

THE FUTURE OF INNOVATION, IDEAS,  
AND PROBLEM SOLVING



# crowd storm

SHAUN ABRAHAMSON   PETER RYDER   BASTIAN UNTERBERG

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# Introduction

*Properly organized and run, a group can be a gold-mine of ideas.*

—Alex Osborn

Alex Osborn loved ideas. His ideas helped to propel his advertising agency, BBDO, to become one of the most innovative advertising firms in the United States. In 1948, he revealed the secret to a process for coming up with new ideas and innovations in his book, *Your Creative Power: How to Use Your Imagination*.<sup>1</sup>

One of the chapters, “How to Organize a Squad to Create Ideas,” introduced a process for soliciting many ideas from groups of people. Osborn called the process *brainstorming*. He described how BBDO used the process to generate more and better ideas. These ideas were at the heart of the advertising agencies’ success. Many decades later, brainstorming is as popular as ever. Need new marketing ideas? Engineering problem not solved? Wondering how to win that new deal? No matter the industry or domain, you have likely participated in brainstorming sessions.

Since its introduction, the brainstorming process has been the subject of various studies and critiques, and the process has evolved. For example, Osborn believed that people should delay feedback—people were encouraged to accept all ideas. However, research suggests that debating ideas can yield better quality ideas. Similarly, while Osborn focused on everyone generating ideas together, research suggests that we are better off producing ideas independently, before getting together.<sup>2</sup>

While Osborn made brainstorming famous, he also introduced another idea that was much less practical at the time. Following his discussion of brainstorming, he talked

about *idea-thinking on a larger scale*. He described processes that were enabling organizations to accept ideas from all of their employees. Building on the highly acclaimed *suggestion systems* developed at US production plants during World War II, Osborn showed how his firm was taking brainstorming to the next level. He showed how hundreds of his employees were using suggestion systems to get the best ideas from anywhere in his firm.

Half a century after Osborn introduced us to brainstorming, the Internet transformed our ability to gather ideas on a large scale. First, e-mail replaced the paper and wooden suggestions boxes. And now, applications are speeding the collection and evaluation of ideas on a scale that lets us take Osborn's ideas to a new level. Organizations in countless industries have successfully turned to very large groups for their ideas. These online crowds might work within large organizations, but more often participants are not employees. To date, these crowds have worked together to design new products, improve services, create new marketing campaigns, and bring to market low-carbon-footprint housing—to name just a few of the many areas. This is brainstorming on a much larger scale.

We call this *crowdstorming*.

Like brainstorming before it, crowdstorming requires that we understand how best to organize the process for gathering and evaluating ideas. There are many parts of the process under investigation. This book is intended to explore and highlight the best ways we know to make crowdstorms work. Our approach builds on our combined experience with more than 200 projects and working with over 100,000 individual participants from around the globe in domains spanning marketing, strategy, design, engineering, and architecture. We have also studied hundreds of projects from other domains and talked with

some of their organizers. And we have consulted a rapidly growing body of research across a wide array of disciplines—from social science to human computer interaction—that cover the many different dimensions of crowdstorm processes.

We have seen the many ways that organizations can innovate by working with external talent:

- *Fortune 500 companies* that are reinventing their product lines or bringing new offerings to market can benefit from the steps we outline.
- *Small and mid-size companies* can use crowdstorming processes to greatly increase their access to global talent in a number of domains.
- *Nonprofits and governmental agencies* can leverage the processes and tools we discuss to tackle broad social change initiatives and create awareness around these issues.
- *Professional organizations*, such as consultancies and advertising agencies, can benefit from many of the ideas to enhance their current capabilities—and connect their global talent pools in more effective ways.
- *Universities* looking to create new virtual studio environments can also apply the material in the book—recapturing the studio environment in an online world where individuals regularly share and review work.

To highlight the potential value of the processes, we have included examples spanning industries and business functions, from startups creating consumer products to a Fortune 500 company's global energy business.

