Communications of the Association for Information Systems

12-2013

Emerging Ideas and Topics in IS: Introduction to the Special Section

Fred Niederman
Saint Louis University, USA, niederfa@slu.edu

Don McCubbrey
Department of Business Information and Analytics, Daniels College of Business, University of Denver

Follow this and additional works at: https://aisel.aisnet.org/cais

Emerging Ideas and Topics in IS: Introduction to the Special Section

Fred Niederman

Department of Operations and Information Technology Management, Saint Louis University

niederfa@slu.edu

Don McCubbrey

Department of Business Information and Analytics, Daniels College of Business, University of Denver

Abstract:

This essay provides a discussion of the original and evolving notions of what constitutes an "emerging" idea and describes the processes by which we organized this special section. We also discuss each of the ten selected articles in terms of what we see that makes the article "emerging" and how we see it fitting into the larger framework of IS knowledge.

Keywords: emerging ideas, fundamental IS concepts, emerging information technologies

I. CONSIDERATIONS REGARDING EMERGING IDEAS AND TOPICS

Many times during the course of proposing, developing, and finalizing this special section, we had to wonder what we'd gotten ourselves into. The notion of a special section on emerging or breakthrough ideas is extremely appealing in the abstract but quite challenging in the concrete. In the abstract, our intention was to provide stimulating, thought-provoking new thinking in IS that might lead to new directions of investigation and insight. As we found out, however, this is more easily said than done. Over time, perhaps, we will find out if we've accomplished this to some extent with the special section as it has actually been formed. We think that the array of selected articles gives us a pretty good chance.

As mentioned, editing a special section on emerging ideas presents a number of challenges. First is the problem of defining an emerging idea. There are a number of things that conspire to make this reasonably difficult. In some cases, the same idea that would appear revolutionary to Fred would be "old hat" to Don, or vice versa. A new idea can be "new" to one observer and quite established to another. This led to the question: If we have ideas that are familiar to a small group, perhaps in a specialized field, but unfamiliar to the larger IS community of potential *Communications of the Association for Information Systems* readers, does this constitute an emerging idea? We did not come to a single answer that can be applied to every case, but we did resolve that such an idea could not be ruled out from the special section. We had to ask ourselves: Will this be a concept new to many, while at the same time being likely to stimulate, refresh, or at least present a slightly new angle to those already familiar with the domain?

Another problem revolves around the amount of development necessary for evaluating the emerging idea. Clearly, if the amount of evidence for the idea is overwhelming or even substantial, chances are that the idea has been around for a while and, therefore, unlikely to be emerging. On the other hand, if the exposition of the idea is sketchy, ambiguous, or divorced from a particular context, it may be difficult to even know with certainty what the idea is, much less whether or not it has potential value. We took the position that, if we saw even a glimmer of potential regarding submissions in this category, we would try to define what we would like to see more of, determine how the topic might be better focused, and request elaboration from the author(s). It is not easy, however, to declare what one would like to see in such a case without moving from the completely unexpected to the framed or structured unknown. Frequently, what we wanted to see were examples to illustrate how broad ideas would present themselves. If this idea can affect IS research or the body of knowledge, where exactly would we see its impact and what would such impact look like?

What about an idea that has been kicked around for some period of time, shows promise, but simply hasn't gotten the attention or reaction that it might need to emerge as a key IS component? Following the overall argument regarding paradigms and paradigm shifts, we were on the lookout for "contrarian" ideas representing alternative views of the field that held the promise of explaining or predicting results of phenomena that are not explained by the major existing tendencies in the literature or pushing us to examine issues that are difficult within the limits of well-established methodologies.

We also considered topics not traditionally within the range of IS concerns. An historic and narrow view of IS might hold that its core domain is the development, use, implementation, and management of computer information systems in organizations. A broader definition would include issues regarding use of information systems by customers and unrelated individuals and effects of such information systems (both social and economic) on society in general. But what about even more distant topics such as Fred's colleague in the department of theological studies who investigates how to better evaluate ancient manuscripts (incidentally using computer technology)? Or how attention spans of young people are changing (partly as a result of IT)? These are interesting topics, in our view (though perhaps these are "old hat" to theologians and psychologists), and we see them potentially opening up new IS thinking and research areas. We expect that people of good intention may disagree about this and that each possible topic would need to be considered in its own right.

