THE DIGITAL FUTURE: REFLECTING ON THE “DARK SIDE” OF INFORMATION TECHNOLOGY USE

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Dear Suprateek,

Please find attached the panel proposal titled “The Digital Future: Reflecting on the “Dark Side” of Information Technology Use”, for consideration at AMCIS 2012. We believe that the proposed panel will be of interest to the conference attendees and to the IS research/practice communities. The proposal is structured as follows. “Statement of Objectives” describes the panel’s objectives and two or three representative questions that each panelist would answer. This section also contains a list of select references that are representative of each panelist’s research in their respective areas. This is followed by a description of the panel layout where we explain how the panel would be structured in terms of the time given to panelists and for Q&A. We also provide descriptions of pre- and post-panel collaborative activities among the panelists. Next, we provide a list of the panelists (participation confirmed as of now) including a short bio of each that emphasizes why the panelist is well qualified to serve as panelist. A statement of equipment needs concludes the proposal. A detailed list of references and publications by the panelists in areas relevant to the panel’s topic is attached in a one-page Appendix at the end of the proposal.

I hope that you will find the proposal in order. Please let me know if any further information is required. Thank you.

Sincerely,
Monideepa

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THE DIGITAL FUTURE: REFLECTING ON THE “DARK SIDE” OF INFORMATION TECHNOLOGY USE

ABSTRACT

The objective of this panel is to advance knowledge in areas related to the “dark” side of IT use in organizations. Emerging and as yet nascent academic research is beginning to focus on negative impacts of IT use. The panel seeks to (1) introduce a new area of exploration and (2) disseminate new points of view. The panelists will do so by drawing upon their research and practice related insights in five areas that characterize the dark side of IT use, namely - IT usage related stress, addiction, misuse, work overload, and interruptions. These are clearly important areas to examine, given that the ubiquitous and functionally pervasive nature of IT use in organizations is expected to expose users to ever greater levels of conditions that are potent for experiencing this dark side. The proposed panel is thus of relevance and interest to the IS research and practice communities.
A. STATEMENT OF PANEL OBJECTIVES.

A large body of research has considered the positive aspects of information technology (IT). However, emerging and nascent research is beginning to focus on negative impacts of IT use. The purpose of this panel is to advance knowledge in areas related to this “dark” side of IT use in organizations. This is clearly an important area for the IS community to attend to, given the results from initial studies and considering that the ubiquitous and functionally pervasive nature of IT use in organizations is expected to expose users to ever greater levels of conditions that are potent for experiencing this dark side. Due to the fledgling nature of research and understanding in this area, the panel seeks to (1) introduce a new area of exploration and (2) disseminate new points of view. The panelists will do this by drawing upon their research and practice related insights in five areas that characterize the dark side of IT use, namely - IT usage related stress, addiction, misuse, work overload, and interruptions. These topics will be discussed in general and in certain instances will be contextualized for healthcare delivery where they are especially ill-understood.

Topic 1 - Technostress: Examining Directions for Research and Practice, Panelist: Monideepa Tarafdar

Technostress is defined as the “stress caused by an inability to adapt to or cope with new ICTs in a healthy manner” (Tarafdar et al 2007, 308). Research in this area has found across-the-board adverse impacts, e.g. decreased job satisfaction, commitment, productivity, and end user satisfaction, and increased work overload and work-home conflict (Ayyagari et al 2011; Ragu-Nathan et al 2008; Tarafdar et al 2007). There are two points of note. First, there is clearly ample scope for cross-domain theoretical development by assimilating perspectives from areas such as theories on stress, role overload and role ambiguity, and human cognition. Second, from the viewpoint of management practice it is critical to anticipate and manage possible antecedents, negative consequences and processes associated with technostress. Our objective is to examine relevant future directions in these two areas by addressing the following two questions:

1. What are possible theoretical directions for shaping and furthering research in stress and related effects from the use of IT?
2. What are some of the associated adverse individual and organizational level outcomes and how can these be managed and controlled?

