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ON THE LEGITIMACY OF IS AS AN INDEPENDENT DISCIPLINE: RESEARCH THAT SETS THE FIELD APART

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ABSTRACT

Motivated by the continuing anxiety discourse within the IS field and the continuing disrespect IS researchers earn from scholars of other management disciplines, this essay discusses six areas in which IS researchers make unique knowledge contributions to management scholarship. More specifically, this essay suggests that information systems development, information systems adoption, organizational information systems innovation, group level resistance to IT implementations, the business value of IT, and Knowledge Management, among others, are all areas in which IS scholars can claim to contribute uniquely to the management body of knowledge. In so doing, this essay provides six robust arguments for IS scholars to concisely justify their field and research – and to be positive about the work they are doing. Perhaps even more importantly, this essay may motivate IS scholars to allocate their resources to topics that help increase the field's legitimacy.

Keywords

Introspection, Maturity, IS, Socio-Technical Phenomena, Legitimacy, Anxiety Discourse.

INTRODUCTION

When attending the Academy of Management meeting, a colleague and his contemporaries invite you to dinner. Including you, there are ten professors at the table, spanning a broad range of Management fields. Over dinner, one professor comments: "I heard that a Business School is planning to merge its entire MIS department with Management. Frankly, I think that's a good idea; I can't think of a single topic researched by IS faculty that is not covered in another Management discipline – only better." As your blood starts boiling, you compose your thoughts and think about what sets the field apart.

The IS field differs from other management disciplines primarily through its focus on socio-technical phenomena. While other fields examine either IT-related phenomena or social systems in isolation, IS research is concerned with phenomena that emerge from the interaction between the two (e.g., Baskerville & Myers, 2002; Lee, 2001; Orlikowski & Iaconno, 2001).

Yet, even as the study of socio-technical phenomena sets the IS field apart, it also places IS research in the heart of management scholarship. As pointed out by Agarwal and Lucas (2005), diversity and integration are major strengths of the IS field. IS research can transcend the traditional functional boundaries in organizations by adopting a holistic view of emergent phenomena. Consequently, management research as a whole, which is fragmented according to these traditional boundaries, might benefit substantially from the infusion of IS research into other management departments. More holistic management research could result. However, good reasons exist for continuing IS research separately. Consider the following examples of socio-technical phenomena that IS scholarship examines, thereby making unique knowledge contributions. We do not claim that these examples are all-encompassing; in fact, IS research in several other topic areas may also yield unique knowledge contributions. However, these examples were carefully chosen on the basis of the IT Interaction Model (Silver et al., 1995).

1. INFORMATION SYSTEMS DEVELOPMENT

One phenomenon IS researchers investigate from a socio-technical perspective is information systems development (ISD) (e.g., Lyytinen et al., 1998; Wallace et al., 2004). In recognition that both technical and social aspects together shape ISD success, Enid Mumford (1995) introduced socio-technical theory to the study of ISD. The social perspective focuses on concerns that are relevant to the behaviors and attributes of project members and to the social context in which the behaviors

of team members occur, while the technical perspective focuses on concerns that are relevant to the attributes of the ISD project itself and the technologies employed (Aladwani, 2002).

Compared to an isolated use of either one of these lenses, their integrated application to the study of ISD success can result in stronger theory with greater explanatory power. For instance, the use of a technical lens alone ignores project member behavior and social exchange processes in team member interaction with project technologies. This can lead to erroneous conclusions. Computer aided software engineering (CASE) tools constitute a classical example, where new IT was introduced into the development process to increase efficiency. While a technical lens alone would have indicated a tremendous success for these new tools due to their potential for facilitating systems development, only the socio-technical perspective could reveal why these tools did not increase ISD success to the extent expected. By examining how CASE tools interact with the social context, researchers gained a more complete understanding of the complex interactions involved in ISD projects. They learned that some team members such as programmers often view themselves as artists rather than engineers and feel that CASE tools remove the beauty of their work. Likewise, software engineers perceive these tools as a threat that could lower the knowledge barrier to enter their profession (Orlikowski, 1993).

