

# EDITOR'S COMMENTS

## Rigor and Relevance in IS Research: Redefining the Debate and a Call for Future Research<sup>1</sup>

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### ***Two Alleged Gaps Between Research and Practice***

Is information systems research relevant to practice? The issue of whether academics address practitioner concerns in their research and whether they influence practice is a long-standing question that stems back to the early days of business, management, and information schools. This debate can be distilled into two alleged gaps. The first gap relates to the topics or themes that researchers tackle and their alignment with what practitioners deem to be central to their needs.<sup>2</sup> The second alleged gap relates to whether research conducted by academics is made accessible to and is actually used by practitioners.<sup>3</sup> Terminology that 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.

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<sup>1</sup>Some of the ideas contained in this editorial appeared originally in another *MISQ* editorial in December 2008. We repeat them here for the sake of continuity of argument.

<sup>2</sup>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.

<sup>3</sup>A third gap might be knowledge transference from practitioner journals to academics, but we do not deal with this question here.

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 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 idea 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. In the first type, *academic* journals, articles are typically written by academics for academics; they often do this by testing theories, supported by validated research procedures (Julien 1996). In the second type, *practitioner* journals, which target the practitioner audience, the articles written by journalists, consultants, management headliners, or professional writers. The overwhelming focus of these articles is practical issues (Julien 1996). Written by either academic-savvy practitioners or practitioner-savvy academics, articles in the third type, *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 make is that practitioner journals are close surrogates representing the interests of practitioners. 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, others prefer surrogates such as CIO surveys for practitioner topical interests.

### **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 cataloged 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 et al. 1984; Brancheau and Wetherbe 1987; Niederman et al. 1991). Using the Alavi and Carlson benchmarks and coding 1600 articles published in a selection of IS journals, Szajna 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, it is not.

Szajna’s results would be more troubling if there were not compelling contemporary evidence that IS scholars have always addressed the single most persistent practitioner concern, namely IS strategy. Taylor et al. (2010) offer strong evidence that the IS community has always focused its attention on IS strategic issues, a topic that appears prominently in every single CIO survey since 1984<sup>4</sup> (Dickson et al. 1984; Brancheau and Wetherbe 1987; Niederman et al. 1991; Luftman 2004; Luftman et al. 2005; Luftman and Kempaiah 2008; Luftman et al. 2009; Luftman and Ben-Zvi 2010). Analyzing the cocitation patterns of over 30,000 citations, Taylor et al. found that IS strategy was the dominant focus of a group of IS scholars who morphed over time, but who always attacked this same problem. Taylor et al. also reveal other persistent themes in the IS academic literature that, it could be argued, have been critical to practitioners over time, themes such as IS development which surely must be considered critical to practitioners as well.

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<sup>4</sup>Mostly under variations of IS strategic planning or IT and business alignment.

There is additional 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 matched or even led 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 this fascinating analysis.

Finally, an extensive coding of the 527 articles in the IT 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.<sup>5</sup> Appendix B presents the clustering of the three journal types, showing separate clusters for academic (Cluster 1), academic–practitioner (Cluster 3), and practitioner (Cluster 5) journals.<sup>6</sup> 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,<sup>7</sup> we conclude that the scientific evidence to date strongly supports the contention that IS scholars are frequently and consistently studying key practitioner issues.

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

While IS research appears to be relevant with respect to the choice of topics by IS scholars, there is no doubt that we can always fruitfully 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.*

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 knowledge. 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.

<sup>5</sup>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.

<sup>6</sup>Of the total inertia in the correspondence analysis, axis 1 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).

<sup>7</sup>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.

## **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 12 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 (Desousa et al. 2006, p. 350).

A working paper by Shah, Wood-Harper, and Pritchard (2010) 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 and that IS academics and IS practitioners should recognize that they are irreconcilable and “divorce”:

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, a divorce is warranted. Now it may be that IS research is truly irrelevant to practice, but we should not stand behind this argument until this is proven, lest we embark on solutions to a problem when there may not be a problem.

Assertions do not evidence make. Academics can voice unsupported opinions as glibly 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) presents 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).”<sup>8</sup>

## **Alleged Gap #2: Are Scholarly and Practitioner Goals 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 managers (Cohen 2007)

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<sup>8</sup>In the same *AMJ* special issue, Rynes et al. (2001) disagree, although no citations were offered to indicate where this fund of scientific evidence may lie.

and their managerial implications, if any, are 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, and 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 designers can utilize the knowledge in the article. Klein and Rowe (2008) express a belief that doctoral students who have prior business experience or who can profit from internships while they are 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.<sup>9</sup>

### ***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<sup>10</sup>
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)<sup>11</sup>

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<sup>9</sup>Kieser and Leiner (2009) contend this.

<sup>10</sup>Thomas Kuhn (1996) argues that textbooks are one of the most important ways scientific communities communicate their knowledge to younger scholars. When we realize that university courses, especially at the introductory level, are taken by many non-majors as well as majors heading for an academic career, it is not a stretch of the imagination to asseverate that textbooks also disseminate knowledge to those who are not going to enter the professoriate, but who will move into jobs in industry.

<sup>11</sup>We attribute credit for some of these goals to workshop outputs from the Kristiansand International Workshop on Information Systems Research (KIWISR), Kristiansand, Norway, May 2010.

## **Suggestions for Future Research and Conclusion**

A 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 so, 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 (i.e., empirically) studied the transfer question from this standpoint.<sup>12</sup>

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 can fully appreciate specialist articles.

