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GLOBAL
INNOVATION
ISSUE

THE SKY'S THE LIMIT...

...when it comes to innovation.
But how best to stimulate it?
Training went to the Innovatrium
to find out

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Inside the

Is innovation a matter of setting your employees free from business process, or is it more about finding the right process to take your company where you want it to go? *Training* magazine visited the innovation experts at the Innovatrium last October to get answers for you. **BY MARGERY WEINSTEIN**

It was a nippy 8 a.m. in Ann Arbor, MI, as I waited outside a modest building on the campus of the University of Michigan (UM) to begin my day at the Innovatrium, a facility operated by Competing Values (a consulting and training firm founded by business school professors, consultants, and former executives); Haworth (an office and building workspace design and manufacturing company); and iscg, (a workplace design distributor). Led by Executive Director Jeff DeGraff, a UM clinical professor of management and organizations, the Innovatrium serves as a laboratory to brainstorm new business process and strategy.

Waiting alongside me for the building to open were a dozen or so up-and-coming engineers from Eaton Corporation, a power management company focused on the electrical, industrial, and transportation markets, who were there to spend their second day strategizing ways to tap emerging markets and set the company on an even stronger path to growth.

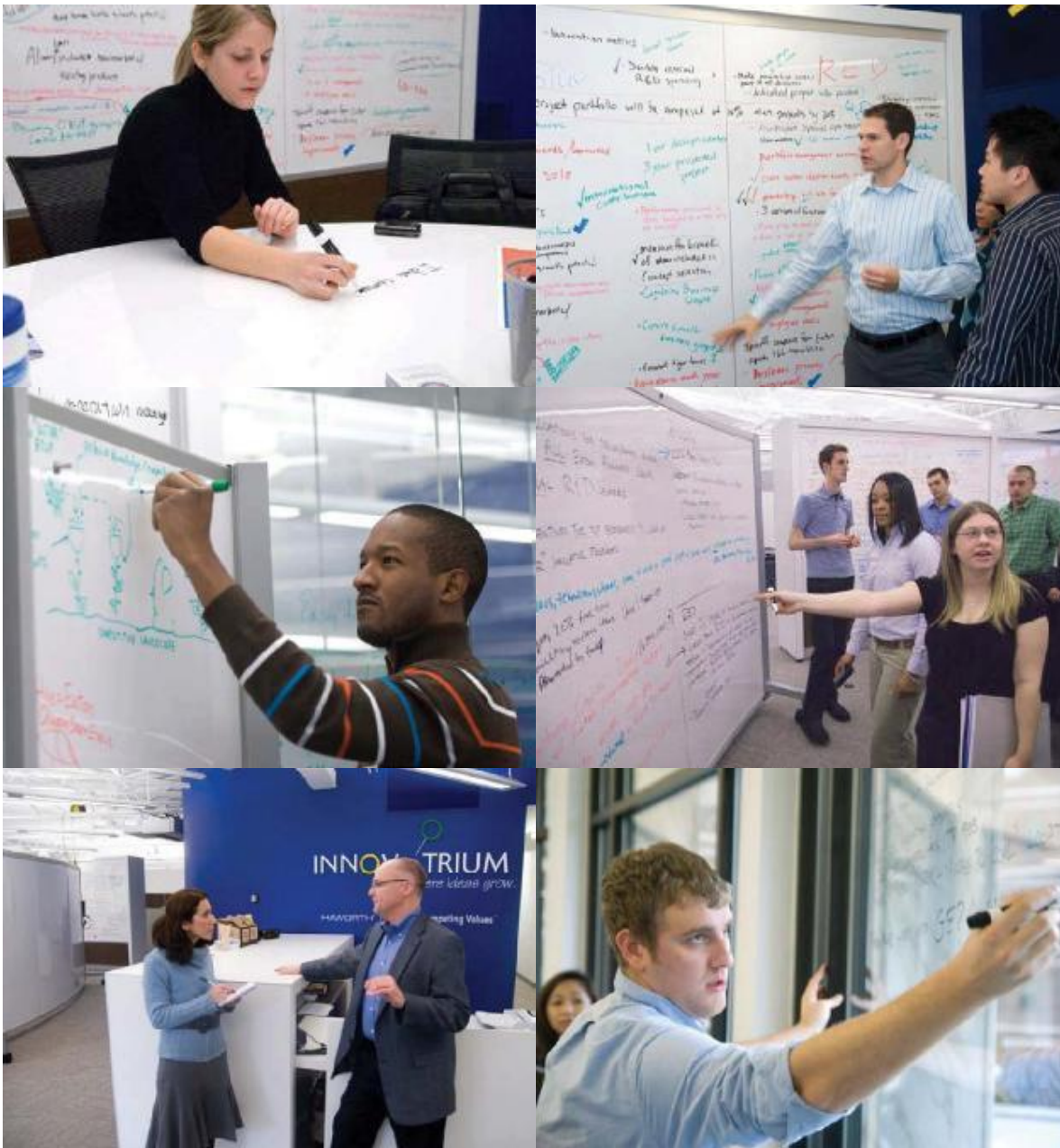
Converted from an old photography studio, the entire second floor inhabited by the Innovatrium can best be described as a blank palette. Large picture windows frame four distinct work environments. There is no decoration in the rounded area devoted to collaboration where the workshop was held, and the only furniture are two

