Executive Summary

Web 2.0 technologies present an opportunity for firms to create online communities where users engage in value creation by submitting product reviews, providing feedback, suggesting ideas, and identifying new sources of innovation. Our research suggests that there are four major challenges associated with successfully integrating an online user community into an organization’s innovation processes: understanding the ideas posted, identifying the best ideas, balancing the needs of transparency with the community against disclosure to competitors, and sustaining the community. In this article, we analyze specific aspects of these four challenges that became evident during the first 18 months of Dell IdeaStorm, Dell Computer Corporation’s online user innovation community. We describe the recommendations that we initially posted on Dell’s site for improving IdeaStorm and the responses we received. The article concludes with seven recommendations for how to overcome these challenges, which we believe can be used by other firms to leverage user innovation communities using an open model with social media tools.

THE PROMISE AND CHALLENGES OF USER INNOVATION COMMUNITIES

Open business models, based on organizations introducing social technologies to engage directly with users, have become a significant source of competitive advantage. One open business model that is getting increased attention is the user innovation community (UIC), where customers participate with an organization in research and development efforts. UICs are electronic social environments that allow globally distributed customers to share their expertise and knowledge with one another and the organization by commenting on existing products and services and proposing new innovations.3 Organizations that effectively reach out and build strong UICs can enhance internal research and development activities by allowing customers to identify new sources of innovation at lower costs.

While gathering customers’ ideas for new product or service innovations is not a new phenomenon, UICs enable organizations to more fully engage with a distributed network of customers through “crowdsourcing”—the use of a very large, undefined group of people who collectively respond to an open call for input to accomplish a job typically allocated to an individual or group within an organization.4 Crowdsourcing is founded on the premise that individuals possess biases in their judgments, making any single individual fallible to error. The growth of information and communication technologies, specifically Web 2.0 technologies, has created an opportunity for

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1 Gerald Kane, Ann Majchrzak, and Blake Ives are the accepting Senior Editors for this article.
2 An earlier draft of this manuscript was presented at the 2009 SIM Academic Workshop on Enterprise and Industry Applications of Web 2.0 in Phoenix, AZ. We would like to acknowledge the contributions of the editorial team and reviewers that provided exceptional feedback and guidance in preparing this manuscript for publication.
organizations to leverage online crowdsourcing in new ways, such as engaging directly with a large number of customers to co-generate innovations. Organizations are beginning to see how incorporating UICs into their internal innovation processes can provide substantial benefits that align with customer needs.5

However, a poorly managed UIC could have devastating consequences for an organization. Customers who spend time and effort submitting and responding to ideas want to engage with the organization but could quickly turn this motivation toward negative behaviors, such as “flaming” and criticizing. The viral aspect of all Web 2.0 technologies means that an organization could quickly lose control of negative content. Inviting customers to contribute ideas and participate in product development requires organizations to respond effectively. Active users in a UIC are likely to be some of their best customers, so the organization cannot afford to disenfranchise them. Communicating with customers who participate in a UIC requires a concerted effort from the organization to understand the ideas contributed, identify the best ideas, and develop communication strategies that align with the new role customers play within the organization’s innovation process. This new customer-developer role elevates customers to a position of greater responsibility and ownership (at least psychologically for the customers) over an organization’s decision making.

However, organizations and customers face the potential of being overwhelmed by the large number of ideas contributed to a UIC. In this sense, the concept of crowdsourcing may be detrimental as good ideas might get “crowded out” due to an inability to understand, identify, and respond to a large number of diverse ideas. A key principle for effective crowdsourcing is that independent opinions target a single idea; crowdsourcing may not work when members of a UIC need to review many different ideas being contributed to the community. Crowdsourcing can also fall prey to overzealous interest groups that attempt to amplify a minority opinion through coordination with friends and fellow users who share similar interests. Activities such as these can violate the independent opinions principle. Organizations therefore need to develop new strategies beyond simple “popularity” for deciding which ideas are worth pursuing. There is a danger that an organization’s personnel will become overloaded because UIC members (users) inundate them with thousands of ideas in a short period of time. With special interest groups potentially biasing collective opinion, an organization can quickly find it has limited capacity to understand the ideas, recognize their potential, and communicate effectively with the user community.

The purpose of this article is to provide recommendations that enhance the promise of UICs and that help organizations manage the challenges associated with UICs. First, we outline a research study in which we identified the four key challenges faced by Dell Computer Corporation in the first 18 months of Dell IdeaStorm, its popular user innovation community. We chose Dell for our research into UICs because of its leading role in the computer manufacturing industry, its early adoption of a UIC, and its status as winner of the 2007 Groundswell award for Company Transformation (awarded for IdeaStorm and other social media initiatives). Toward the end of the study, we posted a set of initial recommendations for how Dell could improve its interactions on IdeaStorm to gather feedback from this UIC, and we briefly discuss the responses we received. We conclude by presenting seven recommendations for UIC management and a summary table indicating how these recommendations address each of the challenges Dell encountered.

CASE STUDY: DELL IDEASTORM

“We are at our best when we are hearing directly from our customers. We listen, learn, and then improve and innovate based on what our customers want.”6 (Michael Dell, CEO, Dell Inc.)

