Criteria and Recommendations for IS Research that Bridges the Academic – Practitioner Gap

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Abstract

Industry practitioners deal with complex and fast-moving information system (IS) related challenges. IS academic researchers generate substantive theoretical outputs dealing with many of these challenges. Unfortunately, practitioners rarely make use of this academic research. This represents a serious gap that has negative consequences for academics and practitioners alike. This paper identifies aspects of the academic-practitioner gap and describes five criteria (value, velocity, visibility, voice, and verifiability) that researchers may use throughout the research process to increase the likelihood of creating research outputs that will be used by practitioners. These criteria are linked to three approaches for conducting research most likely to impact practitioners – direct creation of practitioner content, translation of scholarly research and co-production. We close with specific recommendations for IS academics to overcome the gap.

1. Introduction

There have been a number of articles written in the management literature in the preceding few years regarding the perceived "gap" between the academic and practitioner communities [1-4]. Primarily, this is expressed a difference in academic and applied knowledge and the dearth of material from academic researchers being utilized by practitioners in any meaningful way. Consumption of our research outputs by practitioners has become even more relevant as the "Impact" of research is now a key element within the AACSB accreditation standards for business schools.

There have also been a number of similar articles written with the Information Systems (IS) perspective on this subject. These articles have also suggested that IS research has the potential for impacting society [5-7]. Yet, there are precious few real solutions or recommendations proposed. Two notable articles in recent years have suggested a specific method for ensuring the relevance of our research with practitioner interests [8] and another suggesting 17 avenues for knowledge transfer between academia and practitioners [9].

Of course, there was an extensive debate on Rigor vs. Relevance several years ago, but that was framed as a tradeoff between the need for scientific rigor in research and the need for researchers to be more relevant to practitioner interests. Although we might question *how relevant* IS research appears to be, with respect to the contemporary issues facing practitioners in our chosen field, we see no reason to reenter this previously framed debate. Rather, we are seeking to discuss specific techniques for transcending this gap [10].

A work of scholarship (heretofore called a study) that hits both targets must satisfy the demands of two completely different audiences: researchers and practitioners. But the most pressing issue we face when attempting to meet both demands is how do we generate research that is valuable for both theoretical and practical applications? How do we address the needs for scientific rigor while finding ways to interest the practitioners that will ultimately be

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responsible for implementing any suggestions or findings from a given study?

In this article, we discuss a number of articles that address this gap and ways in which in which IS researchers can design studies that are useful for both practitioner and academic audiences. We propose five criteria that can be used to evaluate the usefulness and applicability of research intended for practitioner and academic purposes: visibility, voice, value, velocity, and verifiability.

2. Academic-Practitioner Gap

Business schools have long been oriented around a scientific approach, developed from the post-war emphasis on rigor and quantitative analysis [11, 12]. This scientific approach is generally <u>not</u> directly applicable to the needs of practitioners. However, the knowledge must allow for both sides to communicate with each other to explain a given phenomenon. But the norm is for the two sides to be incapable of communicating with each other in an incommensurable and distant relationship.

Figure 1 indicates the roles that surround this debate. In the first (box on the left), researchers develop new academic knowledge to identify and generate quasi-scientific knowledge. However, on the other side is the applied knowledge that every manager proposes and codifies. In the middle, the arrows indicate the pathways that must be traversed in order for academics to translate for practitioners to utilize. The opposing arrows allow for the flow of ideas from practical knowledge (street sense) to academic knowledge (book sense). In practice, it is these flows that are non-existent or at least scarce. Essentially, the two communities operate in different worlds, with practitioners believing that academics are only talking to themselves [13, 14].

There seem to be at least three interrelated explanations for the gap between academic scholarship and practitioner needs: separation, divergent goals, and incommensurability.
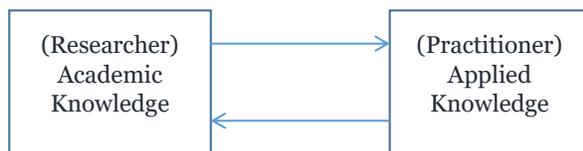
Figure 1. The research knowledge gap

Separation adherents simply acknowledge that academics are academics, and practitioners are practitioners, and never the twain shall meet.

