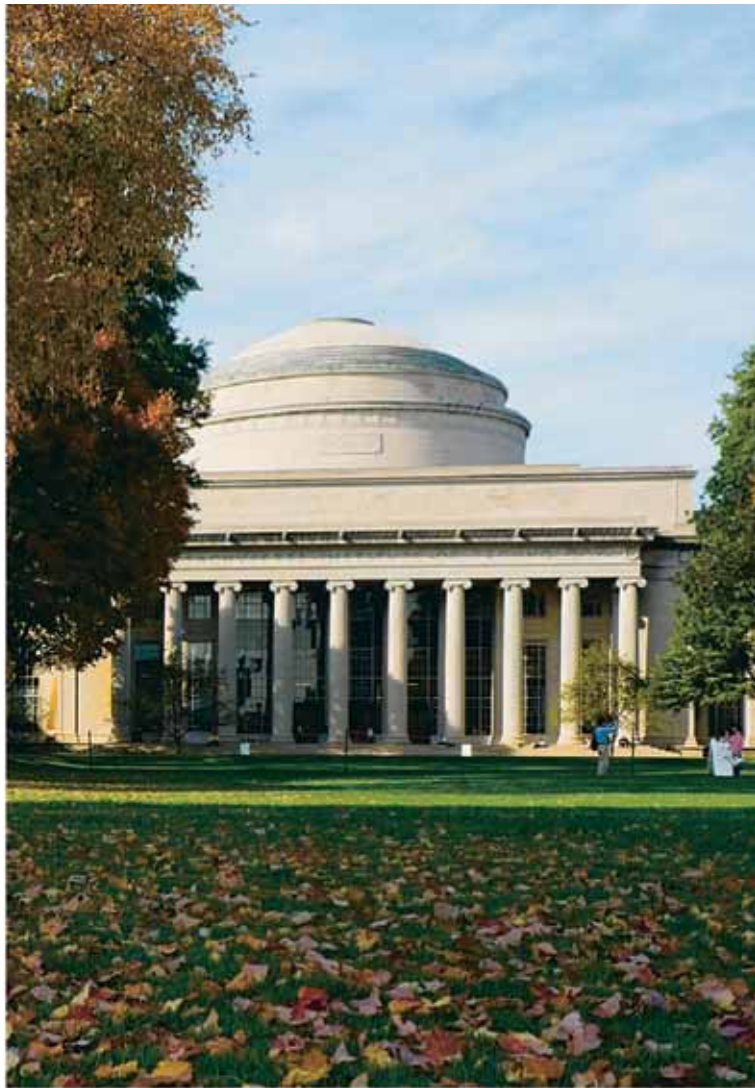




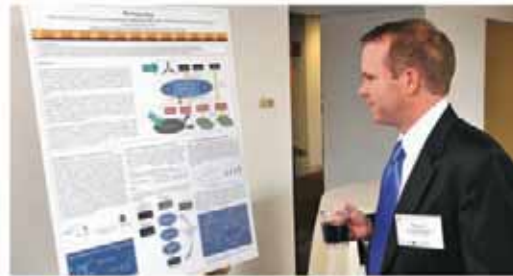
**TECHNOLOGY** and the **CORPORATION**



**2009  
MIT GLOBAL OPERATIONS  
CONFERENCE**

New Visions for Global Operations:  
From Product Development Through  
Delivery and Recycling

2-3 December 2009



## 2009 MIT GLOBAL OPERATIONS CONFERENCE

### New Visions for Global Operations: From Product Development Through Delivery and Recycling

The use of both the physical and internet-enabled worlds has greatly altered traditional concepts of operations and the cycle of product development and distribution. The new generation of products we know and love are designed, distributed and supported in vastly different ways. At the same time businesses are identifying new ways of configuring operations in a global environment.