INNOVATRIUM



rectangular tables, two round tables, and office chairs, all with wheels, allowing for flexible arrangements. DeGraff told me research on innovation indicates it's best to offer open, unadorned spaces for brainstorming, rather than spaces cluttered with "interesting" objects. I thought the most innovative aspect of the Innovatrium's accommodations was every piece of it, from table to window to nearly empty glass cabinet, could be written on with easy-erase markers. The tables also are white boards, and the

PHOTOGRAPHY BY IAN DEGRAFF



large windows lend themselves to use as scribbling boards. And, of course, the room also included several large, actual white boards along with a projector screen.

The Challenge

The previous day's exercises for Eaton's engineers focused on establishing the challenges the company faces, including the development of new products and services, and new places to market those new offerings to. The engineers were given

a "values framework" of differing work approaches and innovation categories. According to the Competing Values framework, approaches of colleagues and innovations can be classified as collaborative, creative, controlling, or competitive. Those classifications are depicted on a color-coded wheel, with yellow for

Eaton engineers learn to innovate. Bottom, middle photo: *Training's* Margery Weinstein gets the scoop from the Innovatrium's Jeff DeGraff.

[Inside the INNOVATRIUM]

“collaborate”; green for “create”; red for “control”; and blue for “compete.” Understanding the innovations needed and the organizational cultures needed to bring those innovations to fruition makes innovation success more likely.

Imagination at Work

Mark Dickinson, HR director for Eaton’s corporate technology office, who accompanied the engineers to the Innovatrium, shared that those I observed “see themselves as ‘greens’ (creators), but according to Competing Values Assessment results, they’re mostly process thinkers, which is why we’re here.” Yet as I looked around the room, they seemed pretty creative. One group, with its record keeper standing on top of a chair, jotted down, high on a window, an idea to create a reality TV show about the product development process at Eaton. “We can always peel ideas back,” said DeGraff. “Thin the herd by talking about your ideas—which ideas are easy to implement and have small wins?”

DeGraff asked each group to come up with a metaphor to describe the innovations they proposed. One group thought up the metaphor of an orchard. For a thriving orchard, you need to plant the seedlings (plant novel, compelling ideas), which then need to be watered and plied with fertilizer (nurtured via a supportive business process), and protected from hazards such as adverse weather (idea sponsors powerful enough to provide protection). To ensure a bountiful harvest, the orchard’s fruit (new products or services) must be picked (brought to market) at the right time; and made the most of by creating, say, offshoot products such as applesauce.

Process Improvements

DeGraff asked the Eaton engineers to consider whether the key to innovation in their organization is more about stopping something old than starting something new. One engineer said she felt the company could deliver better products if it altered how it approaches project deadlines. She said too often her work group is forced to deliver projects before they are ready to meet deadlines that sometimes seem more arbitrary than essential. The result is a product that never achieved its full potential because it was not delivered fully developed. Another engineer pointed out the age-old problem of process slowed by corporate bureaucracy. DeGraff suggested Eaton put its corporate processes to the following test: “What is the process designed to create? Why do you have it?”