Practitioners are indifferent to academics, who live in a completely different world. Likewise, academics have no real relationship with the business world, despite the frequent suggestions to establish and maintain such ties. The result of this is that on a day-to-day basis, the two communities of practice are completely distinct from each other and have little impetus or means to become integrated to any significant degree. Of course, this is not an exclusive separation, as most business schools have advisory relationships or sponsorship arrangements with local and national firms, as well as the obvious classroom relationships. But in terms of the production, dissemination, and consumption of business school research, there is no obvious relationship. As a result, practitioners are uninterested in the activities and operations of academia in terms of the research produced by most faculty members. It simply is of no interest to them, whether they could understand it or not.

The rationale for this separation is further described by some in terms of the divergent goals of the two communities. Academics generate scholarly outputs which are acceptable to the field, which in most cases is the community of scholars who make decisions on such personal concerns as hiring, tenure, promotion, and professional recognition. As such, many make the completely rational decision to frame their research efforts in ways that reinforce the academic system in which they are employed. Taken to an extreme, one can assert that researchers should in fact be proud of our research endeavors and scholarly excellence, as this is how we distinguish ourselves from "trade schools" [15]. On the other hand, the presumed goal for practitioners is to succeed in the marketplace and in their chosen occupations. This includes searching for solutions to contemporary problems that they may encounter in their daily work routines.

Ultimately, it may all be explained by the incommensurability that exists between the two communities. Kuhn [16] argues that proponents of different scientific paradigms are incapable of understanding each other's point of view because they simply see the world differently. As such, it is difficult if not impossible for the two groups to communicate because there is no common language or belief system to base such communications upon. Applied to the academic-practitioner gap, an incommensurability thesis would argue that because of the separation and goal divergence between the two groups, there is no way to fully transcend the gap.

3. The Importance of Bridging the Gap

As a field, IS academic researchers have long held to the applied nature of our domain. The speed at which information systems and technology change, the fundamental role of IS/IT in almost every aspect of the conduct of a business, and the predominant role of IS/IT as the key driver of new strategies, products, and customers all emphasize the potential for academic research, properly constituted, to impact the real-world development and use of IS.

Productive relationships between academic researchers and practitioners offer a variety of mutual benefits. Researchers and practitioners are already looking at the same phenomenon [9]. Practitioners can help to describe problems and frame research questions in ways that are realistic and more meaningful to them, provide access to research settings and data, and offer financial support to do meaningful, long-term research [17]. Academic researchers offer the potential to deploy theory in novel, practical ways to bring practitioners new perspectives on their challenges [3], provide focused attention, dedicated resources and an external perspective to address a significant problem, and the creation of many types of artifacts that can be adapted into practice.

When done effectively, research focused on satisfying the needs of both academics and practitioners can be very impactful [18]. The question is how can academic researchers do what we do differently to generate these impactful outcomes?

4. Five criteria for reaching practitioners

The extant literature offers a number of wide ranging recommendations for ways in which academics can conduct and disseminate research in ways that are more likely to find practitioners as willing consumers. There are several examples of these recommendations, ranging from engaging and establishing partnerships with practitioners [3, 4], conducting applicability checks [8], emphasizing prescriptive accuracy in practical interventions [19], writing up research findings in plain language that omits the requirements for academic contributions, to not even trying to present academic research to practitioners because the needs of the two audiences are so different and incompatible that it is simply not possible to do consistently [15]. While we do not share the hopelessness of this last suggestion, we do recognize the fundamental difficulties involved with bringing academic research outputs to practitioners in a meaningful way. Prior to becoming academics, both

authors had extensive professional experience – one in a high-tech industry undergoing major structural change and the other in management and IS consulting. This experience as long-time practitioners helps us to see the manifestations of the gap in stark terms.

We believe the objective of conducting academic research that is more meaningful and useful to IS practitioners is both worthwhile and, to an extent, possible. Fundamentally, IS researchers and practitioners are looking for different kinds of knowledge [3] to serve different and often incompatible objectives. Across the various management disciplines, including IS, many of the proposed solutions for generating research that matters to practice are consistent. Filtered through our professional experience, we have synthesized the recommendations into a set of five criteria that researchers may use to improve the practical impact of their research: value, velocity, visibility, voice and verifiability. Each is described below.

