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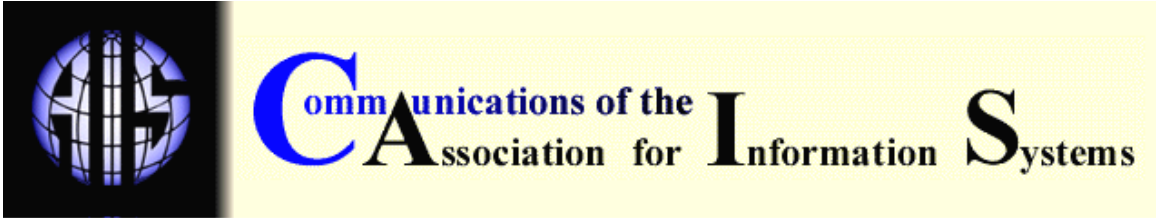
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## THE IS CORE –VI: FURTHER ALONG THE ROAD TO THE IT ARTIFACT

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### ABSTRACT

In one of the recent additions to the IS identity and diversity discussion, Alter [2003] questions the definition and relevance of “IT artifact” as defined by Benbasat and Zmud [2003]. In terms of definition, we believe that there is no substantial difference between Alter’s work system construct and IT artifact. However, when it comes to enhancing the relevance of and guiding the diversity in IT research, Alter’s boundary based approach may be less powerful than a core, IT-artifact based approach. Alter’s focus on systems, nonetheless, has its merits and therefore we suggest a possible convergence of Alter and Benbasat and Zmud’s constructs.

**KEYWORDS:** IT artifact, core, IS discipline, diversity, IS identity

### I. INTRODUCTION

The still-unresolved debate about the identity and legitimacy of the Information Systems (IS) discipline is ongoing. Benbasat and Zmud [2003] and Alter [2003] entered the fray with suggestions about how the IS discipline should deal with research diversity, the role of reference disciplines, and recognizing appropriate phenomenon of interest in the discipline. To establish identity for the IS field, Benbasat and Zmud [2003] herald the “IT artifact” as a way of defining the intellectual core and, thus bringing more focus and structure to the discipline. They conceptualize the IT artifact as the

*“application of IT to enable or support some task(s) embedded with a structure(s) that itself is embedded with a context(s)” (p. 186).*

Alter [2003] responds to Benbasat and Zmud’s proposal by arguing that the discipline should sidestep the IT artifact concept, and instead, use the “systems in organizations” concept that he proposes. He also addresses the diversity issue by outlining the boundary for IS research in various terms including distance from the discipline’s core.

Alter shares Benbasat and Zmud’s concern about IS research:

*“under-investigating phenomena intimately associated with IT-based systems and over-investigating phenomena distantly related with IT-based systems.”*

However, he illuminates problems with Benbasat and Zmud's definition of the core and prescribes an alternative approach to determining what legitimately falls within the spectrum of IS research. We think his prescription may not be effective unless used with some criteria to determine whether an investigation is "intimately" or "distantly" related to IT-based systems. Clearly the differences between the core and the boundary approaches are distinct and not obviously easy to reconcile. Yet, we believe that the overlapping ideas can be refined and integrated to help guide the field in defining itself.

## II. IT ARTIFACT

Benbasat and Zmud suggest that

*"the hardware/software design of the IT artifact encapsulates the structures, routines, norms, and values implicit in the rich context within which the artifact is embedded." (p. 186)*

Benbasat and Zmud also propose a nomological net as the basis for determining the relevance of IS research. Alter infers an inconsistency based on a subtle difference between IT application and usage that we do not think substantially affects the power of the IT artifact construct.

Alter also questions the definition of IT artifact. He quotes four different dictionary definitions of the word "artifact" and then projects each onto the term IT artifact as the starting point of showing the term's ambiguity. However, it seems obvious that Benbasat and Zmud do not intend to use the word "artifact" in the sense of the third and fourth definitions. Even Alter himself uses only the first two definitions. Hence, we find Alter's discussion distracting since a prudent reader should be able to determine the connotation of IT artifact based on the context.

The word artifact carries multiple meanings. In the narrow sense, it refers to the more concrete IT application. In the broad sense, it is the aggregate of four elements – IT, task, task structure, and task context. The issue is not about which is the correct definition. It is about whether the concept can serve as an effective instrument to guide us in assessing the relevance of an IS study. To dissipate possible misinterpretation, perhaps Benbasat and Zmud should qualify the definition of IT artifact based on this two-fold meaning. Doing so will lead to affirmative answers to all the questions Alter raises in the section titled "Giving up on the IT artifact."

Alter also raises the issue that parameterized or customized software may not encapsulate, and may actually contradict, the "routines, norms, and values." However, by Benbasat and Zmud's definition, the IT artifact fully encapsulates the context. The possible contradiction Alter alludes to may, in fact, reflect the contradiction within the various routines, norms, and values he specifies. It is hard to assume that the context is homogeneous and void of any conflicts or contradictions within and/or among the routines, norms, and values. On the contrary, contradiction and conflicts are more likely to be the norm than exception. One purpose of IS research is to explore the underlying reason for these conflicts and contradictions, and to use the paradoxes that they reveal to develop IS theory.

