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KNOWLEDGE MOBILIZATION: THE CHALLENGE FOR INFORMATION PROFESSIONALS

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Abstract. This paper examines the challenges that the success of library and information systems design and implementation is now generating. It makes a distinction between management and mobilization and argues that the organizational success of the interrelated fields of knowledge management and information systems (KM/IS) rests on strengthening (1) their descriptive understanding of how individuals in organizations make their own choices about accessing, using and sharing knowledge and (2) corresponding prescriptive recommendations for adapting the technical designs of KM/IS to best accommodate those choices. It is success that has created this need, in that every major trend in KM/IS adds to user choices and reduces institutional control; the library now has no locked doors and experts can “meet” wherever they are and whenever they want. Blogs bypass all the formal traditions, practices, editorial policies, verification procedures and protections against libel and misrepresentation of traditional print media. The frequent use of the term “democratic journalism” to describe the blog phenomenon (George, 2006) in itself implies that traditional journalism is non-democratic. While KM/IS is not driven by a search for profits in the mass consumer market, it shares the same basic aim as leaders in consumer electronics, mobile data services, and even the gaming field. It is a commitment of institutional funds, whether from research grants or in-house sources, to innovate through information technology. The purpose of the innovation is to enable and encourage new behaviors. Knowledge management is focused in this regard on knowledge-sharing and collaboration. Information services are generally more centered on individual information-seeking and learning. When user choices determine the adoption and impact of this type of innovation, then obviously it is essential to understand the foundations and dynamics of choice.

The New Context of Information Technology-Based Innovations: The Primacy of User Choices

In the applied fields of information technology, supply largely drives demand and innovation drives supply. The world was not chanting a need for the Apple II in the late 1970s. There was no market research in the early 1980s that identified a widespread and urgent wish to turn the Internet of technical and academic professionals into the consumer and business Web. The education community has been driving e-learning, not students, who largely see it as irrelevant or a distraction. (Zemsky and Massy, cited in Combes, 2006) Napster and the iPod created a massive new market, not the other way round. Google generated googling. The Semantic Web, surely one of the most promising lines of development in the extension of Internet-based information services, (Berners-Lee et al, 2001) is a concept totally unfamiliar to most information workers.

Of course, once the inventive supply side brings to market a new information-seeking, knowledge-sharing or social interaction capability, then the inventive demand side takes over. User creativity has largely generated, for instance, such cultural phenomena as the teenage SMS messaging society and the much clichéd Net Generation. (Tapscott, 1999) Blogs have taken off at a bewildering rate. A literally virtual economy has grown up around online multimedia games with futures, real financial trades and complex forms of arbitrage that more and more academic economists are using as data relevant to real-world markets. And, though the phishers, sbloggers, spammers, spoofers, hackers and other exotically-named villains that are enjoying one of the greatest growth industries of all time – online theft and fraud – are criminals, they are certainly inventive.

Along with user invention comes user indifference, underuse, misuse and nonuse of the innovations. The mobile data services industry is still a solution looking for a problem in trying to recoup the trillion dollars of investment that the industry has made in 3G licenses, network build-out and marketing. (Lakaniemi, 2005) Surveys in Finland, one of the leading nations in the world in the adoption of mobile technology, routinely show that consumers simply want to make and receive phone calls and maybe SMS messages. (Walden and Carlsson, 2005) WAP, the protocol that was heralded as launching the era of the wireless Internet, was an expensive disappointment. (Keen and McIntosh 2001) No

amount of marketing hype has persuaded most owners of data phones to use them for data services. Indifference and habit prevail.

So, too, does underuse and even misuse. In terms of information-based services, the flood of inventive supply, ranging from search engines to blogs to a host of online libraries and communities, has not in general led to significant improvements in information behavior and performance. In a paper prepared for this conference, Barbara Combes summarizes a wealth of research on the nature of Net generation use of the Internet and shows that “Web-savvy” often equates to shallow and narrow search, simplistic reliance on a few sources of information with minimal critical enquiry and an indifference to basic concerns about accuracy and reliability. (Combes 2006) rather than this being information “behavior” it is information convenience. Regardless of the basis for their choices, users make the “system,” not the other way around.