Some of the factors that make these different include:

- *Combined product and service offerings*
- *New design and development tools*
- *An emphasis on sustainability*
- *Robustness with respect to economic change*
- *Globalization in both product development and delivery supply chains*
- *A systems approach to developing leaner manufacturing and a more efficient supply chain*

This conference gathers together thought leaders from MIT and industry to discuss the latest ideas to design, develop, manufacture and distribute. The sessions will cover topics from design through delivery and recycling, using a variety of examples from different industries.

[ilp-www.mit.edu/events/GO2009](http://www.mit.edu/events/GO2009)



**Massachusetts  
Institute of  
Technology**

## **KEYNOTE: Positioning Dell's Supply Chain for the Future**

Jeffrey W. Clarke, Vice Chairman, Operations & Technology  
Dell Inc.

Successful companies require flexible supply chains that can adapt to the ever changing needs of their customers and business models. Dell's business is rapidly expanding into new sales channels, growing in global markets, and diversifying to meet new customer requirements. To support this expansion, Dell is innovating a myriad of supply chain solutions to meet the varying needs of customers, from individual consumers and retailers to large corporate enterprises. Differentiated supply chain solutions enable Dell to offer unprecedented customer satisfaction. An optimized supply chain solution directly impacts the bottom line, including landing the lowest cost position. Additionally, Dell is committed to environmental responsibility and has integrated this company principle into all aspects of the product lifecycle, from design and engineering to packaging and recycling. Insight into Dell's comprehensive transition of its supply chain will serve to show how the company has set the stage for its future and improve its long-term competitiveness.

## **Staying Power: Six Enduring Principles for Managing Strategy and Innovation in an Uncertain World**

Michael A. Cusumano, Sloan Management Review Distinguished Professor of Management and Engineering Systems  
Head, Technological Innovation and Entrepreneurship (TIE) Group  
MIT Sloan School of Management and MIT Engineering Systems Division

This lecture will present an overview of Professor Cusumano's forthcoming book, titled *In Search of Best Practice: Enduring Ideas in Strategy and Innovation Management*, prepared for the 2009 Clarendon Lectures in Management Studies at the University of Oxford. The focus is on concepts important to address the dual challenge of simultaneous "innovation and commoditization" in many industries. These ideas have been studied extensively by theoretical and empirical academic researchers and also have appeared in Professor Cusumano's research over the past 25 years. His work has focused on the automobile, software, and consumer electronics industries, including large-sample research and case studies of Toyota, Microsoft, Sony, JVC, Netscape, and Intel, as well as Japanese and Indian 'software factories.'

The six ideas are: (1) capabilities, not just strategy (or vision); (2) pull, don't just push; (3) scope, not just scale; (4) flexibility, not just efficiency; (5) platforms, not just products; and (6) services, not just products (or platforms). The first four ideas all deal with firm "agility" or the ability to anticipate or react quickly and flexibility to change. The last two ideas extend the capabilities and innovation horizons of the product firm beyond conventional modes of strategy and business models. Professor Cusumano positions each idea against other concepts frequently associated with 'best practices' and competitive advantage but which he believes are less valuable than they seem. In addition, he will discuss the difficulty of arriving at any absolute set of 'best practices' given the limitations of case studies and large-sample research methods as well as various contextual variables such as environmental changes that limit our ability to generalize.

## **Global Operations and Engineering Systems: Grappling with Intertwined Technological and Social Complexity**

Olivier de Weck, Associate Professor of Aeronautics and Astronautics and Engineering Systems  
Associate Director, Engineering Systems Division  
MIT Department of Aeronautics and Astronautics and MIT Engineering Systems Division