Topic 2 - Technology Related Addiction, Panelist: Ofir Turel

In recent years attention has been given to the potential existence of technology-related addictions (Byun et al. 2009; Young 2010). In some IT use contexts, users develop a strong maladaptive psychological dependency on using a technology artifact, which results in a pattern of excessive IT-seeking and IT-use behaviors that take place at the expense of other important activities, and deteriorates individuals' normal functioning (Turel et al. 2011). Addiction-prone IT artifacts include online video games (Charlton et al. 2007; van Rooij et al. 2011), mobile email (Turel et al. 2010), social networking websites (Karaikeskos et al. 2010), online gambling websites (McBride et al. 2009), and others. Technology-related addictions can influence one’s quality of life (Bruner et al. 2006; Fu et al. 2010; Griffiths 2000), and possibly his or her work attitudes and behaviors (Turel et al. 2011). The IS community has started exploring some of the correlates, antecedents, and consequences of this relatively new phenomenon that can potentially have far reaching impacts on the well-being of individuals, organizations and societies. We address the following two questions to help disseminate insights and foster debate in this area.

1. Why should we care? What are some of the consequences of technology-related addictions?
2. What are some of the future research directions the IS community could pursue?

Topic 3 - Information Technology Misuse, Panelist: John D’Arcy

An undesirable side effect of firms’ increasing reliance on IT is greater exposure to a diverse set of IT risks. One such risk is employee misuse of IT resources. Research indicates that a large percentage of security breach incidents can be traced back to misuse-related actions of employees, intentional or accidental. Extant research has explored the effectiveness of various organizational factors such as security policies and security education programs in reducing employee IT misuse (D’Arcy et al. 2009; Warkentin et al. 2011). A number of individual traits, such as level of self-control and moral predispositions, have also been investigated as antecedents to various IT misuse behaviors (Hu et al. 2011). However, our knowledge of the IT misuse area is still in its infancy, and, as evidenced by
recent practitioner surveys, the number of employee-related IT security incidents continues to escalate. Against this backdrop, we seek to gain a better understanding of the factors that contribute to employee misuse of IT in the workplace. Specifically, the panelist will address the following:

1. What are some of the individual and organizational factors that contribute to employee misuse of IT in the workplace?
2. What are the most effective administrative and technical countermeasures for limiting employee misuse of IT in the workplace?
3. What role do stress and addiction play in influencing employee misuse of IT in the workplace?

**Topic 4: Information Overload in Healthcare, Panelist: Ashish Gupta**

The use of technologies such as electronic medical record systems and mobile applications in the clinical environment imposes significantly greater demands on the user’s time and attention. Despite the ongoing strides being made towards improving and understanding healthcare IT (HIT) systems, there exists a lack of core understanding on how such systems can be effectively embedded in clinical workflow processes. IT use has been associated with increased cognitive overload, multitasking, and interruptions (Li et al 2011). The health care environment poses unique challenges from these negative effects such as the disruption of established cognitive processes, poor decision-making and medical errors leading to unsafe care delivery systems (Southon et al 1999). These are particularly true in chaotic critical care environments such as intensive care units where care complexity, information overload, and acuity of illness coupled along with ill-designed HIT interfaces may lead to increased morbidities and comorbidities. The panelist will focus on the negative consequence of IT use in the clinical environment and address the following questions.

1. Why do we need to focus on current deficiencies of HIT systems and associated negative consequences?
2. What do we need to do by way of research (i.e. salient theoretical frameworks on technology and workflow)?
3. How can we do this by way of practice (i.e. examples from own research and other paradigms to identify an effective frameworks)?

**Topic 5 - Effective Interface Design for Minimizing Negative Emotions due to System Interruptions, Panelist: Mary Czerwinski**

Interruptions have long been known to be the curse of the human worker—whether they be in an assembly line or a high tech office, interruptions—both their length and their duration—have been linked to a number of physical and mental infirmities. Our research has investigated the physical and semantic characteristics of interruptions and their influence on task productivity. We have also iteratively designed novel user interfaces to mitigate the impact of interruptions, optimizing when users need to switch and shortening their task resumption times. Currently our research is focused on sensor-based tracking of users with an intention to detect stress and frustration while using computing devices in real time. We have designed reflective user interfaces for users tracking various emotions and evaluated their effectiveness over time. Next we will investigate the results of user interface designs that work in conjunction with users with the hope of avoiding altogether or shortening episodes of negative emotions, including stress. The panelist will discuss the following questions:

1. What are relevant design aspects of system interfaces for dealing with interruptions?
2. How we might limit negative emotions from IT use through system interventions?