Moving from the examples of consumer technology discussed above to the institutional environments of corporate knowledge management initiatives and library information systems, what this adds up to is that innovations follow a general pattern:

1. Very large investments of intellectual capital and financial capital are needed to launch major new infrastructures, tools and services.
2. Once launched, how and if they are used is entirely dependent on the response of individuals and the communities that they choose to belong to.
3. There is widespread evidence that they do not choose to use these resources in ways that their inventors wanted and intended that they would.
4. The very liberation from control and opening up of options that new information supply creates means that user choices determine its value and impact.
5. While those choices depend on supply side innovation, once the innovation is in place, the supply side loses most of its control.
6. The choices very often may not be based on the same logic of “information” value and use or conceptions of “knowledge” that the supply side innovators assume.
7. The challenge, which is both a problem and an opportunity, is to energize and mobilize the demand side of innovation: to mesh KM/IS supply and individual demand and vice versa.

Running through this list is “choice.” Running through the discussions on generating those choices should be the theme of impact and payoff. Both KM and LIS are fields of institutional investment: major commitments of resources to building and deploying “branded” systems, facilities, services and education. A library is a brand in the sense that it is a promise of something of value to its customers, a commitment to service, a publicly recognized and respected name, and an attractive choice for the customer. By contrast, prior to the era of digital infrastructures and access tools it was a facility, with few other choices available and a narrow conception of service.

The same is the case for organizational knowledge management applications, such as an intranet for members of a consulting firm to share information about clients and projects, a portal for engineers to post problems and locate relevant expertise and advice, or a customer relationship management system. These are services that are intended to be marketed within the organization and to be turned into the equivalent of a brand.

Branding is just the starting point for successful adoption, however. People are very inventive in their personal knowledge management and information seeking and increasingly free to move around a rich space of resources or not to do so and stay within their known and comfortable intellectual and social geography, habits and connections. In a consumer market, that freedom affects its competitive dynamics; users have made Apple richer and most of the wired telecommunications industry very much poorer. In the institutional setting, such freedom has somewhat different implications. Libraries invest in information services for the purpose of social good, such as, for instance, helping improve education, leveraging labor force skills in the knowledge-driven economy, and strengthening the dissemination of and access to information by citizens.

Companies similarly invest in knowledge management intranets, customer relationship management systems, and electronic collaboration tools. Binney’s Knowledge Management Spectrum identifies forty major types of knowledge management application – brands – across six categories. (Binney 2001) Again, prior to the opening up of the boundaries on information access, these were just “systems.” The goal in moving from system to service and from technology design to adoption and use is for the purpose of organizational good: higher productivity, collaboration, sharing of experience and expertise, and leverage of skills. Increasingly, social good and economic good converge. This lies behind the growing cooperation between government, business, and education to strengthen the capability

and capacity of their cities, regions and even the nation to create new niches in the global-connected knowledge-driven economy. (Carrillo, 2002)

But what happens when there is a fundamental gap between these provider intentions and user choices? The answer is that user choices win out. That means that it is essential to fuse the institutional supply/management side of innovation with the individual demand/mobilization side of the knowledge and information investment/payoff equation.

From Management to Mobilization: The Nature and Size of the Gap to be Bridged

The immediate starting question is how wide is the gap between management and mobilization? Here are a few examples that suggest it is far larger than most of the literature on KM/IS assumes.

There is an inherent contradiction between the institutional view of KM/IS and the individual's conception of "knowledge. KM/IS almost axiomatically views both information and knowledge as independent of the individual. Consider the following typical definitions:

"Knowledge management is the coordinated effort to create and leverage an organization's know-how." (Binney, 2005)

"Knowledge management is a discipline that promotes an integrated approach to the creation, capture, organization, access, and use of an enterprise's information assets. These assets include structured databases, textual information such as policy and procedure documents, and most importantly, the tacit knowledge and expertise resident in the heads of individual employees. (Eyler 2001, cited in Wilson, 2002)

"Firms are knowledge institutions as well as financial ones" (Leonard, 1998)

"An organization's knowledge can be managed like any other asset." Guthrie (1992, cited in Wilson, 2002)

"We define knowledge management as the collective phrase for the group of processes used by organizations to increase their value by improving the effectiveness of the generation and application of their intellectual capital." (Gartner 2000, cited in Wilson, 2002)

Here, knowledge and information are literally *organizational* assets.

