



## **Developing Systemic Innovation in an IT Organization**

A new initiative from Intel IT turns the concept of innovation into a key business value. Using formal tools, training, and methods, Intel's systemic innovation initiative is working to integrate sustainable innovation practices into the IT organization.

Jack Anderson, Luis Gimenez, Deanna Nunley, and Esther Baldwin, Intel Corporation

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## Executive Summary

To foster and encourage innovation throughout Intel's IT organization, we introduced a new initiative that formalizes innovation as a measurable business value. Innovation is already a part of Intel culture—we strive to hire, develop, reward, and retain innovative employees. As a result, Intel is known for creating and adopting innovative solutions and for taking informed risks. To maintain our competitive edge, we need to foster long-term systemic innovation.

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Innovation is the introduction of something new to an organization or individual. By systemic innovation, we mean continually creating value through ongoing innovation that becomes part of our culture.

We are rolling out the initiative within our IT organization, and then using it as a catalyst for innovation throughout Intel worldwide. We intend to move beyond historically recognized—though still critical—innovation efforts such as new technology and investments in patenting, to embrace less obvious innovation. This might include individuals sharing best practices on how to manage a project, for example, or discussions among employees about better collaboration methods. The systemic innovation initiative allows us to manage innovation as a culture in the same way that we manage quality and safety.

The systemic innovation initiative intends to sustain and continue to build Intel's competitive advantage and industry leadership by:

- Fostering and encouraging innovation and creative thinking
- Challenging the status quo and embracing change
- Delivering innovative and competitive products and services
- Continuously learning, developing, and improving (incremental innovation)
- Encouraging and rewarding informed risk-taking
- Providing a challenging work environment

Through the systemic innovation initiative, we intend to make those values formal, systemic, and tangible—and eventually part of an ingrained culture of innovation throughout Intel.

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## The Business Challenge

To remain competitive and maintain an influential role in our industry, we need to treat innovation as a measurable business value, and make innovation a fundamental part of Intel life.

The innovation effort is a chartered initiative to help foster innovation at all levels of Intel IT—both the organization and its people—to create business value and provide a competitive advantage.

Our strategy is to recognize innovation as a process. In doing so, we plan to apply the technology, management disciplines, and marketing skills we already have to infuse innovation throughout the IT organization. We intend to capitalize on the creativity and competence of our IT employees.

We began the initiative by:

- Engaging support from the organization's leadership
- Defining success criteria and measurable success indicators
- Providing consistent messaging, approaches, and tools across all divisions
- Appointing and helping innovation champions within different divisions
- Setting up an innovation task force to assist the innovation champions, and integrating the initiative at the division staff and corporate level throughout Intel
- Using IT as a learning ground for expansion to all of Intel

Figure 1 shows the 2005 schedule for introducing the systemic innovation initiative throughout the IT group.

## Engaging Everyone

One of the initiative's core principals is to engage employees as participants at all levels of every organization within Intel IT. To accomplish that task, we are:

- Using an intranet site as a central communication hub
- Acknowledging and recognizing individual innovation champions
- Engaging senior management
- Communicating expectations appropriately to employees
- Creating a task force and steering committee
- Measuring innovation with an innovation self assessment
- Providing flexible job opportunities to work on innovative projects