## **How to Read This Book**

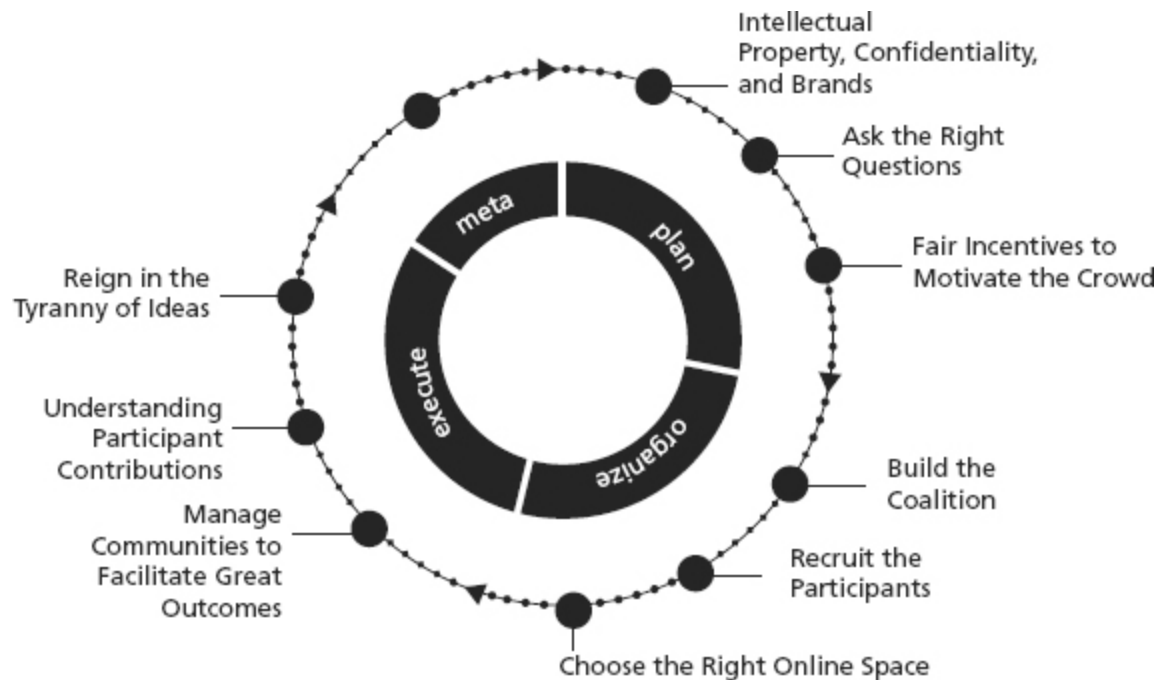
For the reader who is beginning to explore the potential of working with talent outside his or her organization, we

recommend reading Chapter 1: First, Some Context. We offer an overview of what organizations are doing with outside talent—from crowdsourcing to collaborative consumption. We focus on the benefits of outside talent, crowds, and communities and we explain where crowdstorming fits in a quickly expanding universe of crowd-enabled business processes.

For those who have worked with crowdsourcing, open innovation, cocreation, or mass collaboration, the benefits are likely already familiar. For you, we've broken the crowdstorming lifecycle down to highlight the best approaches to planning, organizing, and executing crowdstorming projects.

[Figure I.1](#) shows how a crowdstorm project might be organized from planning and organizing through execution and review (or meta). There is one notable exception. We have moved the discussion about online spaces (which covers the role of technologies and platforms) to the end. We think it's important to understand everything that makes crowdstorming work, before considering the right enabling technologies. Broadly, the chapters try to answer the following questions:

### **[Figure I.1](#) The Crowdstorming Lifecycle**



- How to weigh the business benefit of crowdstorming with an organization's legal, confidentiality, and brand needs
- What kinds of questions to ask crowdstorm participants
- How to compel a community to participate and reward them when they do
- How to recruit the best people to join your crowdstorm
- How a coalition of partners can enhance crowdstorming
- How to organize participants for the best results
- How to monitor a community in support of community management
- How to evaluate results
- The technology alternatives to enable crowdstorming
- Moving beyond what we have shared in this book

We love the possibilities of crowdstorming, but we are much more excited about ensuring that you can get results from the process. So each chapter includes references to academic research and interviews, as well as our own observations. And the concepts are made tangible with stories in each chapter.

# Let's Begin

We cannot promise that we have cracked the code on all the ways organizations will use crowdstorming. What we can help you recognize— and utilize—are clear, actionable steps to begin realizing innovative outcomes by leveraging external talent. Exploring the art of the possible with a structure to harness this power can help you with idea creation, innovation, and problem solving.

