

LEAD-USER RESEARCH FOR BREAKTHROUGH INNOVATION

Lead-user research can help companies uncover both unmet customer needs and the innovative solutions that leading-edge users are developing to meet those needs.

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OVERVIEW: *The best companies often work closely with their customers to uncover needs and wants that can be translated into new or improved product or service offerings. The lead-user research method goes a step further, looking not only to the typical customer, but to those users whose needs and preferences lead the market. These lead users, as they are called, will modify products or use them in unforeseen ways to meet their needs. The lead-user research method was developed as a systematic way to mine the insights and innovations of these lead users. Since it was pioneered in the late 1990s, the lead-user method has evolved and grown. This paper offers an update on the use of the method and on adaptations to increase its efficiency using online search and communities as well as an overview of lessons learned from experiences on more than 20 lead-user projects.*

KEY CONCEPTS: *Lead-user research; Customer-centered innovation; User innovation*

Most companies want the same thing—a healthy pipeline of breakthrough products and services that will provide robust and steady profits. To achieve this, companies often reach out to their customers directly in order to tap

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into what matters most to the people who will purchase their products and services. There is much to be learned from one's current and potential customers.

The lead-user research method goes beyond other customer-centered approaches, seeking insights not only from customers but from “lead users,” users who are so far ahead of the industry that they see no choice but to invent solutions to meet their needs. Lead users are tapped for their understanding of future needs, but even more, these visionaries provide solutions—or keys to potential solutions—for the companies that can discover these users and connect with them. As Eric von Hippel, who coined the term “lead user,” remarked, “This is not traditional market research—asking customers what they want. This is identifying what your most advanced users are already doing and understanding what their innovations mean for the future of your business” (quoted in Taylor 2006).

In the fifteen years since von Hippel partnered with 3M to create a repeatable process to leverage lead-user innovations, various companies have used and adapted the lead-user research method to fill their innovation pipelines. Von Hippel's research work and his popular book *Democratizing Innovation* (2005) have kept the notion of user innovations at the forefront of business thinking. Recent trends in user-centered innovation, open innovation, the open-source movement, and collaborative communities all have roots in von Hippel's groundbreaking work on lead users and lead-user research. Lead-user research enjoyed a surge of popularity across companies and business schools in the late 1990s and early 2000s. In addition to 3M, many major U.S. companies ran lead-user research projects between 1997 and 2002, among these Bell Atlantic (now Verizon), Nortel, Kellogg, Pitney Bowes, Philips, Nestlé, Gillette, and Cabot (Table 1).

Processes and tools have changed in the years since the initial development of the lead-user research method.

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Yet it remains a powerful tool for fresh, new thinking. The method can be used to achieve different types of business outcomes beyond developing new products and services; new business models, new product platforms, new technologies, and new markets have all been generated through lead-user research projects. I have worked directly on four lead-user projects, as project leader and lead-user consultant, each of which had a different goal: A joint project between Bell Atlantic (now Verizon) and 3M was intended to develop concepts for products and services for the telecommunications field technician of the future (see “My Lead User Story”). A Pitney Bowes project involved developing a new business model for the company’s entry into the package shipping space. The Gillette team used the lead-user research method to spur technology innovation. The fourth company (confidential) was looking to leverage their core technology expertise to create new growth platforms for both near-term and longer-term opportunities. The practice of lead-user research has evolved to accommodate the emergence of the Internet as a tool for identifying and communicating

with lead users, among other developments, and to incorporate lessons learned over the past decade.

A History of Lead-User Research

Lead users are individuals or firms who have product or service needs beyond what is currently available in the general market. They have a strong enough need to significantly modify existing offerings or to create new products that do not even exist yet. A lead user is motivated to innovate in order to solve his or her own problems rather than to sell a product or service (von Hippel 2005). The identification of lead users emerged from von Hippel’s observation that, in certain industrial fields, innovations most often come from users; for example, 100% of “first of type” innovations in scientific instruments and semiconductor process equipment come from users (von Hippel 1986). It is important to note that the term “user” does not necessarily imply an individual. Rather, a lead user can be an individual, a group, or a company.

