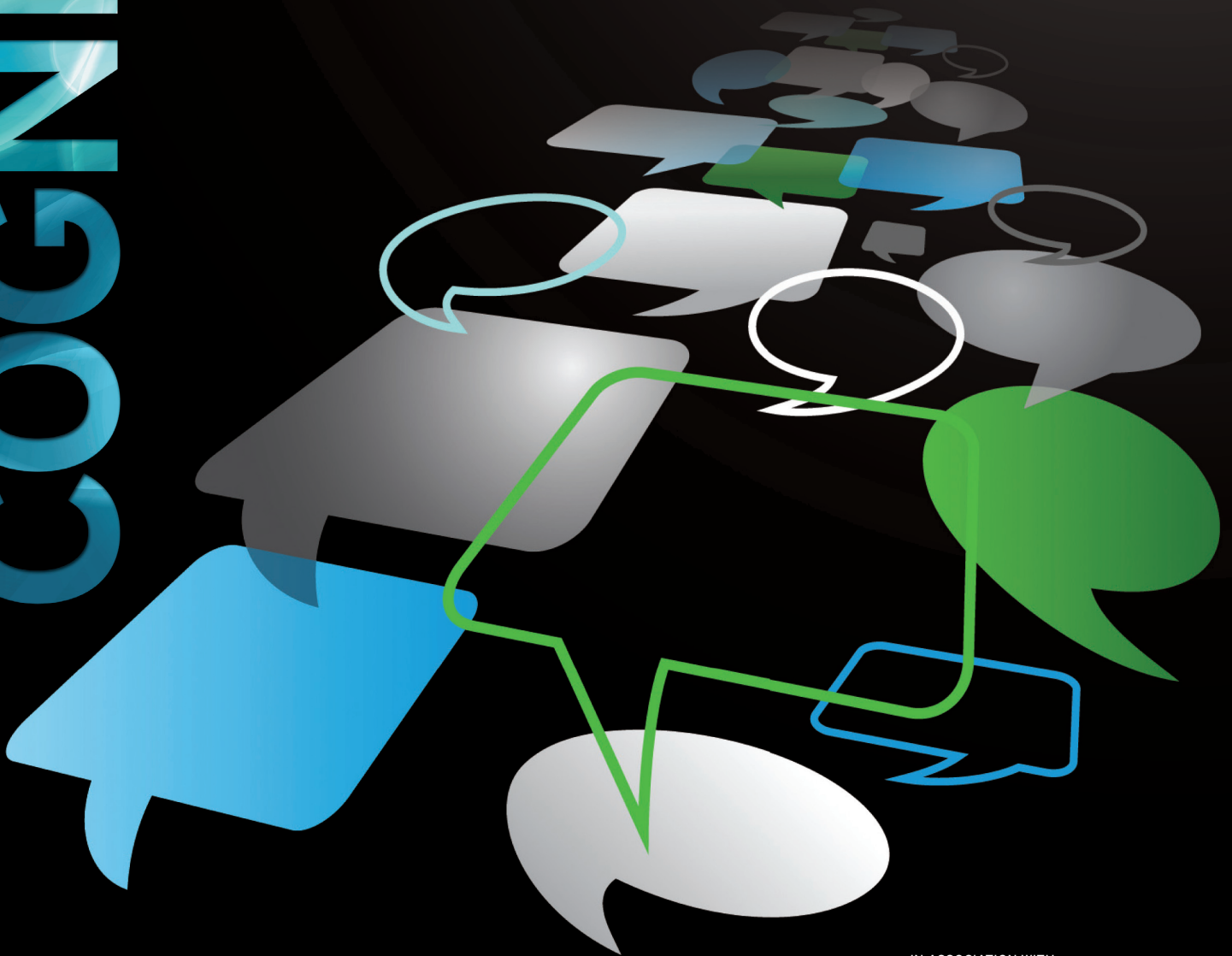# Cognizant

Innovation Beyond the Four Walls

Breaking down innovation barriers

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Executive Summary

As companies face relentless pressure to innovate in their development of products and services, they are seeking new strategies and techniques to gain and retain a leading edge. With the proliferation of social media platforms and virtual communication, forward-looking companies are increasingly looking outside the four walls of their organizations and tapping into customers and partners to find inspiration and the innovation to compete and excel in the ever-changing business environment. The objective: to take innovation beyond game-changing products and services and create more effective and efficient operational processes, as well as more profitable and productive ways of promoting and creating market opportunities. The obstacles are numerous and often deep and wide. As a result, implementing and sustaining innovation across these dimensions is exceedingly difficult and not for the faint of heart.

Having embraced the new tactics and tools, such as social media platforms and virtual communication, companies now face the challenge of integrating them into an organizational structure.

This report explores the collaboration efforts and tools embraced to foster and expand innovation outside the traditional organization's four walls. It finds that organizations strongly believe in open environments for innovation and a vast majority of them are using virtual tools for internal and external collaboration. Yet, having embraced the new tactics and tools, companies now face the challenge of integrating them into an organizational structure that will unlock the value of open innovation, drive superior business performance and build competitive advantage vis-à-vis key rivals, near and far.

Key findings include:

• **Internal collaboration systems that allow all employees to share their ideas are the most popular open tactic used by companies to foster innovation.** They are, however, often just the first step. Other tactics — such as platforms to elicit and share ideas with consumers, other companies (including competitors) or crowd sourcing — are next in line.

• **The emerging trend of balancing the use of internal versus external resources for creating and implementing innovative ideas results in hybrid innovation models** – or companies that leverage both internal and external resources. They are already more common than companies that rely mostly on internal resources for innovation.

• **Among these hybrids, internal company teams combined with customers are among the top performers.** They have much higher satisfaction levels than all other organizational structures, on average, in terms of six performance benchmarks, including refreshing the portfolio of products and services or being consistent in innovation performance. They also lead all other organizational structures on average in terms of employment of open innovation tactics and virtual tools.

Breaking down innovation barriers means integrating customers, partners and outside influencers in the process. To remain competitive, or extend their advantage, organizations must continue to seek new and better ways to innovate. The integration of customers, partners and outside influencers beyond the traditional organizational structure will continue to evolve as the adoption and proliferation of virtual tools and social technologies expand.

Methodology

This report is based on a survey of 311 executives. Almost half of the executives (153) came from the United States, and the rest were from Europe. They represented all major industries, including manufacturing (62), technology (49), professional services (28) and financial services (21). The respondents' companies' had at least $1 billion in revenues, with roughly a third with revenues between $1 billion and $5 billion, a third with revenues of $5 billion to $10 billion, and the rest with revenues over $10 billion.

Two-thirds of the respondents were C-level executives, including 57 chief executives, presidents or managing directors. The largest group (136 executives) had roles in the IT departments, followed by executives from operations and production (61), general management (53), and research and development (24).