4.1 Value

The work must be of value to practitioners. Writers addressing this issue, typically from the perspective of *relevance*, argue that academics must be more in tune with the topics of interest that practitioners deal with. We agree with this sentiment and others have found that IS researchers are typically congruent with practitioner interests [9]. Relevant topics are necessary but not sufficient to be valuable. Value to practitioners comes in the form of actionable recommendations – relevant criteria used to assess (diagnostics), levers/mechanisms that can be activated and manipulated to drive outcomes, reliable relationships between factors within their span of control [4], and expected impacts. These come in the form of frameworks, analytical tools and best practices that help practitioners see what can work and why, the range of available options and clearly described examples of real outcomes [3, 19].

Practitioners are not likely to find value in a single study due to a narrow focus, constructs and relationships that do not reflect reality, limited explanatory power, and the inability to relate to the context presented [3, 4]. Value will come from synthesizing comprehensive research programs to identify counterintuitive insights and prescriptive practices that impact core business processes [1, 17, 19]. Additionally, efforts to synthesize findings across multiple studies that take on a multidisciplinary perspective offer potentially greater value as the demands of complex organizational

challenges rarely fall exclusively within the confines of a single academic discipline.

4.2 Velocity

Practitioners move to the beat of a different drummer when compared to academic researchers. Our IS industry colleagues must be able to identify solutions to problems that can impact outcomes in the present and business results often within the next quarter. The academic journal peer review process introduces a number of delays in publishing that are significantly out of phase with most current IS and business practices. For instance, it may take two years to gather data, analyze it, and write an academic article to submit to a top-tier journal. It may then take another two years from initial submission to acceptance, followed by additional delays to actually appear in press. This is a four to five-year process, during which time the business environment has changed and technological aspects of the field may have advanced beyond the insights gleaned from the original data collection.

Practitioner articles need to be made available with significantly more velocity from idea to output. The demands of publishing in top tier journals will not change. Even the advent of posting accepted articles online before publication only shortens the cycle modestly. This requires researches to consider alternatives to reach practitioners much faster that operate in parallel with the efforts to generate academic manuscripts. Practitioners need recommendations that come from our preliminary findings, tentative and simplified models, and case descriptions. These are typically generated as standard outputs of the research process. These interim, preliminary outputs may not be fully vetted and supported by theory, nor represent a robust theoretical contribution – yet. But the good (enough) need not be an enemy of the ideal (academically rigorous). And preliminary findings presented to practitioners through non-academic outlets do not preclude the publication of high quality academic findings. This is one potentially important way to dramatically increase the velocity of IS research efforts in reaching practitioners.

4.3 Visibility

Visibility refers to the availability of this research for managers. If the research is "hidden" in scholarly journals, it is virtually invisible to practitioners, who rarely (if ever) seek the information out. Instead, the research should be published in forums where practitioners are more likely to see it. We see examples of efforts to fix this, including the MISQ partnership with Sloan Management Review, among others.

There are certainly other media through which we can communicate across the gap, including textbooks and other pedagogical activities, speaking opportunities for professional organizations, newspaper articles, white papers, and more [9]. Each of these is an opportunity to meet practitioners in places they are likely to look for information about the field.

Unfortunately, these are typically not venues which are supportive to the tenure and promotion goals of faculty, especially junior faculty. As a result, many senior faculty have advised that it may be more beneficial for junior faculty to establish credibility through a monotheistic focus on scholarly research before branching out to publish in practitioner outlets. We agree that each scholar must be realistic in allocating their time towards projects that are likely to achieve their professional and personal goals, which may lead some scholars to wait until they are able to devote sufficient time to crossing the gap.

4.4 Voice

To be usable, the writing must be in a form (or a voice) that managers can, and may actually want to, read. Not to disrespect managers as incapable of digesting the methods which researchers are prone to employ, but very few of them are remotely interested in the vagaries of our arcane statistical and qualitative techniques. Managers (and other practitioners) are also rather disinterested in the formal, standardized and inaccessible style of prose academics use [3, 20-22]. Academics frequently use terminology and phrasing that just are not used in industry [3, 23]. The core message is crucial to articulating value – practitioners are seeking new approaches to contemporary issues and not repetition of purportedly timeless and comprehensive frameworks and theory so prevalent in academic research [1]. The simple, visually appealing and typically brief research findings presented by consultancies like Gartner and Forrester have impact with practitioners. Academic rigor demands thoroughness and comprehensiveness in conveying information while practitioners want concise summaries [3]. As IS researchers, we have an opportunity to adopt a different voice, one that is characteristic of the "research" consultancies, to express our research through summaries that capture the essence of key findings.