But if scientific articles have merit for praxis, 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 possibly no 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 a challenge yet to be met.

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<sup>12</sup>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 Management*  
*Industrial Marketing Management*  
*Information & Management*  
*Information Society*  
*Information Systems Research*  
*Journal of the 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*  
*Internet Week*  
*Management Accounting – London*  
*McKinsey Quarterly*  
*Purchasing & Supply Management*  
*Supply Management*  
*TMA Journal*  
*Working Woman*



# Appendix B

## Correspondence Analysis of the Outsourcing Literature<sup>13</sup>

### LEGEND

#### Knowledge sources

- acad = academic profile point
- ap = academic-practitioner profile point
- practice = practitioner profile point

#### Antecedents

##### Triggers

- a1 = strategic realignment
- a2 = poor profitability
- a3 = poor performance
- a4 = resource deficiency
- a5 = regulatory influence
- a6 = supplier presence

##### Inhibitors

- ag1 = increase in org. risks
- ag2 = strong org. resistance
- ag3 = poor funct. performance
- ag4 = loss of funct. resources
- ag5 = high transaction costs
- ag6 = lack of suitable suppliers

#### Process

- p1 = planning four outsourcing
- p2 = manage vendor obligations
- p3 = manage client obligations
- p4 = manage employee obligations

#### Consequences

##### Positive

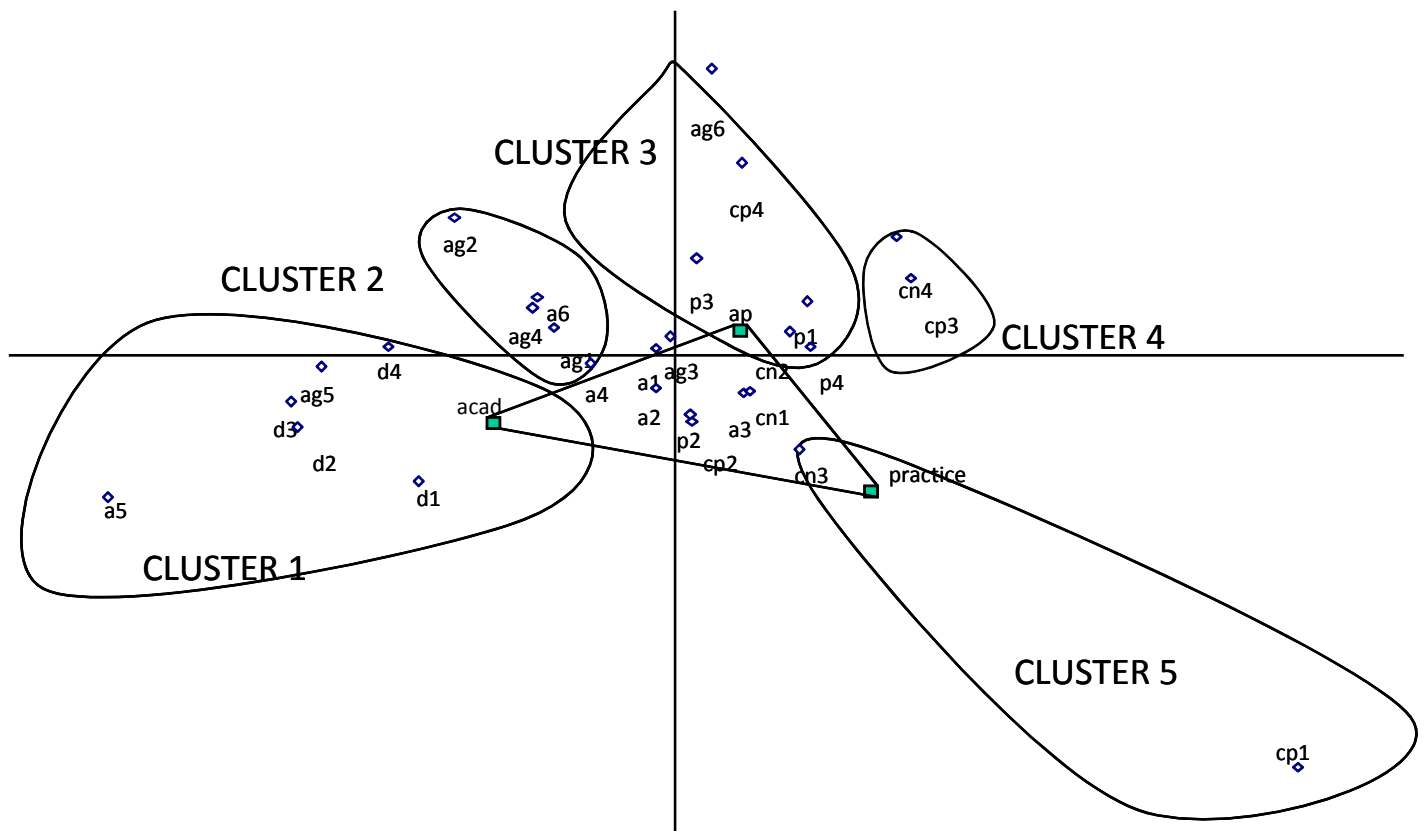
- cp1 = increased CA
- cp2 = increased profitability
- cp3 = enhanced performance
- cp4 = increased resources

##### Negative

- cn1 = increased org. risks
- cn2 = decreased funct. performance
- cn3 = reduced resources
- cn4 = increased transaction costs

#### Definitions

- d1 = execution
- d2 = control
- d3 = location
- d4 = ownership



<sup>13</sup>Straub and Ang 2008.