Launch and Growth of IdeaStorm

In January 2007, Dell was facing a difficult situation. PC users were beginning to express negative feelings toward Dell’s direct-buy business model, and news media were highlighting Hewlett-Packard’s ascension to the top PC manufacturer in the world for two

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As a result, the then CEO of Dell, Kevin Rollins, resigned, and Michael Dell, the founder, re-assumed command of his struggling company. In an effort to realign its business model under Michael Dell’s vision, Dell introduced IdeaStorm to its customers in February 2007, with the explicit statement that IdeaStorm was a place “Where your ideas reign” (see Figure 1, which shows the IdeaStorm homepage).

Within the first five months, IdeaStorm users worldwide submitted over 6,200 ideas to help Dell become a better, more innovative organization. Several hundred of these gained immediate popularity, and Dell initially implemented 11 (see Table 1).

One year after its inception, Dell had listed 35 ideas (including the initial 11 adopted) contributed by IdeaStorm users on the Ideas in Action page, signifying some level of adoption. These user ideas covered a wide variety of areas, such as pre-installing the Linux operating system to introducing a new Tablet PC. As of August 2010, over 14,500 ideas with roughly 730,000 votes and almost 90,000 user comments were posted to IdeaStorm, and 417 ideas, approximately 3% of all ideas, were marked as implemented by Dell.

Dell and IdeaStorm have received several public acknowledgements from IT news magazines, professional bloggers, and organizations for embracing crowdsourcing and adopting a user-driven innovation process.

Our Study of IdeaStorm

We observed the IdeaStorm community during the first 18 months of implementation. Each week, we reviewed the idea descriptions, comment fields, and the community blog for idea status updates. In addition, we followed both individual IdeaStorm users identified by Dell as top contributors (users with the most popular ideas) and the official Dell moderators to understand the relationship between community users and Dell. To avoid influencing the community, we refrained from making direct comments, voting, or submitting ideas during the observation period.

A Brief Description of IdeaStorm

IdeaStorm is built on Salesforce.com Consulting’s Salesforce CRM platform. Through IdeaStorm, users can submit, vote, and comment on ideas. Users must create a username and account to post their ideas about new innovations. They provide an idea title and description and have the option to classify the idea from over 30 categories (e.g., Linux, Desktops, Sales Strategies). Once posted, other users in the IdeaStorm community are able to promote or demote the idea (vote), signaling whether it should or should not

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### Table 1: Initial Ideas Adopted by Dell

<table>
<thead>
<tr>
<th>Idea Title</th>
<th>“Idea Description”</th>
<th>Type of Innovation</th>
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<tbody>
<tr>
<td>Blog in Different Languages</td>
<td>“Dell should blog in different languages. English is important, but what about Mandarin, Spanish, French, German?”</td>
<td>Incremental (adds feature to website)</td>
</tr>
<tr>
<td>Could Dell Go Green?</td>
<td>“Dell has already made its environmental commitment clear. My suggestion is that this could become a hallmark of the company - why not make the products, literally, green?”</td>
<td>Incremental (ongoing effort)</td>
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<tr>
<td>Dell Forums - no Linux/OSS forum</td>
<td>“The Windows folk here, as well as some OSS folk, have called for a separate forum for Linux/OSS. Dell FORUMS would be a good place to implement this, if Dell is about to offer machines with Linux pre-installed to the general public.”</td>
<td>Incremental (add feature to website)</td>
</tr>
<tr>
<td>Dell Tablet PC</td>
<td>“The XPS and E series notebooks are great, but a move into making 12.1- and 14.1-inch tablet PC convertible notebooks would be fantastic.”</td>
<td>Incremental (internal R&amp;D project)</td>
</tr>
<tr>
<td>Don’t Eliminate XP Just Yet</td>
<td>“I would like to see both Home and Business computers, especially notebooks, have an XP Home and Pro option on top of Vista until it has at least been out for a year.”</td>
<td>Incremental (delay option currently available on purchase)</td>
</tr>
<tr>
<td>National Call Centers [and other Service Improvement Ideas]</td>
<td>“As a corporate customer, I like Dell’s products and my USA customer support. I have read the web about all the people that have had problems with Dell customer service, and mine and others are not isolated incidents.”</td>
<td>Radical (reconfiguration of customer support centers)</td>
</tr>
<tr>
<td>No Extra Software Option</td>
<td>“Would love the ability to have a clean Vista install. No AOL software, no earthlink software, no Google software - just a clean, original OS.”</td>
<td>Incremental (modification of pre-loaded software image)</td>
</tr>
<tr>
<td>Organize the sales pages by need, not product line</td>
<td>“Start with features - walk the user through the choices until they get the perfect PC.”</td>
<td>Incremental (modification of feature on website)</td>
</tr>
<tr>
<td>Pre-Installed Linux</td>
<td>Ubuntu</td>
<td>Fedora</td>
</tr>
<tr>
<td>Preinstalled Software Must Be Optional</td>
<td>“At the first start-up, have a selection screen say, ‘As part of customizing your new Dell computer, please select which of the following programs you wish to try out. If you do not select them, they will not be installed.’”</td>
<td>Incremental (modification of pre-loaded software image)</td>
</tr>
<tr>
<td>Solid State Drive as option in Notebooks</td>
<td>“With no moving parts, a solid state drive eliminates seek time, latency, and other electro-mechanical delays and failures associated with a conventional hard disk drive.”</td>
<td>Radical (introduction of new hardware component)</td>
</tr>
</tbody>
</table>

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be adopted by Dell. Highly promoted ideas are given “most popular status,” which enables them to be accessed directly from the IdeaStorm homepage (the default option). Users can also access ideas from the homepage by recent ideas, top ideas, and comments. They can also search by idea title or keywords.