We love ideas. But we love putting ideas into action even more. So let's get started.

## Notes

1. Alex Osborn, *Your Creative Power: How to Use Your Imagination* (New York: Charles Scribner's Sons, 1948).
2. For an introductory summary of research on brainstorming see Jonah Lehrer, "Groupthink: the Brainstorming Myth," *The New Yorker*, January 30, 2012, [www.newyorker.com/reporting/2012/01/30/120130fa\\_fact\\_lehrer#ixzz28IjhxJEf](http://www.newyorker.com/reporting/2012/01/30/120130fa_fact_lehrer#ixzz28IjhxJEf).



# Chapter 1

## First, Some Context

*No matter who you are, most of the smartest people work for somebody else.*

—Bill Joy

In 2000, Goldcorp CEO Rob McEwen was frustrated with the relatively poor performance of Goldcorp's Red Lake Mine in Ontario, Canada. Goldcorp's geologists had experienced limited success in pinpointing the gold's underground location. McEwen knew he was literally sitting on a gold mine but unable to realize its potential. Then McEwen found himself at an executive education session at MIT. In a session where open source software was being discussed, it dawned on him what needed to be done. Open source software benefitted from the ongoing analysis, review, testing, and contributions of a large diverse group of people working for multiple different organizations. Could he employ similar principles to help his team improve their understanding of his mine's potential?

McEwen took an unprecedented step in his industry. He assembled digital representations of Goldcorp's proprietary geological data and made it available to people outside the company. He challenged *them* to prospect, using the digital representations of the mine. The challenge was launched on Goldcorp's website. Everything related to the Red Lake Mine—400 megabytes worth of data about the 55,000-acre site—went online and was transparent to the world. Participants were offered prize money of \$575,000 for the best ideas.

The response was astonishing—especially for an industry that had always believed the key to success lay in making its proprietary knowledge accessible only to its own employees. Over 1,400 scientists, mathematicians, geologists, engineers, military officers, students, and consultants from 50 countries downloaded the company’s data for virtual exploration. In all, participants identified 110 sites that might yield gold. Fifty percent of these sites were previously *unknown* to the company. Of these new targets, *more than 80 percent* yielded significant gold reserves. The group with the winning entry was from Australia and had never even visited Canada. McEwen estimates that the collaborative process shaved two to three years off their exploration time. The value of the gold found: *\$6 billion*.<sup>1</sup>

Another remarkable story of a company looking to external talent comes from the world of toys. LEGO is one of the fastest growing and most profitable companies in toy industry today, but back in 2003, the company was on the verge of bankruptcy. LEGO’s story is revealing not only for the way it tapped into external talent to get creative ideas but also for how it used creative collaboration to vet and find ideas that had the greatest potential to become profitable.<sup>2</sup>

From the mid-1990s to 2003, LEGO’s business stopped growing. After decades of doubling its revenue every five years, changes in the market slowed LEGO’s growth to a standstill. The impact of video and other technologies were shifting its core customer base’s buying patterns. Distribution channel changes—from mom-and-pop toy stores to retail giants like Carrefour, Walmart, and Target—impacted how LEGO interacted with its end customers. And changes in supply chains, from domestic manufacturing to offshore sources, altered the cost structure of toy production and negatively impacted the bottom line.

By 2003, the company was almost broke and a new CEO was appointed, Jørgen Vig Knudstorp. Under Knudstorp, LEGO made the transition into being an innovative company that was (and still is) highly profitable. That transition had many facets, but one that has significance for this discussion concerns the impact one single new product experience had on the way LEGO now manages innovation.

The product was called LEGO Mindstorms. Mindstorms is a configurable robotics product that LEGO successfully launched in 1998. However, during the trying times at LEGO, much of the original team had moved on. But LEGO knew there was an enthusiastic group of people who were very familiar with Mindstorms—Mindstorms customers. So they reached out to this group—first on an individual basis and then through a consumer products show. They had hoped to get support from 100 of these fans; they were inundated with responses from 10,000. The new development team was flooded with new ideas for the product.

What LEGO discovered was an external pool of design talent that was smart, enthusiastic, and motivated by their love of the Mindstorms product. LEGO quickly recognized that this group could not only *provide them with product ideas* but, more importantly, they could *help evaluate which ideas were best*, and thus help ensure that the new product would be profitable.

