

# Introduction: HCI Studies in MIS

## **Fiona Fui-Hoon Nah**

College of Business Administration  
University of Nebraska-Lincoln

## **Ping Zhang**

School of Information Studies  
Syracuse University

## **Scott McCoy**

School of Business Administration  
College of William & Mary

## **Background**

Human-computer interaction (HCI) is an important area of research and practice that cuts across several disciplines including Industrial Engineering, Management Information Systems (MIS), Computer Science, Information Science, Psychology, Sociology, and Anthropology. HCI research within the MIS discipline has some distinct features, which are related to the evolution and current state of the MIS discipline. MIS started as applied Computer Science in the 1970s and gradually developed into a more social science oriented discipline (Baskerville & Myers, 2002). MIS is broadly defined as “the effective design, delivery and use of information systems in organizations” (Keen, 1980). The two distinguishing features of MIS from other ‘homes’ of HCI are its *business-application* and *management* orientations (Zhang, Nah, & Preece, 2004). HCI is an important area of research that is gaining increasing attention in MIS (Zhang, Benbasat, Carey, Davis, Galletta, & Strong, 2002). In general, HCI researchers in the MIS discipline are more interested in studying and understanding the ways humans interact with information, technologies, and tasks in the business, managerial, and organizational contexts (Zhang et al., 2002). Hence, the focus lies in understanding the relationships and interactions between people (e.g., management, users, implementers, designers, developers, senior executives, and vendors), tasks, contexts, information, and technology.

The Association for Information Systems (AIS) is the premier global organization for academics specializing in Management Information Systems. A Special Interest Group on Human-Computer Interaction (SIGHCI) was founded in 2001 by Ping Zhang from Syracuse University and Fiona Fui-Hoon Nah from University of Nebraska-Lincoln. AIS SIGHCI provides a forum for AIS members to discuss, develop, and promote a range of issues related to the history, reference disciplines, theories, practice, methodologies and techniques, new developments, and applications of the interaction between humans, information, technologies, and tasks, especially in the business, managerial, organizational, and cultural contexts. The mission of AIS SIGHCI is twofold: to facilitate the exchange, development, communication, and dissemination of information among

AIS members, and to promote research related to human-computer interaction within business, managerial, and organizational contexts among AIS members and to the larger community of practitioners and scholars (Zhang, 2004).

Since AIS SIGHCI's inception, HCI has become a common theme in major MIS conferences, as demonstrated by the successful HCI mini-tracks/tracks at the Americas Conferences on Information Systems in August and the HCI workshops held prior to the International Conferences on Information Systems in December each year. These meetings have yielded a number of special issues in top MIS and HCI journals, including *International Journal of Human-Computer Studies* (Volume 59, Issue 4, October 2003), *Journal of Association for Information Systems* (January and March, 2004), *Behaviour and Information Technology* (Volume 23, Issue 3, May-June, 2004), and *Journal of Management Information Systems* (forthcoming in 2005).

These special issues represent AIS SIGHCI's continued outreach efforts to establish dialogues, synergies, and connections with the HCI communities across various disciplines. Additional recent efforts of AIS SIGHCI include organizing two "HCI in MIS" sessions at the 2005 HCI International Conference and participating in the 'User Experience' development consortium at the CHI 2005 conference (Galletta, Zhang, & Nah, 2005). Given the shared HCI interests, concerns, and goals among various disciplines (Zhang & Dillon, 2003), we believe that HCI interest groups from various disciplines need to carry out more dialogue exchanges with each other to share their multifaceted perspectives and facilitate cross-fertilization of ideas. We envision that the HCI field as a whole can benefit from such collaborations and dialogues, and establish greater synergies by working together. We hope this special issue will help to achieve the above goals by facilitating greater collaborations between SIGHCI and various international HCI communities.

### **Contributions to the Special Issue**

This special issue of the *International Journal of Human-Computer Interaction* comprises a sample of HCI studies in MIS. It is based on the expansions of the best research papers from the HCI track at the Americas Conference on Information Systems (AMCIS) that was held in New York City in August 2004. The HCI track had seven mini-tracks with 50 research papers accepted in these mini-tracks. Of the 42 research papers in the four mini-tracks that participated in this special issue, 12 of them were nominated by the mini-track chairs as best candidate papers. Expansions of these papers were invited for consideration in this special issue. After a rigorous process involving two rounds of peer reviews, seven papers were accepted for publication in this special issue. These seven papers cover human-centered IT design and development, as well as IT use and impact on users, organizations, and societies.

Three articles contribute to our understanding of IT design and development. In the first article entitled "Visualizing E-brand Personality: Exploratory Studies on Visual Attributes and E-Brand Personalities in Korea," Park, Choi, and Kim studied the

relationships between visual attributes of website design and brand personality of websites (or e-brand personality). They carried out three studies to identify the dimensions of e-brand personality and assess the visual attributes (e.g., simplicity, cohesion, contrast, regularity, balance) associated with the four e-brand personality dimensions (i.e., bold, analytical, friendly and sophisticated). Their findings provide useful guidelines for designing and establishing e-brand personality of websites.

In “The Enhanced Restricted Focus Viewer,” Tarasewich, Pomplun, Fillion, and Broberg designed, implemented, and evaluated the Enhanced Restricted Focus Viewer (ERFV), a software tool that tracks the visual attention of users in hyperlinked environments. This tool can be used to conduct usability testing on websites without the need for expensive hardware like the traditional eye tracking system that is routinely used for such tests. The authors demonstrated that the ERFV compares favourably to the traditional hardware-based eye-tracking system and is a useful tool for website evaluation. Overall, the authors have shown that software-based ERFV is a more economical yet equally effective tool than hardware-based eye-tracking systems for capturing and tracking users’ attention in the Web environment and for website usability testing.