Each user has an individual profile page (see Figure 2). These pages are maintained by Dell and contain information about users’ IdeaStorm activities (e.g., the number of ideas contributed, voted on, and commented on). This information is provided in both aggregate form and as a running timeline to show recent actions by a user. IdeaStorm does not allow users to contact fellow users directly. Users are only able to communicate via the ideas’ comment fields or blog postings made by the Dell moderators.

Users are not given a financial incentive for participating, but they can benefit in other ways. They may have their idea adopted, making Dell products better suit their needs. Top users are honored on the Top Idea Makers list. This list identifies the 20 most popular users and contains information about the number of ideas each has posted, the number of comments posted, and the number of votes made. Users that have ideas adopted or make particularly helpful contributions to the community are recognized by name in status updates on the IdeaStorm blog.

**UIE CHALLENGES AT DELL**

While successful, IdeaStorm was not without problems. Dell encountered significant challenges managing user expectations and realizing value from IdeaStorm. Based on our observations, we identified four key challenges that Dell faced during its first 18 months of managing IdeaStorm: understanding the ideas posted, identifying the best ideas, balancing the needs of transparency with the community against disclosure to competitors, and sustaining the community. These challenges directly related to the UIC’s activities quickly exceeding Dell’s capacity to respond, requiring it to develop new strategies to effectively leverage IdeaStorm.

**Challenge 1: Understanding the Ideas Posted**

The first challenge Dell faced was in understanding the ideas contributed by users, both in terms of users’ intentions and the scope of implementation. The risks associated with failing to understand an idea could result in Dell potentially implementing the wrong idea, angering users, or failing to properly manage an idea’s launch. Based on our observations, Dell’s ability to understand ideas was limited by two factors: lack of idea detail and communication medium.

**Lack of Idea Detail.** IdeaStorm relies on the voluntary time commitment of users to contribute and comment on ideas. Many of the ideas generated came from users experiencing problems with Dell’s products or services. As a result, they tended to contribute ideas quickly without realizing their ideas lacked sufficient detail to be understood by Dell. Consider, for instance, the following quote from the description field of an idea asking Dell to preinstall OpenBSD for a firewall system:
“Good support of IPMI. If this come (sic) true, please donate.”

This description gives the IdeaStorm moderators little information or direction to act on. First, what does IPMI stand for? While an R&D team may understand the user is discussing the Intelligent Platform Management Interface, a community moderator may not understand the specifics of the idea. Second, what is the target product line for this idea? IPMI allows system administrators to monitor workstations in an organization, making this idea important for corporate computer purchasers but not for the personal computer market. The description does not discuss a specific model or focus on corporate computers, making the moderator spend significant time trying to understand the technical aspects of the idea.

In situations like this, the principles of crowdsourcing suggest the community would “fill in the blanks” and create a well-balanced idea with a clear description. However, our observations found that users largely ignored ideas that lacked clear descriptions and either submitted duplicate ideas with better descriptions or voted down the idea citing lack of information. This issue increased the strain on moderators, requiring them to focus on ideas that were easily understood but not necessarily the best innovations.

**Communication Medium.** When soliciting ideas through IdeaStorm, communications occur via a technology that limits both parties’ ability to understand each other. Many ideas and comments posted by users are specific to personal experiences (e.g., users expressing preferences for specific Linux operating systems). These experiences have a tacit knowledge dimension that is difficult to express through a website used as the primary medium of exchange. As a consequence, Dell could easily misinterpret an idea. For example, when Dell first responded to the pre-installed Linux operating system idea, it assumed the idea was for corporate users and not personal computers. This assumption was incorrect because the idea description asked for Dell to offer a Linux operating system option on all Dell PCs.

Additionally, many users posted comments about their personal and work experiences and preferences for different Linux versions and expressed interest in purchasing a personal Linux computer from Dell, if offered. Based on the idea’s popularity, Dell posted comments concerning its efforts to work with Novell and its corporate product offerings. Had Dell adopted the idea as it understood it (targeted at the corporate market), it might have produced a product unwanted by the UIC community and with little market demand.

**Challenge 2: Identifying the Best Ideas**

The second challenge Dell faced was how to develop strategies for identifying and selecting which ideas to adopt from the UIC. Inviting users to participate in Dell’s innovation process put significant strain on Dell’s ability to absorb the information contributed by users, making it difficult to identify the best ideas from amongst the thousands contributed. Dell needed to develop new capabilities to analyze and prioritize ideas. There is a widely held belief that crowdsourcing should be the dominant strategy in deciding which ideas to adopt because the best ideas will “float to the top.” However, evidence from Dell suggests that good ideas may go unnoticed due to the limited resources available to review each idea in a timely manner. In particular, Dell’s ability to identify the best ideas was constrained by four conditions that we observed in IdeaStorm: volume of ideas contributed, idea duplication, minority opinion influence, and urgency to respond.