### Intranet Site

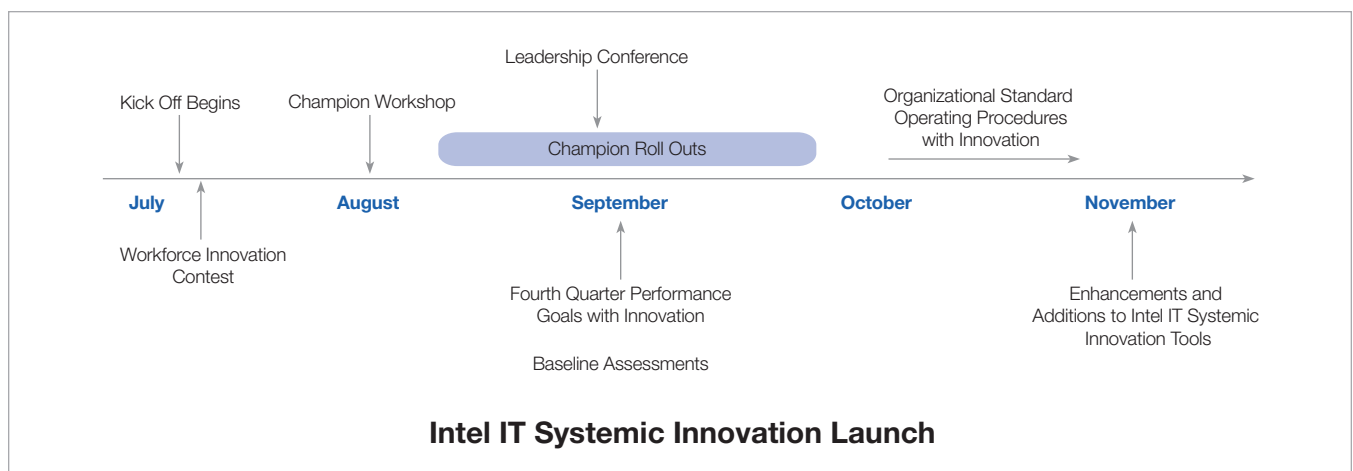
To communicate the innovation message to all audience segments, we're using the Intel intranet site. Content in the site explains what innovation is, what the initiative means to individuals, and what tools we offer for individual success. As Figure 2 shows, the site serves as an up-to-date source of innovation information for everyone.

The intranet site also contains information that helps managers measure innovative work.

### Innovation Champions

To help move the initiative forward, we use innovation champions in each of the divisions throughout IT. Staff management appoints the champions, and together, they serve as a working group to define, plan, deliver, and track systemic innovation. We encourage and guide

**Figure 1. 2005 innovation initiative**



the champions as they nurture innovation throughout IT, offering a consistent message, approach, and tools.

The champions foster innovation behaviors at all levels of IT, enabling results. Each champion is responsible for behaviors and results in his or her portion of the IT organization. We expect champions to execute the IT innovation strategy as set by the innovation and research steering committee.

The innovation champion is essentially a personal delivery channel for each organization. We encourage each champion to select and customize appropriate tools for individual organizations, and for different functions within each organization, to decide when to use those tools, and to choose how to deliver the innovation message.

The intranet site contains a specific section for champions, with information to assist with delivering innovation to their organizations.

## Management Commitment

Management commitment is the key to making systemic innovation successful. Managers play a key role in enabling an environment that supports innovative behavior. We engaged senior managers and employees as innovation champions, allocated adequate budget for the initiative, and set up a management-based steering committee for innovation and research.

We also chartered an innovation task force, a central group whose goal is to develop tools, processes, and communications that help individual innovation champions integrate results into the division staff level.

## Rewards and Recognition Program

The opportunity—and obligation—to recognize and be recognized for hard work and dedication toward innovation, is critical to the innovation initiative. Recognizing innovative actions or deliverables is the key to creating a culture of innovation. We plan to point out innovation wherever it's appropriate and the rewards and recognition program helps us accomplish this goal. The program builds on an existing Intel reward program; with this initiative, we now add innovation to the behaviors we reward and track. It includes recognizing innovation successes and failures.

We view innovation as a component we're building within the IT group's culture and values. Therefore, one initiative goal is to positively acknowledge accomplishments or behaviors that support Intel's values and the IT group's strategic goals.

Figure 2. Innovation intranet site



Starting in second half of 2005, we tracked all recognition in the IT organization related to innovation. Employees who submit an award are asked to specify the word “innovation” in the award title if innovation is involved. Moving into 2006, we plan to update the reward tools to formally establish innovation as part of our automated tracking tools.