4.5 Verifiability

Of course, none of this is to suggest that the insights must not be subjected to the review of peers and, ideally, the practitioners themselves. The veracity and correctness of the research must never be in question. How this is interpreted by practitioners is fundamentally different. We have previously referenced the concept of prescriptive accuracy. Ultimately, our industry colleagues are looking for insights into what "works" when trying to address complex issues and through actionable recommendations for how to do it. This is not inconsistent or incompatible with academic concepts of validity, but rather a very pragmatic response to assessing research outputs. Proposed frameworks and recommended best practices need to be supported with demonstrations of multiple environments and contexts where they have been applied successfully. This also requires exposing cases where desired outcomes were not achieved and identification of the factors that impacted those outcomes.

5. The Conduct of Research

The purpose of practitioner-oriented papers is to provide the tools for managers to apply the research to their situation. This includes a story, a framework to simplify the theory (if any), and explicit guidelines for how the article's lessons can be applied. But the question is how academics can generate research outputs that are consistent with the proposed five criteria for practitioner research.

Several solutions have been proposed for academics in the management and IS literature. On one hand, several authors argue that the gap either does not exist or is not as problematic as suggested by others [9]. From this perspective, no changes are required as the status quo is satisfactory. Others believe that we should not attempt to address the gap because of the inherent value of scholarly research [15] and the inevitable failure to make impact due to the incommensurable belief systems of the two communities. We can agree that there may not be many tangible consequences arising from continuing to publish primarily in scholarly journals with little effort spent trying to reach practitioners. However, for many of us, one of the reasons we are members of this profession is to make a difference in the world around us. In addition, the AACSB has recently emphasized the need to increase the impact that business schools have on the world around us.

Impact can be generated by one of three general methods: direct creation of practitioner content, translation of scholarly knowledge, and co-production. In the first, researchers actively set out to write papers for practitioner outlets (e.g. white papers, targeted journals and magazines, etc.). This is the most direct method, with articles being written without the need for practitioner involvement or formal research procedures. One could argue that this is the format of many of the articles written in the popular press or practitioner outlets. In most cases, these articles are shorter than the typical scholarly article. As such, the value of these outputs lies in their velocity, voice, and visibility. However, the onus is on the researcher to ensure that the verifiability of the prescriptions or findings are appropriate.

Translation is perhaps the most literal approach of making scholarly knowledge from academic papers into a form that practitioners can and will choose to utilize. This means emphasizing the value in practitioner terms, converting the voice into a form that is more readable by practitioners, and presenting the output in a more visible outlet. Translation includes either converting a single paper or interpreting a stream of research. Examples of the former include initiatives by both *MIS Quarterly* [24] and the *European Journal of Information Systems* [25]. The intent of both efforts is to establish a dialog with practitioners with respect to the findings of individual research studies. In the latter, authors integrate a series of studies to create a consumable product for practitioners, which may take many forms from white papers to full length books. (One could argue that textbooks fulfill this purpose to a certain extent as well.)

The downside of translation is that it assumes that the design and conduct of the study has practical value, notwithstanding the inclusion of implications for practitioners. In many cases, the study is tailored for academic purposes that any real utility for practitioners is difficult to tease out. An additional downside is that translation requires the original works to be completed first, which often contradicts the need for high velocity dissemination.

The final approach involves efforts to conduct research collaboratively with practitioners. This requires researchers to engage with practitioners at each step of the process, including identifying important phenomenon and formulating research questions, study design, data collection, analysis and interpretation, and dissemination. Both the SIM annual competition and MISQE have often encouraged researchers to work with practitioners to develop practice-oriented papers. At the minimum, researchers should encourage practitioners at the research site to review and critique the outputs before submission and publication. More involved methods

for conducting this research include co-production [26], engaged scholarship [27], action research [28], design science [29], and applicability checks [8].

Collaborative efforts are often more difficult to conduct, if only because the divergent goals of the two parties may irritate each other [30]. And yet, if successfully conducted, the outputs can be inspiring and have been shown to generate value for both academics and practitioners [3, 17].

