promising, further prototyping revealed the likelihood of awkward and undignified moments whenever a passenger climbed into or out of the top bunk.

By being open to wild ideas and questioning assumptions, they developed the Skycouch. It's a deceptively simple solution to a long-standing pain for passengers: being unable to lie down in economy class. Although it might seem unavoidable that lie-flat seats take up more room (as they do in business-class cabins around the world), Air New Zealand challenged that conventional wisdom with Skycouch. The seats include a heavily padded section that can be swung up like a footrest, transforming a row of three seats into a futon-like platform that a couple can lie down on together. Industry observers have begun referring to the new seating configuration as "cuddle class."

Air New Zealand took some risks in developing their own custom seating and taking such a bold, experimental approach, but their efforts have paid off. The design has earned the company multiple accolades, such as receiving *Condé Nast Traveler's* Innovation & Design award and being named *Air Transport World's* Airline of the Year.

LAUNCH TO LEARN

Once you embrace the idea of leaping into action, small experiments become a key source of new knowledge and insight.

Successful companies of every size embrace experimentation in order to stay ahead of disruptive trends and lead market change. It is a way to rapidly test unanswered questions about everything from design details to new business models.

Traditionally, experiments in the business world have happened internally and behind closed doors. But today, innovative companies “launch to learn” in the open market. Instead of waiting until the end of a development cycle, launching is a way to test and gain insights that you can apply to your product as you continue to iterate.

Many startups already have adapted this model. Ever in beta and working on new releases, they do a little bit of design, implement it, launch it, and then make quick course corrections before launching again. When they learn something isn’t working, they adjust as rapidly as possible. By launching a series of small experiments in order to learn, they avoid the risk of spending years perfecting one major product—only to find out no one wants it. By making your corporate R&D cycle more iterative, you can continue to learn and innovate after a product ships.

Game-changing investment platform Kickstarter has become a popular way of launching to learn. Allowing entrepreneurs to test the marketability of their idea at a very early stage, it helps answer the question “if you build it, will they come?” Creators make a pitch for funding, and backers from around the world pledge their financial support. If the funding goal is reached by a predetermined deadline, the venture gets funded. Otherwise, the backers keep their money and the would-be entrepreneurs have to try another path. In its first four years, Kickstarter has helped crowdsource almost half a billion dollars for more than thirty-five thousand creative projects. And the votes of confidence from

Kickstarter backers not only provide financial support but also help entrepreneurs confirm whether there is demand for their new ideas before they jump in all the way.

Applying some creative thinking, you can come up with many different ways of launching to learn. For example, social gaming company Zynga uses a technique it calls “ghetto testing” to estimate demand for new game concepts. Before writing a single line of code, it posts a teaser ad for the game on a popular website and tracks the number of potential customers who click on it. Similarly, a few days after Amazon announced a lending feature for Kindle books, an entrepreneurial product manager in Britain set up a Facebook group to gauge interest in matching up book lenders with borrowers. When more than four thousand members signed up, she felt confident enough to create her own lending/borrowing site and went live just two weeks later with what is now Booklending.com.

As IDEO design director Tom Hulme puts it, “Release your idea into the wild before it’s ready.” Real-world market testing (even when you know you have more development to do) can be an invaluable source of insight.

CREATING INFECTIOUS ACTION

Little changes can eventually add up to a big impact. Starting small gets you from a state of rest to a state of motion, and you’ve started to build momentum for the bigger challenges ahead.

“Creating Infectious Action” was a high-energy d.school class that challenged students to make an idea go viral—or to literally start a movement. Although that may sound intimidating, with some coaching and a few design thinking tools, students were able

to prototype everything from grassroots marketing campaigns to entire businesses. They surprised themselves (and sometimes us) with how much impact their ideas could generate.