**Volume of Ideas Contributed.** With the launch of IdeaStorm, Dell invited an unknown number of users to contribute their ideas for improving products and services and for new ones. IdeaStorm enabled users to contribute ideas regardless of time and location. While users as a community are not constrained by time, an organization’s personnel have significant limitations, as noted by this Dell moderator:

> “Almost 9,000 ideas from IdeaStorm (more than 60 in the past week) is a bit overwhelming, but we continuously improve how the team categorizes and prioritizes the ideas to ensure relevant feedback gets to the right groups within Dell.”

IdeaStorm moderators faced the difficult challenge of reviewing ideas, assessing the potential value of each idea, and coordinating with other organizational resources for follow up. Given the limited time and resources available, the community of users can quickly exceed an organization’s ability to identify and nurture suitable ideas.

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11 [http://en.community.dell.com/dell-blogs/b/direct2dell/archive/2008/05/14/weekly-recap-5-14-08.aspx](http://en.community.dell.com/dell-blogs/b/direct2dell/archive/2008/05/14/weekly-recap-5-14-08.aspx)

12 Di Gangi, P. M. and Wasko, M. “Steal My Idea! User Innovation Community Influence on Organizational Adoption of User Innovations: A Case Study of Dell IdeaStorm,” Decision Support Systems (48:1), 2009. This article provides an example of how organizations implementing user innovation communities can exceed their abilities when a volunteer user community contributes thousands of ideas.
Idea Duplication. There are many ways in which a community of users does not conform to the same standards as a paid workforce. Users are donating their time, energy, and intellectual capital for free when participating in IdeaStorm. In an attempt to generate user participation, many organizations adopting Web 2.0 applications feel the need to foster the culture instilled by Wikipedia.com, that users can “ignore all the rules.” For some IdeaStorm users, the effort involved in searching to determine whether a fellow user has already submitted a similar idea may be more than they are willing to expend. As a result, duplicate ideas were created, causing a “splinter the vote” phenomenon across similar ideas, making it more difficult for a single idea to achieve enough votes to capture Dell’s attention. The following comments highlight the frustrations associated with idea duplication:

“Ideas get attention by having the points go up. Best thing is NOT to duplicate but to promote and comment on the existing idea you agree with. Reporting ideas as duplicates is one of the top things on my fix list! Believe me. :) But we’re still a few months away from the next release of the site, when fixes like this will go live. In the meantime, some people are writing “duplicate” in a comment and providing a link to the duplicate idea and then reporting it as abuse. Not too easy of a process, but it’s a start. Thanks for your commitment to clearing the clutter.”  13 (IdeaStorm moderator)

“The lack of administration participating from day one has caused the site to balloon to over 9,000 ideas, with many of them being duplicates. Now, they have more people working on the site, but the duplicates and backlog of work to catch up on is causing the delay in response to continue. The search function is also lacking: so many users new to the site create a duplicate idea with no clue that they have done so.” 14 (IdeaStorm user)

While IdeaStorm temporarily relied on users to report duplicate ideas, the moderators also assessed whether each idea was similar to or slightly different from an existing idea and merged similar ideas. There is a continuing need for IdeaStorm moderators to do this because new users visiting the site continue to create duplicate ideas. The result is that moderators spend time on administrative tasks that detract from the central purpose of IdeaStorm—identifying and nurturing promising ideas for adoption.

Minority Opinion Influence. The success of crowdsourcing relies on the aggregation of independent opinions so that individual biases are eliminated. Based on this principle, actions that potentially influence an idea’s outcome, beyond individual opinions, can detract from an organization’s ability to judge whether an idea is popular in the marketplace and should be adopted. In a Web 2.0 environment, influence can be manipulated through a variety of methods. For instance, several ideas on IdeaStorm focused on the promotion of open source software (OSS), both operating system and applications. Users expressed concerns that other IdeaStorm users were garnering support from external communities (e.g., Digg.com and Slashdot.org) that have passionate Linux followers. The concern was that these users may not be interested in helping Dell but were more interested in promoting the use of OSS platforms. As a result, Linux users who would not have normally participated in IdeaStorm may have provided Dell with a false impression of the popularity of OSS-related ideas. In statistical sampling, this would be equivalent to the sample population not reflecting the true population due to oversampling of a specific, narrow demographic.

Urgency to Respond. When Dell launched IdeaStorm, a vital component of its success strategy was to demonstrate to the community that Dell was listening and adopting ideas. This posed a significant challenge for Dell. It had to decide whether to respond to easy, incremental innovations that could be immediately implemented or to radical innovations that are, on the surface, difficult to comprehend and require more effort and coordination among various organizational resources. Incremental ideas ranged from minor changes to the IdeaStorm platform, such as introducing category tags and adding a Linux OSS community forum for product support, to ideas that align with products or services currently under development by internal R&D teams (e.g., solid state hard drives). In contrast, radical ideas require significant reconfiguration of organizational resources (e.g., national call centers).

Dell used several mechanisms for communicating an idea’s status to the community. First, moderators appended status tags to ideas (“Under Review,” “Reviewed,” “In Progress,” “Coming Soon,” “Implemented,” and “Partially Implemented”). Second, IdeaStorm used an “Ideas in Action” and “Direct2Dell” blog page that “lists and describes all

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13 http://www.ideastorm.com/ideaView?id=0877000000007EiAAI
14 http://www.ideastorm.com/ideaView?id=087700000000BDIAAM
the ideas submitted by the community that have been or are being implemented as a result of IdeaStorm.” Third, IdeaStorm moderators posted comments directly in individual ideas. These communication strategies allowed Dell to provide general information about the status of an idea while limiting the amount of information disclosed to its competitors. In each case, the response contained a brief comment and/or a referral to a Dell statement concerning the status of the idea.

