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The Dark Side of Information and Communication Technologies: The View from the Industry-Level of Analysis

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THE DARK SIDE OF INFORMATION AND COMMUNICATION TECHNOLOGIES: THE VIEW FROM THE INDUSTRY- LEVEL OF ANALYSIS

Chairs: **Suzi Iacono**, National Science Foundation
Rolf Wigand, University of Arkansas at Little Rock

Panelists: **Kevin Crowston**, Syracuse University
Ken Kraemer, University of California at Irvine
M. Lynne Markus, Bentley College
Steve Sawyer, Pennsylvania State University
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The Year 2000 problem spurred companies to rethink investments in information and communication technologies (ICT). Many used the Y2K problem as an opportunity to renew ICT infrastructures, to install integrated enterprise packages, and to pursue new opportunities for ICT-enabled value such as e-commerce, supply chain management, and customer relationship management. Some evidence suggests that these efforts have had substantial payoffs in terms of shareholder value.

But can such firm-level benefits persist when competitors catch up or when the success of leaders drives inefficient producers out of business? This panel features NSF-funded researchers whose studies have examined the impacts of ICT at the industry-level of analysis. They show significant industry-level ICT-enabled impacts with potentially negative implications for the firms competing within industries.

In the Information Systems field, the ability to gain competitive advantage with ICT has long been an important theme. Although some researchers warned that ICT might contribute to the destruction of competitive advantage, by far the majority of the discourse has centered on how individual firms should invest in ICT. When taking an industry-level view of ICT-enabled competitive advantage, however, we can see its potential dark side. Among the risks ICT poses to the firms in an industry are these:

- Fundamentally reducing the cost structure of an industry such that some firms can no longer compete and that others experience squeezed margins
- Destruction of in-house competencies (e.g., through radical process change or business process outsourcing)
- Investments in ICT are required as a condition of doing business without providing any bottom-line benefits
- Increased dependency on external ICT providers leading to business inflexibility and lack of ICT knowledge

Changes such as these are obscured by our field's current focus on the firm or interorganizational levels of analysis. When attention is raised to the industry level, it quickly becomes apparent that individual firms have much less ability to influence the course of events than we usually assume. A few industry leaders may change the game for the rest, but even they may not be immune to the unintended consequences of their own success.

The researchers comprising this panel have conducted NSF-funded industry-level studies of ICT impacts in the following industries: home mortgage, real estate, personal computers, and manufacturing, wholesale/retail/distribution and banking/

insurance in 10 nations. Panelists will informally share their findings in response to probing questions focusing on what we can learn by looking at ICT at the industry level of analysis and what these findings mean for individual firms.

Controversial Issues to Be Addressed

Examples of how ICT is changing the competitive landscape at the industry level are easy to find. The air travel industry, for example, has been restructured as consortia organized around four major reservation systems. The members of this panel address a series of challenging questions in two broad groupings:

1. What have we learned at the industry level about the aggregate effects of IT investments?
2. Considering what we have learned at the industry level, what are the implications for individual firms?