If it is true that most breakthrough innovations are created by users, how can a company leverage this phenomenon? That was the question posed by Mary Sonnack, 3M division scientist and internal consultant, in 1994. Sonnack sought to find a way to generate customer-focused product concepts that went beyond incremental product improvements. Her answer was the lead-user research method, which she developed with Joan Churchill, a Minnesota-based organizational psychologist, and von Hippel. The method gives companies a systematic process to discover and mine the work of lead users to develop new strategic directions, new markets and applications, new product and service concepts, or new technology platforms.

The lead-user research method was first rolled out to several divisions of 3M in the late 1990s. In all, eight divisions were involved in lead-user research, seven

Table 1.—Lead-User Research Projects and Outcomes

Project	Outcomes
New Strategic Direction	
3M – Medical products (1st study)	product platform, concepts
Nestlé – Food products	Business model, concepts
Kellogg – Food products	product, service platform
Pitney Bowes – Shipping	business model, concepts
3M – Filtration (1st study)	product platform
New Markets and Applications	
3M – Cooling equipment	product concepts, entry markets
Nortel Networks – e-commerce	technology, product platforms
New Products and Services	
3M – Packaging products	concepts: family of products
3M – Filtration (2nd study)	concepts: user “tool kits”
Bell-Atlantic/3M – Telecom	concepts: products, services
3M – Medical products (2nd study)	concepts: product “system”
Philips – Home appliances	concepts: product “system”
New Technology Platforms	
3M – Commercial graphics	concepts: technology, product
3M – Biomaterials	concepts: technology, product
Cabot	concepts: technology, process
Gillette	concepts: technology

projects were completed, and a 3M Center of Excellence was established. Training materials were packaged into a reusable workbook (von Hippel, Churchill, and Sonnack 1998), which was reissued online in 2009 for free access via a creative commons license (Churchill, von Hippel, and Sonnack 2009), and six train-the-trainer videos were developed to help lead-user coaches and teams understand the process. In 1999, a *Harvard Business Review* article was published on lead-user research at 3M (von Hippel, Thomke, and Sonnack 1999). In addition, three Harvard Business School cases focused on the lead-user process at 3M (Thomke and Nimgade 1998a, 1998b, 1998c).

In 2002, a research team published a study comparing the success of the lead-user research method at 3M to traditional idea-generation methods such as team brainstorming (Lilien et al. 2002). In addition to qualitative indicators, the study looked at estimated sales forecasts for five years for products emerging from various ideation processes and found that annual sales of product ideas generated by the average lead-user project at 3M were conservatively projected to be \$146 million after five years, more than eight times higher than forecast sales for the average contemporaneously conducted “traditional” project (Table 2). Moreover, each funded lead-user project was projected to create a new major product line for a 3M division. As a direct result, divisions funding lead-user project ideas were projecting their highest rate of major product-line generation in the past 50 years.

The lead-user research method continues to be popular in Europe, primarily in Denmark, Austria, Germany, Switzerland, and the United Kingdom. The Copenhagen Business School-based Danish User-Centered Innovation lab (DUCI) has been studying lead-user methods and collaborating with businesses and the Danish government on innovation projects, and the Vienna University of Economics and Business hosts a User Innovation Research Initiative whose mission is “to deepen our understanding of the phenomenon of user innovation” (User Innovation Research Initiative 2010, ¶1). There are 13 academic research groups worldwide focused on lead-user research. A list of these research institutions, together with links to more information about each of them, can be found at <http://www.leaduser.com>.

