

Industrial Performance Center

The MIT Industrial Performance Center (IPC) is dedicated to the study of productivity, innovation, and industrial development in the United States and other economies. The center carries out field-based, often large-scale research projects that bring together scientists and engineers with scholars from the social sciences and management disciplines. These interdisciplinary teams observe strategic, technological, and organizational developments in industry and analyze the implications for the economy and for society. Through this research we seek to help leaders in business, government, and education better understand global industrial developments and develop practical new approaches for strengthening public policies, business strategies, technical practices, and educational programs.

With the participation of faculty members and students from all five MIT schools, the center serves as a focus for interdisciplinary research on industry, monitoring and analyzing patterns of organizational and technological practice, interpreting them for our partners and sponsors, and feeding our observations and insights back into the core disciplines and educational curricula of the Institute.

Research Highlights

The center's research is organized around three major themes: systems and strategies for innovation; globalization and its implications for industry and society; and technology and the changing American workplace.

This year the center continued its research program on local innovation systems. An international team of researchers led by Professor Richard Lester is studying the conditions of innovation in selected industries in more than 20 locations—including both high-technology agglomerations and less-favored regions—in the United States, Finland, Japan, the United Kingdom, Taiwan, Ireland, Israel, and Norway. A particular focus is on the role of research universities as contributors to innovation and economic growth in these regions. The IPC-based team also includes researchers from the University of Tampere and Helsinki University of Technology in Finland, Cambridge University in the UK, and Rogaland Research Foundation in Norway. It is sponsored by an international consortium of governments and foundations.

Also this year, professors Richard Lester and Michael Piore completed their multiyear study of design and new product development practices. Their new book, *Innovation: The Missing Dimension*, will be published in September 2004.

The center continues its studies on globalization. The term “globalization” refers to the changes in the international economy that are tending toward the creation of a single world market for capital, goods, and services. In each of these dimensions, globalization raises new challenges for sustaining innovation, growth, societal well-being, and broad political legitimacy in the nations it encompasses. The IPC Globalization Study focuses on one aspect of these developments: the fragmentation of the production systems of firms in the advanced economies and the relocation of parts of these enterprises to other

societies. Research on this topic is underway in the United States, Europe, and Asia. Interviews have been carried out at about 600 firms—roughly half in China and the Chinese-speaking economies. The IPC Globalization Study team is led by Professor Suzanne Berger (Political Science), and also includes professors Tayo Akinwande (Electrical Engineering and Computer Science [EECS]), Don Lessard (Sloan), Richard Lester (Nuclear Engineering), Charles Sodini (EECS), Edward Steinfeld (Political Science), IPC senior research affiliate Tim Sturgeon, and several doctoral students; it also includes researchers from Germany, Japan, and Taiwan. The first major publication from this project, *Global Taiwan*, will appear at the end of this year.

In related work, Professor Ed Steinfeld continues his study of the impact of globalization on Chinese industrial policy and structure, and Dr. Tim Sturgeon, a cofounder of the Global Value Chain Initiative, continues his research on modular production networks.

With support from the Hewlett Foundation, the IPC and the Sloan School are collaborating on a second major research initiative related to globalization. The Globalization, Economic Development, and Standards Project focuses on the investment and contracting practices of multinational corporations in emerging economies, the implications of these practices for sustainable economic development, and the role of labor and environmental standards and related codes of conduct. The research is led by Professor Richard Locke (Sloan and Political Science) and Professor Michael Piore (Economics and Political Science), and participating faculty include professors Joshua Cohen (Political Science), Thomas Kochan (Sloan), Dara O'Rourke (Urban Studies and Planning), Judith Tandler (Urban Studies and Planning), and Balakrishnan Rajagopal (Urban Studies and Planning).

Professor Frank Levy (Urban Studies and Planning) and his students continue their studies of technological change in the workplace and its implications for education and the organization of work. A major focus this year was a research seminar on the offshoring of jobs. Also this year, Professor Levy and his coauthor Professor Richard Murnane of Harvard published a new book, *The New Division of Labor: How Computers are Creating the Next Job Market*.

People

Professor Suzanne Berger was awarded the 2003 Prix Européen du Livre d'Economie for her book, *The First Globalization: Lessons from the French*. Doctoral student Sean Safford received the 2004 Louis R. Pondy Award for the best paper based on a dissertation by the Academy of Management, Organization Theory Division.

Dr. Sachi Hatakenaka and Dr. Jean-Jacques Degroof were appointed as postdoctoral research fellows.

Visitors to the center this year included Professor Gary Herrigel of the University of Chicago, who held a Sloan Industry Fellowship, Professor Markku Sotarauta of the University of Tampere, and Dr. Celine Druihle of the University of Cambridge.

Professor Richard Lester served as a member of the interdisciplinary faculty study group that produced the MIT report, *The Future of Nuclear Power*. Also this year, together with Professor John M. Deutch, he published *Making Technology Work: Applications in Energy and the Environment*, a book based on their interdisciplinary graduate course on the application of technology.

Richard K. Lester

Director

Professor of Nuclear Engineering

More information about the Industrial Performance Center can be found on the web at <http://web.mit.edu/ipc/www/>.