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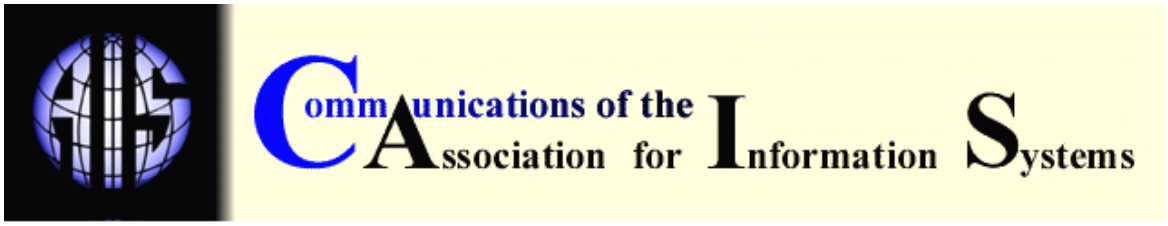

IS RELEVANCE: MYTH OR REALITY?

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ABSTRACT

The question of relevance of the IS discipline is critically important. The issues at hand are: Has the IS discipline fundamentally changed the way we perceive the world? Have the contribution to scholarly research in IS in any way shaped the way we evolved and continue to evolve as individuals and organizations? Who leads whom between academic research and industrial innovations? Are there symbiotic synergies between the two or are they traveling on separate tracks oblivious of the existence of on another?

The IS field is unique compared to other disciplines when viewed in the light of these questions. First, the time gap between research and practice is very narrow (unlike other, comparable disciplines such as computer science and management science where research is mostly way ahead of practice) and the two alternate in leading one another. The relevance question arises only when this gap widens either laterally or linearly, and is unique to IS. Second, because the IS field grew out of the efforts of individuals from several other disciplines, its foundations rest on its interdisciplinary thrusts. Third, given the revolutionary impact of IT in contemporary times, these thrusts have to be tempered with the realism borne out of practice. In this regard, IS is faced with tremendous opportunities, leverages, and challenges. Our thesis is that IS research is not a myth, includes several seminal contributions that basically altered our views of the world, and has a rich and promising road ahead.

I. INTRODUCTION

The current debate about the relevance of the IS discipline to current and emerging IS/IT practices in industry is both critically important and thought provoking. The IS community should indeed be thankful to Detmar Straub who raised this issue about Deepak Khazanchi's survey by airing his profound feelings regarding the state of IS research and practice. While one may or may not agree with his remarks, they served the remarkable purpose of engaging the community in a soul-stirring debate, honest and deep reflections, and a critical review of what has been accomplished as well as opportunities and challenges in the road ahead. The purpose of this communication is to address these crucial elements.

II. SOME WORKS OF LASTING IMPACT

At the outset, it is my firm belief and conviction that the IS field definitely made seminal contributions to both IS theory and practice. At this point, a distinction between a *field* and its *community* is important. While the field encompasses the discipline and its concepts - both abstract and physical - the community is the people who develop the discipline. Although in general these two are congruous, there can be great differences between them because people

who are not exclusively identified with a field could make significant contributions to it. To cite some examples:

1. While database systems are considered as part of the IS discipline, significant contributions to databases came from the computer science community;
2. A large number of researchers in the operations research community made numerous contributions to areas such as heuristic search in artificial intelligence, computational complexity theory, and data mining, all traditionally associated with the computer science field.

The distinction between a field and its community is especially wide in the IS case: areas of IS cut across many disciplines and researchers from numerous disciplines made significant contributions to the many facets of the IS field. In fact, the people associated exclusively with IS - as IS professionals by job descriptions or titles - constitute a subset of the entire community that is either directly or even tangentially associated with the field. So the question is: are we concerned with the accomplishments in the IS field as a whole, or are we simply restricting ourselves to the contributions of an exclusively identifiable academic IS community? In the following discussion, I take the broader view and address the IS field as a whole.

Although the IS field is younger than comparable fields such as computer science, management science and some of the related social sciences, several path-breaking works laid its foundations over the years. These seminal works are of lasting impact, and either fundamentally changed the way we view the world or created immensely novel opportunities for research and practice in the last few decades. The following is a partial list of some of these works, subject to my personal awareness of the field. These works are presented in sequence only because a sequence has to exist; it neither implies nor reflects an ascending or a descending order of superiority among the authors cited and their works.

- Simon - without a question I believe his contributions are seminal to our field; we call him our own although I am not sure whether economists and computer scientists (and numerous other research communities where Simon has contributed) will agree with us.
- Shannon's mathematical theory of communication; DeLone and McLean's oft-cited paper on IS success bases its IS success model on Shannon and Weaver's theory of communication.
- Weiner's work in Cybernetics.
- Scott-Morton's work in describing fundamental concepts of MIS
- plus his work on DSS later with Keen.
- Ackoff's work in similarly describing the fundamental concepts about systems and MIS
- Keen's work on fundamental MIS concepts; plus his work on DSS
- ("Interactive Computer Systems for Managers: A Modest Proposal", Sloan Management Review, Fall 1976, pp. 1-17). The field of DSS has come a long way since then and one of the most important areas of impact is in the current B2B e-commerce solutions
- Chen's work on ER modeling revolutionized our approach to systems analysis and design
- Codd's work on Relational Databases (although computer scientists will claim his work to be seminal to their field rather than to the field of MISalthough his theory of RDBMSs has shaped Information Systems to what they are today).
- Miller's work on cognitive limits which became the basis for all our
- modeling schemas in IS.
- Newell and Simon's work on human information processing.
- Tversky and Kahnemann's work on decision making under uncertainty (once again psychologists may call this work seminal in their field)
- Checkland's work in soft systems thinking
- Mumford's work on socio-technical systems
- Churchman's work on the systems theory and the philosophical foundations of information systems
- von Bertalanffy's work on general systems theory