The wider academic community has been exploring both theory and applications of the lead-user research method (Lüthje et al. 2004; Heinerth et al. 2006; Hassan 2008). In addition, practitioners continue to discover and try the lead-user research method, making adaptations to accommodate both recent technological developments and context-specific needs. Chris Flanagan of the Business Innovation Factory (BIF) has begun to experiment with finding and bringing lead users into BIF’s real-world experimentation environments (Flanagan 2008). Cecilia Weckström, LEGO’s senior director of consumer insight and experience innovation, noted the wide-ranging effect of the company’s lead-user program. For Weckström:

Table 2.—Funded Ideas: Lead-User Origin vs. Non-Lead-User Origin

	LU ideas (n = 5) ¹	Non-LU ideas (n = 42) ²	Sig.
Factors related to the value of idea			
Novelty compared with competition ³	9.6	6.8	0.01
Originality/newness of customer needs addressed ³	8.3	5.3	0.09
% market share in Year 5	68%	33%	0.01
Estimated sales in Year 5 (deflated for forecast error)	\$146m	\$18m	0.00
Potential for entire product family ³	10.0	7.5	0.03
Operating profit	22%	24%	0.70
Probability of success	80%	66%	0.24
Strategic importance ³	9.6	7.3	0.08
Intellectual property protection ³	7.1	6.7	0.80
Factors related to organizational fit of idea			
Fit with existing distribution channels ³	8.8	8.0	0.61
Fit with existing manufacturing capabilities ³	7.8	6.7	0.80
Fit with existing strategic plan ³	9.8	8.4	0.24

1. Funded LU ideas: All are for major new product lines.

2. Funded non-LU ideas: One is for a major new product line; 41 are incremental ideas.

3. These items were measured using a 10-point rating scale, where 10 = high.

Source: Lilien et al. 2002

. . . the largest impact [of LEGO's lead-user process] has been the culture change which lead-user innovation has caused within LEGO, making us more community focused and inviting users in to explore a number of product ranges and new models with us. The Mindstorms NXT is an enduring example of what a great product can emerge from a lead-user process. The LEGO hobby train was a complete lead-user effort with minimal involvement from LEGO and launched the train category as a user-collaboration platform. As we developed the infrastructure for mass customisation with LEGO Factory and Digital designer—we can now begin to use that platform to involve our users in the task of building LEGO Universe, a multi-player online game. LEGO Architecture is but one example of opening up our business platform for collaboration with the fan community and moving towards an eco-system of value creation. (Weckström 2009, ¶3)

The Lead-User Research Method

There are four key differences between lead-user research projects and standard market research efforts. Lead-user research projects:

1. Focus on the needs of leading-edge users, not routine users;
2. Seek not only needs data but innovations—user-developed solutions to leading-edge needs—from users;
3. Seek needs and solutions in adjacent markets and nonobvious, analogous markets, in addition to target markets;
4. Employ a crossdisciplinary team, bringing in perspectives from various parts of the organization.

The success of a lead-user research project depends greatly on the project team. Individual team members must have or acquire advanced interviewing skills, and the team must include a balance of deep expertise in all relevant domains and operate from a spirit of inquiry and creativity.

Lead-User Techniques

The lead-user research method as usually practiced employs a four-phased approach. The first two phases address customer needs; phases three and four focus on solutions. The method is designed to be completed in approximately six to eight months, with a crossfunctional project team of four to six people, one of whom is a project leader, all working part time. One or two lead-user process “coaches” may be assigned to guide the team. A coach is knowledgeable in the lead user process, guiding the team through the stages of the process and training the team on lead user interview, networking, observation, and

workshop design techniques. Coaches are not subject matter experts in the research domain.

Phase One: Preparing to Launch the Lead-User Project. The team plans the project schedule, learns about the current marketplace, and shapes the project focus.

Phase Two: Identifying Key Trends and Customer Needs. The team seeks out lead users and lead-use experts in order to understand trends that impact the area of study and to glean deeper insight into the needs of leading-edge users by observing how they are innovating make-shift solutions to address gaps in the market. This phase culminates in framing the needs that will be the focus of the next phase.