Rao, Luk, and Warren, in their article entitled “Issues in Building Multi-user Interfaces,” used the group ranking task to study the design of multi-user interfaces. They observed how groups performed the ranking task in a non-computer supported environment, proposed a design to support the task in the computer environment, and evaluated a prototype of their proposed design based on informal feedback from users. Their findings provide us with a better understanding of the issues and challenges involved in designing multi-user interfaces.

IT use, user evaluation, and its subsequent impacts on users, organizations and societies are of great interest to HCI researchers in the MIS discipline. Four papers in this special issue examine this aspect. They utilized a variety of research methods including survey, field experiment, and laboratory experiment.

Qiu and Benbasat evaluated the effects of Text-to-Speech voice and 3D avatars on consumer trust toward customer service representatives in “Online Consumer Trust and Live Help Interfaces: The Effects of Text-to-Speech Voice and 3D Avatars.” They found that the presence of Text-to-Speech voice increases consumers’ trust while the use of 3D avatars does not change consumers’ trust. Their results offer insights to improve user interface design for supporting communications in e-commerce websites.

Personalization can be used to achieve true human-centeredness in HCI design. Yet, the impact of personalization on individuals is largely unknown and under-studied, especially in the Web environment. In “An Empirical Examination of the Effects of Web Personalization at Different Stages of Decision-Making,” Ho and Tam investigated the effects of three major elements of Web personalization strategies on users’ information processing and expectations through different decision-making stages. Using a personalized ring-tone website, an experiment was conducted to test the effects of personalization. The results show that Web personalization plays a key role when users

are forming their consideration sets but its effects diminish once the user has made a decision.

Although a significant portion of HCI studies in MIS emphasizes IT/IS acceptance and usage, it is generally known that IS use is necessary but not sufficient to improve individual productivity. The nature of IS use may potentially mediate the relationship between IS use and IS-enabled productivity. This is the key premise of “Beyond Perceptions and Usage: Impact of Nature of IS Use on IS-enabled Productivity” by Jain and Kanungo. The authors went beyond studying the general user perceptions of IS, and examined the nature of IS use and its impact on individual’s IS-enabled productivity. The researchers proposed and validated a model of individual IS-enabled productivity that focuses not only on the usage of IS but also on the nature of this usage. This study contributes to the MIS literature by explaining the weak link between IS acceptance and individual productivity.

Both organizations and development firms should be aware of positive and negative impacts IT may bring to the health and well-being of potential users. In “Role of Human Computer Interaction Factors as Moderators of Occupational Stress and Work Exhaustion,” Rajeswari and Anantharaman explored the relationship of HCI factors, such as computer self-efficacy, technology training efficacy, perceived control over technology and intrinsic motivation, on the relationship between occupational stress and work exhaustion. A survey methodology was employed using a sample in two cities in southern India. Results showed that these HCI variables do have an effect on stress and work exhaustion.

### **Acknowledgements**

The guest editors are grateful to the editors-in-chief for their strong support and encouragement to bring the idea of editing a special issue on ‘HCI studies in MIS’ to fruition. The guest editors also thank the following reviewers who have not only played an important role in quality control during the entire review process but have also contributed to the development of the manuscripts included in this special issue: Ranida Boothanom, Xiaowen Fang, Holtjona Galanxhi, Dennis Galletta, Jane Gravill, Traci Hess, Andrea Houston, Richard Johnson, Brian Jones, Jinwoo Kim, Barbara Klein, Kevin Kuan, Dahui Li, Na Li, Nancy Lightner, Eleanor Loiacono, Tom Roberts, Sharath Sasidh, Tom Stafford, Heshan Sun, Dov Te’eni, Raul Trejo, G.J. Vreede, Sidne Ward, John Wells, and Mun Yi.

## References

- Baskerville, R. L., & Myers, M. D. (2002). Information systems as a reference discipline. *MIS Quarterly*, 26(1), 1–14.
- Galletta, D. F., Zhang, P., & Nah, F. (2005). AIS SIGHCI position paper. *Proceedings of CHI*, April 2-7, Portland, Oregon.
- Keen, P. G. W. (1980). MIS research: reference disciplines and a cumulative tradition. *Proceedings of the First International Conference on Information Systems*, December 8-10, Philadelphia, Pennsylvania, 9-18.
- Zhang, P. (2004). AIS SIGHCI three-year report. In *AIS SIGHCI Newsletter*, 2-6. Retrieved from [http://sigs.aisnet.org/sighci/newsletters/v3n1\\_0704.pdf](http://sigs.aisnet.org/sighci/newsletters/v3n1_0704.pdf).
- Zhang, P., & Dillon, A. (2003). HCI and MIS: Shared concerns. *International Journal of Human-Computer Studies*, 59(4), 397-402.
- Zhang, P., Nah, F., & Preece, J. (2004). HCI studies in Management Information Systems. *Behaviour and Information Technology*, 23(3), 147-151.
- Zhang, P., Benbasat, I., Carey, J., Davis, F., Galletta, D., & Strong, D. (2002). Human-Computer Interaction research in the MIS discipline. *Communications of the Association for Information Systems*, 9(20), 334-355.