## Innovation Toolkit

The innovation toolkit is a set of tools, processes, and hands-on instructions about systemic innovation. It contains tools, materials, and reference information to help individuals and groups implement systemic innovation in their daily work. A separate site for champions contains more detail and project planning guidance.

Examples of tools and processes:

- **Innovation training class:** basic training about innovation, how to do it, and our investments and goals for innovation
- **Innovation engine:** a tool to capture and disposition innovative ideas
- **Innovation assignments and ventures:** a process that allows managers to post part-time or full-time innovation job opportunities online, so that IT employees can apply

We designed the toolkit to involve and assist employees in innovation activities in their day-to-day work life. We will continue to enhance our current tools and add others to assist our employees.

## Innovation Self-Assessment

The innovation self-assessment tool measures a group's perception of its commitment, involvement, and performance in innovation. Participants read thought-provoking questions about innovation and innovative behavior, then respond with comments and scores based on each participant's perception of the group's level of innovative activity.

The group creates an action plan as a result of the self assessment findings. We design this action plan to move the organization up the innovation maturity curve. When we complete the action plan, we expect the group scores to improve with subsequent assessments.

The assessment tool helps groups and individuals measure:

- Management commitment
- Business responsibility
- Innovation competency
- Innovative practices related to Intel values
- Innovation support

## Innovation Training Courses

We offer an innovation training course to teach a comprehensive set of basic innovation information, individual investments, and goals.

Individuals can use the training to gain a basic understanding of innovation-related practices, methods, and tools. Managers can use the course with their teams to prompt innovative

behavior and improve the team environment to encourage innovation. The innovation training is a key component and initial step for introducing innovation concepts into teams and starting discussions about innovation.

The innovation training includes:

- Basic overview of the practice of innovation within working teams
- Recommended approach to bring innovation into a daily work environment
- Training overview and references to help teams and individuals increase innovation in their daily work

Other training courses and workshops are being developed and are geared at target audiences, such as managers, to help them establish an environment of innovation. We are also gearing courses toward individual contributors, to help them document creative ideas and potentially move the ideas through the patent process.

## Innovation Engine

The innovation engine is an online tool that lets us collect innovative ideas and problems that require innovative solutions, from Intel employees, as shown in Figure 3 on the following page. Topics range from product design enhancements to business process improvements. Individuals can design each topic or individual requests for ideas differently, depending on the organization's particular need.

### Benefits of Rewards and Recognition Program

- Provides a method to identify and acknowledge innovative behavior
- Offers an opportunity for all employees to engage at all levels to identify innovation
- Motivates employees to repeat desired behaviors around innovation
- Fosters a culture of innovation

### Benefits of Innovation Self-Assessment

- Establishes an objective measurement and score for the level of innovation within a group
- Prompts team members to consciously think about innovative practices
- Acts as a training aid for the Innovation topic
- Records group strengths, improvement areas, and provides scores to measure current status
- Enables baseline understanding for future tracking and ongoing self assessment
- Provides an action plan process to improve innovation within a group

Key components of the innovation engine include:

- An online interface and database to collect ideas, analyze submittals, and assist in the selection process
- An intranet landing area that describes all details for any idea campaign
- Guidelines and templates on how to plan for, promote, judge, and complete a campaign

The innovation engine should help employees build innovation into roadmaps, business practices, and general organizational operations.

The tool is ideal for collecting ideas from any group of 250 or more employees to facilitate the communication and judging process. For smaller groups, we use a separate template in Intel's information sharing and document collaboration software. As an element of systemic innovation, we repeat idea campaigns on a regular basis, to stimulate a continuous flow of innovation.

