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Un-haunting From the Ghost We Killed: IS Research and Education in the Post-Industrial Economy

La recherche et la formation en SI dans une économie post-industrielle

Panel

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Abstract

The field of management emerged in response to the challenges of the industrial age that is now coming to an end. Since its inception, the information systems (IS) research community has argued that the information technology will bring fundamental challenges to the forces that underpin the way we organize our work. The IS discipline played a significant role in bringing the end of the industrial age, fulfilling its early promises. However, the IS community is struggling to find a way to move beyond the powerful institutional and intellectual hegemony based on the industrial-age organization. The proposed panel will take up this challenge and debate several ways of going beyond the hegemony of industrial age organization that has dominated both research and education of the field.

Résumé

La sphère du management s'est imposée comme une solution aux défis de l'ère industrielle qui est actuellement en fin de vie. Dès le début, les chercheurs en Systèmes d'Information (S.I.) ont souligné que les technologies de l'information allaient profondément remettre en question l'ensemble de notre organisation du travail. Les Systèmes d'Information ont certes joué un rôle déterminant dans le déclin de l'ère industrielle, tenant leurs promesses initiales. Mais la communauté S.I. peine actuellement à se frayer un chemin au-delà des puissantes hégémonies institutionnelles et intellectuelles engendrées par le modèle organisationnel de l'âge industriel. Le groupe désigné s'intéressera à ce problème et discutera des différentes manières de dépasser cette hégémonie de l'organisation propre à l'ère industrielle et qui a conditionné à la fois la recherche et l'enseignement dans le domaine.

Theme of the Panel

The field of management emerged in response to the challenges of the industrial age that is now coming to an end. Modern organizations were designed to meet the demand for large volumes of standardized products under varying levels of uncertainty, with the objective of providing stability and predictability (Weick 2004). Over decades, a powerful network of multinational corporations, business schools, professional societies, academic journals, industry associations and popular press has emerged. These institutions formed a powerful self-reinforcing network of norms, rules and power that formed a strong hegemony during the industrial age that dominated much of the intellectual discourse in management.

Now that we are entering a post-industrial, knowledge-based economy, however, organizations face new challenges and opportunities. Customers are no longer satisfied with standardized products, and seek products and services that provide unique value and desirable experiences. At the same time, we are beginning to observe the emergence of

powerful new forms of organizing logic that challenges the dominant hegemony of industrial age organization. Open source movements, self-organizing teams, globally distributed ad-hoc virtual networks, and large-scale collective actions supported through the use of mobile tools are few examples of such new forms of organizing logic (e.g., Tapscott and Williams 2006).

Innovations in information technology are at the center of such a shift in the society. Since its inception, the information systems (IS) research community has argued that the information technology will bring fundamental transformation in the way we organize our work and life. In a way, the IS discipline played a significant role in bringing the end of the industrial age, fulfilling its early promises.

However, as evidenced in recent debate about IS identity (Benbasat and Zmud 2003, Lyytinen and King 2004), the IS communityis struggling to find a way to move beyond the powerful institutional and intellectual hegemony rooted in the industrial age. From the beginning, the dominant paradigm of IS research and education has been situated at the junction of technology and modern organizations. The field was born as a response to the emerging use of information technologies in modern organizations and associated problems and challenges. Davis and Olson (1985) defined an information system to refer to "the computer-based information processing system which supports the operations, management, and decision-making functions of an organization" (p. 5). As Keen (1980) noted, the field was born more as "convenient umbrella term for a hybrid, applied field" with many *reference disciplines* such as management science, cognitive science, organization science, economics, computer science, psychology, sociology and accounting, just to name a few. In fact, as noted by Baskerville and Myers (2002) and Benbasat and Weber (1996), many earlier IS scholars were trained in these reference disciplines and they learned and borrowed theories and methods from them. Therefore, since the conception of the field, the discourse of IS research and education was dominated by the hegemony of the industrial age organization.

Two powerful forces began challenging this implicit assumption that underpins the foundation of the field. **First**, as evidenced in the use of mobile phones, YouTube and social networking sites such as Facebook and MySpace, the use of information technology goes far beyond the boundary of modern organizations. Just as global supply chain management systems and enterprise systems have transformed these organizations, emerging new forms of information technology are rapidly changing the way we live everyday life. These changes outside the conventional boundary of modern organization are just as important as the use of IS within an organizational boundary. **Second**, as individuals begin to use information technology outside of modern organizations, they are beginning to find ways to organize themselves to accomplish complex tasks without relying on modern organizations that represent the dominant organizing logic in the industrial age. While some organizations have begun embracing such new logics as a way of transforming their practices (e.g., Chesbrough et al 2006), other organizations are fundamentally threatened by these new logics.