In this talk Professor de Weck will discuss and list some of the most pressing societal challenges we face today and argue that their solution requires both systems thinking,



as well as new methods and tools for dealing with intertwined technological and social complexity. These challenges include the provisioning of clean energy and mitigation of climate change, the revision of our health care system to maximize value as well as the renewal of our critical infrastructures including more efficient transportation and global logistics and operations. All of these domains are in need of technological innovation, and such innovation is indeed happening. He will show specific examples of new technologies that have the potential for substantial impact, such as in digital production printing systems and in real time RFID monitoring and management of systems via the internet. However, by themselves such technologies cannot solve the challenges we face. Only once they are fully embedded into their host systems do they gain the potential to deliver value. This requires a broader perspective including issues of technology infusion and engineering change, costs and benefits, social acceptance, and incentives as well as the role of government regulations and standards. Thus, the higher the level of abstraction, the more intertwined the technological, social, and managerial dimensions of the problem are. De Weck will close with a discussion of the role of Global Operations in the context of Engineering Systems. Engineering Systems are the complex networks of artifacts and people that fulfill some of the most important functions in society today and we are striving towards better ways of modeling, analyzing, designing, and managing these systems in the future.

### **Industry Evolution, Enterprise Architectures, and the Timing of Operations Innovations**

**Charles H. Fine, Chrysler Leaders for Global Operations Professor of Management and Engineering Systems**

**Co-Director, International Motor Vehicle Program (IMVP)**

**MIT Sloan School of Management and MIT Engineering Systems Division**

Operations innovation is critical for the survival and growth of many firms. Companies that have explicit innovation strategies for their operations are more likely to deliver both incremental and disruptive operational innovations. To develop these strategies, companies can opportunistically exploit an understanding of the life cycle of their operations models and the architectures of their enterprises. Data from three industries (automotive, airlines, and aerospace) provides a rich set of evidence upon which one can develop such strategies.

### **New Visions for Global Operations**

**John Kern, Vice President of Product Operations**

**Cisco Systems, Inc.**

Cisco is in pursuit of consistently providing an unrivaled end-to-end experience to our customers by delivering the best value chain in the world. Our Value Chain performance is built to serve customers with both operations and innovation excellence and has a positive impact on the bottom-line financial performance of the company.

Join this session to learn how you can leverage your value chain as a competitive advantage to enable new business models that drive greater, sustainable innovation. This presentation will provide an overview of the critical processes and global business drivers involved in creating best practices, and will highlight key lessons learned at Cisco.

# December 2-3, 2009

## **Life-cycle Materials Management: Strategic Opportunities in Design for Reuse and Recycling**

**Randolph E. Kirchain, Associate Professor of Materials Science and Engineering and Engineering Systems**  
MIT Department of Materials Science and Engineering and MIT Engineering Systems Division

For more than three decades, recycling has been promoted as an important strategy to reduce the footprint of modern society. While the importance of conservation only continues to grow, recent research indicates that recycling can provide significant economic benefits - even to firms outside of the raw materials sector. These benefits include increased supply-chain efficiency, improved brand image, as well as lower and more stable materials costs. This presentation will explore these benefits as well as the strategies that firms can undertake to realize them. Finally, this presentation will discuss how modeling tools can be applied to uncover economically-beneficial opportunities for recycling through cases in two different industries: light metals and platinum-group metals.

## **Optimizing Cost, Cash, and Service Levels in a Volatile Environment**

**David Simchi-Levi, Professor of Civil and Environmental Engineering and Engineering Systems**  
Co-Director, Leaders for Global Operations (LGO) and System Design and Management (SDM) Programs  
MIT Civil and Environmental Engineering Department and MIT Engineering Systems Division

With the economic recession in full swing, supply chain managers are facing a growing array of risks. Fluctuating transportation costs, high volatility in demand volume and mix, commodity price volatility, increase in labor costs in developing countries, and the pressure to reduce inventories are just a few of the challenges that companies are struggling to overcome today and will likely face in the future.

In such an environment it is important to focus on three dimensions: Cost, Cash, and Service. That is, it is important to identify strategies to reduce cost and cut working capital (cash) while at the same time maintain or increase service levels. Of course, the increase in volatility and risks demand strategies that, while reducing cost and working capital, allow the firm to better respond to changes in demand volume and mix, exchange rates, technology, or labor costs. In particular, it is important to implement a strategy that allows the firm to cut costs while at the same time prepare for growth.