2. INFORMATION SYSTEMS ADOPTION

While the above topic reveals that technical project attributes interact with the social context in shaping ISD success, the final system, once implemented, again interacts with a social context in creating individual and organizational impacts (Orlikowski & Robey, 1991). IS scholars uniquely study this latter social context as it pertains to the adoption of IT by individuals.

By applying a socio-technical lens, IS scholars found a variety of contextual factors that interact with IT in shaping adoption-related outcomes. These factors include, among others, a given individual's culture, affect, and personality characteristics such as computer self efficacy (e.g., Agarwal & Karahanna, 2000; Kappos & Rivard, 2008; Marakas et al., 1998; Thatcher et al., 2008). IS researchers developed the theory of IT culture-conflict, which suggests that individuals will limit their interaction with an IT if the values inherent in the IT are in conflict with the values held by the individuals (Leidner & Kayworth, 2006). They also found that perceived enjoyment associated with the use of an IT will increase individual's interaction with the technology (Van der Heijden, 2004). Further, IS scholars developed a deep understanding of how individual differences shape individual's use of an IT. For example, they indicated that an individual's belief in her ability to interact with a computer will influence the frequency of this interaction (Compeau & Higgins, 1995). IS researchers also learned that the adoption context moderates all these relationships between individuals and IT. Some of these relationships are stronger in the context of initial acceptance, while others, for instance the one between IT and affect, tend to be stronger in a post-adoption context (Jasperson et al., 2005).

Perhaps the unique fashion in which IS scholars study the use-related outcomes of IT becomes especially evident in the context of electronic commerce. While a variety of fields study e-commerce with an emphasis on either IT or online shoppers (e.g., economics), IS research examines how buyer interaction with IT shapes buying behavior (e.g., Pennington et al., 2003). Thus, IS research is in the unique position to explain under what technological conditions consumers tend to shop online.

3. ORGANIZATIONIONAL INFORMATION SYSTEMS INNOVATION

Complementary to the individual adoption of IT, IS researchers examined the rich interactions involved in the "upstream" organizational innovation in IT. As have scholars in other disciplines, IS researchers have relied on Roger's (1995) diffusion of innovation theory to understand the adoption and diffusion of IT across enterprises.

However, in contrast to the innovations studied in other management fields, IT innovations strongly interact with the organizational context to which they are applied. Specifically, they link support and core processes within organizations (Swanson, 1994). This link results in innovation spawning, a concept that refers to a highly interactive process in which less strategic innovations may spawn more strategic ones and vice versa. By applying a socio-technical lens, IS research further suggests that the degree of business orientation of the IS unit impacts the strategic importance of innovations, thereby influencing the innovation's organizational outcomes (Chan et al., 1997; Swanson, 1994).

The unique dimension added by the interactions between technical and social systems to the study of organizational innovation becomes particularly apparent when disruptive information technologies are about to be introduced into the workplace. Such technologies can lead to organizational conflict by changing important structures within the social context (e.g., the power structure) (Sherif et al., 2006). The next topic will elaborate on this phenomenon.

4. GROUP-LEVEL RESISTANCE TO IT IMPLEMENTATIONS

Group-level resistance to IT implementations is another – though related – topic, which IS scholars study from a socio-technical perspective. Group-level resistance arises when whole departments or groups within an organization deliberately refrain from adequately using a newly introduced system.

Markus (1983) uncovered the politics inherent in technology resistance by applying a socio-technical lens. She identified that IT can change the power structure within an enterprise, thereby leading some groups to embrace a new technology and others to object to it. Only the IS field's unique focus on the interaction between IT and the social context could identify a change in power structure as both a consequence of system implementation and a reason for system resistance. Indeed, her research indicated that the examination of technical system aspects alone would have resulted in a merely superficial understanding of the conflicting views on the technology. Potential explanations would have included different perceptions regarding, for example, system deficiencies. Likewise, the isolated investigation of the social context would have identified superficial factors such as a differential disposition to resist change in general or different cognitive styles across groups.