Before starting this special-section journey, we discussed together and with quite a few other people, at some length, the sort of articles we were looking for that might provide emerging ideas. These included:

1. Reorganization or reinterpretation of the relationship among components in development, managing, and innovating with IS within and between organizations; e.g., better understanding of the interaction of

specific organizational policies and practices with development constraints and outcomes. We stand behind this approach to recognizing emerging ideas, but found it difficult in practice to know how much reorganization or reinterpretation was necessary. For example, we were resolved that the addition of a new construct to a nomological net or a new variable to the measure of a construct was not likely to qualify as an emerging idea. On the other hand, it is possible that the one new construct or variable might tip a balance in either explaining significantly more variance or bringing more clarity to the range of managerial choices that pertain to the phenomena.

2. Reporting of patterns of findings based on observations and studies in the IS domain, e.g., meta-analysis or literature reviews showing patterns of findings and unaddressed questions in a domain of interest. We expected that a number of fields may be entering a kind of maturity that allows the results of individual studies to be compared and contrasted in a way that yields new insights. Some other domains have been examined this way with very meaningful results, including knowledge management [Alavi and Leidner, 2001], outsourcing [Dibbern, Goles, Hirschheim, and Jayatilaka, 2004], and group support systems [Fjermestad and Starr, 2000/2001]. What would such new areas be? Do we have enough knowledge now about RFID, cloud computing, open source licensing, or business analytics to take another look and put these into a new context or develop a new understanding? In essence, we sought new findings relative to established approaches and, perhaps, reconfirmations of existing findings relative to these. But most of all, we were looking for new findings coupled with new approaches.

3. Observation of detailed strategic, tactical, and operational behaviors and/or artifacts from the organizational application of IS, e.g., case studies showing the acquisition, adaptation, and use of information systems focused on detailed choices and local as well as summary outcomes. We anticipated submissions based on methods emphasizing exploratory research. We expected significant numbers of case studies that examined unusual industries (e.g., not financial or manufacturing) that would show where their uniqueness generated activities at variance with the norm in our literature. We anticipated many design science and action research papers showing proof of concept or applicability of new content. We expected grounded theory, either formal or loosely implemented, that probed topics little studied to date or studied only with other methods like experiments or surveys that expanded, supported, or contradicted prevalent thought.

4. We also expected extrapolations of current trends into future prospects. We envisioned some articles that might start with an historical view, for example, of the evolution of service bureaus to outsourcing to cloud computing that might show how what was learned about the earlier forms could be applied to the newer ones, what the emergent characteristics of the new phenomena consist of, and how new research can build on the past rather than start over. We would be most interested indeed if the logical next evolutionary steps of such a trend were explored. Will cloud computing become near universal? Will there be an evolution of security issues in this case? How will the economics of computing change? How might this change the way organizations are organized? What might this mean in terms of the nature of work?

5. IS capabilities to address the grand challenges facing society were expected, including healthcare, sustainability, poverty alleviation, employment, social equity, and extending participation in governing institutions. We did receive a number of articles pertaining to green IS of one sort or another. On a personal level the societal impact of environmental issues is of serious importance to both editors. We anticipated a substantial number of articles with both specific and broader commentary on these topics. In terms of sustainability, for example, we thought we might see design science efforts at products or algorithms addressing a range of environmental targets. We thought we might see articles regarding the use of IS during the "Arab Spring" and the subsequent response of challenged governments who also used IS. We are aware of many programs around the world using IS to spread literacy, economic development, and responsive government. We anticipated seeing both specific cases and overviews regarding these topics. Healthcare delivery seems an especially troubling problem in the U.S., so we would have been very open to articles contrasting IS use in healthcare in the U.S. versus elsewhere. Of course, medicine is constantly improving around the world and IS is a major contributor to both content (e.g., genomics leading to new treatments and understanding) and method (e.g., using massive data analytics to efficiently evaluate potential pharmaceutical solutions). On the other hand, there are many outlets for healthcare IS papers, so we were not certain if we would receive many submissions in this area.

In fairness, we have always acknowledged that individuals with really significant "emergent" ideas might rather attempt to publish these in the basket of eight or more specialized journals. We were hoping that authors who felt stymied with repeated attempts to "crash" into these top journals, perhaps because their methods were less than

precise or their thinking didn't have preexisting theoretical support, might turn to this forum. We expected some senior scholars to write up the "outlier" ideas they've had over the years but without a forum for exposing them to the community.