The starting point: Internal collaboration systems

Organizations have an abundance of resources for innovation at their disposal, but perhaps the most important and at the same time the most challenging to organize and manage are the employees within the corporation. A company's own human capital is an invaluable asset to corporate innovation in terms of the employees' knowledge of internal processes and resources, competitive pressures, product development and the needs of customers.
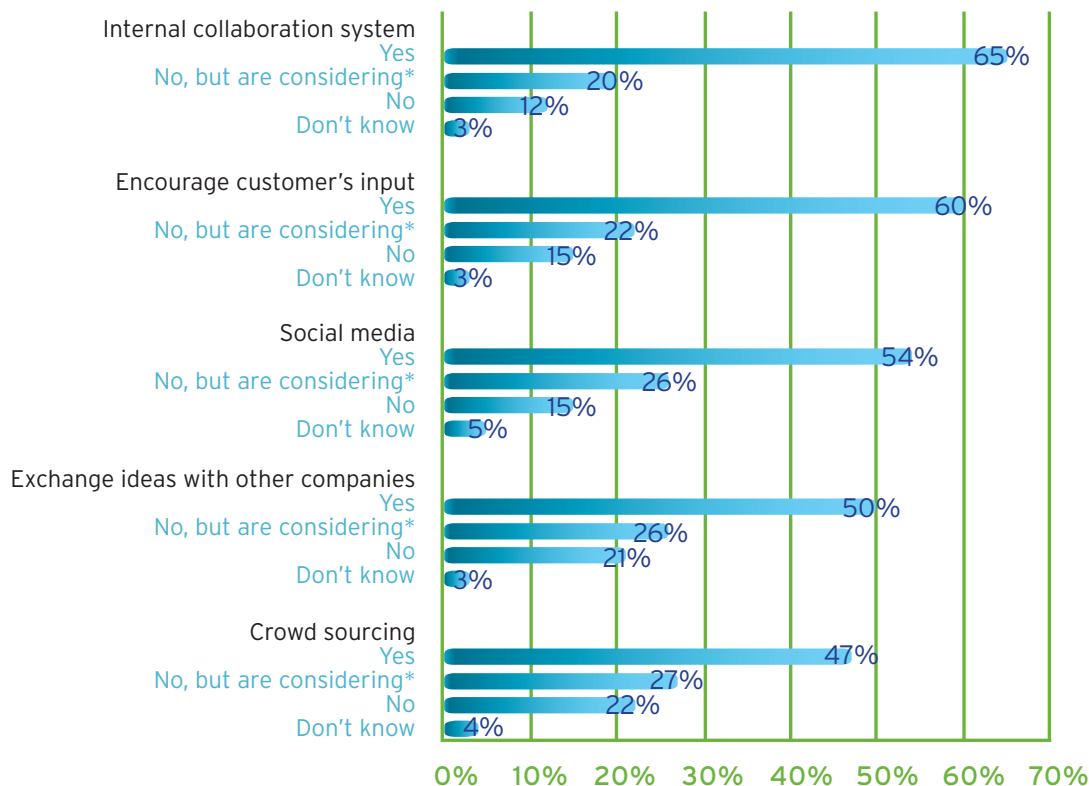
But there are also challenges to harnessing the potential of innovative talent from various parts and functional areas of the company. Innovative teams may be intermingled with product development and ongoing operations, which can blur lines of responsibility and the feeling of ownership of new ideas. Retaining the most innovative talent is crucial to maintaining a competitive edge, and balancing the implementation of ideas versus quantifiable ROI is a delicate management concern. However, when innovation teams function separately, company-wide input and feasibility testing may be less forthcoming.

With companies spread across many continents and employing multinational workforces, leveraging internal resources is an effort that extends far beyond the four walls of any one geographical or functional unit, and requires complex organizational skills and sophisticated communication systems.

Companies have embraced the potential of their human capital to foster innovation. As of today, the use of internal collaboration systems that allow all employees to share their ideas is the most commonly applied tactic to foster innovation (Figure 1).

> A company's own human capital is invaluable and challenging at the same time.

FIGURE 1: Does your company use any of the following tactics to gather information and ideas for innovation?

Internal collaboration system
- Yes — 65%
- No, but are considering* — 20%
- No — 12%
- Don't know — 3%

Encourage customer's input
- Yes — 60%
- No, but are considering* — 22%
- No — 15%
- Don't know — 3%

Social media
- Yes — 54%
- No, but are considering* — 26%
- No — 15%
- Don't know — 5%

Exchange ideas with other companies
- Yes — 50%
- No, but are considering* — 26%
- No — 21%
- Don't know — 3%

Crowd sourcing
- Yes — 47%
- No, but are considering* — 27%
- No — 22%
- Don't know — 4%

*For use in the next two years.

Internal collaboration systems take on different forms at different companies, depending on corporate culture, industry, number of projects, types of challenges and participants. They can be formalized, ongoing models, such as at Juniper Networks, a network solutions provider. The company recently formalized a unit known as the incubation lab, aimed at fostering innovation (see sidebar page 7). They can also be an initiative open to all employees in conjunction with focused campaigns, as is the case at chemical and pharmaceutical firm Bayer AG (see sidebar below).

On the other hand, E*TRADE Financial, the online brokerage firm, reaches out to its employees with specific challenges; it plans to launch what it terms Innovation Unleashed, a team-based competition that encourages employees to submit a proposal that solves a particular investing problem. The competition's pilot will focus on the topic of retirement. "It's not hard to motivate people here, because innovation is part of E*TRADE's DNA," says Amy Radin, Chief Innovation Officer, referring to the company's pioneering efforts in online trading.

Paris-based drinks giant Pernod Ricard takes a less formal and more social approach to innovation. The company runs what Adrian Keogh, Marketing Director, Innovation, terms "creative sessions" to collect ideas from employees; these can last two hours or two days, with a view to turning the best ideas into full innovation projects. He points out that while virtual networks work well internally, leveraging personal relationships is also important.

"Keep it simple and accessible to everyone, seize the diversity by providing appropriate net-working tools, and focus on business relevant topics," says Alexander Moscho, Head of Corporate Development, Bayer AG.

BAYER: All aboard

Germany's chemical and pharmaceutical giant Bayer AG runs a global initiative known as Triple-I (Inspiration, Ideas, Innovation). All employees worldwide have direct and easy access to a central intranet platform on which ideas can be submitted, as well as local contact persons for employees in their countries who also are involved in local innovation initiatives.

There are focused campaigns within the initiative. During these Idea Campaigns, all employees can participate in a four- to six-month brainstorming session focused on a special business topic, e.g., new offers in women's healthcare. Facilitating the interaction of different people with various backgrounds to foster innovation is key. For example, in local brainstorming workshops, materials science and animal health experts conceived new device ideas, and then transferred this to the global platform, where ideas can be shared, discussed and voted upon. On the other hand, someone who is an expert in polymer applications can take an unbiased consumer view on healthcare topics. Awards are given for those ideas that are positively evaluated by a business unit; to qualify, the concept has to trigger additional follow-up activities or contribute new, significant input to an already ongoing project. During the idea campaigns, the focus is on specific innovation questions relevant to the company's business, so there always is a "pull" to implement ideas. According to Alexander Moscho, Head of Corporate Development, who is responsible for corporate strategy and portfolio management at Bayer, more than 30 concepts are currently in development within subgroups of the company.