Phase Three: Exploring Lead-User Needs and Solutions. The project team continues to find lead users through networking and interviews. The team may make site visits to observe lead users and uncover tacit information. (A lead user may not be aware of the uniqueness or innovative quality of his or her work, and the project team, in observing the user, may glean additional insights.) At the same time, the team generates preliminary solution concepts by putting together insights gleaned from various lead-user innovations and outcomes from team synthesis activities. These solution concepts will be refined further in a workshop with some lead users.

Phase Four: Improving Solution Concepts with Lead Users and Experts. The team invites a select group of lead users and lead-use experts to attend a two-and-a-half day workshop focused on improving or adding to promising preliminary concepts. The project team takes the concepts generated from the workshop, ties them into the other pieces of the solution, creates a business case, and delivers recommendations to management.

The lead-user process iteratively employs techniques of networking, interviewing, direct observation, literature scanning, and synthesis. The team begins with a project focus, immersing in markets they are targeting and identifying trends of importance. The team scans professional journals, articles, and other literature to determine what is happening, who the major players are, and who may be doing leading-edge work. All of these activities guide the team in where to look for lead users. The team then interviews key people, both to look for new insights and to discover who else may have further information or additional insight. Often, the leaders in a field will know other leading-edge people in that field; the project team can use references from an interviewee to identify and contact other lead users. This process of networking is known as “pyramiding” because the project team members network up the pyramid of expertise until they find the leaders at the top.

A few key elements make the lead-user research method unique. First, the interviews are not market survey-type

My Lead User Story

In 1998, I led a joint lead-user research project with 3M and Bell Atlantic (now Verizon), a major customer for 3M's telecommunications test equipment. Our charter was to look five years out and develop concepts for what the telecommunications field technician of the future would need. We were thinking along the lines of futuristic portable terminal devices and software components. Our initial focus was to understand the needs of advanced users (before we networked our way to lead users), in order to identify attributes of importance.

For my first site visit, I rode along with Joe (not his real name), a telephone company field technician; he took me to one of the worst neighborhoods in Brooklyn. Responding to the first call, we walked into an apartment where a scantily clad, glazed-eyed young woman lounged on a mattress on the floor. Our troubleshooting found us climbing out her back bedroom window, into the backyard, across a thicket of thorns and weeds, and over to the pole at the far end of her yard, all the while being serenaded by a huge drooling, barking dog in the neighbor's yard. "I see the problem," Joe said. He climbed the pole, carrying an awkwardly worn, "hand-held" device that someone in our group had developed as a state-of-the-art field technician's tool. The terminal, which included 3M's test "brick," weighed about five pounds. Joe fixed the problem quickly. We had survived the thorns, the thugs, and the dogs, and I was ready to get back into the truck and lock the doors. But first, we had to climb back into the bedroom window, check the customer's dial tone, and use the customer's line to connect the hand-held to the service database and update the job details.

At our next call, another field technician was standing out front, leaning against the building and drinking a soda. He had gotten a call for a different apartment in the same building. Why were two technicians dispatched to the same building? The other guy was a novice. Joe was a super-technician, and Joe discovered that a cable had been clipped by neighborhood troublemakers, and its rubber melted so the copper could be sold. As it turned out, it was lucky that there were two field technicians at that one job. It made the activity of running the new cable much quicker, and the novice technician learned new troubleshooting and repair tips from Joe.

The findings from this site visit were echoed in numerous other site visits and interviews. A new "hand-held" terminal was but one of the future needs of field technicians. Technicians needed a better process to close out jobs, one that did not involve going into customers' houses. They needed better information about the equipment at the customer premises. New field technicians, of which there were growing numbers, needed to communicate with more-experienced technicians who could help them troubleshoot and clue them in to the realities of nonstandard telephone setups and a diverse, unpredictable client base. Dispatch rules needed to be overhauled. And as for the hand-held terminals, they needed to be designed ergonomically so that the technicians could climb poles and fences—and flee dogs. Any new hardware and software needed to keep pace with a new, rapidly changing set of multiple technologies, which meant upgrading and updating them had to be as cost-effective as possible.