We also want to point out that in reviewing these articles for emerging ideas, we did not use as a criterion that we agree with all the points presented or represented. In our view, our purpose includes presenting stimulating points of view as well as "truths." As a result, some of the points raised are ones that we feel are valid and reasonable, but that we might enjoy arguing about (or at least discussing pleasantly).

Perhaps we will be able to continue addressing these approaches to emergent ideas in future specialized presentations or through general *Communications of the Association for Information Systems* submissions.

In considering the mechanics of this special section, we note two aspects discussed below.

1. It is almost as hard to recognize an emerging idea when you see one as it is to describe what you are looking for. In the first round of abstracts, many of the ideas were sensible, reasonable, study proposals. But in recombining knowledge in slightly new ways, applying knowledge in a new setting, or applying a different theoretical lens to an existing body of literature, a good many of the proposals were not strikingly innovative enough for us to encourage further development. For most of these we recommended submission to *Communications of the Association for Information Systems* as a regular article and, on rare occasions, to other journals where there seemed to be a better topical fit.

2. We observed some clustering of the submitted articles by theme—quite a few pertained to social networking and its implications and a number focused on ethics. Emerging technologies seem to drive much of the thinking about what is emerging. We did not really see anything about the tendency of technologies to often be reformulations of earlier ones. For example, cloud computing appears much like a resuscitation of service bureaus, albeit with more sophisticated hardware and software and delivery through the Internet. The point isn't to argue whether there is enough change for cloud computing to be considered something "new," but rather to consider whether we learned anything about service bureaus that can simply be applied to cloud computing, then adjusted for the evolved technological maturity so that we have a cumulative tradition and don't have to start over with every new technical bit of progress.

That said, we do feel that each of the array of articles included in this special section presents something new, original, and worthy of your consideration. In some ways these articles address quite independent issues. We have organized them into three sections. The first addresses issues pertaining to the field itself. The second addresses underlying concepts regarding the fundamental nature of key concepts, such as emergence and information transfer. The third addresses emerging or evolving technologies and innovation in their uses and applications.

II. A DIVERSE SET OF EMERGING CONCERNS AND OPPORTUNITIES

The first three articles are largely focused on the IS research environment and field. They extend our view of who is conducting IS research, opportunities for individuals and institutions to extend their work, and proposing a common resource for general use and benefit.

Bernard and Gallupe [2013] provide insights into the structure, effects, and unresolved issues pertaining to analysts of the IS industry. To the editors, this was a striking example of exploring a topic that was outside our previous experience and one that we weren't aware of being examined in the existing literature. In our view, this article presented a detailed investigation that illuminated dynamics of this important but little investigated stakeholder in the IS domain. We note the expressed implications in the text investigating the forces that shape these organizations, how they interact with IS decision makers, and what their ultimate effects are on IS organizational outcomes. However, we would also urge that the influence of this force in the industry might trigger further elaboration of our understanding in a number of areas central to IS research regarding what we've already learned and documented: diffusion of IT, the economic impact of IT investments, choices between open source and proprietary software, open source development dynamics, processes for and effects of strategic IS-business alignment, and an array of IS performance metrics. We are not confident that the influence of the IT industry analyst organizations will materially affect each of these IS sub-domains, but we do feel that there is the potential for reshaping our prevailing views in each of these, and perhaps other, areas.

Baker and Wetherbe [2013] discuss project funding and collaborating with industry to frame and conduct research. This represents another topic addressing the structure of the IS research community. Although this article was originally submitted to the general body of *Communications of the Association for Information Systems* articles, we

felt that it represented an "emerging idea" article, not in the sense that working directly with industry is new, but that the study brings us up to date on the changing landscape of interacting with business concerns. For many, we hope, this article will provide new ideas in terms of scope and type of research. We fear that one of the limitations on cases and other field studies in top IS journals pertains to the difficulty in gaining access and fulfilling all scholarly and client expectations. We would be especially pleased if this article prompted exploratory and theory testing research in the organizational setting. As the article points out, however, the range of funding opportunities is not limited to field studies but can include anything that the sponsors can be convinced is worth their time, energy, and money.