David Hughes, a former army captain who flew combat helicopters in Iraq and Afghanistan, told us the story of one such project. Seeking to reduce local gasoline consumption, he and a group of students started an initiative to transform downtown Palo Alto into a pedestrian mall. The eight-block stretch of shops and restaurants along University Avenue is often so clogged with traffic that drivers sit in their cars, engines idling, as they watch pedestrians pass them by. By creating “sticky” stories and leveraging their social networks (e.g., asking professors with popular blogs to write about the concept), the students found that the pedestrian mall idea spread like wildfire.

Within two weeks, over 1,700 people signed the petition or joined a Facebook group backing the initiative. The team got the support of the former Palo Alto mayor, and merchants put stickers in their windows. Soon they were invited to City Hall to address the City Council. The idea was never implemented, but the team got a lot further than they imagined, given the constraints of a one-month project.

As an operations-oriented person who never thought of himself as creative, Hughes was inspired by seeing how much power the team had to influence opinions and behaviors. Now teaching at West Point, he told us, “I used to think that to make something happen in a corporation or in the army, you had to be at the higher ranks, to be a general. But you just need to start a movement.”

EXPERIMENTING YOUR WAY TO SUCCESS

Whether your resources are abundant or scarce, embracing experimentation can help fuel the fires of innovation. Experiments, by their very definition, are expected to have a higher rate of failure. But if you recast the traditional failure-is-not-an-option attitude as a series of small experiments, you can actually increase your chances of long-term success.

Many years ago, our longtime strategic partner Jim Hackett had a change he wanted to make. Jim is CEO of Steelcase, and he pointed out to his senior team one day that although they were the world's largest maker of system furniture (what Dilbert would call "cubicles"), leaders at the very top of the company all worked in conventional walled offices

with doors. Jim could have introduced a dramatic break with tradition by telling them, "Going forward, we are all moving to open offices." In most organiza-

Embracing
experimentation
can help fuel the
fires of innovation.

tions, such a unilateral shift would have encountered fierce resistance as, one by one, executives requested a private meeting to voice their objections. But Jim is a natural leader, and that's not what he did. Instead, he proposed an experiment. He suggested that—for six months—everyone on the team try moving out into an open-air Leadership Community, equipped with the latest office furniture and technology. "I don't want any foot dragging," Jim said. "I want you to give it an earnest try. And at the end of six months, my promise to you is that whatever's not working, we will make it better." Jim is a leader of very high integrity, and everyone took him at his word. Who could reasonably refuse to participate

for just six months? Knowing that there might be hiccups along the way, they trusted that any real problems would be addressed. The result turned out to be a high-energy environment for the team, and even a de facto showcase for visiting executives. Nineteen years later, Jim Hackett and his team are still tweaking their “experiment,” but the Steelcase open-air Leadership Community is going strong. Ask members of the executive team today, and they will tell you that they love it—and wouldn’t think of moving back.

Our point? Try recasting your changes as experiments to boost reception and increase creative confidence. Some will fail (that’s why it’s called “trial and error”). But many, protected under the nonthreatening umbrella of experimentation, may raise your chances of success.

MAKING NEWS

With a belief in your own creative capacity, you feel empowered to take action, to become an agent for change in your environment—at work, at home, or in the world at large. As Akshay reflects back on the creation of Pulse News and his journey to creative confidence, he cites his bias toward action as a key way his ideas get better and more innovative. “Most analytical people don’t have a bias toward action, including myself formerly,” he says. “If I had an idea, I would just keep thinking about it in my head, or I’d talk about it, but I wouldn’t do anything about it. Now it feels natural to have an idea and then immediately build a prototype, whether it’s in thirty minutes, four hours, or a week. If I’m excited about something, I’ll go ahead and do it.”

So don't sit back and let circumstances determine your fate. Take action yourself, and influence the actions of others. As one of our favorite radio journalists, "Scoop" Nisker, used to say at the end of every one of his broadcasts, "If you don't like the news . . . go out and make some of your own."