Garnering great ideas

Boeing is harnessing employees' ideas online to help shape the company's future

By Conan Kisor

Boeing is joining the growing number of global enterprises that use advanced Web-based collaboration practices to rapidly solicit, capture, refine and synthesize ideas from employees to drive innovation. Among those practices is Ideas to Innovation, or I2I, a suite of services offered by Integrated Defense Systems' Phantom Works organization that helps the company capture and organize ideas from the right people—at the right time—to tackle business challenges.

Conceived and managed by Phantom Works' Analysis, Modeling, Simulation & Experimentation (AMSE) division, I2I might best be described as organized, intensive and secure online brainstorming in a compressed time frame. It includes

an automated system to recruit participants and software to prioritize and evaluate their ideas. An I2I "event" works like this:

- A sponsor poses a strategic business challenge seeking employees' ideas using Idea Central, a commercially available software product developed by Imaginatik.
- Potential participants from around the company are identified using methods that ensure a knowledgeable and diverse sample of a target employee population. They are tapped via e-mail when the event begins.
- Over a set number of days, participants post ideas to the event Web site, submit supporting documents, pose questions, build on others' suggestions and even vote on ideas.

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> *– Bill Freiberg, capture team lead, Boeing Phantom Works' Advanced Systems Concepts and Exploration*

- Throughout the event, the sponsor reviews submissions and selects those that are most promising, innovative and feasible—often asking follow-up questions to clarify and further develop employees' ideas.

Boeing teams that have used the I2I idea generation capability include the Enterprise Technology Strategy organization. That team is using I2I to foster novel ideas in manufacturing technology. One of this group's goals is to devise a common set of automated, non-intrusive measurement and machine "visioning" technologies that could improve and unify the multiple measurement systems used across Boeing's production sites.

"We're looking to invest in technologies that collect and analyze data in real time—those that won't require key steps in the manufacturing process to pause while a measurement is taken," said Mike Vander Wel, who leads the Manufacturing Domain. It's one of eight companywide technology groupings, or domains, in Boeing's Enterprise Technology Strategy designed to better integrate and focus Boeing's technology investments. He pointed to laser tracker technology as an example of a system that can disrupt production due to sensitivity to temperature fluctuations caused by factory doors opening, or to vibrations caused by people moving near production hardware.

Using a weeklong I2I event, the Manufacturing Domain surfaced 84 ideas about potential innovations in machine visioning from more than 330 engineers and technical experts from 22 sites around the company. "We received ideas from Information Technology people, systems engineers, people working on network-centric programs, even those in the aftermarket and spares organizations," Vander Wel said. "I2I greatly expanded our reach in tapping into the broad expertise we have within the company. The event surfaced a lot of great ideas, and now there is more work to be done to create a machine visioning architecture, a technology road map and a plan."

Boeing is not alone in its employee-centric approach to stimulating innovation. Global companies such as IBM, Pfizer and Chevron also are using centralized approaches like I2I to harvest employees' business ideas. An IBM study found that a company's employees are the single most significant source of innovative business ideas, outpacing partners, customers, consultants and even competitors.

"At Boeing, the I2I process helps the company obtain and cull through hundreds of reasonable business suggestions so that the 'pearls' can rise to the top," said Rob Williams, senior manager of Innovation & Integration, AMSE. "What's more, I2I events are Lean; they can be conducted on short notice and don't require travel or significant meeting costs."

In addition to big-picture business challenges, I2I is being used for tactical purposes. For example, when an opportunity arose for Phantom Works to respond to a request for proposal (RFP) from a defense customer on a very tight deadline, the proposal team used an I2I event concurrent with its own concept-development methods. More than 180 employees contributed. Within 10 days of RFP release, the team had 85 suggestions regarding structures, lifting surface geometry, propulsion and flight controls for a novel aircraft concept.

"We had ideas from all over the company, from people we never would have thought to contact, and several ideas validated the direction the proposal was heading," said Bill Freiberg, capture team lead for Boeing Phantom Works' Advanced System Concepts and Exploration unit. He noted that without I2I, he would have had to identify and reach out to colleagues individually for ideas for the proposal, which would have been very time-consuming. Indeed, he estimated that I2I saved his team between $50,000 and $100,000.

For employees, I2I provides an immediate way to contribute ideas and knowledge that could significantly shape the company's future. For the company, I2I enables organizations to benefit from the expertise of an unprecedented depth and breadth of Boeing talent more rapidly and efficiently than ever before.

"That's important, because the ability to nimbly adopt technical advances and other successes across the company will help Boeing gain a competitive advantage, enter new markets and strengthen decision-making," said Guy Higgins, vice president, AMSE.

Any Boeing organization seeking to learn more about the program may send an e-mail to robert.t.williams2@boeing.com. ■

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GRAPHIC: (LEFT) Phantom Works engineer Kentaro Sugiyama is shown with an aircraft concept related to a proposal for a defense customer. An Ideas to Innovation event enabled 180 Boeing people to rapidly contribute their ideas on aspects of the project.
BRANDON LUONG/BOEING; PHOTO BY RON BOOKOUT/BOEING