Of the 11 ideas initially adopted (see Table 1), eight focused on incremental innovations that affected a single internal organizational unit (e.g., web development) or introduced a product or service already being developed by Dell. The other three were radical innovations that required Dell to reconfigure existing processes and/or coordinate with multiple internal resources. These 11 ideas demonstrate that the sense of urgency to respond to IdeaStorm users required personnel to focus first on incremental ideas, which potentially constrains Dell’s ability to stay ahead of market trends because it limits the time available to explore ideas that can radically change Dell’s product and service portfolios.

### Challenge 3: Balancing Needs for Transparency Against Disclosure

The third challenge concerns how Dell protects the ideas generated in IdeaStorm from adoption by competitors. IdeaStorm is designed as an open environment that is freely accessible to anyone with access to the Internet (only a user account is needed to contribute an idea or comment to IdeaStorm). Dell thus faced the challenge of how to protect its innovations from being adopted by competitors such as HP, Lenovo, and Apple. An organization in a highly competitive industry where first mover advantage can be significant must manage information disclosure in its UIC. The quote below from an IdeaStorm moderator indicates there was significant concern over too much information disclosure:

> “Many of these ideas, if updated clearly enough, would show many of our cards to the competition.”

Conversely, Dell needed to consider the consequences of failing to disclose information through IdeaStorm and thus frustrating its user community. IdeaStorm opened up Dell’s R&D process by inviting user contributions, and these users expected to be treated differently than a traditional customer. In IdeaStorm, users became innovation collaborators with Dell, where ownership of the idea is shared between Dell and the IdeaStorm community. Evidence of this argument can be seen in the following idea description posted to IdeaStorm and Dell’s response in the Direct2Dell blog:

> “Most of the time when I see **REVIEWED** or another tag that indicates refusal to implement, I just see one Dell comment that says ‘Dell has reviewed such and such idea’ or ‘Dell is continuing to explore such and such’...and in another Dell comment I see ‘Changed status to **REVIEWED**,’ Could we have some more details please, as to why you refuse to implement?” (IdeaStorm user)

Response from IdeaStorm moderator: “Will we tell you why we chose to do or not do something? Not all the time. We aim to be as transparent as possible, when and where it makes sense. But do remember it would not be wise competitively to share all of our corporate strategy online.”

IdeaStorm users expected Dell to disclose its opinion of user ideas, provide information on decisions being made concerning ideas, and provide updates on the status of ideas. However, Dell has reservations about being too transparent and thus allowing competitors to see too much of its strategy. Consequently, Dell faced the significant challenge of balancing the needs of the community against disclosing information that would signal its intentions to competitors. This presents an interesting dilemma for Dell: users’ ideas that are most easily understood and implementable as innovations are also most likely to be easily understood and replicated by competitors. This makes Dell’s ability to understand and absorb complex ideas from the community even more critical in its quest to generate a sustainable competitive advantage.

### Challenge 4: Sustaining the Community

As suggested in the first three challenges, central to leveraging IdeaStorm successfully was Dell’s ability to understand ideas from the perspective of the users, identify the promising ideas, and protect ideas from imitation by competitors. Addressing these three challenges requires finding an appropriate balance between them while also developing strategies for interacting with the community to sustain user

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15  http://www.ideastorm.com/ideaView?id=087700000000BDIAAM

16 http://www.ideastorm.com/ideaView?id=087700000000Bj5AAE.

participation. If users perceive the organization as being non-responsive or failing to listen to the ideas being contributed voluntarily, they may become alienated, and the organization can potentially lose a valuable external source of ideas. How users are treated by the organization directly impacts their decision to continue to engage and the quality of that engagement. Failure to properly manage the relationship with the UIC community may result in users withdrawing from the community, flaming within the community, and new users not contributing ideas.

This challenge is most severe when an organization faces the difficult situation of rejecting an idea even though it is popular within the community. For instance, one of the first ideas contributed to IdeaStorm was to offer OpenOffice as a pre-installed option on Dell computers. The idea gained early popularity (it was the most popular idea as of May 31, 2010) and was initially referenced as part of Dell’s early blog comments on the interest in open source software expressed by IdeaStorm users. However, Dell was not interested in implementing this idea for a variety of reasons (e.g., OpenOffice is freely downloadable from the Internet, it contradicted other popular ideas asking for no software to be pre-installed, it is pre-installed on many Linux operating systems, etc.). The difficult challenge for IdeaStorm moderators was how to respond to the idea, given that the community had voted it as one of the most popular.

Unfortunately, Dell’s response helped to alienate community members. Initially, it responded to the idea only in its organization blog (Direct2Dell) and not directly to the idea in IdeaStorm. This created the impression among users that Dell was not responding to the idea and therefore not listening or paying attention to the community. Subsequently, Dell responded within the comment thread for the idea but only after a large number of comments were made concerning Dell’s lack of participation once the idea reached the 100,000 vote milestone. Users expressed frustration over the lack of a response from Dell and threatened to stop participating on IdeaStorm, which negatively affected user perceptions of Dell’s attitude about the IdeaStorm community.