JUNIPER: Formalizing disruption

Juniper Networks, a network solutions provider, recently formalized a unit known as the incubation lab, which reports to Pradeep Sindhu, Vice Chairman, Chief Technology Officer and founder of the company. Small teams, mainly but not exclusively made up of engineers, work to come up with ideas that are narrowed down in number to those with potential for major returns in areas where, as Sindhu puts it, architectural disruptions are happening in the networking industry.

The idea is incubated in the lab for a period lasting three months to a year. "If the concept is not going to work, we want to fast-fail it," says Sindhu. "If it moves forward, it may be absorbed into one of our existing businesses as something new but aligned with what that business is doing. Alternatively, we may create an entirely new business unit within Juniper if the idea is geared towards disruptive innovation."

Now that the incubation process is a formal one, Sindhu would like to scale it up to enable it to manage four or five projects in parallel, not just one or two. At the same time, he points out that incremental (rather than disruptive) innovation is being carried out on a day-to-day basis within business units and within the company's two main divisions.

Hybrid approach to innovation resources

While reaching in-house for innovation ideas is the most popular tactic, it is just one facet of the innovation spectrum, and it is fast becoming intermingled with and supplemented by external resources. There is a sense of urgency in utilizing the resources outside the four walls, as over the next two years more executives surveyed for this study anticipate opening up innovation platforms to communicate and cooperate with external resources than with internal resources (Figure 1, page 5).

The smooth and productive functioning of such channels requires a thoughtful choice of external innovation partners as well as establishing secure and efficient lines and platforms of communications, which may include crowd sourcing, sharing ideas with other companies or gathering input from consumers.

Although it is complex to achieve, such a hybrid approach—where companies rely almost equally on internal versus external resources—is a predominant form of resource usage, with almost half of executives surveyed for this report saying their companies are hybrids (Figures 2 and 3). Hybrids are defined as companies that use the 40/60 to 60/40 ratio of internal versus external resources for innovation.

Internalists are companies that rely mostly on internal resources for innovation, as the ratio of internal versus external resources ranges from 90/10 to 70/30. Externalists are companies that rely mostly on external resources for innovation, applying the ratio of 30/70 to 10/90 of internal versus external resources for innovation.

In terms of creating and implementing innovation, the majority of companies, 45% and 46% respectively, define themselves as hybrids (Figures 2 and 3).

Owens Corning's use of external resources is biased 75% toward implementation and 25% toward ideas.

FIGURE 2: How does your company leverage internal versus external resources for creating ideas?

N/A
4%

EXTERNALISTS
11%

HYBRIDS
45%

INTERNALISTS
40%

FIGURE 3: How does your company leverage internal resources versus external resources for implementing ideas?

N/A
4%

EXTERNALISTS
12%

HYBRIDS
46%
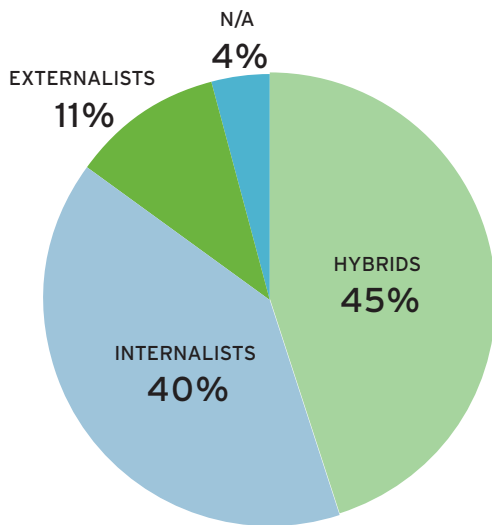
INTERNALISTS
38%

Hybrids: Companies that use from 60/40 to 40/60 ratio of internal versus external resources for innovation

Internalists: Companies that use from 90/10 to 70/30 ratio of internal versus external resources for innovation

Externalists: Companies that use from 30/70 to 10/90 ratio of internal versus external resources for innovation

There are many types of external resources that companies can tap into—from other companies, including competitors, to academic institutions or customers. External and internal resources can also be combined in many ways, with innumerable variations as to which resources to rely on predominantly and what tasks they may be expected to solve.

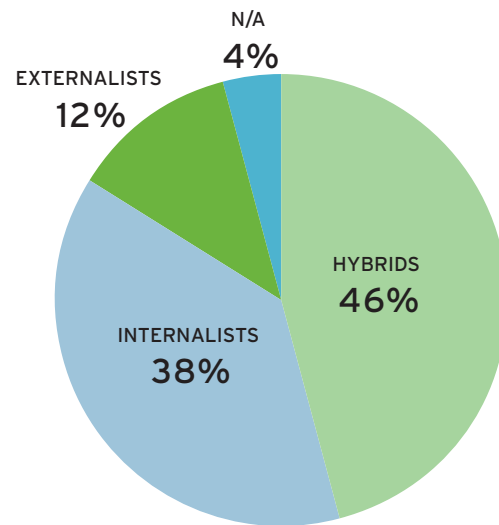Building materials and glass-fiber maker Owens Corning relies on combining internal resources, spread throughout all of the company's divisions, with corporate partners and customers. John Hillenbrand, Chief Innovation Officer at Owens Corning, says the dominant model is to have dedicated R&D and marketing personnel in each of the three main businesses—composites, roofing and insulation—working with customers: "We have a very talented R&D group, in which we continue to invest, and for implementation, we have had considerable success in complementing our internal team by leveraging external talent and resources."

Hillenbrand estimates that the company's use of external resources is biased 75% toward implementation and 25% toward ideas. "We embrace the notion of open innovation as a means of tapping outside parties in order to bring new solutions to market faster than would otherwise be possible," he says, speaking in particular about the recent launch of the company's new EcoTouch™ insulation product. The company partnered with Cargill to produce what it termed the reinvention of fiberglass, since EcoTouch™ contains more than 99% natural ingredients, including plant-based materials, and is free of formaldehyde.

"A key part of our innovation initiative, in addition to partnerships like this, lies with customers," continues Hillenbrand. "Very early on, and throughout the development of EcoTouch, we engaged a panel of several key customers to serve as a sounding board and to ensure we fully understood their expectations of our new product platform. Innovation can't just be defined as R&D. We interpret it as turning knowledge into value, for our customers and for Owens Corning. That's

why their insight is vital; customers can often see around corners when others can't."