The IS field deeply entrenched in the logic of modern organizations has established its legitimacy in part through its tie with the hegemony of the industrial age organization (e.g., Sambamurthy and Zmud 2000). As such, the fundamental shift in modern organization is likely to continue to challenge the IS community to overthrow the old industrial age hegemony and seek new ones for research and education. Fundamentally, this existential challenge was brought by information technology, and as an academic community that studies information technology, we have unique opportunity to shape our own challenges in moving forward.

The proposed panel will take up this challenge and debate several ways of challenging and going beyond the current dominance of the hegemony of the industrial age organization, both in terms of research and education. While the panel might necessarily look back occasionally to examine the root of the current challenge, we will look forward, focusing on what we *ought to* be doing and where we *ought to* be.

The panel will engage in conversation among themselves and with the audience on various tensions that we need to consider. Among those, we will discuss the tensions between:
- instructional mission and research objectives;
- traditional scholar roles and more application and practice-based roles
- serving current needs and shaping the future; and,
- building on intellectual tradition and creating new language.

Panel Content

The panelists will use a common "point-counterpoint" presentation format, presenting both their constructive ideas for future research and education, and identifying key challenges accompanying this new direction. Each presenter will focus on different influences of the intellectual hegemony of industrial age organization and propose challenge audience and other panelists with a concrete way to overthrow the current hegemony. The goal of each presentation will be to leave the audience with a number of open questions for discussion in the session and for future conversation beyond this conference. The panel chair will motivate the topic and then will introduce both the purpose and the format of the panel. He will present the industrial age organizing logic as a hegemony that has dominated the IS discourse in the past.

Phillip Ein-Dor opens the panel by arguing that the IS discipline has painted itself into a corner by being positioned principally in schools of business/management and so accepting the hegemony of their needs and points of view. This has led to a myopic view of the nature and role of Information Systems. So long as the greater part of information systems were devoted to business and its management that was not a major problem. However, we now face two major problems: on the one hand, IS are being increasingly bought off-the-shelf so that there is less need for IS personnel and, on the other hand, most of the interesting things in IS are happening outside business in areas such as healthcare, bioinformatics, community informatics, and online communities. Consequently, he argues that the discipline should free itself from the hegemony of the business/management paradigm and needs to reorient itself in the following ways. First, in terms of instructional mission and research objectives, our horizons need to be broadened to include many different types of information systems and to delve deeper into the basic nature of information and information systems. Second, to serve current needs and to shape the future, we need to reorganize in such a way that our program offerings are much broader, deal with the whole spectrum of information systems, are much more flexible, and can quickly adapt to current changes and to those that will occur in the future. Third, to build an intellectual tradition and create new languages; here we should engage in the search for a broader philosophical base encompassing all aspects of information, information processing, and information use.

John King contrasts the intellectual traditions of Computer Science (CS) and IS programs with that of emerging Information Schools (i-Schools). He begins with an observation that enrollments in computer science (CS) and information systems programs have declined significantly since 2000, giving the appearance of fields adrift. Yet, enrollments in professional programs in i-Schools have grown as enrollments in the other programs have declined. This enrollment change cannot be explained by student interest shifting from CS and IS programs to i-School programs -- CS and IS programs have lost far more students than the recently created i-Schools have gained. The question is why students would continue to be interested in the expanding i-School programs while losing interest in CS and IS programs. Some students are attracted to i-Schools because they offer some areas of concentration that CS and IS programs do not. Depending on the i-School, students can study economics of information, scientific informatics, libraries, archives, community information, and other topics taught by few if any CS or IS programs. Some of these topics are legacies of the evolution of the i-Schools themselves (e.g., a number grew out of library schools), while others have been created by i-Schools (e.g., community information). At a more fundamental level, the i-Schools are attractive to students because they are not bound by the hegemonic social conventions that bind CS and IS programs. To a significant degree, the i-Schools arose because neither CS nor IS offered the breadth of engagement in information-related issues that the i-Schools could offer. This is not merely a matter of curiculula, although curricula are part of the matter. Rather, at issue is the point of view that scholars in i-Schools are able to take toward the study of information in all its manifestations. This discussion will focus on the attraction of these newer programs and lessons that the information systems field can take from their success.

