Introduction: fragmentation and integration in knowledge management research

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Abstract Knowledge management (KM) research lacks a common conceptual core; it is cross-disciplinary, addresses a wide variety of phenomena, and has difficulty distinguishing itself from many related areas of research. The result is a fragmented field that is itself artificially split from the related literature on organizational learning. KM may be progressing through a predictable life-cycle that could end in collapse of the KM concept unless researchers can develop more integrative core theories of learning- and knowledge-related phenomena in organizations. The diverse body of organizational learning and knowledge management research provides an impressive foundation for the synthesis of such broader theories of learning and knowledge that are creative, new, and integrative.

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Organizational science is characterized by its attention to successive concepts, with different (but often related) terminologies, that conform to a life-cycle of: emerging excitement, followed by critique, and either transformation or decline (Hirsch and Levin, 1999, p. 199).

Hirsch and Levin (1999) describe a cyclical model of progress in the organizational sciences that should (at least in part) sound familiar to researchers working within the field of knowledge management (KM). Their proposed life-cycle begins with a phase of emerging excitement as a new idea bursts onto the scene. After an initial flurry of research, questions are raised about the idea’s validity and utility. It soon becomes clear that the initial idea is perhaps too broad (an “umbrella construct” in Hirsch and Levin’s terms), leading researchers to propose typologies to identify and separate different aspects of that idea. Subsequent research that builds on these typologies tends to underscore the differences between aspects of the central idea, rather than their commonalities. In the absence of commonality, researchers pursue divergent threads until the once-powerful new idea becomes a multitude of smaller, non-overlapping ideas. In the end, a lack of consensus undermines the original concept, leading to its collapse. This last part has not happened (yet) in the KM field, but if Hirsch and Levin are right, KM research will soon face a serious theoretical challenge.
KM research has certainly benefited from an unusually long phase characterized by emerging excitement. During this “honeymoon period,” some critics have been kept at bay with the argument that all new ideas require time to mature. Indeed, the steady growth in scholarly publishing on KM over the past decade (Scarborough et al., 1999) shows no signs of abating. Yet, if we blindly accept this growth as evidence of the robustness of the KM concept, we stray into risky territory. The increasing prevalence of typologies that are intended to contextualize (and thus fragment) KM (e.g. Becerra-Fernandez and Sabherwal, 2001; Hansen et al., 1999) suggests that we, at least implicitly, recognize the possibility that KM may be an over-generalized umbrella construct. Researchers often draw on these typologies and conclude that it is more palatable to investigate one small piece of the KM puzzle. If we accept Hirsch and Levin’s arguments, these facts have ominous implications for the future of KM.

The papers that appear in this special issue of Information Technology & People vary considerably in the stage of Hirsch and Levin’s life-cycle that they exemplify. While all touch on the use of information technology to facilitate KM, they parallel the considerable diversity that exists in KM research in general. In our Call for papers for this special issue, we asked for submissions that explored the relationships between individual behaviors, social processes, forms of interactions and knowledge management systems (KMS). Many authors were kind enough to submit their work to support this pursuit. In the end, through the hard work of many reviewers and the authors, a total of five papers were accepted for publication. Our thanks goes to the following people who served as referees for submissions to this special issue: Anton Bradburn, Frada Burstein, Brian Butler, Ann Frances Cameron, Mike Chiasson, Antonio Cordella, Elaine Ferneley, Dianne Ford, Michael Gallivan, Brent Gallupe, Andrew Gold, Sanjay Gosain, Jane Gravill, Richard Herschel, K.D. Joshi, Karl Heinz Kautz, D. Christopher Kayes, Dorothy Leidner, Rikard Lindgren, Henry Linger, Leighann Neilson, Davide Nicolini, Adekunle Okunoye, Fernando Olivera, David Pauleen, David Ramsden, Ulrike Schultze, Sandy Staples, Veda Storey, Christopher Street, Russ Vince, Gert-Jan de Vreede, Steven Walczak, Jane Webster, and Pak Yoong.

Different strands of KM are well-represented in this special issue. Some call for explicit development of a core theory of KM, while others apply and extend existing theory. Of these, J.-C. Spender is both the strongest advocate of the need for theorizing about KM and the most vocal critic of the theoretical bases adopted by KM and KMS researchers to date. In his article, Spender challenges the predominantly rational assumptions that many researchers – including other authors in this issue – make about KM research. His analysis reveals a lack of uniqueness to KM theorizing; without a theory of KM, our field remains indistinguishable from others. Spender articulates micro-foundations of a new theory of KM that rejects a purely rational and calculative basis for organizing. His central thesis is that deficiencies in knowledge have more
complex effects on decision making than previously theorized, and that emotional responses are the key to understanding these effects. Building on this idea, Spender demonstrates how a consideration of emotion provides an important point of departure for moving beyond an essentially economic analysis of knowledge. Spender’s call to action is urgent and compelling, and it is our hope that it will stimulate readers to pursue novel approaches to KM and KMS research.