Juniper Networks runs a venture capital fund, the Junos Innovation Fund, which plans to invest up to $50 million in start-up companies. "We have defined application programming interfaces (APIs) to our software, and we are looking for companies that could add value to these APIs," says Juniper's Sindhu. The cooperation between the internal incubation lab and the outside partners is an example of a hybrid approach—mixing of internal and external resources. "We have built a good working relationship between our incubation lab and these smaller companies," says Sindhu.

He continues: "We use the fund to augment Junos OS and extend it to our ecosystem, which currently extends to more than 100 companies. We do a lot of work looking at technologies that complement our existing ones. Juniper engineers and the business units are involved with these companies, looking at how we can solve tough technical and business issues. An example is T-Mobile. We worked closely with them and eventually acquired their security systems for smartphones, tablets and endpoints and integrated these with our Junos Pulse endpoint platform.

"While most investments will not turn into acquisitions, all investments need to be good business deals and provide some combination of lower costs, incremental revenue and improved customer experience."

Getting the structure right

Among the many external resources that can foster innovation, corporations recognize their customers as crucial. As a result, they have been quick to adopt new innovation structures that involve their customers in their innovation efforts by establishing internal company teams combined with customers (Figure 4).

In fact, this organizational structure to foster innovation has by now become the second most popular structure quoted by the respondents to the survey, just one percentage point in terms of usage behind the more traditional central innovation teams at the corporate level (Figure 4).

FIGURE 4: How is your company structured to foster innovation?

Structure	Percentage
Central innovation team at the corporate level	42%
Internal teams combined with customers	41%
Central innovation teams at the division or regional level	38%
Virtual team across company division/business units	33%
Outsourced innovation teams	30%
Co-located or globally composed innovation teams	29%
External business development organization	27%
"Offshore" innovation teams in lower cost countries	21%
None	5%
Other	1%

This trend is likely to continue; survey respondents from companies that have internal teams combined with customers report higher satisfaction levels with their innovation efforts than the average for companies with all other structures, as measured by six different benchmarks (Figure 5).

There are significant regional differences in the types of structures companies employ for innovation. While Europeans also lean toward a centralized function, they make far less use of the virtual team structure and have fewer company teams working with customers. Outsourced innovation teams are less common in Europe as well (Appendix 2, Figure 1).

There are also differences in terms of structures that correspond to the innovation strategy adopted. Companies that depend more on external resources for innovation rely to a noticeably greater extent on the company/customer arrangement. They also make greater use of co-located or globally composed innovation teams and external business development organizations that support open innovation partners. Hybrids are less inclined to adopt the central team structure (Appendix 1, Figure 1).

The most noticeable difference shows in satisfaction regarding the company's performance in the area of developing a pipeline of innovation initiatives. Higher satisfaction levels are also evident in the areas of being consistent in innovation performance, refreshing the portfolio of products and services, and measuring the value of innovation initiatives. E*TRADE Financial's Radin is a strong proponent of relying on customer input for innovation (see sidebar page 11).

FIGURE 5: How satisfied are you with your company's performance in the following innovation areas?

Developing a pipeline of innovation initiatives
Internal company teams combined with customers — 85%
All other organizations — 74%

Being consistent in our innovation performance
Internal company teams combined with customers — 84%
All other organizations — 74%

Measuring the value of innovation initiatives
Internal company teams combined with customers — 83%
All other organizations — 78%

Refreshing the portfolio of products and services
Internal company teams combined with customers — 82%
All other organizations — 74%

Realizing or implementing innovative concepts/ideas
Internal company teams combined with customers — 81%
All other organizations — 74%

Availability of relevant skill sets
Internal company teams combined with customers — 81%
All other organizations — 74%

Percent satisfied or very satisfied

E*TRADE: Engaging customers

Amy Radin, at E*TRADE Financial, the online brokerage firm, does not hesitate when asked about the use of internal and external resources to foster innovation. "We are a hybrid. It's not a question of drawing solely on one or the other. A lot of power resides in tapping into the creativity of our employees through the idea workshop process and through insights into how people's attitudes and behavior are changing with respect to their money, and the role money plays in their lives. But it's very risky not to have customers directly engaged. Never confuse what a subject matter expert says with what the customer really needs, especially in our industry, where so much is changing rapidly."

Radin says the firm's customers (and potential customers) are its biggest external resource. E*TRADE uses tools from the field of cultural anthropology, including in-home interviews with individual retail investors, to ascertain their financial needs and aspirations. It has also set up a virtual 24/7 community, known as the Co-Creation Lab, where investors can initiate a dialogue or respond to suggestions from E*TRADE. "Typically it's hard to get genuine feedback on financial issues because individuals are reluctant to open up," says Radin. "This is a good way to start a dialogue."

She continues: "Traditional focus groups, where you are essentially thrown into an unfamiliar room with a group of strangers for two hours at the end of a busy day, is not the best venue for people to open up about a topic as personal to them as their money. We are getting to a much deeper level of insight about people's thoughts, attitudes and behaviors toward their money by connecting with them in more relevant ways."

Inside the toolbox

New technologies are constantly opening up avenues for communication and interconnectivity that can foster innovation, with both internal and external resources. The existence of virtual and social media often requires creating new communication platforms for innovation, as well as evaluating and choosing which of the tools are indeed productive and how and where they should be deployed.

The range of tools available to companies for fostering innovation and collaboration is wide. Videoconferencing is most popular, but virtual meetings and brainstorming sessions in a virtual town hall format are becoming more commonplace, as are social media platforms such as Facebook, Twitter and LinkedIn (Figure 6).

FIGURE 6: Virtual tools used

Tool	Internal	External
Videoconferencing	55%	50%
Virtual meetings	45%	40%
Instant messaging applications	42%	36%
Brainstorming in virtual town hall	41%	30%
"Expert" communities	39%	35%
External social media platforms	35%	35%
Enterprise microblogging	30%	
Enterprise social network	29%	
Enterprise wiki	28%	
None	4%	8%

External is NA for microblogging, enterprise network and wiki.

Major companies with a global reach typically take virtual meetings for granted. "They are standard practice here," says Owens Corning's Hillenbrand. "We reach across time zones to ensure that milestones are, first, customer-driven and, second, achieved on schedule. Our objective is to have a common language across the company so that projects are compared on an apples-to-apples basis, and we can be sure that investments are made where the best returns are."

By industry, a majority of financial sector executives use virtual meetings and instant messaging applications as an internal tool (Appendix 4, Figure 1). On the subject of social media, those in the millennial generation are substantially higher users than "boomers" and members of Generation X (Appendix 3, Figure 2).

A minority of executives encourage employee use of social media during work hours, although more allow use only for business purposes. Concerns about security are the main barrier, and reduced employee productivity is also a worry. Fewer boomers encourage use of social media, and they are more likely to block employee access to social media sites from office computers and phones than millennials (Appendix 3).

Corporate focus:
Use of social media to foster innovation

Depending on the nature of their industry, executives interviewed by Forbes Insights for this report had different views on the merits and applications of social media as a driver of innovation.