Alter [2013] addresses a real problem, in our view, of the IS discipline—and perhaps other fields of study as well. Since the first ICIS in 1980, there has been periodic discussion of how to build a cumulative tradition, as well as what the central and core knowledge of the field consists of. We view this in terms of being disproportionately strong at producing and publishing detail level studies, but being less developed in terms of showing the integration and distillation of knowledge gained from these. Alter addresses this problem by proposing the collective development of an interpretary to provide a framework or vehicle for collecting definitions and descriptions of key concepts in IS. He presents a detailed example with entries ranging from agile methods to XML as conceived from either an IT artifact or work system perspective. Of course, he suggests that many more concepts can be added and additional perspectives would be anticipated. The utility of such a framework is manifest by aiding each scholar to see a range of viewpoints pertaining to each key element without having to track down each of them. This interpretary may or may not be taken up with enthusiasm by the field, although Alter strongly presents the argument for its benefits. However, whether or not such a program becomes a tool and resource for the field, this article presents one approach to developing a common foundation for our elemental definitions—diverse as they may be—within the IS field.

The next set of articles probe fundamental concepts regarding our discipline. These focus on how we view information, what we mean by emergence, and an emerging field of "policy informatics" aimed at supporting government decision making through IS.

Beynon-Davies [2013] offers the opportunity to draw away from the tumult of daily activity and reconsider just what we mean by information. To some, such inquiry might seem esoteric relative to more concrete discussion of solving particular business problems with the application of technology, but we find it to be addressing the fundamental identity of signals, meaning, and interaction. We return frequently to ponderings of this nature and find the guidance provided by this article to be stimulating and thought provoking, and hope our readers join us in this spirit. The idea that some facial configurations may be universal communicants of particular messages, while others may vary with context, seems highly transferrable to the range of questions pertaining to culture, management policies, virtual teams (and other interactive groups), and implementation of specific IS products in organizations of appreciable size.

Hovorka and Germonprez [2013] focus on the concept of emergence. We see this concept as a key ingredient in the definition and nature of systems. However, like many, we have been prone to use this term as a general idea without clearly differentiating among different kinds of emergence, which by their differences, may have different characteristics. Our understanding of this term will be different moving forward as a result of the clarity of differentiating and describing these different types of emergence in this article. We also note and underline the implications of this discussion in terms of the nature of IS research where emergence is an important part of the phenomenon being studied. As the authors point out, such understanding is difficult, at best, in cross-sectional studies. Perhaps the collection of cross-sectional studies over time and across variation in circumstance can provide some illumination of both the content and process by which synergies or new characteristics emerge, but this study, again, highlights the potential value and, perhaps necessity, for highly weighting longitudinal study.

Krishnamurthy, Desouza, Johnston, and Bhagwatwar [2013] introduce policy informatics as an emerging research domain. In essence, this domain pertains to how information technologies can be used to support the selection and building of social policies. The article proposes, describes, and presents examples of emerging efforts to gather and analyze relevant data, often in complex and interactive environments; to design the infrastructure of governing; and to generate processes by which empathetic governance can occur. It is interesting to contrast this area with the still nascent subfield of "e-government." Much of the e-government literature focuses on the relationship between citizens and government in performing transactional activity—such as online tax filing [Lim, Tan, Cyr, Pan, and Xiao, 2012]. The policy informatics perspective shares much with the e-government arena, particularly regarding issues of precursors to successful implementation such as trust and empathy, but tends to focus more directly on the policies themselves and the governance processes rather than on particular systems. We see this article having some shared perspective with Baker [2013] in presenting an emerging topic that can be viewed in terms of moving with a more explored topic (e.g., DSS to "big data" and e-government to policy informatics). We also see this article sharing a perspective with Holzer and Junglas [2013] in terms of the concern for ethics, participation, and transparency.

Scheepers and Middleton [2013] aim to focus our attention on the nature of mobile and ubiquitous computing from the perspective of the user. Their article elaborates on the difference between features and "affordances" in the sense of applications of computing potentialities to their purposeful application by users. It stresses the ability of users to adopt the features intentionally provided by designers to both intended and innovative uses. It positions such selections in terms of an alternative view of outcomes shifting from a focus on "success" to a focus on quality of life. Reexamining outcomes in this light holds the potential to rethink the nature of "success" in the more traditional business contexts as well. As stated in the article, this is intended as "pre-theory," meaning that it aims to serve as a base for testing and refinement, should others find it to be potentially useful; in essence it is theory in the sense of a logical set of constructs and relationships but with a low amount of evidence in its support. We are hopeful that researchers in this area will consider carefully the potential that this framework opens up for conceptualizing their own work in evaluation of systems where applications and affordances can be bundled and unbundled according to the intentions of the user.