As Alter demonstrates with his Table A1 and Table 3, there is no substantial difference between the concept of IT artifact and his work system concept. His terminology is merely a matter of rearrangement and re-categorization, which is the result of different ways of examining the same set of criteria to define the core of IS research. Rather than introduce a new term to an old discussion, perhaps it would be better to refine the term that currently surfaces and resurfaces in the debate [Orlikowski and Iacono, 2001; Weber, 2003]. In particular, perhaps it would be better to refine what IT artifact means. The definition can be expanded to explicitly include the systems concept that is absolutely central to the IS discipline.

### III. CORE VS. BOUNDARY

Although Benbasat and Zmud's IT artifact does not appear to differ much from Alter's work system, the two constructs play very different roles in defining the discipline. Benbasat and Zmud propose the use of IT artifact to gravitate IS research toward a core that is central in presenting IS as a distinctive discipline. In contrast, at least with respect to the diversity issue, even the work system concept takes a back seat in Alter's discourse. Alter demonstrates a strong aversion to some contemplated damages that a relatively uniform core may inflict upon IS research. In particular, he suggests that an IT artifact approach may lead to a techno-centric view, which probably will be as detrimental to IS research as lack of focus. His prescription for boosting IS research, therefore, is to maximize diversity in a field that is only loosely and nebulously bounded.

Thus, the value and applicability of Alter's boundary to IS research is dubious due to the amorphousness of the boundary. Alter provides a rather comprehensive map of this boundary in his Table A2. His disclaimer, "preferences about which specific situations to include or exclude are too detailed and subjective to pursue here," ironically forebodes what is likely to happen and renders his boundary map weak in providing guidance for promoting IS research.

As Alter notes, some particular categories in Table A2 might fit better into other disciplines such as computer science, organizational behavior, operations management, or economics. For instance, the inclusion of the category "importance of workarounds by suppliers and buyers in keeping supply chains operating" (Row: Interorganizational work systems, Column: Unplanned adaptation and change) does not always seem to pertain to IS. The upper-left-most cell, "Theoretical understanding of privacy," in and by itself, does not seem to belong in this table. However, if research in "theoretical understanding of privacy" involves an IT-dimension, e.g., online privacy, the whole picture changes. By the same token, if the "workaround by suppliers and buyers" is examined as a critical part of an information system, rather than building a new warehouse to improve distribution, then it becomes a relevant, though not necessarily core, issue.

When used in anecdotal forms such as Table A2, Alter's prescription often does not provide much guidance or definitional power. As technology continues to advance and innovation to flourish, IT is destined to transform more and more aspects of societal, organizational and personal life in ways that we cannot even imagine today. Constantly redrawing the boundary will prove to be a futile task. The fluid boundaries are bound to expand based on Alter's definition, and yet this expansion offers little promise of assistance in improving the relevance of IS research. In contrast, the core approach based on the IT artifact is more robust because it offers less guesswork and a more definable scope.

To be sure, a concentrative IT artifact perspective that goes from the boundary toward the core may also err by proving too fluid, especially if the focus is on specific technologies. Nevertheless, the concentrative nature ensures that errors do not carry the research too far from the discipline's core. In comparison, the centrifugal tendency of Alter's boundary allows for more ambiguity and inclusion of irrelevant topics. Although the boundary helps us define a germane area for research by reducing the errors of inclusion, it does not say anything further about what is most critical. The core is what gives us the focus by reducing errors of exclusion. The IT artifact construct itself is meant to assist in defining that core and in reducing errant, irrelevant endeavors.

### IV. DIVERSITY

Alter's boundary is closely related to his view of diversity in IS research. He embraces diversity as a way of guarding against a detrimental narrowing of focus of acceptable research topics in the IS discipline. He seems to be highly wary of a techno-centric view of IS research that the IT artifact approach may cause. However, this outcome may not materialize. On the one hand, as shown above, the IT artifact in essence is synonymous with Alter's work system concept. Thus it should not be deemed automatically to imply a narrow, techno-lens look at the world.

On the other hand, an IT-centric view, at a prudent dosage, may help ensure the uniqueness of the IS discipline's contribution to this world --- hence the legitimacy of the discipline. Alter argues that an IT-centric worldview is "counterproductive for describing and understanding real world situations in which IT is applied." This is like saying that a physics-centric worldview is counterproductive for understanding physical phenomena or that an accounting-centric view is counterproductive for accounting issues. Every discipline is born to examine and is expected best to explain phenomena in its "realm." With this expertise inevitably comes its price, i.e., its limitation and possible bias. Expecting a discipline to adopt a purely neutral, "impartial," worldview is the same as expecting American, German, or Chinese people all to speak Esperanto.

In part, the IS discipline owes its legitimacy to the IT community. It is really hard to imagine an applied discipline, such as IS, existing without its related field in the practitioners' world. The discipline would become a castle in the air. Its contribution to meaningful knowledge production, if not completely annihilated, would be a relic at best.