People Factor

Balance your work team according to the color-coded Competitive Values chart, said DeGraff, meaning you need all

Quick Tips

Taking the first steps toward creating a more innovative company isn’t insurmountable. Here are some tips from University of Michigan Clinical Professor of Management and Organizations and Innovatrium Executive Director Jeff DeGraff:

- Ask employees to consider examples of powerful ideas or solutions in their own lives for inspiration.
- Thin the herd by talking about your ideas—which ideas are easy to implement and have small wins? Big wins are great, and ultimately necessary, but it’s the quick, small wins that give innovation momentum.
- Ask employees to think through all the “functions and attributes” of their ideas.
- Have employees come up with a metaphor that would describe the innovations they proposed.
- Diversify what you don’t know. In other words, maybe instead of one prototype and one marketing strategy, you could offer up a few different innovations to get to the place you want to go.
- Create slack with non-optimized resources upfront, so you don’t optimize your resources when you don’t know where you’re going.
- Identify and watch your leading customers. Using your customers as a source of innovation means “building and nurturing customer communities.”
- Ask employees to consider whether the key to innovation in their organization is more about stopping something old than starting something new.
- Put corporate processes to the following test: “What is the process designed to create? Why do you have it?”
- Ensure the work team you assemble to address your challenge is balanced according to the color-coded Competitive Values chart, meaning you need all personality types, including a collaborator, creator, controller, and competitor.
- Encourage the innovator to take ownership of the project, including serving as its lead champion, and perhaps more importantly, lining up sponsors with the power to legitimize the innovation.
- Guide employees to choose sponsors who have something to gain or lose in the fate of your innovation.
- Make peace with innovation resisters by asking what they stand to lose if your innovation wins. Could they lose their jobs or see their work role diminish? How can you offset such losses?


personality types, including a collaborator (yellow), creator (green), controller (red), and competitor (blue) to win.

The innovator also must take ownership of the project, including serving as its lead champion, and perhaps more importantly, lining up sponsors with the power to legitimize the innovation.

Then there is the opposition. The first step to making peace with resisters is asking what they stand to lose if your innovation wins. How can you offset their potential losses, DeGraff said to ask yourself.

Implementation

It’s about 3 p.m., Eaton’s workshop is coming to a close, and Dickinson, the HR executive who brought the engineers to the Innovatrium, has an end-of-the-day (hopefully not end-of-days) surprise for his participants. The engineers were charged—in real life—with making their proposed solutions a reality. They will meet again in first quarter 2010 to go over implementation plans.

Dickinson left them with a parting call to action: “Please let your bosses know what you learned here, what you did, and what you’ll be working on going forward.” 

For the extended version of this article, visit www.trainingmag.com/innovatrium. For an extended interview with Jeff DeGraff, visit www.trainingmag.com/degraff. For comments from Innovatrium participants, visit www.trainingmag.com/innovate.

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Innovator Instigator

December 03, 2009

By Margery Weinstein

Every innovation, no matter how powerful, needs that initial kick-start. The kicker of the Innovatrium, an Ann Arbor, MI-based innovation ideas laboratory for corporations, is Executive Director Jeff DeGraff, a University of Michigan Ross School of Business clinical professor of management and organizations. *Training* magazine picked his brain on what gets innovation going, and keeps it alive long enough to benefit organizations—and their customers:

Training: How would you define innovation?

Jeff DeGraff: While innovation traditionally is defined as useful novelty, when most people talk about innovation, they think about gadgets or miracle drugs or perhaps a creative ad campaign. More so, when we look at a list of "the most innovative companies" from surveyed CEOs, the attributes include everything from strong brands to stock prices. Here lies the problem. In most firms, when the term 'innovation' is thrown around, leaders don't mean the same thing. For example, in a packaged goods firm, the head of manufacturing may use the term to mean continuous improvement, while the director of marketing may utilize it to focus her team on the customer experience. If they don't have a shared understanding of the word innovation, they won't be able to build a common outcome together, and actually may be at cross purposes. Progressive firms are widening the net on where, and how, innovation happens in the organization. While there are many differences in the types of innovation, there are some common dynamics. An innovation has to make some valuable activity or object, better or new. In the process, it typically displaces an established way of doing things or destroys something old. Over time, the innovation morphs into the anti-innovation, the old thing that must be undone. A good example is e-mail. In less than a decade, e-mail went from a time saving solution, to a time wasting problem. Predictably, a new solution will replace e-mail, and the innovation cycle will continue ad infinitum.

Training: What do you think the status of innovation is at most companies?

JD: Innovation is currently enjoying a renewed status as the "key to value creation" because the easy growth opportunities of the last 25 years, from the productivity gains of pervasive information, technology, and a rapidly developing global market, steadily have declined. Incremental gains now go to the cheapest labor markets. Or they have become automated by technology or simple applications. The low-hanging fruit has been picked.