The final four articles address issues of emerging application of IS and technology. These illustrate the potential use of a priori decision support systems, the use of IS for stimulating ethical behaviors, and a framework for using IS to enable innovation.

Baker [2013] presents a conceptual case study illustrating in the dairy industry how relational data models might be used to process incoming streams of data. There has been an explosive growth of data from sources such as RFID and other sensors, as well as from network traffic and Internet activities. These new data sources open up new avenues for organizational ability to enhance transactional processing by adding intelligence to firm responses and also to react automatically to patterns as they become apparent and changes in customer preferences or environmental influences as they occur. This article is forward-looking in illustrating how such processing of information a priori or before human intervention can be manifest. We see this topic as an extension of the vast literature on decision support systems and business intelligence where lessons that have been learned about algorithmic content and institutional processes for implementation may be applied (study would be appropriate to investigate which are simply applicable and which need modification). But we emphasize that we see this as an extension. We would not expect that all lessons from DSS would apply "out of the box," nor would all needed lessons be derivable from what we know of DSS. Rather, we view this as an opportunity for researchers to begin the utilization of what we hope has become an accumulation of IS knowledge to apply what is known regarding existing technology to shortcut the study of emerging technology by transferring what is common and focusing on the new features and affordances.

Holzer and Junglas [2013] investigate the use of information systems as a mechanism for pressuring organizations toward holding to higher ethical standards. Ethics, of course, is among the fundamental philosophical domains of inquiry and not an especially new topic in itself. However, the introduction of new information technologies at an increasingly rapid pace presents an array of new emerging problems and new questions. This article edges on the tantalizing question of whether or not information systems themselves can act as ethical agents. One might argue that technologies are inherently neutral until animated by the intention and execution of users. On the other hand, the creators of IS may program constraints or pathways to force or encourage particular behaviors or embed (or hide) preferred choices. Once the technology leaves the developers' control, its features may be enacted with more or less faithfulness to the original design. Alternatively, it may retain its original configuration long after the developers have come to prefer other behaviors or choices. The authors address the communication role IS may play in helping stakeholders communicate their ethical concerns. They point to a number of examples where Internet-based information-sharing arrangements are used to help set standards, raise awareness, trigger action, and assess outcomes. In this article we are reminded of the potential for information systems to encourage ethical behavior and are presented with a set of questions demonstrating how this might be enabled by clarifying and distributing relevant information to a broad set of stakeholders.

Mohan, Pontis, and Alter [2013] present three extant case studies of how information systems have enabled micro-lending initiatives for the unbanked poor in contemporary rural India to scale. Although there are some 11,000 microfinancing institutions (MFIs) lending money to the poor at the bottom of the pyramid, over 90 percent of them are relatively small, with each serving fewer than 10,000 clients. In most cases, small loans are granted by MFIs to enable poor villagers to start and to grow entrepreneurial ventures to help lift themselves, their families, and their fellow villagers out of poverty. One of the limitations on the effectiveness of the majority of MFIs is the lack of personal contact they have with their clients. This article addresses the void in current IS literature dealing with the problems of the unbanked poor at the bottom of the pyramid, who by current estimates live on less than $2.50 per day and comprise some three billion persons, almost half the world's population. The three case studies all use a common business model called the "door-step banking model" as a means of reaching their clients. "Door-step banking" obviates the need for the poor in remote areas to travel to a bank for financial services. With a door-step bank, the MFI's loan officers travel to villages for disbursing the initial loan to clients and collecting repayments in

periodic installments. As described in the article, each of the three MFIs (SKS Microfinance, Equitas Microfinance, and Grameen Koota) used information systems in different ways to enable to their organizations to scale to 6 million, 1.3 million, and 400 thousand clients, respectively. Together, the three case studies illustrate the key role that information systems can play in addressing serious social problems by enabling creative approaches to scale.