Up to this point, our ethnographic research and trends analysis work did not distinguish the lead-user research method from other methods of identifying customer needs. When we began to tap into lead users our research changed. We identified which attributes of the technicians' needs were most important and began seeking out lead users in other industries with

interviews, nor are they of the type "what do you do?" Rather, they are in the spirit of "What do you know?", "What do you think?", and "What is your intuition?" The interviewers aim to understand the perspectives and insights of the interviewees, seeking out stories that are rich in concrete examples. Eliciting those stories requires strong interviewing skills. A good interviewer is discerning, open to surprises, and able to drill down beyond pat answers. The interviewer must also be able to combine seemingly disparate pieces of information into concepts and work generatively within a project team.

Second—and this is a key differentiating aspect of lead-user research—lead users and lead-use experts are not necessarily in the target market or target technology domain. Indeed, a different industry or application may

have solutions that are far in advance of typical solutions in the target industry, and that insight may seed major innovation. Antilock braking systems originated in the aerospace industry, where aircraft operators had an extreme need to stop vehicles quickly; later deployed in automobiles, they are now a standard safety feature. Thus, a lead user is a lead user with respect not to the field of application, but with respect to a particular attribute being investigated. For example, in a 3M medical-products project, the application area was surgical draping for control of patient infection. Investigating low-cost methods of bacterial control in veterinary surgery, the team became interested in how materials adhered to skin. Seeking insight into this attribute took the team to a leading Broadway makeup artist who specialized in fitting actors with full-face masks.

analogous needs and innovative solutions. Those attributes included the need to learn increasingly complex telecom equipment, the need to interact with colleagues, the need to work in cramped or uncomfortable quarters while fixing the customer's equipment, and the need to be able to respond to the strange and sometimes wild behaviors that human beings exhibited toward and around their telephone equipment.

We spoke to Julian Orr, a member of the Xerox Palo Alto Research Center and the author of *Talking About Machines: An Ethnography of a Modern Job* (1996). Orr's insights about Xerox copier repair technicians and their need for community, assistance in error diagnosis, and information sharing rang true for our telephone technicians. We met with someone at General Motors who had built an extensive expert-system database with 200,000 rules that could be presented to the technician to assist in diagnosis, based on the technician's level of knowledge and skill. We talked to Marc Prensky, a leading designer and developer of online training games. Prensky was using games to engage workers in order to help them learn. He had studied the vastly different reading and learning habits of the younger generation and had developed methods for corporations to train their younger workers.

We engaged Robert Weinreb, founder and president of the Tenba Bag Company, to give us insight on ergonomic design. Weinreb and his company had developed breakthrough innovations in ergonomically designed camera bags. He had been a photographer who desperately needed a malleable, special-purpose, lightweight, protective equipment bag to take with him on photo shoots. There was nothing like this on the market, so he designed and manufactured his own and had become a major seller of camera equipment bags. We worked with Dan Siewiorek, a Carnegie Mellon professor whose specialty was wearable computing. We also worked with people in the fields of learning and communications, human computer interaction, and virtual reality, as well as people from across the phone company: field technicians, supervisors, and management.

After five or so months of investigation, we brought top experts from this wide range of areas to a two-and-a-half-day solutions workshop, where participants worked on three carefully selected aspects of the solution space. Some of the features we listed: a smartphone; an off-the-shelf device that we could load applications on; a keyboard; a camera so that technicians could send each other pictures of what they had found in the field; the ability to store the device in a holster; and a device with hands-free, voice-activated capability. One of the concepts that emerged from that workshop bears an uncanny resemblance to the BlackBerry® Curve™ I use today.

The wealth of compelling insights and innovative concepts for the telecommunications field technician of the future came from working not only with current users, but with lead users, and from leaders not only from our own industry, but from related and very different fields, where users had the same attribute needs (such as a lightweight, malleable carrying case). 3M went on to develop a set of new telecommunications test equipment features that allowed physically isolated workers to work in virtual teams to resolve problems.

