

# Big Data, Big Decisions: Reflections on AIS's Role in Ethical Guidance and Oversight

Panel

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## Abstract

*This panel will introduce and debate a controversial resolution suggesting that the AIS community should take an active role in developing guidelines for the ethical practice of Big Data and analytics both in academic research and organizational practice. In addition, the resolution proposes that the AIS community should monitor and study the relevant stakeholders' compliance with these guidelines. The panel will first provide background to the implications of Big Data and analytics based on a recent NSF-funded research agenda setting workshop. The panelists will then comment on potential benefits and potential harms from the perspective of key stakeholder segments: individual citizens, organizations, and society as a whole. The panel will invite the audience to debate the major provocation: What is the appropriate role for the AIS community in ethical leadership on the uses of Big Data and analytics?*

**Keywords:** Big Data, analytics, ethics, data analysis, data privacy, AIS community

## Introduction

This panel is designed to showcase and reflect upon the following controversial resolution:

“The AIS community should develop strong guidelines for the ethical practice of Big Data and analytics in 1) academic research and 2) the practices of businesses, government and not-for-profit organizations. In addition, the AIS community should actively 1) monitor/enforce AIS members' compliance with ethical guidelines for Big Data and analytics research and 2) conduct and publish research on organizations' compliance/compliance with ethical guidelines.”

“Big Data” and analytics are widely argued to have tremendous potential benefits for individuals, organizations, and society. Indeed, many actual uses of Big Data and analytics have been described and their benefits documented. However, Big Data and analytics also raise fears and concerns about potential

harms, especially (but not exclusively) for individuals. The most commonly mentioned are concerns about personal information privacy and security threats. However, numerous other concerns include:

- Unlawful or unethical use of Big Data by corporations to discriminate in decisions about employment, housing, insurance, pricing, etc.
- The “surveillance society” arising from ubiquitous location-based monitoring and tracking
- Inappropriate uses of Big Data and analytics by private citizens for purposes of cyberbullying, cyberstalking, crime, etc.
- Marginalization of “small data” research methods like qualitative research; discounting of traditional hypothesis-testing strategies; this would be particularly distressing because it is an area in which academic research is able to excel relative to corporate big data research
- Threats to academic independence from corporate influence, because so-called “public” social media data is actually owned by corporations, who may restrict access to in-house researchers or to those whose loyalty they can ensure through funding.
- Threats to academic research legitimacy, as corporate big data researchers increasingly outdistance universities in ability to provide the most advanced research infrastructures

These issues were at the heart of a recent research-agenda setting workshop funded by the U.S. National Science Foundation (M. Lynne Markus, Principal Investigator, award #1348929), held in Washington D.C. in late January 2014. Among the conclusions from the workshop are the following:

- Concerns about Big Data cannot be adequately addressed solely with better technical solutions for security and privacy. These two are not the only concerns about Big Data and analytics.
- Some concerns about Big Data (e.g., potential for enabling discrimination, or the loss of academic independence) cut across industry sectors (e.g., education, health, finance, marketing) and deserve to be treated holistically
- Ethical concerns about Big Data and analytics arise in academic research, organizational behavior, and everyday life (because citizens are users and producers of Big Data as well as the “targets” of academic research and organizational behavior)
- Fundamental differences in values may exist across stakeholder groups. For instance, some individuals may value personal information privacy above all else, whereas others are willing to forgo privacy for the benefits of social connection or better matching with the offerings of corporations. As another example, some researchers fear (for valid reasons) that efforts to ensure personal privacy will prevent the achievement of collective benefit (e.g., mining health records for better disease treatment). Others worry about power asymmetry caused by the wide latitude corporations have by virtue of strong intellectual property protection and weak regulatory regimes.
- Education about ethical dilemmas and acceptable behavior is needed, not only for academic and corporate data scientists, but also for managers, non-data-oriented knowledge workers (e.g., human resources specialists and doctors), and the public at large.

## Controversial Issues

AIS members hold differing positions on the severity and implications of the potential harms of Big Data and analytics. Some AIS members believe that the benefits and research opportunities presented by big data analytics so far outweigh the negatives that there are no reasons for discussion. Other AIS members believe that we should not call attention to the very real negatives by discussing them or researching them for fear of promoting public backlash. Still other AIS members believe that negative outcomes are inevitable but that they are transitional and thus can safely be ignored.