5. THE BUSINESS VALUE OF IT

IS scholars are also in a unique position to generate knowledge on the business value of IT. By examining the interaction between organizational and technological resources, they can deepen understanding of the conditions under which payoffs to IT investments can be expected (Melville et al., 2004; Wade & Hulland, 2004).

By using the resource-based view of the firm (RBV) (Barney, 1991; Wernerfelt, 1984), IS scholars learned that an examination of IT investments from the perspective of a technological imperative is unlikely to show significant IT business value. According to RBV, competitive advantage can be achieved when resources are valuable and heterogeneously distributed across competing firms. This advantage can be sustained when resources are also imperfectly mobile (Mata et al., 1995). According to this logic, IT assets themselves are of limited value since they are widely available (Mata et al., 1995). Some even call them a commodity (Carr, 2003).

Instead, IT value arises from the interaction between IT and other organizational resources. This interaction can result in differential payoffs to IT investments across enterprises since IT can be interpreted flexibly (Orlikowski & Robey, 1991). IT can interact with different organizational resources across enterprises or it can interact with similar resources in different ways. Because of this flexibility, interactions between IT and other resources are likely to be heterogeneously distributed across competing firms. Such interactions may further be unlikely to be imitable since synergies arising from a complementary set may not be obvious to competitors, thus providing at least a temporary and likely a sustained competitive advantage (Tanriverdi and Venkatraman, 2005).

Following this logic, IT can lead to competitive advantage on its own when IT assets interact with IT capabilities, thereby creating differential value and causal ambiguity (Aral & Weill, 2007; Tanriverdi, 2006). For example, firms with differential levels of business-IT strategic alignment are likely to reap differential benefits from the same investment level (Chan et al., 2006). As becomes apparent, only the unique socio-technical focus of the IS field allows such knowledge to be created.

6. KNOWLEDGE MANAGEMENT

Knowledge Management (KM) initiatives constitute a good example for phenomena that lend themselves to IS research. Because IT and the social context can interact in shaping KM success, they need to be examined together. On the one hand, studying KM without an explicit consideration of knowledge management systems (KMS) is of limited value. This can be argued since KMS can substantially extend human and organizational information processing capacity (Davenport & Prusak, 2000; Galbraith, 1974), which strongly constrains KM. On the other hand, the social context also constrains KM. Organizational cultures and individual traits can influence the transfer of knowledge (Alavi & Leidner, 2001). For example, cultures of knowledge sharing will likely be associated with higher levels of knowledge transfer than cultures of knowledge hoarding.

Consequently, the study of the interaction between a KMS and an organizational context likely yields particularly rich insight into organizational KM. For instance, a KMS may hardly extend information processing in an organization that values knowledge hoarding. At the same time, an organizational emphasis on knowledge sharing is of limited value if no infrastructure is available to facilitate the transfer of knowledge. By examining both aspects together, IS scholars can learn under what technological conditions a particular social context may be effective and vice versa.

CONCLUSION

By employing a socio-technical lens, IS scholars uniquely study a variety of phenomena concerned with how organizations make IT investment decisions, how IT systems are successfully developed, how they are introduced effectively with minimum group-level resistance, and how they interact with individuals as well as other organizational resources in shaping organizational outcomes. However, not only do IS scholars uniquely study each of these topics in isolation, but they also uniquely examine interactions between the topics. For instance, Orlikowski and Robey (1991) indicate that the extent to which the social context associated with systems development is aligned with the social context associated with system use will influence firm-level IT impacts. An example for this interplay between research streams can be derived from the theory of IT culture conflict (Leidner & Kayworth, 2006). Given that culture is largely unconscious (Leidner & Kayworth, 2006; Myers & Tan, 2002), an IT system designed by people who value collectivism will likely hold collectivistic values. If the individuals who are bound to use the system value individualism instead, limited impacts from this IT can be expected.

These examples show that IS scholarship has strong, unique contributions to make to the Management body of knowledge. We hope that this essay facilitates reaching a consensus on what constitutes meaningful IS research; at the minimum, this essay provides robust arguments for IS researchers to concisely justify their field and research

ACKNOWLEDGMENTS

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