

"Rigor and Relevance in IS Research: Redefining the Debate and A Call for Future Research"

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Two Alleged Gaps between Research and Practice

The issue of whether academics address practitioner concerns in their research and whether they influence practice is a long standing issue that stems back to the early days of business schools. This debate can be distilled into two alleged gaps. The first gap relates to the choice of topics or themes that researchers tackle and what practitioners deem to be central to their needs.¹ The second alleged gap relates to whether research conducted by academics is made accessible to and is actually used by practitioners.² The terminology that best captures these two points (Straub and Ang 2008) can be stated as:

1. topic usefulness, and
2. knowledge transference.

Let us deal with these sequentially.

Alleged Gap #1: Topic Usefulness

One need only glance at the business literature before encountering assertions that the topics that scholars study are not useful or relevant to practice. Hyatt et al. (1997), for example, see a gap between scientists and practitioners, with researchers not seeing value in practitioner studies and practitioners not believing that academic research provides relevant solutions. Woodman (1993) uses the phrase "major schism" to describe this alleged gap.

But assertions are not proof in themselves. As scientists, we need evidence that the topics that are chosen for scientific investigation are not reflective of the needs of practice. While it may be politically correct to be a Cassandra on this issue, it is neither wise nor logical to adopt this viewpoint without rigorous proof

¹ We believe that this question is typically framed so as to find large gaps, as for example, focusing on whether practitioners read scholarly journals. Rynes (2007), for instance, reports on a forum that assumes that the only avenue of influence comes through written forms of communication.

² A third gap would be the lack of knowledge transference from practitioner journals to academics, but we do not deal with this question here.

that there is, indeed, such a gap (or gaps).

Alleged Gap #1: Publication in Different Journal Types as Surrogates for Practitioner and Academic Interests

One of the ways scholars have studied topic relevance is through the analysis of different types or classes of journals so it is important that we develop this next as a basis for our later reasoning. Journals have been typed into three broad dissemination classes based on audience and methodology (Adler and Bartholomew 1992). The three types are: (1) "academic," (2) "practitioner or professional," and (3) "academic-practitioner." First, "academic" journal articles are typically written by academics for academic; they often do this by testing theories, supported by validated research procedures (Julien, 1996). Second are practitioner journals which target the practitioner audience and written by journalists, consultants, management headliners, or professional writers. The overwhelming focus of these journals is practical issues (Julien, 1996). Written by either academic-savvy practitioners or practitioner-savvy academics, "academic-practitioner" journals aim for the professional audience (Adler and Bartholomew, 1992). See Appendix A for examples of journals that fall into each of these categories.

The assumption that those studying topic usefulness is that practitioner journals are close surrogates of the interests of practice. By the same token, published academic research is the metric for whether these topics are taken up by the academic world. These seem like reasonable surrogates, although, as we shall shortly see, other prefer surrogates for practitioner topical interests such as CIO surveys.

Alleged Gap #1: Evidence for Topic Usefulness

The early empirical literature on topic usefulness has been mixed. Alavi and Carlson (1992) analyzed 900 academic and academic-practitioner articles in the IS literature and concluded that IS scholarship was relevant because over a third of the 900 articles they catalogued were "devoted to describing and illustrating how...MIS concepts and models could be applied" (p. 56). In 1994, however, Szajna contended that academic research does not always align well with key IS practitioner concerns. To demonstrate this, she matched published scholarly research topics to the key topics identified in three CIO surveys published in *MIS Quarterly* in 1984, 1987, and 1991 (Dickson and Nechis, 1984; Brancheau and Wetherbe, 1987; Niederman, Brancheau, and Wetherbe, 1991). Using the Alavi and Carlson (1992) benchmark and coding 1600 articles published in a selection of IS journals, she analyzed the ten-year period from 1984 to 1993. The journals coded included: *ACM Computing Surveys*, *Communications of the ACM*, *Computer (IEEE)*, *Decision Science*, *Harvard Business Review*, *Information & Management*, *Information Systems Research*, *Journal of MIS*, *Management Science*, *MIS*

Quarterly, and *Sloan Management Review*. Whereas she found significant relationships between research topics and practitioner interests in 1984 and 1987, these linkages were not significant in 1991. If we view the glass as half full (rather than half empty), one would have to say that two-thirds of her tests indicate that IS research is relevant, but that in the last period she examined the test does not.