By the time Mindstorms was launched in 2006, the company had handed over incrementally more control for idea creation, refinement, and selection to the external community of Mindstorms enthusiasts. The launch was a huge success. LEGO even turned over part of the marketing—interviews with the press—to the community. This external community turned out to be not only more knowledgeable about the product, but more believable in extolling the virtues of LEGO's newest offering.

Almost a decade after they began, LEGO has not slowed in its pursuit of new and better ways to work with outside talent. In 2011, LEGO launched a process called *Cuusoo* (which means *wish* in Japanese) to find and evaluate new ideas for LEGO products. Anyone can submit ideas to the Cuusoo site. Idea owners are encouraged to promote their ideas. If 10,000 people vote for an idea, LEGO will review the idea. If the idea meets certain guidelines related to considerations like design, brand, pricing, availability of a license, LEGO will put the idea into production and share royalties with the idea owner. In the case of LEGO Minecraft, the product was already a smash hit game. Cuusoo made it easy for this already engaged and excited community to begin creating brand extensions on their own for the benefit of both LEGO and MineCraft. And, while LEGO is certainly well known for deals with brands from Disney to Starwars, this time the new partnership idea and validation came from a different place—the smart, insightful, and engaged people outside LEGO.

## Abundant Talent Outside

Goldcorp and LEGO could not be more different businesses. But both tapped into abundant external talent to help them succeed in the face of some of their greatest challenges. They discovered people who had the background, interest, or enthusiasm to engage with their organization and innovate. They found ways to organize interactions with people outside their internal structure, in part out of a confluence of necessity and design—but, more tellingly, because they *could*. And, while their approach to innovation might seem to be new, it is in fact a very old idea.

In his 1937 essay on the “Theory of the Firm,”<sup>4</sup> Nobel Prize winning economist Ronald Coase asked this question: Given that “production could be carried on without any

organization [that is, firms] at all,” why and under what conditions should we expect firms to emerge? Coase’s essay looks at two competing sets of costs. On the one hand, Coase finds that organizations tend to become less successful at allocating resources as they grow; more specifically, they tend to *misallocate* resources. On the other hand, Coase looks at the hidden costs of transacting with the market—such as searching for talent, evaluating skills or bargaining, securing trade secrets, and enforcing contracts.

In 1937, Coase’s costs were determined in part by the business processes of the time, and also by the communication options. Today, online platforms and social networks are reducing some of the transaction costs and the increasingly competitive global market is escalating the costs of misallocated resources inside the firm. In other words, it’s a perfect time to revisit the balance between when to use internal resources versus when to go out to the market. We also see that, with these lower costs, there is a third type of relationship—people who are not employees and who are not accessed via the market. Like LEGO’s community of Mindstorms fans, their relationships to the organization are different as are their motivations.

In his 2008 book *Here Comes Everybody*,<sup>5</sup> author Clay Shirky hints at the shifting role of the organization in his subtitle: *The Power of Organizing Without Organizations*. He examines how new forms of social interaction enabled by technology are changing the way people are forming groups and working—from political movements that topple dictators, to consumer cooperation that causes corporations to change behavior. And, in *Imagine: How Creativity Works*,<sup>6</sup> Jonah Lehrer suggests that most innovation and creative ideas do not occur when we are alone, but instead emerge from social interactions that “inspire novel thoughts.” Lehrer explains, “It doesn’t matter if this sharing takes place on

Hudson Street or at a bar full of engineers . . . the exchange is all that matters.”

While Coase is focused on the pure economics of the organization versus the market, author and law professor Yochai Benkler introduces additional forms of cooperation. In *The Penguin and the Leviathan*,<sup>7</sup> Benkler tracks the broad expansion of cooperative systems while making a case for the reduced impact of pure self-interest—and the rise of more cooperative alternatives. He points to the “disruptions wrought by the internet” that are “accelerating the rate of globalization and scientific growth, all of which are forcing an increased number of businesses to examine how they can emphasize learning and innovation rather than mere efficiency.” Benkler makes the case for balancing social and selfish incentives. He notes how organizations are seeing the best talent drawn to work that is either inherently rewarding or widely associated in the society with respect and value. And, he concludes, “As our world continues to flatten and the boundaries of communication continue to disappear, more and more companies are adopting . . . collaborative strategies. . . . In a global economy, you never know who, somewhere in the world, will be willing and able to help you or who will come up with a new and better way to do what you are doing. . . . The most successful know that innovation happens everywhere. Not just in executive boardrooms, or R&D labs, but everywhere.”

