Editorial Preface

Consolidation and Learning in IS: Managing the Research Knowledge Base

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Information systems as a discipline has gone through a number of growth phases. Having its origin in computer science and management science, it looked into management to develop its theoretical focus and managerial orientations, leading to management information systems (MIS) as a multidisciplinary field. MIS has looked into computer science and new technologies as the subject of its studies and has searched for theories in a number of disciplines, including management, social psychology and others for conceptualizing relationships among technology, people and organizations. IS research has now reached a maturity level that can afford to face interesting questions about its nature without undermining the existing diversity of perspectives within the field.

Rigor and Relevance. In 1999, MISQ published a number of commentaries by the leading researchers in the field on rigor and relevance in IS research. Taking their cues from a BusinessWeek (1990) piece critical of management research, Benbasat and Zmud (1999) comment on the importance of relevance in initiating research questions and in reporting the results. They argue that “[r]elevancy does not research needs to be carried out in a less rigorous fashion. In fact, mangers value and respect rigor (as it often proves to be a key discriminator between academic and consultancy contributions” [p. 5]. Benbasat and Zmud (1999) identify four dimensions of relevance: interesting, applicable, current, and accessible. The “interesting” dimension relates to the choice of research question and its importance to IS practitioners. The “applicable” dimension relates to the utility of results for practitioners, whereas the “current” dimension is the relevancy of the results to the current business issues. The “accessible” dimension has the focus on writing results that are understandable by practitioners. Based on the dimensions of relevance, they make nine recommendations, including the development of cumulative, theory-based, context-rich bodies of research.

In the same MISQ issue, Applegate (1999) poses the dilemma of the case-based field-study approach that may have a higher relevance to practitioners. Lee (1999) argues against the positivist approach as being the only choice of methodology and discusses the interpretivist approach as an avenue that could provide increased depth and relevance to IS research. Davenport and Markus (1999) take issue with the comment about lack of rigor in consultancy and argue that consultants have more direct access to businesses and hence their work has relevance and in some cases rigor. They recommend emulating research in medicine and law, which have stronger ties with their practitioners’ concerns and problems. Lyytinen (1999) points to the important role of textbooks in informing students (future practitioners) of IS research findings.

This lively debate with its points and counterpoints highlights the general
consensus on the required dual excellence in rigor and relevance in IS research. However, researchers may need to look into a variety of disciplines and practices to emulate the dual excellence, to adopt different approaches to uncover relevant results, and to rely on diverse outlets to report to and educate practitioners about the research findings.

**IS as Reference Discipline.** Another question about IS research is whether it is a discipline by itself and how distinct it is from IT-based research in other fields, such as management and marketing. Baskerville and Myers (2002) argue that IS has become a reference discipline of its own, and declare that using other disciplines as “reference” disciplines is out of date. While they support the multi-disciplinary nature of IS research, they state that IS is now a reference discipline of its own, and the theories in other fields could serve as “supporting” at best. Expanding on this perspective, Nambisian (2003) calls for an active role for IS as a reference discipline in exploring issues related to new product development.

**IT Artifact.** If we accept the premise that IS is now a reference discipline, then the question is how one can distinguish IS research from IT-based research in other fields. Benbasat and Zmud (2003) address this issue by arguing that the core of IS research has “IT artifact,” related to which are managerial, methodological, and technical capabilities, practices, usage, and impacts. In other words, the core IT artifact would differentiate an IS research project from those, say, in management or marketing. Orlikowski and Iacono (2001) shed more light on the role of technology in IS research. They observe that IS research “has not engaged deeply in its core subject matter—the information technology (IT) artifact” (p. 121). They categorize the conceptualization of technology in IS research into five views: tool, proxy, ensemble, computational, and nominal, where the last category denotes the absence of IT artifact in IS research. In their categorization of 177 published papers in Information Systems Research, in 1990-1999, Orlikowski and Iacono (2001) report that 25% of papers fall in the nominal category, leading to the call for engaging in core subject matter: the IT artifact.

From these informed commentaries, one can conclude that IS research requires dual excellence in rigor and relevance, which has its basis in theory and draws its content from the issues related to IT artifacts. It allows for multiple perspectives—positivist and interpretivist—and demands innovative ways of creating connections between research and practice by looking internally within the IS field or externally to other fields for emulating stronger connectivity.