### Innovation Assignments and Ventures Tool

Managers use this tool to post information online when a part-time or full-time innovation job opportunity opens within IT. It allows employees to apply for opportunities specific to innovation by including the following:

- Overview of details, eligibility requirements, and process for use of the tool
- Guidelines and frequently asked questions

Figure 3. Idea submission page

The screenshot shows a web form titled "Operations Innovation Day Submission 2005". At the top, there are navigation links for "Home", "Contact Us", and "Innovation". Below the navigation is a header for "Innovation Engine" and "Ops Innovation Day". The main content area contains the following fields:

- Submission Title:** A text input field with "Innovation Engine Demo" entered.
- Submission Type:** A dropdown menu with "Poster" selected.
- Which Strategic Objective best fits this submission:** A dropdown menu with "Business Value" selected.
- Strategic Objective Level 2:** A dropdown menu with "Business capabilities" selected.
- Background / Challenge (500 words max):** A large text area with a scroll bar.

On the left side of the form, there is a sidebar with "Help Information:" and links for "Motivations/Justification", "The Basics", "Linkages to other programs", and "Ops Innovation Home".

- Interface and database to collect job postings for temporary assignments and part-time project participation
- Interface to apply for assignments

The assignment and ventures tool is ideal for a manager facing a short-term innovation project requiring skills that a particular group lacks. It's also useful for employees who want to expand their career development through innovative ventures.

### Other Innovation Tools

We also offer additional tools to encourage innovation, including worldwide innovation centers, an innovation research and development council, and innovation labs.

### Benefits of the Innovation Engine

- Enables an organization to quickly and effectively gather innovative ideas from a group of people
- Allows idea collection on any topic from business practices to product development
- Integrates best known methods from previous campaigns into the tool and related processes
- Acts as an effective means of embracing new idea generation into an organization
- Maintains an idea "asset" database of all collected employee ideas for future mining and use

### Benefits of Innovation Assignments and Ventures Tool

- Lets managers quickly and effectively post innovation job enhancement opportunities
- Lets employees view innovation job enhancement opportunities and follow a process to apply for them
- Makes innovation a part of everyone's work environment

## Measuring Evidence of Innovation

Our initiative fosters innovative behaviors and results across the entire organization. We are just beginning the innovation initiative, so we won't have measurable results for at least a year. As we look for critical success indicators, we measure behaviors and results. Measuring behaviors shows us how well we develop new processes, and how well management supports innovation.

We are measuring the following information to track the results of the initiative:

- Number of innovation related rewards and recognitions
- Numbers from various feedback mechanisms, showing employee acceptance and understanding of the initiative
- Results from the innovation self assessment capability maturity framework (survey measuring five levels of maturity related to innovation behavior)
- Percentage of our budget dedicated to innovation, research, and exploration of emerging technologies
- Shareholder value created from innovation activities. (Shareholder Value = IT Efficiencies + Business Value provided to the IT customers)
- Number of ideas generated in specific innovation harvesting campaigns
- Number of ideas harvested from the campaigns and turned into implementable projects
- Number of invention disclosure filings (IDFs)
- Number of Intel patent submissions
- Number of white papers published

## Conclusion

The systemic innovation initiative is an organized effort to encourage employees to create value through ongoing innovation. We intend to see immediate and long-term positive results from the adoption of the initiative within our IT organization. We're setting a precedent in IT with our investment in a formal set of training, tools, and methods to encourage innovation—a precedent that we hope to see adopted throughout the company.

## Authors

**Jack Anderson** is a program manager with the IT Innovation and Research group at Intel Corporation.

**Luis Gimenez** is a program manager with the IT Innovation and Research group at Intel Corporation.

**Deanna Nunley** is a marketing campaign manager with the IT Marketing group at Intel Corporation.

**Esther Baldwin** is an innovation program manager with the Innovation and Research group at Intel Corporation.

### Acronyms

<b>CMF</b>	capability maturity framework
<b>IDF</b>	invention disclosure filing
<b>SOP</b>	standard operating procedure

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