Szajna's results (1994) would be more troubling if there were not compelling evidence that IS scholars have always addressed the single most persistent practitioner concern, namely IS strategy. A forthcoming article by Taylor et al. (2010) offers strong evidence that the IS community has always focused its attention on IS strategic issues, a topic which appears prominently in every single CIO survey since 1984³ (Dickson and Nechis, 1984; Brancheau and Wetherbe, 1987; Niederman, Brancheau, and Wetherbe, 1991; Luftman, 2004; Luftman and Ben-Zvi, 2005; Luftman and Kempaia, 2008; Luftman et al., 2009; Luftman and Ben-Zvi, 2010). Analyzing the co-citation patterns of over 30,000 citations, Taylor et al. (2010) found that IS strategy was the dominant focus of a group of IS scholars who morphed over time, but who always attacked this same topic.

There is also more recent scientific evidence of the usefulness of topics in the IS academic press. In their intensive study of IS fashions, Baskerville and Myers (2009) document convincingly that IS researchers match or even lead practice in the investigation of such selected topics as office automation, case tools, BPR, and e-Commerce. The fact that their year-by-year tally of topical articles in academic versus practitioner journals match so closely, even taking into account scholarly publication delays, suggests to us that there could be a relatively close alignment between scholarship and practice. Because of scholarly journal publication lag effects, it is even possible that IS scholars are leading practice according to their fascinating data.

Finally, an extensive coding of the 527 articles in the outsourcing literature base reported in Straub and Ang (2008) and Lau et al. (2000) indicates that while there is not a perfect alignment of the interests of practitioners and scientists, there is enough critical overlap to argue that IS academics are, in fact, relevant. These studies found that journal types (which are surrogates for academic versus practitioner topical interests) do differ by topic.⁴ Appendix B presents the clustering of the three journal types, showing separate clusters for academic

³ Mostly under variations of IS strategic planning or IT and business alignment.

⁴ The following is heavily based on a working paper by Kelvin Lau, Soon Ang, and Detmar Straub. For copies, please contact the latter two authors.

(Cluster 1), academic-practitioner (Cluster 3), and practitioner journals (Cluster 5).⁵ This speaks to the different audiences for the journal types. Practitioner journals tend to concentrate on consequences of outsourcing such as the returns of outsourcing investment and organizational performance (see legend in Appendix B). Academic journals bring definitional issues and causal factors of outsourcing front and center. Stressing definitions, they also test theories about the ontology of outsourcing. Academic-practitioner journals have a distinct focus on strategic plans, routines, operating procedures and processes. What is critical in analyzing these correspondences is that there are significant overlapping themes in the triangular cluster. All three journal types publish articles that stress the consequences of outsourcing. Moreover, Clusters 2 and 4 stand between, respectively, two journal types. These are also shared interests.

Lau et al. (2000) contend that the academic literature stresses both internal and external antecedents to explain why a phenomenon takes place, rather than highly specific implementation details. Contrariwise, the practitioner literature is more likely to discuss only internal factors, since these represent elements or factors more under the control of the manager. Their hypothesis testing supports these contentions.

Taking into account the bulk of the IS studies just analyzed,⁶ we conclude that the scientific evidence to date strongly supports the argument that IS scholars are frequently and consistently studying key practitioner issues.

Alleged Gap #1: The Need for More Practical Relevance in Scholarly Articles

While IS research appears to be relevant with respect to the choice of topics by IS scholars, we can always strengthen our connection to business needs. An indication that this connection is taken seriously at top academic journals is the reviewer evaluation form currently in use at *MIS Quarterly*. In this form, the second listed criterion with respect to the contribution of the article is "**Practical Significance**," defined as:

The work contributes to our understanding of current technological and organizational problems or challenges faced by IS or other practitioners.

⁵ Of the total inertia in the correspondence analysis, axis explained 62.7% and axis 2 explained the remaining 38.3%, yielding an explained variance of 100%. This likely means that the model was good enough to explain the total inertia (Clausen, 1988; Dangschat and Blasius, 1987).

⁶ See Anderson et al. (2001) who argue that there has been a move away from practical science in industrial and organizational psychology. They have empirical evidence for this trend, which, although not in information systems, is still worrying.