Some AIS members believe that ignoring the possible negative consequences of Big Data and analytics is unethical and may itself actually promote backlash. For instance, the pro-societal Big Data educational initiative inBloom (funded by the Gates Foundation) was recently terminated because of parental

concerns about privacy. In order to prevent the blocking of other valuable uses of Big Data and analytics, some AIS members contend that our community should be actively engaged in ethical leadership and in the production of research and education that produces a balanced picture of the costs, benefits, and risks of Big Data and analytics for different stakeholder groups.

Because there is no “right answer” to any question about the appropriate uses or desirable consequences of Big Data and analytics, the suggestion that the AIS community should take a strong position on ethically acceptable behavior (by researchers and by organizations) is controversial. The purpose of this panel is to expose the controversy and provoke “conversations for possibilities” (of action) by the AIS community.

## **Panel Structure and Panelists’ Positions**

Heikki Topi (moderator) will introduce the panel by providing background on the NSF-funded workshop and framing the controversial proposal that the AIS community actively engage in ethical leadership. He will also highlight a number of areas of potential negative consequences of Big Data and analytics, including: loss of academic independence and scientific credibility; discrimination and labeling; changes in the nature of human knowledge, job quality, and employment opportunities, among others. He will also represent M. Lynne Markus, the other co-organizer of the panel, at the event.

The panelists will each then comment on both the potential benefits and the potential harms of Big Data and analytics from the perspective of a major stakeholder segment:

- Individual citizens (Eric K. Clemons)
- Organizations (Sue Newell)
- Society as a whole (Susan Winter)
- Organizations and society particularly from the legal informatics point of view (Matthew K.O. Lee)

In addition to the general commentary regarding the issues within their domain of the panel topic, each of the panelists will highlight two or three specific ethical dilemmas within their area and express a specific personal position regarding these issues.

Each panelist will also state his/her personal position regarding whether/how the AIS community should pursue ethical leadership in this domain. The panelists will ensure that their statements regarding the AIS community’s role will be both specific and action-oriented.

Graeme Shanks will summarize the arguments, surface a few key themes for discussion, and focus audience participation on the major provocation: What is the appropriate role for the AIS community in ethical leadership on the uses of Big Data and analytics?

The panelists will bring a number of different global perspectives to the conversation. Sue Newell represents AIS Region 2 and both Matthew Lee and Graeme Shanks Region 3. In addition, Eric Clemons works extensively in China, and several panelists have ongoing projects with stakeholders in Region 2.

Half of the allotted time will be devoted to audience participation. The moderator will carefully manage the discussion, ensuring that the debate will stay focused and move forward in a productive way.

## **Biographies**

**Eric K. Clemons** is Professor of Operations and Information Management at the Wharton School of the University of Pennsylvania. His education includes an S.B. in Physics from MIT, and an M.S. and Ph.D. in Operations Research from Cornell University. His research for the past 30 years has involved the systematic study of the transformational effects of information on the strategy and practice of business. More recently, he has begun studying blogging and social media, cloud computing and cloud computing standards, and the challenges to applying current antitrust law to online business models. He has published over 100 scholarly articles and regularly publishes online in *Huffington Post*, *Business Insider*, and *Tech Crunch*. Dr. Clemons is the founder and project director for the Wharton School’s Sponsored

Research Project on Information: Strategy and Economics within the Program for Global Strategy and Knowledge Intensive Organizations. He participated in the World Economic Forum in Davos, Switzerland in February 2009 and in the Beijing Forum in 2011. He is currently studying the processes needed to create innovative consumer products in China and to create consumer trust and brand loyalty, and has a monthly column on this work for China's *Long March of Quality Review*. He is also active in regulatory and technology policy work in Japan, Korea, and the EU.

**Matthew K. O. Lee** is Chair Professor of Information Systems & E-Commerce at the College of Business, City University of Hong Kong (CityU). Concurrently, he is Director of Communication and Public Relations of CityU and a member of the President's Cabinet. He was Associate Dean (2001-2006, 2007-2011) and Acting Dean (2006-2007) of the College of Business, and also the founding Director of the CityU DBA Program and the Residence Master of Jockey Club Harmony Hall at the Student Residence of CityU (2005-2011). Professor Lee was Head of Department of Information Systems at CityU from 1995 to 2001. Professor Lee has a research and professional interest in IT based innovation adoption and diffusion (focusing on systems implementation management issues), knowledge management, electronic commerce, online social networks, and legal informatics encompassing the legal, ethical and policy aspects of information technology. Professor Lee's has published over one hundred refereed articles in international journals, conference proceedings, and research textbooks. He is the Principal Investigator of a number of prestigious competitive grants and has published in leading journals in his field (such as *MIS Quarterly*, *Journal of MIS*, *Communications of the ACM*, *International Journal of Electronic Commerce*, *Decision Support Systems*, *Information & Management*, and the *Journal of International Business Studies*).