What is particularly alarming is some U.S. firms have made significant cuts to research and development at the exact moment when more robust forms of innovation will be required to remain in the forefront of their industries. Conversely, a promising trend is the radical new collaborative innovation tools and techniques that are emerging in fields such as biotechnology and eco-energy. Innovation is the only value proposition that has a shelf life. Like milk that has gone bad, an innovation only remains as such for a brief time. From big pharmaceutical firms to mega-automobile manufacturers, the new eventually will overtake the better. This happens in every age, and there is no reason to believe ours will be an exception.

Training: What is the biggest innovation killer in organizations, and what can a person who is in a training or

learning and development role, do?

JD: By far, the biggest inhibitor of innovation is a culture of effortless superiority. In firms where everything must be perfect the first time and every time, it's highly unlikely they will create anything unique. This is the unstated danger of overreaching quality programs. If there are no places in an organization where imperfection, or slack, is encouraged, the variation and experimentation required to drive innovation will be smothered, along with the towering revenues they bring. Unlike ordinary management, where failure is to be avoided, breakthrough innovation requires we accelerate the inevitable failure cycle to arrive at the future first. And there is no data on the future; no one can predict when breakthrough innovation will pay. This is what we call a convex or intangible form of value. It is why we pay a premium for growth stocks. Edison famously bragged about his 10,000 failures en route to the lightbulb. He knew innovation is about what we learn along the way.

Training: What are a few examples of companies today that are taking the lead in innovation?

JD: There are four types of innovation that largely determine an appropriate innovation culture and its complementary competencies. These four types are NOT determined by personality preferences, but rather by how these types produce specific value propositions. These indicators are used to predict the growth rates of firms and their stock prices. Each of these forms has recognizable innovation practices and indicators—an innovation playbook. There are generative forms of innovation (create) that produce radical new products and services and are used to speculate new emerging markets—think Genentech. The opposite forms of innovation are technology-based (control) where efficiency and quality are essential, as in medical procedures or heavy manufacturing—think Toyota. These competing types of innovation are defined by a difference of magnitude and associated risk. There are business forms of innovation (compete) characterized by the pursuit of profitability at fast speeds—think Goldman Sachs. Finally, there are social forms of innovation (collaborate) that often are post-capitalist as they pursue the development of helpful communities and the sharing of knowledge—think Linux. These last two competing types of innovation are defined by a difference of the speed and sustainability. There is no one type of innovative company. How a firm innovates determines what it innovates. Creating value from innovation is mostly about connecting these dots.

Training: Based on your research, do larger, more unwieldy organizations have more trouble with innovation than those that are on the smaller size?

JD: Firm size usually is taken as an indicator of relative maturity, but there are significant exceptions to this assumption such as Google. Start-ups lack the capital and reach of incumbent organizations, so they must rely on significant differentiation to establish their presence in a market. This is why smaller firms are often newer, produce more radical forms of innovation, and assume a much higher risk profile. For every 20-person biotech [company] acquired by a pharmaceutical giant for a billion dollars, there are hundreds that never make it. These nascent firms take a "forward position" in the innovation development cycle as they create new products and services, and speculate emerging markets first, but lack the scope and scale to fully develop them. Larger corporations typically are more established and occupy the "aft position" because they have the ability to grow through the acquisition of smaller companies. It is not so much that these giants cannot radically innovate—consider IBM—but that they choose not to assume the risk because they have markets and shareholders to protect. In the end, small companies either cease to operate, or become large companies, thus completing a turn of the innovation cycle. While firm size used to be an area of substantial debate among academics, the focus has changed—companies no longer compete as individual entities, but rather as federations.

Consider the products and services of Apple that integrate a host of music publishers, mid-size Taiwanese manufacturers, and two-person application developers into a seamless iSolution. Where does the company begin and end? In the age of crowd sourcing and idea markets, Wikipedia, and InnoCentive, firms of all sizes must develop,

acquire, or align themselves with the full range of innovation attributes, from revolutionary to evolutionary.

Training: Does technology, such as sophisticated collaboration platforms and cutting edge internal Web 2.0 tools, necessarily aid corporate creativity, or is it more complicated than that?

JD: The convergence of the information technology and innovation space may be the most significant development in this field during the post-industrial era. Endless connectivity, deep global pools of expertise, and the ability to manipulate and move data across platforms markedly increased the speed of innovation. But research on the effects of these collaborative innovation networks, or CoINs, as they are called, is far from one-sided. One study suggests teams increasingly are crossing boundaries and domains to produce more frequently cited research, and that this trend has fundamentally changed how knowledge is created. On the other hand, a series of other studies reports top innovators primarily network only with other top innovators and that breakthrough innovations travel exclusively in these elite groups.