There have been many ingenious suggestions for how we can strengthen our linkages to organizations, and even in the absence of proof that there is a current problem with topic usefulness, these need to be taken seriously.

Nevertheless, even though topic relevance is important to scholarly journals, no one should expect a large proportion of the practitioner community to themselves read and thereafter directly utilize academic work. This raises the question of knowledge transfer. If practitioners do not read scholarly work, then how do they receive and process this knowledge? We address this question next.

Alleged Gap #2: Knowledge Transference

First, there is a long standing criticism of business research that it is not being communicated effectively to the business world. On this point, the *Academy of Management Journal* addressed knowledge transfer in a special issue in 2001. Here Boland et al. (2001) state that: "it is a widespread perception that knowledge created by scholars is not used in practice" (p. 393). What's more, these authors next list twelve other published assertions to this effect.

We are constantly bombarded with such assertions, but with little-to-no real evidence, evidence that would stand up in a scientific court of law. In a panel at the 2005 International Conference of Information Systems, for example, one of the panelists argued that:

"The outcome is that research does not appreciate the complexity of environments, both at the industry and societal levels. Hence, research products, especially those that are written up in our mainstream journals, seldom get any attention from external stakeholders." (p. 350)

Our companion article by Shah, Wood-Harper and Pritchard is also typical of the proponents of the IS scholar-IS practice gap argument. Here is just one paragraph asserting that there is a gap:

"Some senior IS academics have opined that IS research publications have become formulaic. Some of the blame goes to the environment created by the demands of USA's tenure system in the USA and the UK's Research Assessment Exercise. Some argue that the reviewing process itself is producing this result. Others assert that much of IS published research is academic navel-gazing—that is, rigorous but not really relevant (that is, IS published research is becoming divorced from practice)....."

We note that these authors themselves use verbs like "opine," "argue," and "assert" in discussing this series of unreferenced claims that IS is not relevant, but there is nary a shred of true scientific evidence that such a gap exists and that, therefore, that a divorce is warranted. Now it may be that IS research is irrelevant to practice, but we should not stand behind this argument until this is proven, lest we embark on solutions to a problem that may not be a problem.

Assertions do not evidence make. Academic can voice opinions as well as anyone else, but the key to determining whether there is a problem is scientific evidence to this effect.

Alleged Gap #2: Scientific Evidence for the Gap

Apropos this framing of the discussion, we could find little empirical work supporting a gap (or no gap) in praxus knowledge transfer. In the human resources area, Cascio (2007) present some interesting findings about possible transfer, but it is not clear whether these results will generalize to other disciplines.

An additional authority regarding this absence of evidence is Mohrman et al. (2001) who state that: "There has been relatively little empirical examination and self-reflection about the practical usefulness of various organizational science research approaches, although there have been calls for such activity (e.g., Gergen & Thatchenkery, 1996; Mowday, 1997)."⁷

Alleged Gap #2: Are Scholars and Practitioners Reconcilable?

No reasonable person would or could argue that transfer of knowledge between academicians and practitioners is simple or easy. Tomes and treatises that are well received by the community of scholars are often difficult to follow for managers⁸ and their managerial implications, if there are any, obscure. Vaast and Walsham (2009) present a convincing conceptual argument that knowledge transference between the community of scholars and the community of practitioners is challenging. Shared knowledge is "situated" and tacit knowledge can only be rarely and with great difficulty communicated across communities of practice (CoPs), networks of practice (NoPs), and information infrastructures (IIs). Moreover, they argue that scholars are distinct from practitioners in terms of CoPs, NoPs, & IIs.

Among the many articles with suggestions for how to improve transfer of knowledge is Roseman and Vesey (2008) who argue that design science research should incorporate an "applicability" check to ensure that managers and systems

⁷ In the same *AMJ* special issue, Rynes et al. (2001) disagrees although no citations were offered to indicate where this fund of scientific evidence may lie.