The Bell Atlantic team transferred seed ideas for process and tool improvements to the engineering and management teams. All team members involved in the process learned to look at users, lead users, and the innovation process itself in a new and exciting way.

The third point to note about the lead-user method is that the process is iterative and combinatorial. The team does not merely identify a single lead user, find a compelling solution, and incorporate it into the pipeline. The combined insights and information from the range of lead users are synthesized and built upon by the project team as they generate concepts. Finally, the lead users invited to the workshop may or may not be the same people the team worked with during earlier phases. As the project evolves, different questions and challenges emerge, and different lead users may be tapped. Here again, lead users may not be leaders in their own industry; rather, they are lead users for particular attributes of the solution that the project team is after. A successful outcome lies not in simply finding lead users, but in undertaking the iterative

activities of question formulation, discovery, and synthesis that suggest *which* lead users to go after.

For readers interested in learning more about the lead-user research method, the complete handbook (Churchill, von Hippel, and Sonnack 2009) and training videos are available for free download at <http://web.mit.edu/evhippel/www/tutorials.htm>.

Variations on the Lead-User Research Method

Two variations on the process of finding lead users have emerged from efforts to increase the efficiency of the search process and leverage the explosion of information and networking tools available online. In contrast to the “pyramiding” process defined in the original lead-user process guide, some users now engage in “broadcasting,” seeking lead users by posting to websites, online

forums, or discussion groups lead users are likely to visit and asking lead users to identify themselves or their colleagues. This process was described to me in a 2008 conversation by Peter Kragh, Director of Innovation, Ostomy Care Marketing at Coloplast A/G, a long-time practitioner of lead-user research methods.

This technique has arisen with the growth of the Internet. With the proliferation of online communities, the task of identifying lead users is now often accomplished by e-mails, online forum posts, and broadcasts to community websites rather than through the more laborious process of conducting preliminary interviews via individual telephone calls. A new method known as “netnography”—a combination of Internet and ethnography—is being investigated as a way to find lead users. Netnography identifies online communities of interest and compares posts by the most active community members to a set of lead-user characteristics (Belz and Baumbach 2010). While the authors acknowledge the limitations of this method—they are assessing whole individuals based on community posts, with no consideration of offline character traits—they have found that 22.5 percent of active online community members possess lead-user attributes, and they point to this method as a way of accelerating the process of finding lead users at a reduced cost.

Some practitioners have streamlined the lead-user research process by focusing on the workshops themselves, skipping the earlier phases of trend and needs analysis. Alexander Lang, former director of marketing and innovation at the German automotive supplier Webasto and now an independent consultant, described to me how he runs successful lead-user workshops for the automotive industry throughout Germany and other parts of Europe to innovate solutions, drawing from a large pool of contacts he has aggregated; Lang’s workshops draw on both lead users and “avid” users. Lang has developed a process for identifying ideal workshop participants, and he works with companies to frame the focus of the workshop and then select lead-user workshop participants from among his large database.

Benefits and Challenges of the Lead-User Research Method

The core idea of the lead-user research method—that lead users from your own, related, and different domains have insights or solutions that can be fruitfully leveraged for breakthrough innovation—is a compelling concept that has stood the test of time, even as it has adapted to advances in technology. However, the method also presents some challenges. In this era of accelerated innovation cycles, project teams may not have an extended period of time to develop a research project with outcomes that are difficult to predict. Temporary teams, especially crossfunctional teams and part-time teams, do

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not always get appropriate support and “air cover” from management, which can undermine their effectiveness and rob the project of needed resources.