High-quality patents are taken as evidence of this tendency. So it may be that teams are more effective in creating incremental to moderate forms of innovation, while smart set individuals, who produce fewer tangible innovations, are more likely to develop breakthroughs. Again, the nature of the innovation, and the specific part of the process, are the key. The new maxim might be to enlist the crowd to spot an opportunity, but engage deep domain experts to create it.

Training: When creating innovation workshops for employees, is there research to suggest it's best to divide into small groups, such as by job role or level?

JD: There is basic organizational psychology research that suggests small groups outperform larger groups in terms of the number and quality of ideas they can generate in a given period of time. The old divide-and-conquer approach. But related studies underscore the importance of these groups regularly meeting to exchange ideas and knowledge. They discuss what's working and what's not. Trainers often refer to this activity as "search and reapply." Finally, in addition to small group work, the collective group has a creative function in developing potential improvement points and divining simple rules that can be integrated into the routine practices of the smaller groups and the organization-at-large. This attention and incubation step is the foundation of organizational learning.

Training: How have innovation initiatives at organizations globally evolved over the last five to 10 years?

JD: There are two basic, almost oppositional, trends over the last decade. First, initiatives are more likely to be globally synchronized to leverage the wide range of know-how that comes with diversity, and to reduce development times. For example, Boeing might work on a cockpit interface prototype in Chicago, transfer the work to Bangalore, and finally move it to Shanghai in a single day. Each part of the organization typically has a specialty that contributes unique value to the global matrix of the corporation. A shared information platform, common processes and practices, and a basic understanding of one or more languages are required to make this sort of initiative seamless. Still, no matter how integrated the systems, the handoffs are where initiatives typically are fumbled due to misalignment issues that are not technical, but related to sense-making.

The second trend is smaller firms are undertaking much more substantial and complex initiatives. Developing a blockbuster drug used to be the sole domain of major pharmaceutical firms that had thousands of researchers at their disposal. But a closer look at the industry reveals many tier-one and two biotech firms, with fewer than a hundred researchers, have brought more game-changing therapies through the Byzantine FDA approval process than their much larger peers. This is because technology, talent, and capital are readily available to smaller firms working interdependently with each other. Where there used to be economies of scale, there now are dis-economies. The challenge with this trend is in designating and protecting intellectual property.

Training: What kinds of innovation techniques and practices will we probably see more of over the next decade, and why?

JD: There is a strong movement toward data-driven innovation. Computing power, storage, and connectivity have blurred the boundaries of imagination and simulation. The endless availability of information, and the tools to focus it, brings the new-found ability to detect an underlying problem set, find an uncontested market, or render a three-dimensional prototype in an instant. The technology becomes the pen, the brush, and the strings in much the same way our children play video games, where they create worlds within worlds.

There are hundreds of computer-based innovation applications that range from simple brainstorming tools to complex algorithms that predict the potency of a portfolio of patents. What is unclear is how these tools limit our imagination and our ability to construct novel solutions that fall outside the parameters of the toolkit. More so, neurobiologists long have suspected there are several levels of creativity that go beyond stimulating new ideas. In the face of ubiquitous technology and connectivity, an alternative series of techniques such as mediation and improvisation are emerging from a wide range of disciplines where inner-knowing, shared vision, and communal dialog are thought to produce more authentic forms of innovation. Intimate insight may turn out to be more prized than the on-demand torrent of possibilities.

Training: One of your specialities is "jump-start" innovation events that trigger the innovation mind-set in organizations, which hopefully then enable them to take it from there, and create winning products and marketing strategies. What is your top innovation "jump-start" tip for trainers reading this article?

JD: Momentum is everything. The flow of good ideas happens every day, everywhere, from the morning shower to the long commute home. The trick is to develop a team of engaged people to recognize and own their best ideas. No one resists what they, themselves, have created. Even if the team proceeds with mediocre ideas, they will discover this along the way, and rework them as necessary. The importance of alignment is overrated, and diversity underrated. Select participants as you would for an engaging dinner party, where the guests like each other, but don't share the same point of view. Encourage constructive conflict and, most importantly, step back when the team becomes animated and energized. In the end, innovation is terra incognita, and the only way to the undiscovered country is to travel through the unknown.