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PANEL 3

A RESEARCH AGENDA FOR VIRTUAL WORK: ARE WE ASKING THE RIGHT QUESTIONS?

Chair: Robert E. Kraut, Carnegie Mellon University, U.S.A.

Panelists: France Belanger, Virginia Polytechnic Institute and State University, U.S.A.
Dianne H. Jordan, Booz-Allen & Hamilton, U.S.A.
Larry Shumpert, BellSouth, U.S.A.
Mary Beth Watson-Manheim, University of Illinois at Chicago, U.S.A.

1. INTRODUCTION

Organizations are becoming more virtual as work is increasingly conducted by individuals working in different geographic locations, and often different time zones. Mobile and distributed work teams are being employed to meet marketplace challenges. Distributed work is enhanced, and often enabled, by advances in communication technologies. A wide range of work environments may be considered virtual, including geographically distributed work teams, global project teams, inter-organizational teams, and non-traditional work environments such as telecommuting, hotelling, and satellite work centers. Even with increased complexity and the potential problems that may arise from having individuals that are geographically dispersed work together, organizations are pursuing virtual work strategies. This allows them a great deal of flexibility to compete in a rapidly changing business environment. For example, Hewlett-Packard engineers are able to manage schematics and mechanical drawings from design through manufacturing from multiple sites, which are distributed worldwide.

This panel will focus on developing a deeper understanding of these new and rapidly evolving work environments. Our goal is to identify a research agenda, which will address emerging issues and concerns relevant to practice. It can be argued that the current research in this area is narrowly focused and does not adequately capture the complexity of these work environments, creating an ever-widening gap between actual managerial concerns and academic research.

2. PANEL DESCRIPTION

Distributed work alternatives are numerous: flexible work arrangements, hotelling, satellite work centers, virtual teams, virtual organizations, or telework (telecommuting). The basic characteristic that defines distributed work is the physical separation of employees from each other and/or their organization's work place. The trade press has featured the efforts, successes, and failures of several organizations at implementing some form of distributed work. The challenges these organizations face have not diminished in recent years, as the market requires more globalization and distribution of their resources. Yet, it seems that research has not been successful at understanding and solving some of the key issues that these practitioners face when considering distributed or virtual work alternatives ("the gap"). In an extensive review of existing research in virtual and remote work, for example, McCloskey and Igarria (1998) highlight the fact that the current state of research is quite poor, with most studies being one of four types: (1) pilot studies, (2) extent of remote work usage in the market, (3) evaluation of perceived impacts of remote work by potential telecommuters, and (4) impacts of telework on work and family conflicts. In addition, they suggest that research

in this area suffers from the following weaknesses: lack of proper definitions (of what is being researched) and lack of control of extraneous factors.

One potential reason why research in this area is neither abundant nor more effectively executed may lie in the difficulty of conducting relevant research. A major reason for this difficulty may be that the problems faced by managers in this environment are inter-disciplinary in nature. Business organizations require a more systemic and holistic approach to studying distributed work. For example, one cannot separate the technology issues from the organizational communication issues in distributed work. Personnel management issues, such as training, development, and career path management, become more complex with distributed work. An understanding of interpersonal relations and group behavior from a social psychology perspective is critical to understanding how relationships are formed and maintained in an environment where cooperating individuals are working in different contexts with different technologies. In addition, for organizations to employ many distributed work environments (DWE) in the most effective manner, they must often redesign the physical workspace. Other factors that may explain the gap between research and practice concerns in distributed work should also be identified.

In addition to the research in virtual or remote work, much of our current knowledge of DWE can be found in research on computer supported collaborative work (CSCW) and distributed group support systems (DGSS). In the CSCW area, studies have typically investigated the quality of responses or performance of teams working on collaborative tasks, most often studied in laboratory settings with students as subjects, with the goal of developing better tools for these groups. The DGSS studies have focused on the behavior and performance of groups in a distributed environment usually using communication technologies. This research has also most often involved students.

While providing insights into the distributed work environment, does this research address the major concerns and issues faced by practitioners? What problems need to be addressed before organizations can take better advantage of today's technologies in distributing their work force?

The focus of the panel will be on developing a new and broader research agenda that takes into account the concerns of practitioners, existing published work, and interdisciplinary perspectives on the topic. This can be accomplished by discussions that will help:

- Establish and understand the extent of the current gap between research and practice in distributed and virtual work;
- Investigate the reasons for this gap, one of which potentially being the inter-disciplinary nature of distributed and virtual work;
- Identify areas of current concern for practitioners;
- Explore emerging trends in virtual work and supporting technologies.