Theoretical rigor requires the process of developing a common body of knowledge about theories that are developed from within the IS fields or are appropriated from other fields through applications and extensions. While such a common body of knowledge will dynamically evolve, anthologies and books on IS theories in which theories, measures, and their applications are discussed in detail will help in training future researchers. Furthermore, as the field advances and the number of theories increases, such collections will help researchers remain up-to-date and current, and may reduce journal pages that are now allocated to repeated reviews of well-known theories. More importantly, they provide a reference point that reduces the instances of misinterpretations in applying these theories. Some candidate topics in such collection may include the following theories and their related measures and applications: theories of adoptions, including various versions of technology adoption model; theories of organizational IT diffusion; theories of reasoned action and planned behavior; other
behavioral theories in IT adoption and use (such as expectancy-confirmation theory, trust theories, culture theories); theories in media and information richness; theories in IT success and satisfaction; structuration theory; fit theories (including cognitive fit, task-technology fit, and task-representation fit); transaction-cost theory; actor-network theory; and theories related to knowledge management.

The second part of rigor-relevance duality relates to bringing the industry and researchers together in identifying relevant research issues for new and old IT artifacts. National and international IS conferences need to take a stronger lead in rigorous and lively debates on research issues as one of their central functions. These debates not only should create a common sphere for the two separate worlds of academia and industry, they should also engage in the “ensemble” view of technology by helping researchers and practitioners come together in identifying social issues related to technology with a critical eye for promoting common goods.

The third axis of dual excellence is teaching IS methodologies. IS researchers have relied on methodology resources and courses for their analysis. Multiple perspectives on IS methodologies have created a need for anthologies and books on IS methodologies and their issues, concerns, shortcomings, and augmentations. While these collections may lack originality in that they will contain some basic topics common to all fields applying the methods, they provide a reference point for training, debate, and underlining major methodological issues that are important in the IS field. For example, developing new measures in IS research requires extensive reliability and validity checks as well as exploratory and confirmatory analyses. Most positivist model testing requires structural equations modeling (SEM) and partial least squares (PLS). There have been a number of journal papers on positivist methodologies, but they have not led to publication of textbooks and reference books that would aid in training new researchers and helping consultants engaged in IS research work. Similarly, there have been discussions on qualitative and interpretivist approaches in IS journals, but no reference texts have emerged with IS researchers as their main audience.

The forth part of rigor-excellence is training future researcher and updating the existing ones. While there have been a number of attempts at curriculum design for IS undergraduate and graduate programs, there has been little discussion on the contents of PhD programs. Although the lack of uniformity provides diversity needed for promoting multiple research perspectives, the discourse on the possible designs and contents of PhD programs provides an opportunity to identify and teach a common body of knowledge and to encode how to deal with its fast-changing nature.

In sum, as IS field matures into a reference discipline, there is a need to take a closer look at knowledge management within the field. While we have been active in creating new knowledge and disseminating it through journal publications, we have not adequately engaged in dialogues to organize and digest the salient theories, methodologies, managerial issues related to IT artifacts effectively.

In looking at the ontology for advancement of science, Heidegger (1962) has identified four ways of being, which are interpreted as “consolidation”, “learning”, “disposition”, and dialogue (Guignon 1983, O’Donovan and Roode 2002). While IS researchers are “disposed” to favor certain IS theories, methodologies, and practical relevance in research topics and outputs, they have not engaged adequately in dialogue to clarify these various dispositions and hence lack a “consolidation” of the
knowledge generated by research. “Consolidation holds together the already existing norms, conventions, standards and smooth work procedures and removes the necessity for the individual member to discover these each time anew” (O’Donovan and Roode 2002, p. 31). With consolidation comes “learning,” which we reflect on and consequently modify what is and find new ways to change it. In other words, consolidation allows us to see the whole and then reflect on how we can improve it. We need consolidation in IS theories, in methodologies used in IS research, in what we consider relevant research, and in IS research training. Such consolidation requires extensive dialogues about our diverse dispositions.

The suggestions on collections of theories and methodologies as well as forums for industry-academia interface are just a sample of approaches we need to take in promoting consolidation and learning. Researchers in IS have a number of resources that could facilitate consolidation and learning: (1) access to the central network: ISWorld.org, an infrastructure suited for dialogue and dissemination; (2) ease with and access to technology that makes e-books, e-journals, and e-exchanges acceptable media of discourse; (3) the awareness of the need for learning and dynamism in the face of rapidly changing technology and its social consequences; and (4) insight into the saliency of knowledge management in complex domains, such as those of IS research. All we need is the will to act.

References