Ramayya Krshinan argues societal-scale technology platform as a force that undermines the hegemony of industrial age organization. He argues that societal-scale information technology platforms such as Myspace, Facebook and YouTube and the large scale adoption and use of mobile devices are fundamentally changing the ways in which individuals communicate, create communities and engage in deliberative discourse. New research questions and challenges arise that pertain to user behavior and the nature of the social ties that form between multiple users on these societal platforms. What are the implications of these social ties? How do they compare with ties established through physical interaction? Can these ties serve as vectors along which opinions can be diffused either for commercial or political purposes? Can the "strength" of these societal-scale communities be predicted based on the strength of the ties? To the extent that social computing platforms permit the creation of shared public spaces, how can these be designed to produce desirable behaviors while minimizing undesirable outcomes? A research program that will study these phenomena brought about by societal scale computing will demand inter-disciplinary

approaches that span the fields of technology, business and public policy. The presentation will discuss the role of IS scholars in the study of this transformative social phenomenon and provide some examples of current research projects on this topic.

Finally, Sirkka Jarvenpaa concludes the panel by challenging the conventional role of scholars of IS field in post-industrial age. In the industrial era economy, educational programs with singular disciplinary and career focus often prevailed (at least in some of the U.S. schools). This was particularly the case with doctoral programs that trained traditional researchers to other top research schools who excelled in publishing "A" journal articles. In a post-industrial economy, the IS field needs to produce graduates to much more diverse roles than ever before. Our doctoral programs must train future leaders for corporations and government as well as traditional scholars. These leaders for government and industry are necessary for the field to have broad based support, consumption, and translation to practice. How do we need to change in order to be successful in screening, training, and socializing our students including Ph.D. students to take advantage of a wide array of opportunities of post-industrial society? How do our top journals and our top conferences must change to celebrate this diversity in roles? How can the high honors of the field such as the AIS fellow be expanded to recognize the application and practice side of the field? The presentation will discuss the role diversity challenges in the IS field and actions that some programs are taking to engender and celebrate role diversity.

References

Baskerville, R. L. and M. D. Myers, "Information systems as a reference discipline," *MIS Quarterly*, 26, 1, (2002), 1-14.

Benbasat, I. and R. Weber, "Research commentary: Rethinking "diversity" in information systems research," *Information Systems Research*, 7, 4, (1996), 389-399.

Benbasat, I. and R. W. Zmud, "The identity crisis within the IS discipline: Defining and communicating tghe discipline's core proprerties," *MIS Quarterly*, 27, 2, (2003), 183-194.

Chesbrough, H., W. Vanhaverbekeand J. West, *Open Innovation: Researching a New Paradigm*, Oxford University Press, New York, 2006.

Davis, G. B. and M. H. Olson, *Management Information Systems: Conceptual Foundations, Structure and Development*, McGraw-Hill, New York, 1985.

Keen, P. G. W., "MIS Research: Reference Disciplines and A Cumulative Tradtion," *Proceedings of the First International Conference on Information Systems*, Philadelpia, PA, 1980, 9-18.

Lyytinen, K. and J. L. King, "Nothing at the center?: Academic legitimacy in the information systems field," *Journal of AIS*, 5, 6, (2004), 220-246.

Sambamurthy, V. and R. W. Zmud, "The organizing logic for an enterprise's IT activities in the digital era-A prognosis of practice and a call for research," *Infomation Systems Research*, 11, 2, (2000), 105-114.

Tapscott, D. and A. D. Williams, *Wikinomics: How Mass Collaboration Changes Everything*, Penguin Group, New York, , 2006.

Weick, K. E., "Rethinking organizational design," In *Managing as Designing*, R. J. Boland and F. Collopy (Ed.), Standford Business Books, Stanford, CA, 2004, 36-53.