Certainly diversity is conducive for creativity, instrumental for improving the rigor of IS research, and critical, in the past and at present, for avoiding myopia and tunnel vision in IS research. However, diversity without aim is not much better than no diversity at all. The status of current IS research, which gave rise to the ongoing debate in the first place, is that the fledgling IS discipline is still seeking its identity and legitimacy. Therefore, the priority should be placed on broadly proving its relevance and value in knowledge production. For that, Robey's [1996] "disciplined diversity" is the most suitable solution. It ensures that we channel diversity along the aims of IS research, while at the same time reducing the discipline-centric tendency about which Alter is rightly concerned about.

## **V. DISCIPLINE IN CRISIS?**

Like other fledgling disciplines, IS researchers are struggling with the field's identity. This introspection is no doubt fueled by current enrollment drops in IS courses and programs and fears of the lasting harmful impact of offshore outsourcing. Alter notes that identity crisis is not a new topic, concludes that the IS field's diversity is a source of strength, and suggests that the discipline may be engaged in the wrong debate. He suggests that the field needs to be more actively involved in identifying where it can add value to its constituents and contribute to the overall body of knowledge. For example, if practitioners saw greater value in our research, they would be more willing to fund it and participate in it. If students saw greater value in IS programs and course offerings, our enrollments might not be dropping as precipitously. In addition to adding value and contributing to knowledge, we would like to add a focus that is not directly addressed in either the Alter or Benbasat and Zmud papers: Perhaps the best way for the IS discipline to end its identity crisis is to develop a healthy set of theories that can be used to help its constituents better understand and deal with the dynamic technological environment in which they find themselves. If the IS discipline were stronger theoretically, it would not need to borrow so extensively from reference disciplines. In summary, perhaps we, as IS researchers, need to rededicate ourselves to developing theories in the areas of IS expertise that we can claim as our own.

## **VI. "SYSTEMS IN ORGANIZATIONS" PROPOSAL**

Alter proposes the term of "systems in organizations" as the umbrella terminology for defining IS research and distinguishing it from other disciplines. To some extent, Alter's systems in organizations concept has merit. After all, a lot of IS research is about systems. It is also highly likely that Alter touched base with the IS research core with his proposal. The problem is that the term may too broadly define the field. Not all systems may be appropriate subjects of study for the IS discipline.

Perhaps the more pragmatic solution is for the Alter and Benbasat and Zmud concepts to converge. "IT systems in organizations" may be a better term to describe the core of the IS discipline. The modifier "IT" qualifies the term to make manifest where IS research's primary interests lie, who our constituents are, what differentiates IS research from *any* research, and what distinguishes the subject systems of IS research from *any* systems. The word "systems," as Alter deftly demonstrates, is an integral concept that encompasses the expertise of IS research. "Organizations" defines the context for the study of IT systems. While organizations may define the nature of the core, it is also important for IS research to explore such societal impacts created by IT as the digital divide, privacy invasions, and security issues at a societal level, even if the core does not. That is, the boundaries of IS research must encompass societal issues. Hence, we argue that the term "IT systems in organizations" suggests diversity in IS research questions while preserving the discipline's focus on the core.

## VII. CONCLUSION

Benbasat and Zmud and Alter share similar concerns and thoughts about what IS research is about. We believe that the differences between their constructs are more a matter of semantics than an incompatible view of the world. The coalescence of their constructs perhaps can address the issue better than either of them individually. Where their views differ widely, however, is in the approach to defining the field. Alter suggests a "boundary-first" approach that we think is difficult to implement. We believe in starting with the core, as Benbasat and Zmud propose. Like both authors, we acknowledge that diversity is the lifeblood of the discipline's survival. Since diversity is difficult to manage, we believe that Robey's disciplined diversity, applied from the core out, along with a healthy dose of good IS theory, offers a viable approach to keeping our discipline alive and vital.

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*Editor's Note:* This article is the sixth in the series titled *The IS Core*. At the time of publication, the papers in this CAIS series included Articles 31 through 41 and the editorial in Article 42. These articles were motivated by Benbasat and Zmud [2003] in the *MIS Quarterly* and by Article 30 [Alter 2003] in this journal. The article was received on October 17, 2003 and was published on November 24, 2003.

## REFERENCES

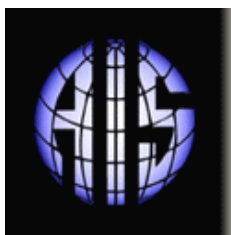
- Benbasat, I. & Zmud, R. (2003). "The Identity Crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties," *MIS Quarterly*, (27)2, June, 183-194.
- Orlikowski, W.J. and C.S. Iacono (2001). "Research Commentary: Desperately Seeking the "IT" in IT Research – A Call to Theorizing the IT Artifact," *Information Systems Research*, 12(2), 121-134
- Robey, D. (1996). "Research Commentary: Diversity in Information Systems Research: Threat, Promise and Responsibility," *Information Systems Research*, (7)4, 400-408.
- Weber, R. (2003). "Still Desperately Seeking the IT Artifact," Editorial, *MIS Quarterly*, 27(2), June, iii-xi.

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