Juniper Networks' Pradeep Sindhu says his company makes quite heavy use of social media internally to foster innovation. Juniper has developed its own internal collaboration site named Matrix that cuts across the company, enabling its engineers to communicate among themselves to exchange ideas and get updates on the status of projects. Every quarter Juniper also organizes events (more "social" than "media") known as Big Bang days, in effect a two-day innovation marathon when engineers are encouraged to produce new ideas.

On the other hand, Pernod Ricard and Bayer use social media to foster innovation in conjunction with marketing efforts.

Pernod Ricard has used social media as a major vehicle for launching (rather than developing) new products. In 2010, as part of its "Plan B" campaign to promote Ballantine's whisky in the Spanish market, the company created a virtual music site where disc jockey Carlos Jean invited consumers to submit basic compositions they shared on Facebook. The more promising submissions were refined by the disc jockey into full-scale music tracks, and two songs have since topped the Spanish hit parade, according to Adrian Keogh, Marketing Director, Innovation.

Bayer seeks dialogue with potential employees and customers through its home page on Facebook, which displays a video message from Marijn Dekkers, the company's CEO, welcoming users and inviting them to click the "Like" button. "Dr. Dekkers is the first CEO of a DAX (German stock index) corporation to seek a dialogue with Facebook users," says Alexander Moscho, Head of Corporate Development. "The German-language careers platform Karrierebibel.de recently rated Bayer's careers page on Facebook among the five best of its kind."

But at Owens Corning, the use of social media has not yielded results: "We have experimented with this and met limited success," says John Hillenbrand. "We have not yet found the sweet spot where we could leverage platforms such as Facebook or Twitter in a powerful way, and I believe that's true of many manufacturers. We are more of a B2B company, whereas those in the software or consumer sectors probably make more use of these media."

So where's the return?

Understanding which tactics, models and structures to implement for innovation, and which tools to apply in order to provide smooth communication strategies, is at the core of building a productive, corporation- and industry-specific, innovation process. Such a well-designed and targeted innovation process is a prerequisite to achieving desired outcomes.

Though results may vary by industry and geography, the ROI in innovation projects is the primary factor considered when a concept is moved to the implementation stage (Figure 7). The ability to enter new markets is also important, although in Europe executives give almost equal preference to both factors (Appendix 2, Figure 2). By industry, many healthcare executives point to ROI as key, and a large proportion of executives in finance give preference to it, also ranking entry to new markets highly (Appendix 4, Figure 2).

FIGURE 7: What are the primary factors that your company considers when moving from an idea or concept to a commercial product or service?
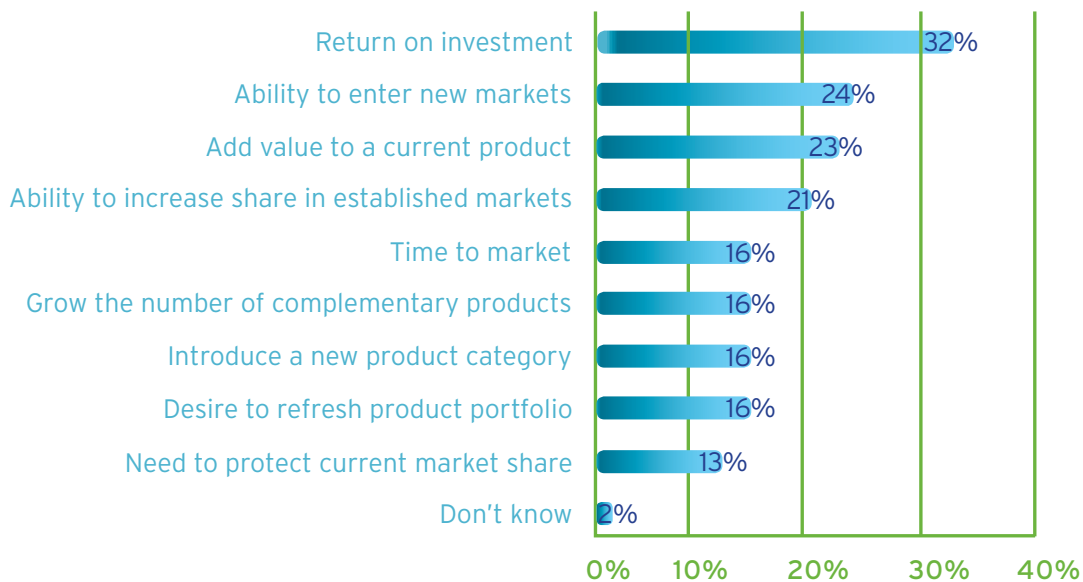
The difficulty lies in measuring the return. "There are many unknowns as to whether or when you might get a payoff from innovation initiatives," notes E*TRADE's Radin. "That can be problematic, especially for a publicly traded company that has to report earnings each quarter. Innovation is part of serving the customer, but at the same time you have to maintain a healthy business."

E*TRADE resolves this dilemma by applying a "spend a little to learn a lot" mindset, pushing small, continuous and iterative learning steps as opposed to a "big bang" approach. "If you are doing something truly innovative, odds are high that forecasting with any level of precision is simply unrealistic. You have to expose people to your product or service, see how they engage with it, and apply those lessons to initial assumptions about financial potential, both revenue and expense," says Radin.

Owens Corning takes a similar approach. "To use a baseball analogy, I am a big believer in going for singles and doubles rather than swinging for the fences with innovation projects," says Hillenbrand. "A string of smaller initiatives can create a lot of momentum and can eventually become big. As for metrics, we try to keep it

in simple business terms by looking at the revenue impact of a new product such as EcoTouch and measuring profitability as well. We can drill down on individual products and measure the results in granular detail."

Juniper's Sindhu is also conscious of the more elusive nature of long-horizon projects. "ROI is a very important metric when you consider the aggregate expenditure of a company's R&D," he says. "The further out in time the project stretches and the more specific it is, the greater the difficulty in gauging the return. If it involves entering a new market, you can only apply a gut feel. Our rule of thumb is to examine ROI very carefully on short- to medium-term projects and to be a bit more relaxed when it comes to long-term ones."

CEO backing helps

Fostering innovation is a complex process, which has moved beyond the four walls and engages internal and external resources worldwide, often utilizing the newest technologies. Notwithstanding how well conceived and designed the innovation process may be, to succeed fully innovation efforts need a strong leader. As with most corporate projects, the focus and backing of the CEO is a huge plus.

The survey shows that innovation is getting attention from the top, as it is the CEO who is most often primarily responsible for fostering innovation. Almost a third of the survey respondents pointed to the CEO as fulfilling that role, more than pointed to the Chief Innovation Officer. This may be due to the high priority of innovation, but also because some corporations may not have the position of a Chief Innovation Officer or may assign the innovation portfolio to executives with varying responsibilities or rank.