Panelists Bios

Phillip Ein-Dor is currently Professor Emeritus at Tel-Aviv University and head of the Information Systems Program at the Academic College of Tel-Aviv—Yaffo. Over the past three decades, Dr. Ein-Dor has published about 50 research papers and has written or edited four books in theory of information systems, natural language processing, information technology and infrastructure, artificial intelligence, and the Internet. Ein-Dor is the founding editor of the *Journal of AIS* and has served on the editorial board of *MIS Quarterly*. He currently serves on the editorial or advisory boards of various IS journals. He has served as council member as well as in the organizing, nominating, and publications committees of AIS. In 2000 he was honored as an AIS Fellow and in 2001 he was

elected President-Elect of AIS and served as President in 2002-2003. In 2005 he founded the Israel Chapter of AIS and has served as Chair since then. He received the AIS LEO Award in 2006.

Sirkka L. Jarvenpaa is the James Bayless/Rauscher Pierce Refsnes Chair in Business Administration at the University of Texas at Austin. She has been a recipient of several best paper awards including two Society of Information Management (SIM) Paper awards and the Management Information Systems Quarterly Best Paper award. At the University of Texas at Austin, she serves as Director of the Center for Business, Technology and Law. Her current research projects focus on China's software development industry. Dr. Jarvenpaa has served as the Editor of Chief of the Journal of Association for Information Systems, co-editor in chief of the Journal of Strategic Information Systems, the senior editor for MIS Quarterly and Information Systems Research. She has and has been on editorial boards of numerous other journals. She has served in many chair roles (program, Ph.D. consortium, planning) for the International Conference on Information Systems, the largest and most prestigious conference in her field. She is also a frequent contributor in Industry conferences on mobile business.

John Leslie King is Professor in the School of Information and Vice Provost for Academic Information at the University of Michigan. His research focuses on the relationship between technical change and social change, and has produced more than 175 books and papers on the role of information technology in the transformation of organizations and institutions. He served as editor-in-chief of the INFORMS journal, *Information Systems Research* from 1992-1998*,* and has co-edited or been a senior editor of many other journals including *Information Infrastructure and Policy and ACM Computing Survey*. He was named Fellow of the Association for Information Systems in 2005, and Fellow of the American Association for the Advancement of Science in 2007. He was a Senior Scientific Advisor on cyberinfrastructure for the National Science Foundation from 2004-2008, and has served as a member of the advisory committees for the NSF directorates of Computer and Information Science and Engineering and Social, Behavioral, and Economic Sciences, as well as the NSF-wide Advisory Committee on Cyberinfrastructure. He currently serves on the Council of the Computing Community Consortium, an organization established by NSF through the Computing Research Association to help chart the future of computing research.

Ramayya Krishnan is the W. W. Cooper and Ruth F. Cooper Professor of Information Systems at Carnegie Mellon University. He is faculty chair of the university's [Masters of Information Systems Management program](). Krishnan's current teaching interests lie at the interface of technology, business and policy aspects of internet-enabled systems. His current research projects investigate risk management in business process design and in information security, social network analysis in settings ranging from call data records to knowledge sharing communities, consumer behavior in e-business settings and the design of policies that take into account the competing needs of promoting data access and protecting privacy. He has published widely on these topics and many of his work received the best paper awards. His work has been funded over the last decade by the National Science Foundation, The Army Research Office, and DARPA. He is presently the co-Department Editor for Information Systems at *Management Science*. His editorial experience includes his work as co-area editor for Telecommunications and Electronic Commerce at the *INFORMS Journal on Computing*, as an Associate Editor for *Management Science*, as an Associate Editor for *Operations Research*, and as an Associate Editor for *Information Systems Research*. He co-edited a special issue of *Interfaces* on e-business (available at http://pubsonline.informs.org/feature/) and co-edited two special issue volumes of *Management Science* on E-business. He is the past president of the INFORMS Information Systems Society and the INFORMS Computing Society.

Youngjin Yoo is Associate Professor in Information Systems and Irwin L. Gross Research Fellow at the Fox School of Business and Management at Temple University. His current work focuses on the use of ubiquitous computing technology in everyday life experiences and the impact of digital technology on innovations in AEC and Automobile industries. His work was published at leading academic journals including *Information Systems Research, MIS Quarterly, Organization Science, the Communications of the ACM,* and *the Academy of Management Journal.* He also edited two books on ubiquitous computing and organized several international research workshop and academic conferences in the area of ubiquitous computing. He is a senior editor of *Journal of Strategic Information Systems,* an associate editor of *Management Science* and *Information Systems Research*, and on the editorial board of *Organization Science* and *Information and Organization.*