Costello, Curley, and Donellan [2013] posit a fresh theoretical framework for the investigation of information systems (IS) enabled innovation. They note that, despite the fact that there is general agreement on the importance of IS-enabled innovation, and the countless examples of successes in the marketplace, their analysis of the literature suggested that IS explorations in innovation would benefit from an ecological framework. Their proposed framework is an adaptation of ecological systems theory (EST), which provided a new perspective for research in human development when it was introduced by Urie Bronfenbrenner in 1979. Their article translates the standard theory into an IS context and elaborates Bronfenbrenner's schema by developing a specific EST for IS innovation because the technological dimension is missing from the standard framework. The proposed framework provides a fresh perspective for researchers to investigate information systems innovation and, among other things, presents information systems innovation as a dynamic interactive process resulting from the encounter between people and their environment with its technological capability. After providing an overview of extant research in order to present the arguments and criteria for an EST framework, they refer to the work of a number of prominent ecological theorists and present the case for the suitability of Bronfenbrenner's work as a model for the IS domain. Their suggested adaptation of the standard model, however, accounts for two main issues peculiar to the IS domain: incorporation of technology and emphasizing the importance of collaboration in the IS innovation process. Finally, they build on the theoretical EST for IS innovation framework to propose an agenda for future research in terms of research directions, research themes, and study designs.

At the end of this project, we are confident that some new ideas have been presented in this special section. We hope that we have stimulated in those of you who might feel that these articles aren't "emergent enough" a great motivation to tell us what really is new and emergent with your own future *Communications of the Association for Information Systems* submissions.

ACKNOWLEDGMENTS

REFERENCES

Alavi, M. and D.E. Leidner (2001) "Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues", *MIS Quarterly*, (25)1, pp. 107–136.

Dibbern, J., T. Goles, R. Hirschheim and B. Jayatilaka (2004) "Information Systems Outsourcing: A Survey and Analysis of the Literature", *Database for Advances in Information Systems,* (35)4, pp. 6–102.

Fjermestad, J. and R.H. Starr (2000/2001) "Group Support Systems: A Descriptive Evaluation of Case and Field Studies", *Journal of Management Information Systems,* (17)3, pp. 115–159.

Lim, E.T.K., C-W. Tan, D. Cyr, S.L. Pan and B. Xiao (2012) "Advancing Public Trust Relationships in Electronic Government: The Singapore e-Filing Journey", *Information Systems Research*, (23)4, pp. 1110–1130, 1378–1383.

ABOUT THE AUTHORS

Fred Niederman serves as the Shaughnessy Endowed Professor of MIS at Saint Louis University. His research interests include global information management, MIS personnel, and using MIS to support teams and groups. Recently he has been investigating the integration of MIS functions after corporate mergers and acquisitions. He is a proponent of grounded theory and theory building as a way to enrich the MIS discipline and build intellectual content customized specifically to our field of practice. He has published more than one hundred articles in leading research journals and refereed conference proceedings. He serves on editorial boards for *Transactions on MIS, Journal of the Association for Information Systems, Communications of the Association for Information Systems, Human Resource Management, Journal of International Management, IEEE Transactions on Engineering Management,* and *the Journal of Global Information Management*. He has edited or co-edited special issues for *Communications of ACM, DATABASE, Journal of Global Information Management, Journal of Organizational Computing and E-Commerce and Human Resource Management*. He served as co-program chair for the 2010 ICIS conference in St. Louis, Missouri, is an active member in the MIS "senior scholars" and is proud to be counted as a member of the "circle of compadres" for the Ph.D. Project.

Don McCubbrey is a Clinical Professor in the Department of Business Information and Analytics in the University of Denver's Daniels College of Business. Prior to joining the Daniels faculty, he was a partner with Andersen Consulting/Arthur Andersen & Co. During his career as a consultant, he participated in numerous information systems consulting engagements in the U.S., as well as in several other countries in the Americas and Europe. He joined the Daniels faculty in 1984, where he was Chair of the Department of Management Information Systems from 1984–2001. At various times, he has been Director of the Colorado Advanced Software Institute, a co-founder of the Colorado Technology Association, Director of the Center for the Study of Electronic Commerce, co-project leader of the Global Text Project, and President of the University Faculty Senate. He has served on the Editorial Boards of *International Information Systems*, *The Journal of Strategic Information Systems*, and *Communications of the Association for Information Systems*. His work has been published in *Communications of the Association for Information Systems*, *Information Technology and People*, and *MIS Quarterly.*

Communications of the Association for Information Systems