One of the first to explore the shifting balances between transaction costs and resource allocation was Henry Chesbrough. In his book *Open Innovation*,<sup>8</sup> he proposes that there are a much greater number of smart, creative, and innovative people and ideas *outside* an organization than within it. Chesbrough says that innovative solutions to challenges exist somewhere in the world and an organization’s “innovative” process is no longer problem solving but “solution finding.” Thus, the innovative process

needs to focus on the methods needed to do the outreach to talent and then manage the process. He indicates that bringing resources together to collectively work on challenges creates a much broader network to address problems. To be successful, the innovative process needs to focus on ways to motivate and manage this truly diverse and often global resource.

Organizations such as Goldcorp and LEGO—along with many others that we will discuss in this book—have been exploring how to leverage external talent to address all kinds of creative and innovative challenges: from new product design to making sense of massive data sets, from architectural challenges to reframing social issues. As the projects above highlight, companies adopt crowdstorming for varying reasons. These organizations are finding new ways to live with Joy’s Law, that most of the best people work for somebody else. But this no longer needs to mean that you cannot work with them in new ways.

In *The Power of the Pull*,<sup>9</sup> John Hagel III and John Sealy Brown lay the groundwork for organizations to access external talent by pointing out what is happening in today’s business environment. Organizations that were used to planning their operations with long-term horizons and focusing on operational efficiency must now respond rapidly to a business environment characterized by fluidity. They must become learning organizations and figure out how to achieve extreme performance by learning to scale their organization’s talent base quickly. Hagel and Brown state that the twenty-first-century organization will still use tools within the firm but will need to access a much broader ecosystem. Their takeaway: learning and innovation will come from collaboration with *talent outside the organization*.

Leading business consulting organizations like McKinsey are helping clients evaluate when and how to use

collaborative planning to set strategic direction for their companies. In a 2012 *McKinsey Quarterly* article entitled “The Social Side of Strategy,”<sup>10</sup> Anna Gast and Michael Zanini argue that, while it’s certainly not a replacement for the strategic planning edifice, engaging larger groups in strategy discussions is valuable for generating ideas, prioritizing them, and challenging operational plans. McKinsey continues to explain that this represents a shift in how an organization should think about its leadership roles and structure: the “C” suite moves from their traditional roles of all-knowing decision makers to “‘social architects’ who spend a lot of time thinking about how to create the processes and incentives that unearth the best thinking and unleash the full potential of all who work at a company.”

Finally, in business academic circles, reviews like the *MIT Sloan Management Review* have been providing research and analysis for years on how to engage in what they call *collective intelligence*. In a seminal article from 2010 entitled “The Collective Intelligence Genome,”<sup>11</sup> a team led by Thomas Malone starts with the premise that collective intelligence has already proved that it works. It suggests that there are four building blocks, or genes—what is being done, who is doing it, why are they doing it, and how it is being done—that help organizations create their own systems for setting up and managing open innovation projects effectively.