This example suggests that organizations must carefully protect and nurture the user/organization relationship to effectively manage user expectations before problems arise. In particular, when ideas are popular within the UIC but impractical for adoption by the organization, communication is needed to ensure the UIC continues to produce ideas for the organization.

<table>
<thead>
<tr>
<th>Table 2: Key Challenge Areas and Triggers</th>
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<tbody>
<tr>
<td><strong>Challenge Areas</strong></td>
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<tr>
<td><strong>Understanding Ideas</strong></td>
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<td><strong>Identifying Ideas</strong></td>
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<td><strong>Protecting Ideas</strong></td>
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<tr>
<td><strong>Sustaining the User Innovation Community</strong></td>
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Summary of the Four Challenges

Table 2 contains a summary of each of the four key challenges Dell faced and the “trigger” factors that gave rise to each challenge.

OUR IDEA POSTED ON IDEASTORM AND THE RESPONSES

Toward the end of the period of observing IdeaStorm, we developed a list of initial recommendations for how Dell could improve its interactions on IdeaStorm and posted this as an idea—titled “Making IdeaStorm Even Better”—to the IdeaStorm community (see Figure 3). Within two weeks, our idea had received 310 points (representing positive votes from 31 distinct IdeaStorm users) with zero demotion votes. Additionally, our posting was promoted for one week to the most popular idea within the “IdeaStorm” category and, at the same time, rose to the 30th most popular idea overall.

Define a Clear Process that Defines for Users How to Identify and Describe Ideas

Our first recommendation focused on defining a standardized process and providing tools for identifying and describing ideas. We argued that due to a lack of clarity, many ideas were disregarded too quickly or unable to gain support from fellow community members. Interestingly, the IdeaStorm moderator suggested that “We have looked at this as well and see it as a point of evolution for us. One
concern we have is the introduction of barriers that would discourage the level of participation.” The potential negative effect of implementing additional steps that might discourage users from submitting ideas and participating is certainly a valid concern early on in a UIC.

The IdeaStorm moderator stated that Dell manages the missing category and duplicate idea issues by “review(ing) every idea and reassign(ing) as needed to ensure a clean site.” Unfortunately, the process described by the IdeaStorm moderator could become a bottleneck for efficient idea management. A logical alternative to requiring users to take prescribed actions would be to implement an automated system to check idea similarity before final submission by the user.

Provide Users with Tools for Developing Consensus

Our second recommendation focused on providing tools for self-governance beyond the voting system for identifying good ideas. Currently, IdeaStorm allows the community to govern which ideas receive votes, resulting in popular ideas being placed on the homepage. However, popular ideas typically generate a large number of comments expressing diverse opinions on how to refine the idea and make it potentially adoptable. Dell is left with the difficult task of sifting through the comments on a popular idea to understand its requirements and the intentions of the IdeaStorm community.

Occasionally, Dell would introduce tools that enabled the community to develop consensus. However, this required Dell to act before users could create a uniform vision of the idea and created a delay between when the idea is submitted and Dell’s action to help understand the idea.

An IdeaStorm user agreed with our strategy of promoting self-governance and suggested additional tools:

“You hit the nail on the head on this one. I was one of the users who tried using the current system several times and find it very lacking. Some users have even suggested that instead of up or down votes, we have the option of a scale rating of 1 to 10. I think it goes beyond just surveys.”

Implementing comment-rating systems (such as those used by social news websites like Digg.com) could provide the community with an efficient method for identifying important comments that aide in the development of an idea and for discounting comments deemed unproductive or irrelevant. The Dell IdeaStorm moderator also agreed with this recommendation stating it was a “very interesting concept” and that Dell would blend this idea with the collaboration ideas Dell is working on for improving IdeaStorm.

Dedicate Personnel to Interact as an Organizational Representative within the Community

Our third recommendation focused on increasing the role and presence of Dell R&D employees within IdeaStorm to allow direct interaction between users and key decision makers. We had observed that community members sometimes expressed interest in hearing from Dell’s front-line employees, to provide additional information that would help the community develop its idea. They also clearly expressed concerns about Dell’s lack of understanding of an idea’s ultimate purpose. Increased presence of key personnel and their active participation could potentially improve site management in terms of reduced development time (asking questions directly to the originators of the idea), transparency of the decision-making process, and signaling IdeaStorm’s importance to Dell’s innovation strategy.

In response, a Dell moderator commented, “I think the best representatives on this site are the ones across Dell who are in the ‘working level’ positions,” suggesting agreement with our recommendation. An IdeaStorm user commented that “I would love to speak with the R&D people along with some of the other decision makers, but I don’t think Dell is ready to be that open with certain things.” Encouraging participation from “working level” positions allows the users to more quickly and clearly articulate technical requirements and user desires for the operational form of an idea, which can contribute to Dell’s ability to more quickly develop promising ideas.

Ask Questions to Understand

Our fourth recommendation was for Dell to modify its overall approach to IdeaStorm from “we’re listening” to “we’re engaging.” This recommendation came from our observations of how the Dell moderators (the most active Dell personnel on IdeaStorm) were able to make significant strides in improving ideas by directly engaging with users and asking questions. Dell should make this a regular practice by promoting the “engage and ask questions” mantra across all personnel.
participating in IdeaStorm. It appears that IdeaStorm moderators and community users agree that a stronger relationship between users and the organization is helpful; however, the stronger relationships could be limited to a targeted subset of the community to provide additional support for identifying, evaluating and adopting user ideas. For example, the IdeaStorm moderator stated, “We reach out to specific customers in e-mail to have more information or a discussion on a particular idea.”