**Sue Newell** is Professor of Information Systems and Director of Studies in the Department of Business and Management at University of Sussex. She has a BSc and PhD from Cardiff University, UK. She is one of the founding members of ikon (innovation, knowledge and organizational networking center), a research center based at Warwick University. She is particularly interested in how knowledgeability is practically achieved within and across individuals, groups and organizations, and the role and agency of technology (in particular information technology) in processes of knowing. More generally, she is interested in how technological innovations are developed, diffused, implemented and appropriated by business organizations in their quest to improve competitiveness, recognizing that often the intended impacts of technology are not realized in practice. Dr. Newell examines these unintended and unexpected consequences associated with innovation processes mainly using qualitative approaches that allow in-depth and longitudinal insights that can highlight the unpredictability of real-life practice. Theoretically, she adopts an eclectic approach, using different lenses to shed light on emergent knowing practices and the associated power dynamics. She has been involved in many of the ikon projects and is currently working on a project examining healthcare innovation initiatives in the US, Canada and the UK. Sue has published over 100 journal articles in the areas of information systems, organization studies and management, as well as numerous books and book chapters.

**Graeme Shanks** is an Australian Professorial Fellow in the Department of Computing and Information Systems in the Melbourne School of Engineering at The University of Melbourne. Prof Shanks completed his PhD in information systems at Monash University in 1997. He was previously Associate Dean (Research) in the Faculty of Information Technology at Monash University. Prior to becoming an academic, he spent several years working as a programmer/analyst and project leader in several large Australian organizations. He has published the outcomes of his research in more than 150 refereed papers in journals including *MIS Quarterly*, *Journal of Information Technology*, *Information Systems Journal*, *Information & Management*, *Journal of the AIS*, *Electronic Commerce Research*, *Journal of Strategic Information Systems*, *Information Systems*, *Behaviour and Information Technology*, *Communications of the AIS*, *Communications of the ACM*, and *Requirements Engineering*. Graeme was a member of the Australian Research Council College of Experts (2004-2005). He is a senior editor of the *Journal of Information Technology* and a member of the editorial boards of the *Journal of Database Management*, *Pacific Asia Journal of the Association for Information Systems* and the *Journal of Knowledge Management Research and Practice*.

**Heikki Topi** is Professor of Computer Information Systems at Bentley University in Waltham, MA. He earned his Ph.D. in Management Information Systems at Indiana University Graduate School of Business. His teaching interests cover a range of core IS topics including advanced systems analysis and design,

systems modeling, data management, and IT infrastructure. His research focuses on human factors and usability in the context of enterprise systems, information search and data management, and the effects of time availability on human-computer interaction. His research has been published in journals such as *European Journal of Information Systems*, *JASIST*, *Information Processing & Management*, *International Journal of Human-Computer Studies*, *Journal of Database Management*, *Small Group Research*, *Communications of AIS* and others. He is co-author of a leading data management textbook *Modern Database Management* and a related text *Essentials of Database Management* with Jeffrey A. Hoffer and V. Ramesh. His co-edited Volume 2 *Information Systems and Information Technology* of CRC/Chapman & Hall's *Computing Handbook* was published in May 2014. He has contributed to national computing curriculum development and evaluation efforts in various leadership roles (including IS 2002, CC2005 Overview Report, and as a task force co-chair of IS 2010, the latest IS curriculum revision) since early 2000s. He has been member of ACM's Education Board since Spring 2006 and has represented first AIS and then ACM on CSAB's Board since 2005.

**Susan J. Winter** is Assistant Director of the Masters of Information Management Program and of the Center for Advanced Study of Communities and Information at the University of Maryland's School of Information Studies. She has previously been a Science Advisor in the Directorate for Social Behavioral and Economic Sciences and Acting Deputy Director of the Office of Cyberinfrastructure at the National Science Foundation supporting distributed, interdisciplinary scientific collaboration where she was responsible for programs funding research on virtual organizations as sociotechnical systems, cyber-enabled discovery and innovation, cyberinfrastructure education, and enabling resources for complex data-driven and computational science including high performance computers, large-scale databases, and advanced software tools. Her research on the impact of information and communications technology on the organization of work has appeared in top journals; she has extensive international managerial and consulting experience, and currently serves on the editorial boards of the *Journal of Information Technology*, *Information and Organization*, and *Group and Organization Management*. She received her PhD in business administration from the University of Arizona, her MA in organizational research methods from the Claremont Graduate University, and her BA in organizational psychology from the University of California, Berkeley.

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