Evidence of the kind of fragmentation described by Hirsch and Levin abounds in this special issue, with each set of authors contributing novel ideas about the purpose, utilization, and outcomes of KMS. Frada Burstein and Henry Linger propose a task-based KM framework as a process-oriented approach to understanding KMS. Their framework focuses on work activity in a post-Fordist context, where technology is deployed to support work activity rather than to automate tasks. Burstein and Linger describe how KMS that model knowledge workers’ understanding of their tasks facilitate knowledge-reuse and augment organizational memory. The significance of this approach lies in its integration of task performance with reflection and evaluation of the task. Burstein and Linger apply this framework across a diverse range of applications ranging from banking to the bio-medical field and demonstrate how this approach facilitates learning and organizational improvement.

Sanjay Gosain turns our attention away from internal KMS and towards the exchange of knowledge across organization boundaries through personal knowledge exchanges (PKEs). PKEs employ market mechanisms to value knowledge and match sources and recipients of knowledge. Gosain outlines how PKEs face more challenges than online markets that support the exchange of tangible commodities and well-specified information goods, because knowledge is often situated, difficult to articulate and socially constructed. Other typical challenges facing all electronic marketplaces, such as security and usability, are magnified for PKEs due to the fundamental difficulties in making _ex ante_ evaluations of knowledge quality and utility. Gosain’s description of the experiences of first-mover PKE companies yields rich insights and offers some suggestions about dealing with these challenges. These cases also describe the varying, and at times contrasting, perspectives on knowledge held by PKE founders, and the impact of these perspectives on PKE design.

A fourth study analyzes the similarities and differences between the types of implementation challenges posed by KMS and traditional forms of IS. In this study, Michael Gallivan, James Eynon, and Arun Rai argue that certain features of KMS (especially their critical mass requirements) require new frameworks to understand their implementation. They use system dynamics theory to develop a model of the challenges associated with implementing KMS designed to promote deliberate knowledge-sharing and re-use. Although it has
been employed more broadly in the management literature to examine the impact of organizational performance improvement programs, such as total quality management, system dynamics has received limited scrutiny in the IS literature. Gallivan et al.’s field study extends prior work that examines the difficulty of implementing KMS and other collaborative technologies (e.g. Karsten, 1999; Orlikowski, 1993) by highlighting the difficulty of changing organizational routines and human behavior. Their paper offers insights for practitioners and researchers to recognize the downward spiral that can occur when conflicting incentives thwart the behavioral changes required for complex performance improvement initiatives, such as KMS, to succeed.

A final paper, by Adekunle Okunoye and Helena Karsten, explores how academic researchers in sub-Saharan Africa use the Internet for KM purposes. Researchers in this part of the globe face considerable challenges, including lack of funds and unreliable infrastructure, which shape their activities and give rise to unique patterns of use. The authors’ rich descriptions show how sub-Saharan researchers make use of limited Internet access to engage in knowledge acquisition, transfer, and application. The difficulties faced by these researchers mold their efforts in unanticipated ways, steering them towards low-quality sources and paradoxically preventing important locally-developed knowledge from being shared with individuals who would stand to benefit most from its application. This paper chronicles both the benefits that even limited Internet use can exert on knowledge processes, and the considerable difficulties that remain in integrating the efforts of these African researchers into the global research community.

It should not be surprising that there is little overlap among these articles. This is as Hirsch and Levin predicted: In response to a lack of consensus about what KM is (and is not), most of these researchers (Spender is the notable exception) step back from any attempt to articulate general theory and instead pursue ideas about KMS that are both focused and dissimilar. This illustrates the basic challenge faced by KM researchers, namely to articulate the core of KM that is both distinct from other research areas and sufficiently bounded that even the casual observer can identify what is, and what is not, KM research. Without such a core, we face the potential collapse of the KM concept. In turn, following Hirsch and Levin, the failure to achieve a generally-held consensus on the core of KM would result in the term “KM” becoming a political liability for authors seeking to publish their work, and force a return to the painful and resource-consuming quest for a new umbrella concept. We write this introduction with the conviction that research progress in this area would be hindered considerably by such an outcome.

There are many challenges associated with articulating such a core. First, KM’s cross-disciplinary nature leaves researchers without a single academic home, and with varying research traditions. This is similar to the problem faced by MIS researchers in the early 1980s – they came from many different
reference disciplines and conducted research in many functional areas of businesses, and thus encroached in no small part on other researchers’ territory. Second, and also similar to MIS research 20 years ago, KM researchers study a wide range of related phenomena whose inter-relationships are not always clear. Our third challenge is quite distinct from that faced by MIS: We cannot point to a distinct entity or phenomenon in organizations and claim that KM is about “that” – there is no PC on the desktop or mainframe in the computing facility, as there was for MIS. The paradox we face is that KM cannot simply be about “knowledge,” for no organization exists without knowledge. If the core of KM is “knowledge”, then KM is about everything – and such an imperialist position is neither intended by KM researchers nor productive in isolating and defining the unique thread that ties together KM research.