3. PANEL FORMAT

This panel will discuss the issues and concerns of managing distributed work from the points of view of academic researchers and of practitioners. Dr. Jordan and Mr. Shumpert, business panelists, will start by presenting their most important issues or concerns related to working in or managing distributed work groups; concerns that they would like to see addressed. Drs. Belanger and Watson-Manheim will then present a brief summary of existing work in this area and provide suggestions for explaining why the gap exists. The ensuing discussion on the gap between these two views should lead to an extensive research agenda in this domain. Dr. Kraut will moderate the discussion and provide his own insights as a summary of the panel. Following the initial presentations by panelists, a period of time will be reserved for questions from the audience and discussion between all attendees.

4. PANELISTS

Dr. France Belanger is an assistant professor of Information Systems in the Department of Accounting and Information Systems and a researcher for the Center for Global Electronic Commerce at Virginia Tech. Prior to her academic career, Dr. Belanger held various technical, marketing, and managerial positions in large information systems and telecommunications corporations in Canada. Her research interests focus on the use of telecommunication technologies in organizations, in particular as enablers of distributed work arrangements such as telecommuting and the virtual organization; telecommunication technologies for electronic

commerce; and the role of technologies in organizational learning, in particular in distance education and training. She has published her work in *Information and Management*, *The Information Society: An International Journal*, and the *Journal of Information Systems Education*. She is co-author of the book *Implementation and Evaluation of Distance Learning: Technologies, Tools and Techniques*, forthcoming (2000) by Idea Group Publishing. Dr. Belanger received her Ph.D. in Information Systems from the University of South Florida.

Dr. Dianne H. Jordan is a strategic information technology planner and senior associate at Booz Allen & Hamilton, where she focuses on advanced distributed learning initiatives and instructional technologies. She currently works in, and manages, a group of individuals distributed across the United States. She has 20 years of professional experience in private industry, academia, and the federal government: as CyberCongress Project Manager for the U.S. House of Representatives, she supervised the deployment of web-based solutions for business units of the House and worked with senior Congressional planners for the development of web-based Congressional legislative information retrieval systems; as a senior manager in the Department of Defense responsible for data communications, operating systems software, information security, and office automation; and serving on the Computer Information Systems faculty at the Baruch College School of Business, teaching telecommunications and an MBA course that focused on the use of information technologies for strategic advantage. Dr. Jordan has a Ph.D. in Business Administration from the University of South Florida.

Dr. Robert E. Kraut is Professor of Social Psychology and Human-Computer Interaction at Carnegie Mellon University. He previously directed the Interpersonal Communications Research Program at Bellcore, was a Member of Technical Staff at AT&T Bell Laboratories, and was a member of the faculty at Cornell University and the University of Pennsylvania. Dr. Kraut has broad interests in the design and social impact of computing. He has conducted empirical research on office automation and employment quality, technology and home-based employment, the communication needs of collaborating scientists, the design of information technology for small-group intellectual work, and the impact of national information networks on organizations and families. His research on the psychological impact of the Internet has received international attention. He was instrumental in the design and testing of several new information technologies including video telephony systems and software for collaborative writing.

Larry Shumpert is a General Manager in the Network Department with BellSouth. He is one of two senior managers responsible for all network operations in the South Carolina area. He has over 25 years in the telecommunications industry and currently manages a work force that includes engineering, outside plant installation/maintenance, and central office activities. His employee base is comprised of over 700 employees, with the majority being in the technical capacity. The outside technicians report to various locations throughout the serving area. They are equipped with lap top computers and communication devices that allow them to perform their work on site and electronically communicate back to their offices. He is a Licensed Professional Engineer in the state of South Carolina and received his MBA from the University of South Carolina.

Dr. Mary Beth Watson-Manheim is an assistant professor of Management Information Systems in the Information and Decision Sciences Department in the College of Business Administration at the University of Illinois at Chicago. Her previous appointment was at the University of Florida. Before pursuing her Ph.D., she was employed for approximately 10 years in the telecommunications industry. Her research interests include the impact of information and communication technologies on the workplace, particularly in the distributed work environment; the role and impact of information technology on organizational communication and learning; and distance learning. Her research has been published in the *Journal of Management Information Systems*, *Group Decision and Negotiations*, and a number of leading Information Systems conferences. She has taught a variety of managerial and technical Information Systems courses at both the graduate and undergraduate levels. In addition, she has taught Information Systems in both residential and executive MBA programs. She received her Ph.D. in Information Technology Management from the Georgia Institute of Technology.

5. REFERENCE

McCloskey, D. W., and Igarria, M. "A Review of the Empirical Research on Telecommuting and Directions for Future Research," in *The Virtual Workplace*, M. Igarria and M. Tan (eds.), Hershey, PA: Idea Group Publishing, 1998, pp. 338-358.