If You Let Them Vote, Make It Count

Our final recommendation focused on improving transparency and communication from Dell to the IdeaStorm community on idea status and its decision-making process. This recommendation was based on the numerous comments and signs of frustration from users questioning the status of ideas and marking key milestones (e.g., when ideas reach vote thresholds). While users do not have a financial incentive and participate voluntarily, their expectations of information disclosure and the balance of power is significantly different from traditional customer relationships. The Dell moderator suggested that “One of the challenges with a public site is the balance between the need for greater participation as well as the need to incubate some ideas out of the view of the competition.” This comment highlighted the dilemma of too much information disclosure reducing the competitiveness of Dell’s product and service offerings, while too little would result in negative reactions from its community members.

Dell has now launched Storm Sessions, similar to Joint Application Development sessions, which allow users and Dell to assemble for a specified period of time to share comments, ask questions, and generate ideas on specific areas of interest to Dell. In general, the IdeaStorm community has largely considered these sessions a success.

Based on the feedback from IdeaStorm users and Dell moderators, our list of best practices was refined. The recommendations that follow are based on the best practices identified for IdeaStorm and by existing innovation and crowdsourcing research.

RECOMMENDATIONS FOR OVERCOMING THE CHALLENGES OF IMPLEMENTING UICS

Our observations of the IdeaStorm community suggest that organizations must prepare for the challenges associated with how a UIC can potentially exceed their capacity to understand ideas, identify ideas, protect ideas, and sustain the community. Integrating our observations of the Dell IdeaStorm community dynamics with feedback from our idea posting and the existing literature on user-driven innovation, we provide seven recommendations for organizations seeking to effectively develop and incorporate UICs into their innovation processes.

1. Create a User Toolkit

Organizations should create a user toolkit that helps standardize the process for framing and submitting an idea. User toolkits create a platform to facilitate knowledge transfer from idea generation to actionable innovations for the organization to develop. The purpose of a user toolkit is to provide users with guidance through standardized instructions, templates, and other tools so that it is easier to convey information from the user to the organization. Additionally, user toolkits can be used to ensure that ideas are unique, include enough and the right kinds of details, and provide all of the information needed to spark discussion.

A user toolkit can also provide samples of good user idea descriptions or provide advice on category selection. For instance, Salesforce.com has implemented a user toolkit in its own UIC, IdeaExchange. IdeaExchange users can quickly reference a “Best Practice Tips: Posting Ideas” page from the IdeaExchange homepage as well as a brief PowerPoint presentation that outlines how users can influence Salesforce.com’s product roadmap (i.e., its product and service portfolios). Providing a toolkit for user idea generation reduces the need for an organization and the community to refine the initial idea and allows both parties to devote more attention to examining the viability of the innovation for adoption.

2. Strategic Positioning of Key Personnel

Organizations should strategically position key personnel within the UIC to ensure that user ideas reach the proper internal resources for idea refinement and, ultimately, adoption. Strategic positioning of key personnel refers to full-time staff who actively engage with the UIC to assist in the user-innovation process.

For instance, some organizations have assigned personnel to open source software communities so they can capture information about innovations and identify key developers in the OSS community. The benefit of strategically positioning key personnel within a UIC is that it increases dialogue between users and organizational representatives, which encourages knowledge exchange and transfer. The rationale for this recommendation stems from the potential disconnect between the activities within the community and the activities in an organization’s actual R&D department. Strategic positioning of R&D personnel can provide much of the needed support for developing a user idea into a viable product.

3. Engage Lead Users

Lead users in a UIC possess unique knowledge and express needs that are typically ahead of market trends. For example, 3M sought out surgeons working in developing nations who were able to describe the medical conditions and hospital needs for products that reduce infections. Lead users can provide insight into future or growing trends that are not obvious to other community members. Engaging lead users provides an organization with the ability to leverage user innovations by actively seeking the opinions of a subset of the community. Lead users can support an organization by identifying promising ideas amongst the thousands submitted, providing guidance on minority opinion influence, transferring tacit knowledge, and disseminating information to users while protecting ideas from competitors.

By definition, lead users are active in idea development (i.e., in contributing ideas and comments) over an extended period of time. As a result, the likelihood of users being identified as lead users when they possess ulterior intentions is reduced because they must demonstrate consistent participation over time. Additionally, lead users will likely be able to identify malicious users who may attempt to influence the organization into taking steps that are not in its or the community’s best interests.

Lead users fall into two main categories: those who actively participate across multiple ideas within a category and could help when organizations look to innovate in specific markets, and those who are most active and influential in the UIC overall and who possesses a high-level overview of the community as a whole. This second category can provide organizations with a more efficient way to identify radical innovations quickly. One of the advantages of online UICs is the ability to track and record communication activities. Despite the potential for information overload, especially in communities as popular as IdeaStorm, online interactions make it easier for organizations to identify the key players in the community.