- Langefors' work on general information systems theory
- Weinberg's work on systems theory, software engineering, and software quality
- Brook's work in software engineering and project management (The Mythical Man Month; No Silver Bullet articles are truly foundational)
- Rockart's work on Critical Success Factors.
- Couger's work on systems methodologies, computer personnel, and creativity
- Tiechrow's work with Konsynski, Nunamaker, and Welke on CASE technology

III. OPPORTUNITIES, LEVERAGES AND CHALLENGES

Information systems (IS) are emerging as critical resources to be leveraged for organizational productivity in most business, social, and economic enterprises. The success of an enterprise is largely dependent on how its information resources are designed, operated, and managed. The major advances in Information Technology such as client/server systems, the Internet, and the desktop/multimedia computing revolution elevated information systems to a position of strategic importance in the modern competitive enterprise. Consequently, research and innovation in IS/IT acquired new levels of significance in academia, industry, and the consumer community.
Increasingly global markets, mobile work forces, and variable consumer needs are driving developments towards a next generation of enterprises. Some key characteristics of next generation enterprises are:

- knowledge management and knowledge work across networked organizations;
- insensitivity to time and distance barriers by electronically gluing organizations with survivable communication networks;
- extended virtual negotiations and deal making in electronic markets;
- management of a variety of software processes underlying interactive customer value management and zero-latency supply chains; and
- ensuring data quality at the enterprise level making use of a variety of data management and application tools.

In light of the above observations, research efforts of academicians and industry specialists can be broadly classified into two types:

- *organizational solutions* and
- *technology advancement*.

The baseline for these efforts constitutes the organizational/business problems and requirements that motivate research, and the state-of-the-art tools and techniques of IT and various disciplinary interfaces that facilitate solution development and innovations. These efforts lead to the development of generalizable organizational solutions mostly from the academia, more specific business solutions mostly from industry, and advancements to the state-of-the-art IT from both of the communities. In some respects the IS/IT discipline is unique with regard to the interdependence between academic research and industrial practice. The innovations in industry sometimes followed those in the academia (as in object technology, for example) and sometimes provided the lead to academic pursuits (as in client/server middleware solutions, for example). The accelerated progress of the IS/IT field is due to the synergies created by the deep coupling of the market *pull* from industry and the research *push* from academia. This push-pull gives IS/IT a distinct character different from many of the traditional disciplines where the research push and market pull forces interacted differently in generating synergies.

The recent growth in information technology gave rise to several new IS research issues. The roots of this development can be traced to the PC revolution of the early 80's, the arrival of local area networks leading to distributed computing/communication systems, wide area networks that began to link computers across the world, the arrival of the Internet, client/server information systems, several ancillary technologies and applications that grew around these basic technological innovations, and a daunting array of commercial products and solutions addressing

specific as well as generic user needs. As a result, new avenues of IS related research that are critical, exciting, and challenging have arisen. Some examples of these numerous research issues are: distributed systems configuration, interoperability among heterogeneous platforms, infrastructure planning, technology standardization, and several applications of technology that came to the forefront of IS research. Much of the cutting edge IS/IT research occurs at the interdisciplinary interfaces leading to novel systems and technologies for various application domains.

IV. CONCLUSION

Typically, the philosophy and research orientation of research communities and their research practices are inextricably tied together. While researchers sometimes tend to focus their efforts along the lines of the orientations of their communities, the orientations themselves evolve and grow with the developments in the field. The IS profession witnessed significant strides in the practical world and research appears to follow these developments. This current trend is the reverse of such trends in other fields where research usually is way ahead of practice. The primary reasons for this reverse trend are the rapid advances in IS technology and the need for adequate support from research communities and journal outlets championing efforts to bridge the gap between practice and academic research. Little of the research and innovation work emanating from industry find their way to academic research outlets. Problems and solutions are common daily encounters in the real world, and some of this work is truly worthy of publication in good research journals. Both success stories and lessons learned from the real world have much to contribute to the research community, and very few of these are currently reported.

In summary, my thesis is threefold:

1. No doubt, seminal contributions have been made in the IS field, albeit from people from a variety of allied disciplines,
2. The IS community should leverage interdisciplinary capabilities and enhanced interactions with industry to create works of lasting impact to both theory and practice, and
3. The opportunities for such leverage are enormous, in spite of the challenges ahead. So, the question of myth doesn't arise, as reality looms large!

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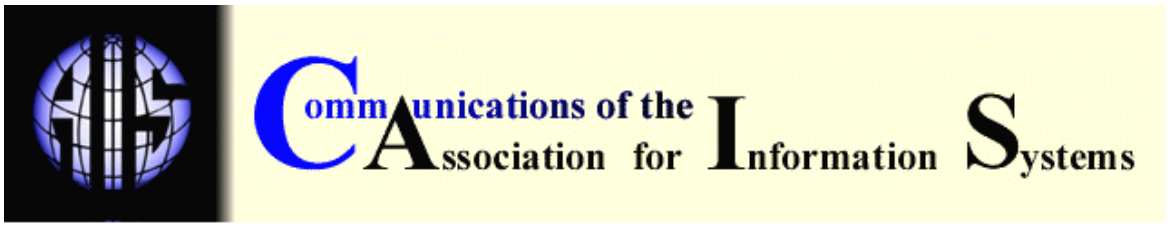

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