In the manufacturing industry more executives point to the CEO as taking a leadership role in innovation. In healthcare fewer do the same.

E*TRADE's Radin points out that full backing for innovation projects by the CEO is critical when returns are hard to determine. "My team is fortunate in having that support," she says, noting she is located just a few doors down from the office of CEO Steven Freiberg, who interacts frequently with the executive team on the company's innovation initiatives.

On the issue of who drives or executes innovation, many cite the office of the CEO as taking a leadership role, rather than simply being highly or somewhat involved. Among other departments, R&D is sometimes assigned that role. In the manufacturing industry more executives point to the CEO, whereas in healthcare fewer do the same (Appendix 4, Figure 3).

The proportion indicating CEO leadership is higher in the U.S. than in Europe, but more European executives mention the Chief Innovation Officer (or someone with a similar title) rather than the CEO, a reversal of the U.S. situation (Appendix 2, Figure 3).

Facing up to the challenges

The success of the innovation process depends on the functioning of the applied models and structures, with the most crucial part being the people involved and their capacity to create and implement ideas. Innovation also has to fulfill a myriad of market and regulatory requirements, which add to the complexity of evaluating the risks and benefits of investment in innovation.

Finding and keeping qualified talent is the largest barrier to innovation. The commercial viability of ideas is also an obstacle, although among European executives that position was reversed. Financial industry respondents pointed to risk management practices

inhibiting innovation as the biggest barrier, followed by a long regulatory approval process. Generation X was especially concerned about exposure of intellectual capital.

What kind of talent is most sought after? "People who really add value are those able to think with both the left and right sides of their brain, so to speak," says E*TRADE's Radin. "They may be subject matter experts, but they can think across silos and see the benefits of people working together on innovation projects."

Searching for top talent in a globally competitive environment is a continual challenge, but it is far from the only challenge when it comes to implementing innovation. At Bayer, Moscho lists acceptance by the public of new technologies as one of his greatest challenges. "In many areas where we are developing innovative solutions, the issues surrounding public and political attitudes to new technologies play a key role. In particular, technology acceptance in the biotech sector (green biotech) is a hurdle to fostering innovation there, especially within Europe."

Doers or thinkers?

With talent looming as the biggest challenge to becoming, or remaining, an innovative company, the survey examined the types of employees—doers versus thinkers, or fast followers versus leaders of innovation—that executives think of as being most beneficial to their ranks.

Most executives feel that being a fast follower, and not leading innovation, is more effective for their company. Most also agree that doers should have more influence than thinkers in the innovation process.

The data cannot be taken literally, however, as in practice companies often need equal input from both kinds of employees. "If you are primarily a doer or a thinker, you will not be as successful at innovation as the person who combines the best elements of both," says Juniper's Sindhu. "The ability to reflect on ideas should go hand in hand with the ability to communicate and execute them."

Conclusions

As the pace of innovation continues to accelerate, this study offers meaningful clues to the likely shape of things to come:

• The emerging hybrid organization with its integrated approach - by design and intent - will include a broad ecosystem beyond an organization itself. Organizations will need to adapt by leveraging new technologies like social media or virtual tools. They must also ensure that processes, structure and infrastructure facilitate and embrace the inputs beyond just the organization itself.

• The return on investment clearly matters, and quantifying the ROI is difficult. Organizations should, at minimum, conduct a pilot that leverages tools and resources beyond their own environments to demonstrate value or risk falling behind more aggressive and innovative companies.

• Thinking "beyond four walls" will be the norm sooner as virtual tools and social media break down innovation's barriers and enable subject matter experts to collaborate the world over. This way of thinking, while difficult for many companies to embrace due to fears over leakage of proprietary information, will enable even the most risk averse company to convert more transparent and focused forms of ideation and knowledge sharing into tangible innovations that drive business performance over the long term.

Appendix One:
Differences in approach to innovation by the ratio
of internal versus external resources applied

FIGURE 1: How is your company structured to foster innovation?

Central innovation team at the corporate level
- Internalists: 52%
- Externalists: 42%
- Hybrids: 30%

Central innovation teams at the division or regional level
- Internalists: 46%
- Externalists: 42%
- Hybrids: 30%

Internal company teams combined with customers
- Internalists: 39%
- Externalists: 58%
- Hybrids: 37%

Virtual teams across company divisions
- Internalists: 35%
- Externalists: 25%
- Hybrids: 28%

Co-located or globally composed innovation teams
- Internalists: 29%
- Externalists: 42%
- Hybrids: 27%

Outsourced innovation teams
- Internalists: 23%
- Externalists: 50%
- Hybrids: 36%

Offshore innovation teams in lower cost countries
- Internalists: 22%
- Externalists: 42%
- Hybrids: 15%

External business development organizations
- Internalists: 19%
- Externalists: 67%
- Hybrids: 28%

None
- Internalists: 3.5%
- Externalists: 0%
- Hybrids: 6.2%

Other
- Internalists: 1.2%
- Externalists: 0%
- Hybrids: 0%

0% 10% 20% 30% 40% 50% 60% 70%

FIGURE 1: How is your company structured to foster innovation?

Central innovation team at the corporate level
U.S. 52%
Europe 32%

Internal company teams combined with customers
U.S. 52%
Europe 32%

Central innovation teams at the division or regional level
U.S. 46%
Europe 30%

Virtual teams across company divisions
U.S. 41%
Europe 25%

Co-located or globally composed innovation teams
U.S. 35%
Europe 24%

External business development organizations
U.S. 34%
Europe 20%

Outsourced innovation teams
U.S. 33%
Europe 27%

Offshore innovation teams in lower cost countries
U.S. 25%
Europe 18%

None
U.S. 6%
Europe 3%

Other
U.S. 1%
Europe 0%

0% 10% 20% 30% 40% 50% 60%

FIGURE 2: What are the primary factors that your company considers when moving from an idea or concept to a commercial product or service?

U.S.

Factor	Percentage
Return on investment	39%
Add value to a current product	27%
Ability to increase share in established markets	27%
Ability to enter new markets	25%
Grow the number of complementary products	16%
Time to market	16%
Introduce a new product category	14%
Desire to refresh product portfolio	14%
Need to protect current market share	12%
Don't know	2%

Europe

Factor	Percentage
Return on investment	25%
Ability to enter new markets	24%
Add value to a current product	19%
Desire to refresh product portfolio	18%
Introduce a new product category	18%
Grow the number of complementary products	16%
Time to market	16%
Ability to increase share in established markets	15%
Need to protect current market share	13%
Don't know	3%

FIGURE 3: Who is responsible primarily for fostering innovation within your company?