4. Promote Self-Governance

Self-governance is a fundamental activity in UIC processes because it enables the community to carry more of the workload associated with developing ideas for the organization. By incorporating tools that allow the community to govern itself and reach a consensus on an idea, an organization reduces the need to cycle repeatedly through time-consuming conversations with users. Tools for consensus-building allow the community to collect tacit opinions on requirements for an idea and convert them into explicit specifications that are more easily transferred. For example, Web 2.0 tools, such as tagging clouds where customers can link their ideas to others with similar themes and graphically display the relative strength of an idea theme, may provide the community and organization with opportunities to identify and develop new bundles of innovations.

Self-governance also enables the organization to demonstrate shared ownership of the UIC with its users. Users are able to make decisions on the specifics of an idea independently of the organization’s actions. As a result, the organization signals to the users that it respects the elevated role they play within a user-driven innovation process.

5. Respond Quickly, Ask Questions

Identifying potentially important ideas requires not only an understanding of the suggested innovation but also a timely response. By responding quickly, the organization provides the community with two important signals. First, that the idea is of interest, which provides the community with an indicator that its participation is valued and is needed to further
develop the idea. Second, the organization signals its understanding of the user idea, which provides the community with the necessary information to efficiently help refine the idea to move the innovation forward. As a result, the organization ensures the sustainability of a continuous source of customer-driven innovations. Even if responses only ask questions, this activity is important. By asking questions, the organization can ensure that it is not mistakenly developing the user innovation incorrectly.

6. If You Let Them Vote, Make It Count

Incorporating users into the innovation process means relinquishing some control over what constitutes a potentially relevant innovation for the organization to adopt. By stifling the democracy of the community, an organization will frustrate and disenfranchise the community. Users who contribute their ideas to an organization’s UIC voluntarily donate their intellectual capital with the expectation their voices will be heard. When there is a voting system that allows users to signal which innovations the community deems important, the organization must respond to these ideas, regardless of whether the idea is eventually adopted.

Sometimes users’ views on what constitutes a great product are different from the organization’s. Since the purpose of a UIC is to leverage ideas from outside formal organizational boundaries, radical innovations are likely to initially produce some discomfort. Even if the organization does not at first see an idea as viable, popular ideas deserve attention because they may provide the organization with an opportunity to gauge the potential for an innovation’s success.

One pitfall to avoid arises from community members being able to use Web 2.0 tools to “game” the system so that a minority group’s opinion becomes dominant. As a consequence, organizations should take care when using total votes as an adoption criterion. While it should respond to every idea receiving a large number of votes, only ideas aligned with its goals and best interests should be adopted. When an organization is not interested in an idea, acknowledging the idea’s popularity and explicitly stating the reasons for not adopting it will signal to the community that its efforts have not been wasted. Furthermore, acknowledging a popular but non-adoptable idea signals that the community should stop pursuing the idea and wasting time, given the organization’s decision. The earlier this signal can be transmitted to the community, the more likely the organization will minimize the negative consequences.

7. Present Your Progress Clearly and Openly to the Community

As stated earlier, there is a need to balance the disclosure of information to UIC users against providing too much detail so that competitors can take advantage of the openness of the UIC. Limited information disclosure is not enough to keep the community informed about how an idea is being viewed by the key decision makers, what changes are being considered to the idea, and when (if) the idea will be adopted. Organizations must create an effective balance between transparency and protecting their strategic interests. Due to the nature of a UIC, ideas posted there will be openly available to competitors.

Remember, though, that the ideas themselves do not create a competitive advantage; that comes from how the organization is able to identify unique opportunities and commercialize ideas posted in the UIC. Increased levels of performance come from an organization’s distinctive skills and processes that enable it to absorb new ideas and respond to changes suggested by the UIC. Thus although full information transparency in a UIC presents some risk that competitors can gauge what strategic moves an organization may be considering, the unique capabilities and resources of the organization help to mitigate this risk. When an organization opens its doors to user innovations, it must also open its doors to the process by which those innovations are examined. Providing more detail to the co-creators of an organization’s new products and services signals to the community that the organization is actively interested in the community’s ideas and is engaging with the community on an equal level.

Relating the Recommendations to the Challenges

Figure 4 shows which combination of our seven recommendations can help to meet each of the four key challenges we identified in the Dell case. Organizations can use this figure as a checklist to ensure the success of their UICs. When faced with a specific challenge, they can use our recommendation(s) to mitigate the negative consequences of the challenge. For instance, an organization struggling with the volume of ideas contributed to its UIC should engage lead users and use the voting mechanism to help identify promising ideas. Lead users can provide the organization with guidance on which ideas are emerging as the most promising within the UIC, while the voting
CONCLUDING COMMENTS

Advances in information and communication technologies enable organizations to expand their boundaries to include users in their innovation processes, especially through UICs. Firms interested in involving their users as an additional organizational resource should consider the recommendations outlined in this article and adopt the strategies used by Dell as an early adopter of UICs. In doing so, organizations will be able to leverage the ideas of their users to expand their innovation processes and maximize the potential for future increases in profitability, while also providing users with the opportunity to connect with the organization.

However, if a firm’s UIC is poorly managed, it becomes a waste of resources because few users will be engaged and actively participating. Far worse, a poorly managed UIC can disenfranchise one of the most important stakeholder groups an organization has: active, passionate customers. Effectively managed, UICs have the potential to put an organization’s customers to work, leveraging and coordinating the efforts of a global volunteer workforce through a thriving user innovation community.

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