We also face structural barriers that inhibit efforts to reach practitioners. In general, practitioner oriented research is not valued as highly as scholarly research in academia. We also do not have the incentives or measurement frameworks to promote this type of work. As such, this penalizes many junior faculty that might otherwise devote time on this research instead of a more steady march towards tenure. This leaves primarily motivated, but tenured researchers to attempt to reach across the gap.

6. Recommendations

Ultimately, to reach practitioners more effectively with our research outputs, something has to change. It is our contention that IS research can inform and be informed by industry practitioners to a much greater extent. Specific recommendations, some of which are incremental while others may necessitate more fundamental change, are presented in Table 1.

Table 1. Researcher Recommendations

Criteria	Actions for Academic Researchers
Value	Adapt Multiple Sources
	"Smell the beast" [4]
	Include actionable insights and implementable recommendations
Velocity	Create interim products (before completion of peer review process)
	Executive Summaries, White Papers, etc.
Visibility	Make effort to enjoin other media
	Tradeoffs for junior faculty
	Recognition of outlets for AACSB impact
Voice	Translation efforts (professional writers/editors)
	Focus on key ideas and quick soundbites [3]

	Collaborative efforts where practitioners lead (or approve) writing
Verifiability	Grounding in real world cases and concrete examples
	Complete Contextual Description to allow comparisons
	Verification of results by practitioner evidence (testimonials, comments, data, etc.)

As stated above, information systems practitioners have to be able to derive value from our research by utilizing its findings and lessons to help solve their existing and impending problems. To do this successfully requires academics to understand the current concerns and grand challenges [3] of the "real world" in order to develop both insights and/or recommendations for practitioners to put to use. Thus, researchers need to make time to go into the field to "smell the beast" [4] to be aware of the important issues and the people seeking to address them. They must also be able to adapt academic research, including individual studies and multidisciplinary streams of research, towards the development of these solutions. These insights and recommendations can be developed in ways that practitioners will find understandable and useful to implement and put into action, rather than as irrelevant theoretical or methodological contributions.

To reach practitioners with value, researchers need also mind the speed by which usable outputs are disseminated. This includes recommendations to increase research velocity such as creating interim outputs (e.g., executive summaries, white papers, or practitioner articles) in a more timely manner than normally occurs with the academic peer review process. In doing so, researchers can develop recommendations for practitioners which may capitalize on IS trends as quickly as they emerge.

The visibility of academic research can be enhanced in several ways, most notably by simply publishing or presenting the results in outlets which researchers are prone to consume. This includes obvious outlets such as Harvard Business Review, Sloan Management Review, and MIS Quarterly Executive, as well as newspapers, magazines, industry conferences, invited lectures, and more. Eventually, there should be an effort to include more of these outputs as positive factors towards promotion and tenure decisions, especially in response to AACSB accreditation emphases. Until

then, junior faculty and others interested in gaining additional recognition at their institution or in the field must be aware of the tradeoffs that exist.

Regardless of the value, velocity, and visibility of the research, it must be expressed in such a way as to enable the practitioners to consume it. This can be accomplished by being more mindful of the differences in how managers understand and interpret research. For instance, some researchers have found success by focusing on the key ideas and quick soundbites of the research [3] rather than requiring a lengthy read and study of an article. If researchers are finding it difficult to write in a style conducive to crossing the gap, it may be useful to hire professional editors to adapt the draft documents accordingly. Alternatively, working collaboratively with the practitioners involved in the study may allow the language and style to match the expectations of the target audience.

Practitioners are keenly interested in verifying the results attributed to recommended interventions. The degree to which they can successfully apply the findings to their own setting comes from a researchers' ability to ground the study through case studies, stories and examples. This also includes an examination of the salient aspects of the context to allow comparisons between source and target organizations. The verifiability is also enhanced through evidence offered from practitioners in the cases, including testimonials, data, metrics, and other results. In studies derived from multiple streams of research or other conceptual sources, the researcher may work to establish credibility through the use of analogies or examples to reinforce the desired explanations.

7. Conclusion

We believe that IS researchers are among the most insightful and conscientious scholars in academia. Practitioners can unquestionably benefit from the research conducted in our field. It is therefore without question that we must find ways to utilize the insights and implications that are developed each year as tools for equally talented members of the practitioner community to employ towards their business and societal goals.

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