## **Improving Labor Standards in Global Supply Chains**

**Richard M. Locke**  
Alvin J. Siteman Professor of Entrepreneurship and Political Science  
Deputy Dean, MIT Sloan School of Management

Abstract pending. Updates at [ilp-www.mit.edu/events/GO2009](http://ilp-www.mit.edu/events/GO2009).

## **Continuous Manufacturing of Small Molecule Pharmaceuticals The Ultra-Lean Way of Manufacturing**

**Bernhardt L. Trout, Professor of Chemical Engineering**  
Director, Novartis-MIT Center for Continuous Manufacturing  
Co-Chair, Singapore-MIT Alliance, Chemical and Pharmaceutical Manufacturing  
MIT Department of Chemical Engineering

Professor Trout will describe the motivation for and vision behind the Novartis-MIT Center for Continuous Manufacturing. In particular, he will discuss continuous manufacturing as the ultimate in lean manufacturing with quantified and fully integrated processes. Finally, Professor Trout will present a cost analysis based on a case study and discuss the challenges behind continuous manufacturing of pharmaceuticals.

**KEYNOTE: Evolution of Pharmaceutical Manufacturing —  
From LEAN to CONTINUOUS**

Tom van Laar  
Head, Global Technical Operations  
Novartis Pharma AG

Van Laar will describe the recent transformation from a traditional, hierarchical, and functionally oriented manufacturing system in Pharmaceuticals to a LEAN and more process oriented manufacturing system and culture. This lays the groundwork for the big leap to continuous flow manufacturing using newly developed technologies and equipment with a completely different organizational support system. Van Laar will describe the operational, technical, and organizational changes required for the LEAN transformation including the mindset shift. He will then present current thinking on how we will achieve these same changes for the Continuous manufacturing transformation.

**Building a Team for Innovation**

David Wallace, Professor of Mechanical Engineering and Engineering Systems  
Co-Director, MIT CADLab  
Margaret MacVicar Faculty Fellow  
MIT Department of Mechanical Engineering and MIT Engineering Systems Division

Innovative product design relies upon skills and attitudes such as: motivation; creativity; knowledge and the ability to execute; and process. This talk will outline techniques and strategies that can be used to help teams, in both research and product design contexts, become more innovative. The presentation will draw upon experiences helping to build design teams, from high-school students on the television show design squad, to undergraduate and graduate design students, to professionals in industry.

**Global Innovation Design**

Harry West, CEO  
Continuum, Inc.

We are going through a time of enormous change in global innovation and design: the integration of the physical and the virtual, fast followers pulling out into the passing lane, the emergence of real markets in emerging markets, intense global competition. Continuum is a global innovation design firm that is helping a broad range of companies across the globe to navigate these changes. Together, in real time, we are developing new approaches to new challenges. A common thread is the recognition that the only sure winner in the future is the consumer, and it is our job is to help companies to get on to the winning team, the consumers' team.

[ilp-www.mit.edu/events/GO2009](http://ilp-www.mit.edu/events/GO2009)





## Featured Speakers

Jeffrey W. Clarke, Keynote

Tom van Laar, Keynote

Michael A. Cusumano

Olivier de Weck

Charles H. Fine

John Kern

Randolph E. Kirchain

David Simchi-Levi

Richard M. Locke

Bernhardt L. Trout

David Wallace

Harry West



## MIT LGO Leaders for Global Operations

A partnership between MIT and industry, the LGO program develops leaders of operations-oriented companies who bring both a management perspective and deep technical understanding. LGO's mission is to generate knowledge at the intersection of engineering and management, and to educate leaders to address the world's most challenging operations problems. Through faculty research, internships, and education, LGO explores how operations-oriented companies thrive in global markets. LGO has industry partners in a wide variety of manufacturing and operations industries such as aerospace, electronics, and consumer goods. LGO offers a two-year graduate program that awards an MBA or a Master of Science from MIT Sloan School of Management and a Master of Science from MIT School of Engineering. More information at: <http://lgo.mit.edu/>.