CEO
- U.S. — 37%
- Europe — 20%

Chief Innovation Officer (or similar title)
- U.S. — 16%
- Europe — 32%

Other C-level executive
- U.S. — 9%
- Europe — 22%

Other senior executive (non C-level)
- U.S. — 2%
- Europe — 9%

Multiple executives
- U.S. — 31%
- Europe — 16%

0%   10%   20%   30%   40%

Appendix Three:
Differences in approach to innovation by generations

FIGURE 1: Which of the following best describes your company's policy toward employee use of social media such as Facebook, Linkedin or Twitter?

We allow employees to access social media only for business purposes during work hours
- Boomers — 45%
- Gen X — 52%
- Millennials — 42%

We block employee access to social media sites from office computers and phones
- Boomers — 37%
- Gen X — 15%
- Millennials — 16%

We encourage employee use of social media during work hours
- Boomers — 18%
- Gen X — 33%
- Millennials — 42%

0%   10%   20%   30%   40%   50%   60%

FIGURE 2: Which of the following tools does your company use internally to foster innovation and collaboration within your organization?

Videoconferencing
- Boomers: 58%
- Gen X: 53%
- Millennials: 57%

Virtual meetings
- Boomers: 48%
- Gen X: 43%
- Millennials: 47%

Brainstorming sessions in a virtual town hall format
- Boomers: 41%
- Gen X: 42%
- Millennials: 38%

Instant messaging applications
- Boomers: 40%
- Gen X: 42%
- Millennials: 42%

"Expert" communities where employees can post and answer questions
- Boomers: 38%
- Gen X: 40%
- Millennials: 36%

External social media platforms
- Boomers: 32%
- Gen X: 30%
- Millennials: 46%

Enterprise wiki
- Boomers: 22%
- Gen X: 27%
- Millennials: 36%

Enterprise social network
- Boomers: 21%
- Gen X: 29%
- Millennials: 37%

Enterprise microblogging
- Boomers: 19%
- Gen X: 31%
- Millennials: 37%

None
- Boomers: 8%
- Gen X: 2%
- Millennials: 4%

Other
- Boomers: 1%
- Gen X: 0%
- Millennials: 1%

0% 10% 20% 30% 40% 50% 60%

Appendix Four:
Differences in approach to innovation by industry

FIGURE 1: Which of the following tools does your company use internally to foster innovation and collaboration within your organization?

Videoconferencing
- Manufacturing: 66%
- Technology: 65%
- Finance: 49%
- Healthcare: 67%

Brainstorming sessions in a virtual town hall format
- Manufacturing: 58%
- Technology: 41%
- Finance: 32%
- Healthcare: 41%

Virtual meetings
- Manufacturing: 52%
- Technology: 39%
- Finance: 59%
- Healthcare: 44%

Enterprise social network
- Manufacturing: 47%
- Technology: 29%
- Finance: 22%
- Healthcare: 26%

Instant messaging applications
- Manufacturing: 47%
- Technology: 45%
- Finance: 59%
- Healthcare: 48%

"Expert" communities where employees can post and answer questions
- Manufacturing: 45%
- Technology: 37%
- Finance: 30%
- Healthcare: 48%

Enterprise wiki
- Manufacturing: 42%
- Technology: 33%
- Finance: 27%
- Healthcare: 33%

Enterprise microblogging
- Manufacturing: 42%
- Technology: 31%
- Finance: 35%
- Healthcare: 26%