⁸ Cohen (2007).

designers can utilize the knowledge in the article. Rowe and Klein (2009) express a belief that doctoral students who have prior business experience or who can profit from internships while in doctoral studies will draw the two camps closer together. Antonacopoulou (2010) sees collaboration between academics and managers as not only possible, but beneficial for both.⁹

Real Avenues for Knowledge Transfer

We believe that knowledge is best transferred to practitioners indirectly. In effect, professors and instructors are intermediaries bridging the gap between scholarship and practice. This is not to say that this is always done well. As in any other profession, there are those who are superb at what they do and those who are, frankly, terrible at this. It may well be a normal distribution of performance as in many other areas of human endeavor. But if we look only at the most fruitful elements in the enterprise, academics deliver research knowledge through a number of venues such as:

1. Textbooks and other books that reflect the best theoretical and practical thinking in the business disciplines
2. Higher education courses and degree programs
3. Non-credit continuing education programs for edification
4. Short courses or seminars (e.g., for continuing education units)
5. Public speaking engagements by academics
6. Newspaper articles
7. Brochures that describe in lay terms the ongoing research of research centers
8. Teaching students the principles of IT consultancy
9. Corporate training by academics
10. Certificate programs
11. Collaborative research between academics and practitioners
12. Sponsored conferences based on research findings
13. Faculty internships
14. Findings presented to university advisory groups
15. White papers and policy briefings
16. Executive doctoral programs
17. Academic-practitioner journals (e.g., *MISQ Executive*, *Academy of Management Executive*)
18. Scholarly journals (a very limited proportion of the overall knowledge transfer)

Suggestions for Future Research and Conclusion

⁹ Kieser and Leiner (2009) contend this.

Divorce between IS academicians and those in practice is premature. First, we have produced evidence that the topics attacked by scholars are what practice needs and wants to know about. Second, there is no credible evidence that knowledge transfer is not taking place. It may or may not be, but at this time, we simply cannot say. If scholars examine the first 17 of the avenues for knowledge transfer above and find that practice is not benefitting from these forms of knowledge transfer, then this gap would be serious enough that something would have to be done. But no one to date has thoroughly studied the transfer question from this standpoint.¹⁰

The way assuredly not to examine this question is by asking practitioners whether they read scholarly journals. They do not. Nor should they. Scholarly journals are written by scholars for scholars. In many cases, the scientific apparatus is so complicated and sophisticated that only a subset of scholars themselves can fully appreciate the articles.

But if scientific articles have merit for praxus, then this knowledge can and should be shared. It is conceivable that the essential principles and implications of academic research can be communicated to practitioners by the best IS academics. The first 17 avenues listed above will represent the vast bulk of the knowledge transfer. The alleged gap needs to be studied from this perspective and this perspective only.

There is no doubt that the issue of relevance is an important one for business, management, and information schools to resolve. At least one alleged relevance gap is likely not a gap at all, and we are arguing that the second alleged gap is even more so in question because it has never been empirically studied. Finding convincing scientific evidence for whether academe is influencing practice is the challenge yet to be met.

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¹⁰ Shrivasta (1987) is suggestive as to how this coding can be accomplished.

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APPENDIX A: Samples of Journals by Journal Types

Academic Journals

American Economic Review
Decision Science
European Journal of Information Systems
European Management Journal
IEEE Transactions on Engineering Mgmt
Industrial Marketing Management
Information & Management
Information Society
Information Systems Research
Journal of AIS
Journal of Business Logistics
Journal of Economic Behavioral Organization
Journal of General Management
Journal of Global Information Management
Journal of Management
Journal of Management Information Systems
Journal of Strategic Information Systems
Long Range Planning
Management Decision
MIS Quarterly
Management Science
Managerial Auditing Journal
Organization Science

Academic-Practitioner Journals

Academy of Management Executive
Business Quarterly
California Management Review
College & Research Libraries
Communications of the ACM
Harvard Business Review
Human Resource Planning
Journal of Euromarketing
Journal of Systems Management
MISQ Executive

Practitioner Journals

ABA Banking Journal
Bank Management
Best's Review (Life/Health)
CFO: The Magazine for Senior Financial Executives
CIO
Datamation
Forbes
Government Executive
Industry Week
Internal Auditor
International Business
InternetWeek
Management Accounting - London
McKinsey Quarterly
Purchasing & Supply Management
Supply Management
TMA Journal
Working Woman

APPENDIX B: Correspondence Analysis of the Outsourcing Literature (Straub and Ang, 2008)

[See separate file]