## system design and management

Created in 1996 in response to industry's need to develop the next generation of leaders, SDM is at the forefront of graduate education at MIT. Not an MBA, SDM combines cutting-edge courses from MIT Sloan School of Management and the MIT School of Engineering, offering flexible matriculation options and an interdisciplinary perspective. SDM prepares graduates to think outside of the box, lead across organizational boundaries and inspire others to collaborate and innovate in both technical and non-technical arenas. Graduates earn an MS in engineering and management, granted jointly by the MIT School of Engineering and MIT Sloan. More information at: <http://sdm.mit.edu>.



## MIT forum

FOR SUPPLY CHAIN INNOVATION

Formed in 2002, the MIT Forum for Supply Chain Innovation is at the center of one of the most pivotal areas of business. By harnessing the world-leading capabilities of MIT, the Forum provides a unique collaborative environment and is the center of an expert community consisting of academics, researchers, and practitioners who develop ideas, practical principles and critical thinking. Through its research, the Forum affects supply chain management and shapes its effect on business strategy. Dedicated to delivering innovative solutions to supply chain issues, the Forum provides each member with unique research that combines new ideas for excellence in supply chain design and implementation with technology-based solutions that make a difference. More information at: <http://supplychain.mit.edu/>.



The Industrial Liaison Program (ILP) is industry's chief gateway to MIT, enabling companies worldwide to harness MIT resources to address current challenges and to anticipate future needs. The ILP helps company managers monitor MIT research developments, identify and arrange expert consultations with MIT faculty, license MIT-owned intellectual property, and sponsor university research. The professional staff of Industrial Liaison Officers facilitates customized interactions for nearly 200 multinational companies. More information at: <http://ilp-www.mit.edu/>.



## Registration and Hotel Information The 2009 MIT Global Operations Conference

[ilp-www.mit.edu/events/GO2009](http://ilp-www.mit.edu/events/GO2009)

December 2-3, 2009

### **Registration Fees:**

Full Registration Fee:	\$1,750
ILP Members*:	Complimentary
LGO-SDM Corporate Partners*:	Complimentary

MIT Forum for Supply Chain Innovation Corporate Partners:\* Complimentary and reduced registration rates may apply. For more information, contact Janet Kerrigan, Events Coordinator, 617-258-8409 or [kerrigan@mit.edu](mailto:kerrigan@mit.edu).

\*A \$50 processing fee will apply to each complimentary registrant who fails to attend without canceling in advance. Cancellations must be received in writing via email: [conf\\_admin@ilp.mit.edu](mailto:conf_admin@ilp.mit.edu) no later than November 20th, 2009.

### **Payment Methods:**

Please make checks payable to MIT.  
VISA, MasterCard, American Express and Discover accepted  
(payable in U.S. dollars only).

### **Cancellation Policy:**

Cancellations received in writing via email [conf\\_admin@ilp.mit.edu](mailto:conf_admin@ilp.mit.edu) on or before November 20, 2009 are entitled to a full refund less a \$50 processing fee. No refunds will be made after November 20, 2009. Substitutions may also be made in writing by November 20, 2009, however, any substitutions after that date will be made at the Conference On-Site Registration Desk.

### **Accommodations:**

A block of rooms has been reserved at the Marriott Cambridge hotel near the MIT campus. Please call for reservations directly at 1-800-228-9290 or 617-494-6600. Rooms are assigned on a first-come, first-served basis, and reservations must be made no later than November 10, 2009. Please refer to the 2009 MIT Global Operations Conference to receive the \$139 room rate.