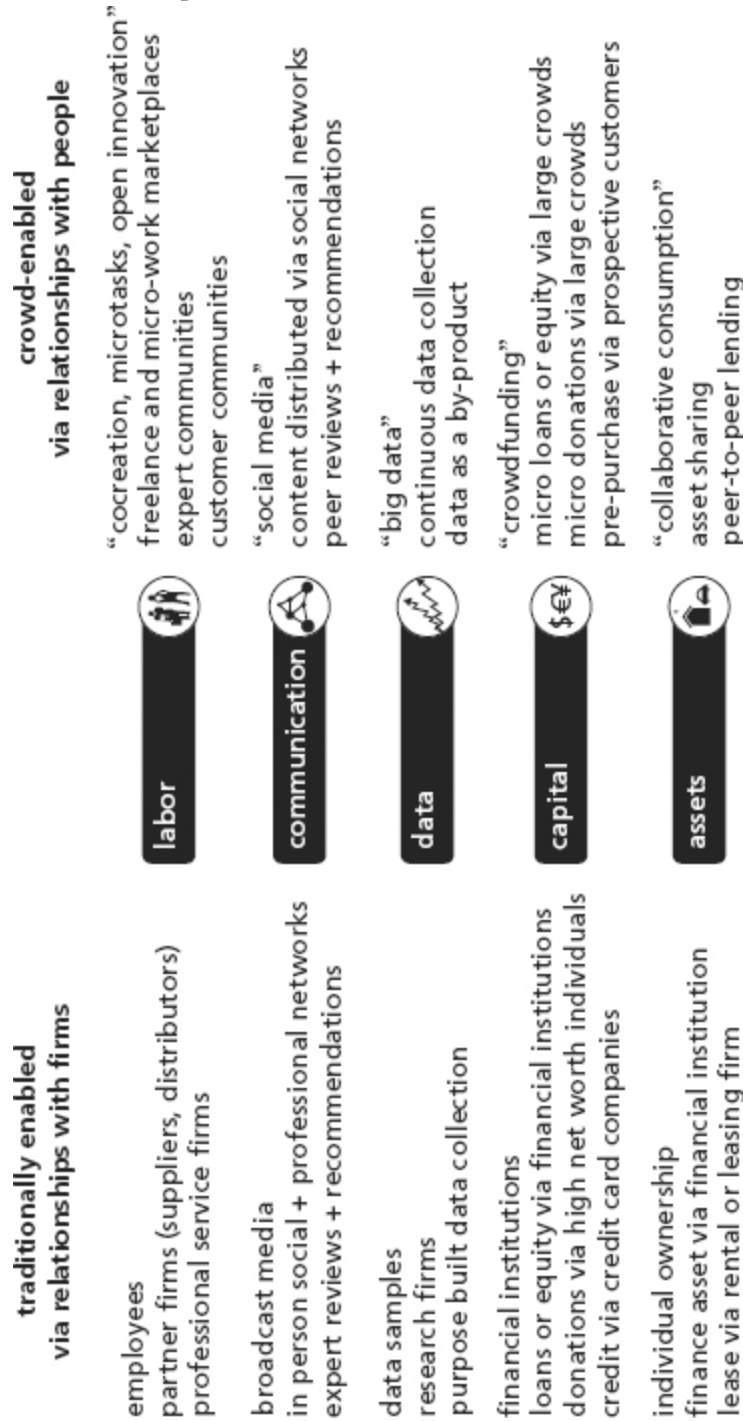
## **Working with Crowds**

*Crowdsourcing* is the term most often used to describe how organizations work with large groups to achieve any number of ends. When Jeff Howe first presented examples of the concept in his 2006 *Wired* article,<sup>12</sup> he covered a broad range of activities. Tasks differed by the level of expertise required, as well as by the amount of time required to



participate. [Figure 1.1](#) offers a perspective of what is being sought from crowds.

**Figure 1.1** The Ways Crowds Deliver Value



Jeff Howe’s original examples were mainly focused on labor. This was an extension of an older concept of

outsourcing. But rather than have one organization outsource from another, organizations can work directly with the crowds—as Shirky observed, people are organizing (and being organized) without organizations. Now crowdsourcing has taken on a much bigger definition, covering much more than labor resources.

- *Assets*: When we use Skype, we effectively borrow bandwidth and computing resources from our peers. It is invisible to us. In *What's Mine is Yours: The Rise of Collaborative Consumption*,<sup>13</sup> Botsman and Rogers highlight a range of more explicit resource sharing arrangements. Car2Go or ZipCar enables sharing of cars and ride sharing services like Zimride or Lyft fall into this category. Another example is Airbnb, which provides an alternative to hotels—only the rooms are made available by individuals.
- *Capital*: One of the first very large-scale examples of soliciting funds from the crowd (that was not a tax system) came in 2008 during the presidential election in the United States, when then-candidate Barack Obama made use of a whole array of crowd funding sources. This approach tends to focus on different models for sourcing and allocating capital, usually in return for products, services, or equity. Examples of this approach include IndieGoGo, Kickstarter, and LendingClub.
- *Networks*: A good deal of social media is concerned with how organizations can get people to influence their social networks, very often via content that is likely to be shared for a variety of reasons, including humor or utility. Having the crowd distribute content in this way is not just cheaper than paying for distribution (often called paid media), but it often has the benefit of being more believable because it comes via people we know.
- *Data*: As we have shifted more of our business and social interaction online, we are creating “Big Data”—that is,

massive amounts of data that organizations are trying to understand to use for many purposes. For example, the data is used to determine what ads we see online and what we might prefer to purchase or rent. The data can be used to monitor our driving, qualify us for better insurance, or compute traffic flow and propose better routing. The main challenge is understanding all of this data. Of course you can connect with a crowd to help with this now. Kaggle will let you connect with data scientists who are expert in the processes of teasing insights and models from these large data sets.