We have no conclusive answer to the question of what the core of KM is or should be. However, we will offer a suggestion that may help point us in the right direction: It is time for KM to reconcile with organizational learning (OL). OL researchers have struggled for decades with similar issues of identity and definition (Miner and Mezias, 1996), and have made considerable progress towards the development of a conceptual core (albeit populated by diverse theoretical approaches) and the articulation of consensus opinions as to key OL phenomena. While most concur that OL and KM research are not identical (e.g. Crossan and Hulland, 2002; Nonaka and Takeuchi, 1995), there is sufficient commonality to suggest that the present level of polarization that exists between OL and KM is excessive (as it often appears to those outside the field). In a nutshell, we hold that OL and KM have far more in common than most are willing to admit. To this extent, Vera and Crossan (2003) argue that “learning is the change in knowledge and the change in knowing”, and propose that OL concerns the processes of learning, while KM focuses more on the knowledge that results from learning and how that knowledge is subsequently applied towards achieving organizational goals. Yet, they acknowledge considerable overlap in research between KM and OL, and describe in detail the great disparity in opinions on this topic.

Some notable efforts towards integration between KM and OL have been made, such as the 2001 OLKM Conference at the Ivey Business School, University of Western Ontario (Vince et al., 2002). Argote’s (1999) recent work also represents a significant effort to tie together these two research areas. Unfortunately, these are the exceptions rather than the rule. One difficulty facing any attempt to integrate OL and KM is the different reference disciplines from which these respective fields of study have emerged (Vera and Crossan, 2003). KM and OL research traditions overlap only in part, and many researchers employ differing epistemological and ontological assumptions. While these differences make it highly unlikely that a single over-arching theory of OL and KM will emerge, the general reticence of many researchers in

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each of these areas to even acknowledge the other perpetuates the idea that our differences are incommensurable. Yet, many other areas of organizational studies have moved towards an acceptance of methodological and philosophical diversity that is not disruptive or counterproductive because researchers generally concur on a set of common phenomena that forms their conceptual core. It is our belief that progress is more likely (and collapse less likely) if OL and KM researchers acknowledge the commonalities in phenomena we study and strive towards an integrated identity and conceptual core.

Earlier in this paper, we suggested that the KM concept is progressing through a life-cycle and hence is threatened by potentially-fatal fragmentation. In closing, let us describe an alternate scenario drawn from Hirsch and Levin’s model that may also come to pass if we continue down our present path. Rather than contemplating the future of only KM research, perhaps we should instead be considering the possibility that there is a life-cycle for all research that deals with learning- and knowledge-related phenomena in organizations. Such an analysis would hold up the gap between KM and OL as fundamental evidence of fragmentation, and suggest that this split hampers our collective ability to articulate a unique core to all learning- and knowledge-related research. Thus, efforts intended to emphasize the differences between KM and OL may not only be wasted, but may be actively counterproductive, contributing towards the collapse of both OL and KM concepts. Bridging this gap may be the most important progress that we can make in ensuring the ongoing viability of both OL and KM. The alternative, if we continue down this path, may well be that we are all destined for another circuit on the concept life-cycle.

Yet such an end is by no means inevitable. Indeed, Hirsch and Levin offer some ideas that may be useful in framing our thoughts about an alternate future for KM and OL research. Fundamentally, Hirsch and Levin base their life-cycle model on the presence of a dialectic between researchers who seek narrow theoretical precision and those who seek to understand general patterns of commonality across disparate phenomena. Both approaches have value, yet both are fundamentally limited in what they can accomplish. Broader, integrating theories cannot capture the variances that occur across contexts and thus lack precision, while narrower theories exclude too many interesting problems and miss larger issues. Our position as advocates for more integration (both within KM, and ultimately, across OL and KM) stems from the belief that the wealth of rich and productive research that has been published in these areas over the past decade can serve as an impressive foundation for the synthesis of broader theories of learning and knowledge that are creative, new, and integrative. Given the wide variety of phenomena studied, research methodologies employed, and objectives pursued by researchers in KM and OL, we believe that there is high potential for triangulation that leads to the creation of integrative core theories of learning- and knowledge-related phenomena in
organizations. Although fragmentation may well be a significant risk faced by researchers in KM and OL, the prospect of a new synthesis that creates a strengthened and unified theoretical basis is an inspiring possibility. We hope the articles in this special issue will serve as helpful sign posts on the journey towards this deeper understanding.

References

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