None
- Manufacturing: 2%
- Technology: 0%
- Finance: 0%
- Healthcare: 4%

Other
- Manufacturing: 0%
- Technology: 0%
- Finance: 0%
- Healthcare: 4%

Appendix Four (continued):
Differences in approach to innovation by industry

FIGURE 2: What are the primary factors that your company considers when moving from an idea or concept to a commercial product or service?
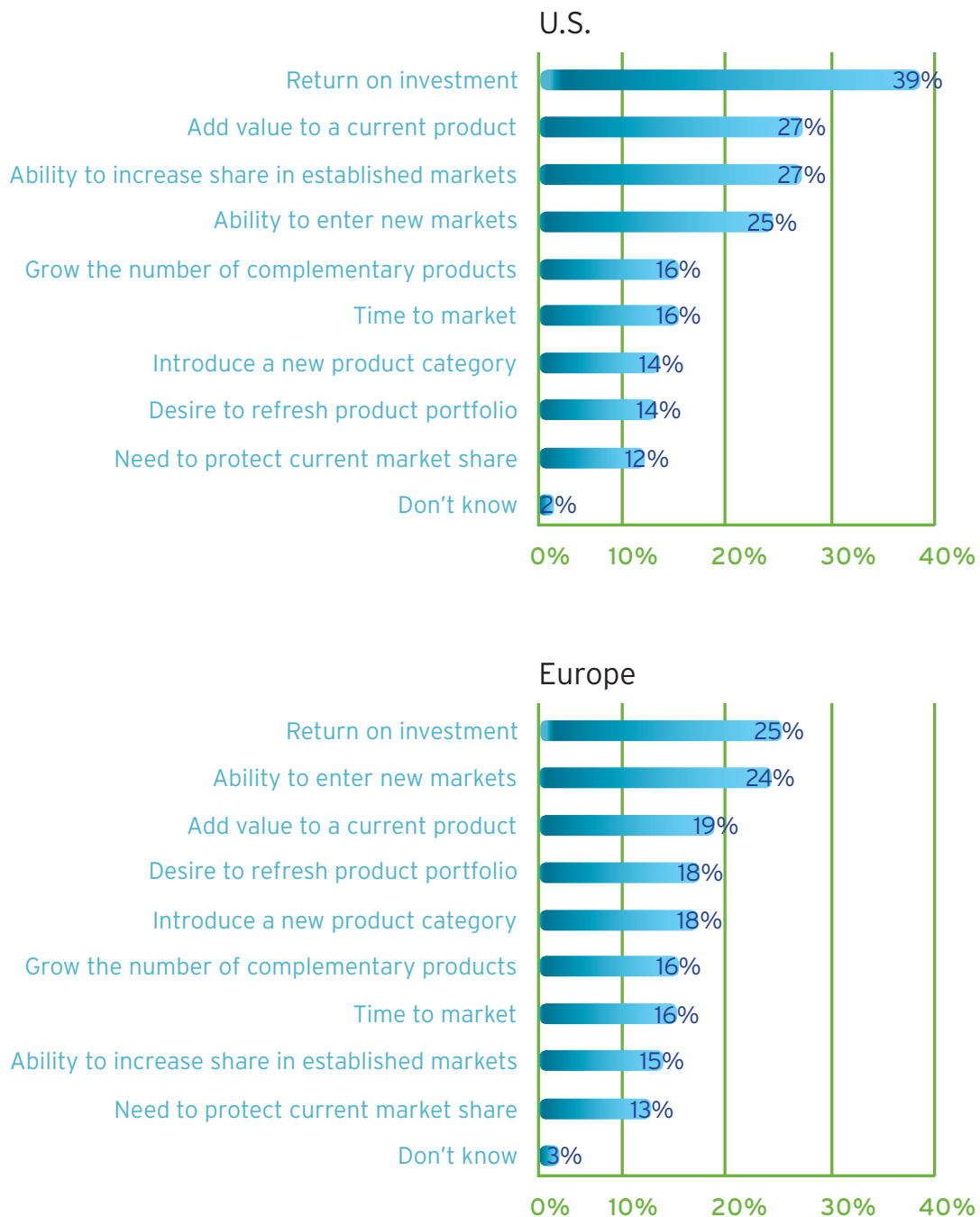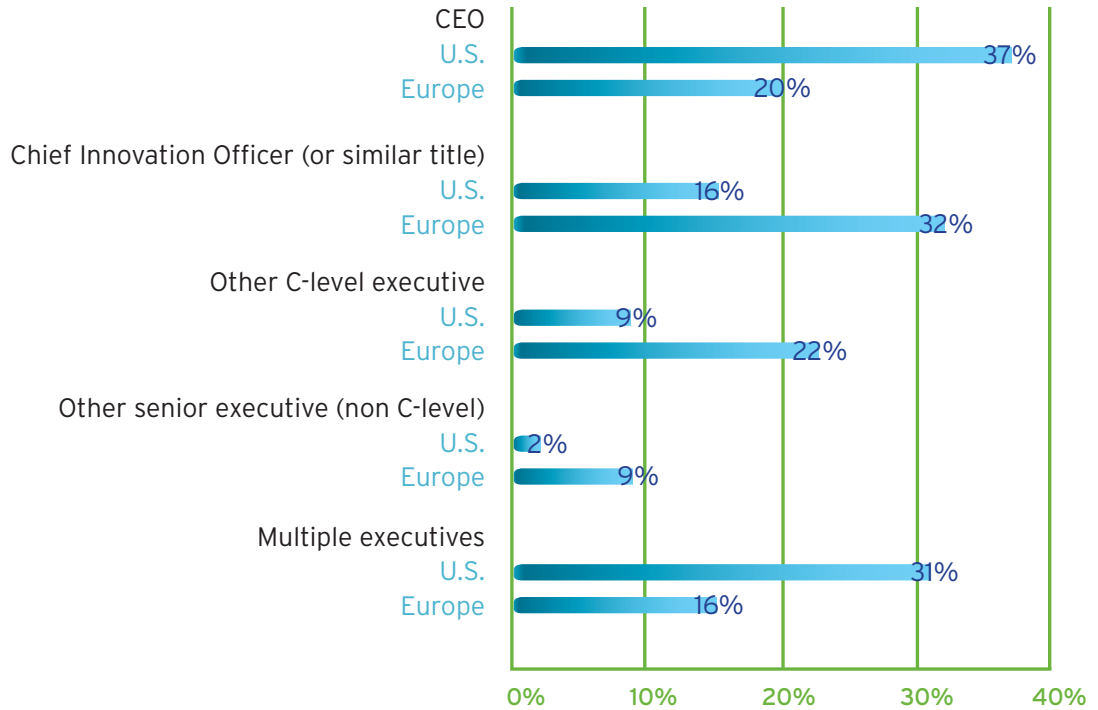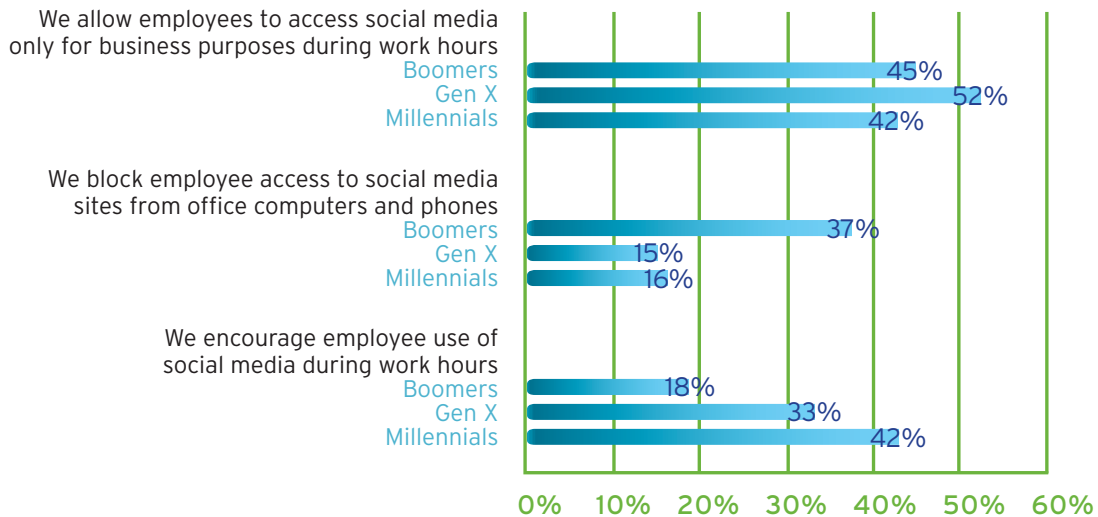
Manufacturing

Factor	Value
Ability to increase share in established markets	34%
Ability to enter new markets	27%
Add value to a current product	26%
Introduce a new product category	26%
Return on investment	24%
Time to market	16%
Grow the number of complementary products	15%
Desire to refresh product portfolio	13%
Need to protect current market share	8%
Don't know	2%

Technology

Factor	Value
Ability to enter new markets	29%
Return on investment	22%
Time to market	20%
Ability to increase share in established markets	20%
Desire to refresh product portfolio	18%
Add value to a current product	16%
Introduce a new product category	16%
Grow the number of complementary products	12%
Need to protect current market share	12%

Finance

Factor	Value
Return on investment	43%
Ability to enter new markets	41%
Add value to a current product	24%
Ability to increase share in established markets	19%
Need to protect current market share	16%
Desire to refresh product portfolio	16%
Time to market	11%
Grow the number of complementary products	8%
Introduce a new product category	5%

Healthcare

Return on investment	48%
Desire to refresh product portfolio	26%
Ability to increase share in established markets	22%
Ability to enter new markets	19%
Grow the number of complementary products	19%
Add value to a current product	19%
Introduce a new product category	15%
Time to market	15%
Need to protect current market share	11%

0% 10% 20% 30% 40% 50%

FIGURE 3: Who is responsible primarily for fostering innovation within your company?

CEO	
Manufacturing	53%
Technology	16%
Finance	24%
Healthcare	19%
Chief Innovation Officer (or similar title):	
Manufacturing	21%
Technology	33%
Finance	22%
Healthcare	26%
Other C-level executive	
Manufacturing	5%
Technology	24%
Finance	32%
Healthcare	7%
Other senior executive (non C-level)	
Manufacturing	8%
Technology	6%
Finance	8%
Healthcare	4%
Multiple executives	
Manufacturing	13%
Technology	16%
Finance	14%
Healthcare	44%

0% 10% 20% 30% 40% 50% 60%

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