Each of these are fascinating, fast-moving shifts in how we (and our organizations) access resources. But our primary concern is the *Labor* category. Within this category are a number of models for connecting organizations and crowds. There are labor marketplaces (e.g. oDesk, Task Rabbit, eLance, Workmarket, Mechanical Turk) to connect organizations with independent professionals in areas ranging from administrative tasks to software testing, from graphic design to assembling Ikea furniture. These are classic jobs made more accessible because of lower transaction costs, which is what Coase was concerned with. Then there are microtasks—small pieces of work that may not require domain expertise, but require human judgment—like determining whether content is pornographic or what words appear in an image. Neither of these models is our main concern, though.

We are interested in a particular type of work—the generation and evaluation of ideas. In the cases we will explore, ideas take many forms—from short text descriptions like the ones you might find in a suggestion box, to complex prototypes (from prediction algorithms to robot cars). Ideas can be business plans or proposals for new business strategies. They can be beautifully rendered homes barely distinguishable from real photos or flowcharts

illustrating how a proposed software application might work. And, just as important, we are interested in the reactions to these ideas. We want to understand the conversations that are inspired by the ideas that can help to improve and evaluate the ideas. In the end, all the ideas require some level of investment, and we want to know which ideas we should expend time and effort to develop.

## **Starbucks Betacup Challenge—New Sources of Sustainable Innovation**

When Starbucks decided to sponsor the complex problem of reducing waste generated by coffee cups in 2010, it was already well on its way to finding solutions to the problem.<sup>14</sup> But they recognized that they could use additional help. Director of Environmental Impact Jim Hanna put it this way: “Given the complexity of the disposable cup waste issue, we need a broad range of stakeholders to become involved in finding solutions. In addition to working with local municipal governments, materials suppliers, and cup manufacturers to improve recycling infrastructures, we believe in harnessing the creativity of environmentally conscious individuals to identify new alternatives.” To do this, Starbucks sponsored an outside group of partners who had initiated the Betacup Project to address the global problem of disposable cups.

While Starbucks sponsored the contest initiative, the Betacup team managed the challenge. It was led by Toby Daniels, social crowdsourcing agency Mutopo, and run as an online contest on Jovoto, a platform designed to cultivate creators and innovators to work together collaboratively on challenges and which had its own creative community. Notably, Starbucks, along with the Betacup team, reached

out to include additional partners including Core77, Denuo, Good Day Monsters, Instructables, and Threadless—all of whom brought their own community of professional designers, design students, and enthusiasts, as well as media outreach and ongoing exposure for the contest.

The contest provided a brief that outlined the problem, as well as a cash incentive of \$20,000 for the winners, which would be divided among those whom the creative community—as well as an expert panel—judged to have the best solution. The challenge was open to all and encouraged public discussion and feedback that allowed for ongoing refinement and updates on submissions. Evaluation and curatorial input by the creative community encouraged networking and teaming. The low barrier of entry—along with the collaboration-enabling infrastructure—allowed the Betacup organizers to tap into a new audience of creators: a community that not only provided new ideas, but could also validate ideas that were submitted, as well as validating Starbucks' three-pronged approach to addressing the paper cup waste issue.

We can measure the results of the Betacup challenge in two ways that shed light on important aspects of crowdstorming. First, Starbucks received a lot of good ideas. The Betacup contest ran for two months, received 430 idea submissions, and 1,500 idea revisions from all over the world. The contest logged over 5,000 comments and 13,000 ratings. The winning idea was not even a product. It was a low-tech solution called the *Karma Cup* whose elegance is in its simplicity. Every Starbucks store captures reusable cup usage and posts it on a chalkboard; when the tenth beverage is sold to a person using a reusable cup, that beverage is free. The solution resulted not only in a cool new initiative, but in a behavioral change among customers as well. It was designed to change the global conversation that had begun the platform into a local conversation in