Based on direct experience with four lead-user projects in four different companies and on interviews with practitioners working on dozens of additional projects, I have distilled four common challenges specific to the lead-user research method:

Finding the right people: Reaching the real lead users and lead-use experts. In 1998, we could not Google a topic. We could not, for example, type in “wearable computing” and get 225,000 hits. We found people by scanning journals and media and contacted them by telephone or, occasionally, by email. We built our network by asking people whose insights they followed. An early “no” was discouraging for some team members. The tendency was sometimes to make the best of a suboptimal contact rather than pressing to find a good match.

While the Internet has totally changed the search paradigm—online communities often point to the top thought

leaders in an industry—there is no substitute for the direct interaction between lead users and project team members, eliciting stories and uncovering tacit information. Project teams need to learn the art of finding visionaries and mining their insights.

Getting the right people to answer the e-mail or phone call. While the right people may be easier to find these days, it may be more difficult to get them to respond to an interview request. For some, it's a matter of time, as demands on people's time expand; others may have concerns about sharing intellectual property with a project team.

Once the right person is found, the team member needs to give that person a compelling reason to respond and to address concerns that may keep the interviewee from participating. True lead users are often passionate about their needs and intrinsically motivated to ruminate aloud about visionary solutions. Often, they are thrilled to share their stories. And almost always, those stories reveal at least one surprising insight. Given the emerging trends of collaboration, open innovation, and open-source innovation, increasingly sophisticated and varied intellectual property arrangements can be designed to protect participants who are concerned.

Remaining open-minded about problems and solutions. It's not enough simply to follow the steps of the lead-user research process; team members must be open to seeing problems in a new way and humble enough to believe that users could have a key piece of a compelling solution. I once worked with a team member who believed that he knew the domain better than users; he knew what the problems were, and he had already thought of several solutions. In fact, he had drawings of a solution in his notebook on the first day we met as a team. With each interview he conducted, he returned to the team with the same findings, regardless of whom he interviewed. His point of view hampered the team during internal synthesis and sharing sessions. He ultimately dropped off the project team, believing it a waste of time, and the team got back on track.

To mitigate this risk, team members should be carefully selected. In addition to being experienced and knowledgeable in his or her domain, every team member should be a good communicator and an open-minded, expansive thinker.

Allocating enough time for the process. The most common problem encountered on lead-user research teams is the lack of time for interviewing, site visits, synthesis, workshop planning, and all of the other necessary steps in the process. The original method calls for four to six people working part time for six months. However, it is difficult for many people to find momentum for research, interviews, and synthesis when their "main job" continues to demand time and attention. Meetings, deadlines,

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and other commitments can interfere with the interviewing process. The other area where insufficient time allocation becomes an issue is at the end of the project. Some organizations falsely believe that the project is over when the workshop ends and that the workshop output can be shipped directly into the pipeline as is. On the contrary, the team needs additional time to refine and reshape the concepts and develop business cases based on workshop outcomes.

In reality, team members should be expected to have weeks where they must devote all of their time to the project, and project managers probably need to spend 70 percent or more of their time on the process throughout the life of the project. This commitment should be acknowledged up front and accounted for by management in order to achieve a successful outcome.

Conclusion

The lead-user research method provides a unique way to uncover rich information on emerging and future customer needs. By studying the innovations of users at the leading edge of an industry and mining the insights of those users who have solved analogous problems in other industries, a company may find the next breakthrough innovation. The method can help a company break away from "me-too" product extensions and accelerate the

creation of new markets, products, platforms, or even strategic directions.

However, successful implementation of the method requires appropriate management support, careful team selection, and sufficient time to allow insights to develop. During the course of a lead-user research project, the team must understand, shape, and synthesize a flood of information; members must be prepared to embrace unexpected insights and think open-mindedly about where or who the next breakthrough will come from. It is difficult to predict at the outset of a project where the team will wind up. Mid-project surprises may point the way to unanticipated successes, and companies need to develop an appetite for such surprises. Many companies aspire to be user centered, but not all succeed. It takes enormous courage to break out of established product labs and open one's eyes and ears to where users are taking you. That courage can be rewarded with breakthrough innovation.

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