**Selected References (Detailed list available on request)**


**B. STATEMENT OF PANEL LAYOUT**

1. **Pre Panel Dialog:** This proposal describes the outcome of the discussions that the panelists have had to date. Subject to selection of the proposal, we plan to continue dialog leading to the position statements, in
an online forum that can potentially be made available to interested audience subsequent to the panel discussion.

II. Panel Layout (assuming a total time of 90 minutes) will be as follows:
1. Each topic will be covered in sequence wherein the moderator will ask the stated questions to each panelist, followed by position statements from each panelist (15 minutes each).
2. Overall Q&A from the audience after the last topic is presented (10-12 minutes).
3. Integrative remarks by the moderator (3-5 minutes).

III. Panel Takeaway Plan: We will generate a resource document that would potentially include the position statements and documentation of Q&A and that can be made available to interested audience subsequent to the panel discussion.

C. PANELISTS (CONFIRMED) IN ALPHABETICAL ORDER OF LAST NAME
1. Mary Czerwinski is a research manager of the Visualization and Interaction Research group at Microsoft Research. The group is responsible for studying and designing advanced technology and interaction techniques that leverage human capabilities across a wide variety of input and output channels. Mary’s primary research areas include attention, spatial cognition, and group awareness technologies. Mary is an affiliate professor at the iSchool, University of Washington. She has also held positions at Compaq, Rice University, Lockheed Engineering and Sciences Corporation, and Bell Communications Research. She received a Ph.D. in cognitive psychology from Indiana University in Bloomington.

2. John D’Arcy is an Assistant Professor in the Mendoza College of Business at the University of Notre Dame. His research interests include information assurance and security, systems analysis and design, and computer ethics. Dr. D’Arcy’s recent research has examined the effectiveness of procedural and technical security controls in deterring computer abuse. His research also investigates individual and organizational factors that contribute to end user security behavior in the workplace. Dr. D’Arcy has published in journals such as Information Systems Research, Decision Sciences Journal, European Journal of Information Systems, Communications of the ACM, Journal of Business Ethics, Decision Support Systems, and Computers & Security. He has also authored one book and co-authored a book chapter on topics in information security management.

3. Ashish Gupta is Associate Professor in the School of Business at Minnesota State University Moorhead. He is Visiting Research Scientist at Mayo Clinic Rochester and Visiting Associate Professor in Biomedical Informatics department at Arizona State University. Dr. Gupta’s research interests are in the areas of information overload, interruptions, data analytics, critical care, EMR, PHR, telemedicine, workflow and process improvements, simulation, healthcare delivery and outcomes, system design, cognitive decision making, in healthcare and epidemiology. His recent articles have appeared or will appear in journals such as European Journal of Information Systems, Decision Support Systems, Information Systems Frontiers, and Communications of the Association for Information Systems. His projects involve collaborations with leading healthcare organizations that include Mayo Clinic, UHS, Cerner Health, Banner Health, and Philips Research North America. He has been a panelist at several conferences, including ICIS. He received a PhD in Management Science and Information Systems from Oklahoma State University.

4. Monideepa Tarafdar is Associate Professor of Information Systems in the College of Business and Innovation University of Toledo. She received her doctorate from Indian Institute of Management Calcutta. Her current research focuses on technostress, IT-enabled business innovation, the IT human resource, developmental IT issues in emerging economies, and IT in healthcare supply chains. She has published in, among others, Information Systems Research, Journal of MIS, Journal of Strategic Information Systems, Information and Management, Sloan Management Review and Communications of the ACM.

5. Ofir Turel is a Professor of Information Systems and Decision Sciences at the College of Business and Economics, California State University, Fullerton. He holds a Ph.D. in Management Information Systems from McMaster University, Canada. His research interests include a broad range of behavioral and managerial issues in various information systems contexts. His work has received several national and international awards, and has been presented in many conferences. He has published over 40 articles in journals such as MIS Quarterly, Journal of MIS, European Journal of Information Systems, Communications of the ACM, Information & Management, Journal of Information Systems, Behavior & Information Technology, Telecommunications Policy, Group Decision and Negotiation, Venture Capital, Journal of Private Equity, and Communications in Statistics.

D. EQUIPMENT NEEDS: Projector and Computer
8. Turel, O., and Serenko, A. (Forthcoming), The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*