The problem is that individuals largely do not think in these terms. For them, knowledge is part of their personal identity and even of their biology rather than their mind; it is determined more by "language games" than information (Wittgenstein). Schutz (1967) claims that knowledge structures are biologically determined: "therefore, the knowledge built from the messages can never be exactly the same as the knowledge base from which the messages were uttered." Peter Drucker, the business management sage, is often quoted about this being the age of the knowledge worker but rarely is that quote followed by his more resonant comment that "You can't manage knowledge. Knowledge is between two ears, and only between two ears. It's really about what individual workers do with the knowledge they have." (Drucker, 2003)

Wilson's attack on the "nonsense of knowledge management" is more long-winded but captures a view of the difference between knowledge and information that undermines many of the assumptions and practices of KM/IS: "Knowledge involves the mental processes of comprehension, understanding and learning that go on in the mind and only in the mind, however much they involve interaction with the world outside the mind, and interaction with others. Whenever we wish to express what we know, we can only do so by uttering messages of one kind or another – oral, written, graphic, gestural or even 'body language'. Such messages do not carry 'knowledge', they constitute 'information', which a knowing mind may assimilate, understand, comprehend and incorporate into their own knowledge structures."

Of course, individuals do recognize that there are indeed many KM/IS resources that are owned by the organization and fit into the data-information-knowledge hierarchy, most obviously patents, proprietary data and co-specific database management systems. This type of information is protected by non-disclosure agreements that outside vendors and consultants are required to sign in working with the company that owns these assets and by the non-compete clauses in employee contracts that prevent them taking the expertise and knowledge built through company investment in the employee to a competitor when they leave the firm. They also recognize that they often have information about clients and contacts that they may not want to share with others because this is indeed a personal asset.

But, all in all, they do not view information and knowledge as organizational or as assets or as an external resource to be managed. Most consequentially for bridging the management/mobilization gap, they do not in general see good reasons to cooperate with the KM/IS mission of systematically drawing on information assets or routinely sharing their knowledge. The general situation is summarized in a

case study; “The organization does not understand how knowledge is shared here and I tend to ignore the knowledge management initiatives wherever I can.” (Davenport et al, 1997) Knowledge-sharing is dominated by “informal” networks. “Most people stick together in clusters of eight to ten like-minded souls, a group with which they undertake the vast majority of their communications and with whom they feel safe.” (*Economist*, 2006) In passing, it is worth noting that this phenomenon is so widespread and systematic that the term “informal” seems inappropriate. Sowell comments that “Old Boy” networks among professional colleagues with stakes in good future relationships with one another are informed sources of knowledge that would be prohibitively expensive for the organization. (Sowell, 1996) Their prevalence suggests they are almost a formal practice in knowledge mobilization. The use of the term “informal” really amounts to “outside our control” from the viewpoint of the organization and “essential for my own work” from the individual’s perspective.

Individuals do not share even the same sense of meaning for the same information. Meaning, relevance, organization, access, communication and incentives for sharing all depend on Knowledge Regimes. This term is derived from the concept of regimes of truth defined by Michel Foucault, the French philosopher. (Foucault, 1980) In many ways, he takes the old adage that knowledge is power very literally and asks how is that power created and used; his answer is that it is more a matter of power over knowledge than the power of knowledge. Indeed, a regime of truth can invalidate otherwise powerful knowledge. Ekbia and Kling (2001) bring Foucault’s perspective into the discussion of knowledge management in a paper that illustrates this point. He argues convincingly that in the United States, discussions of business have been increasingly dominated by the language, institutions and publishing outlets whose regime of truth is stakeholder value, and “the financial reporting, analysts’ reports and business press.” (Ekbia and Kling, 2001) These determine:

“The types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true.” (Foucault, 1980, page 131)

Kling gives many illustrations of how the financial establishment regimes of truth led to the hyping of Enron, a company that knew how to play into the dominant institutions such as the *Wall Street Journal*, the CNBC television network, and investment analyst community. He points out that many observers had for decades challenged the accuracy of accounting statements in accurately reporting the health of a company. “Creative accounting” is the wry summary of how companies distort information on their financial performance.

Regimes of truth determine meaning within the communities that they represent, control or influence. Anyone who tries to bring in a different set of “information” and “knowledge” into the regime’s sphere of influence risks being treated as a dissenter, “whistleblower” or “maverick.” Yet, quite often, such people offer a new “truth” that the organization would benefit from. This has very practical implications for the design of KM/IS applications Consider for instance the simple question “Is Wal-Mart a good company?” The stakeholder value regime of truth both offers an emphatic answer “Yes” and points towards a mass of KM/IS resources that confirms that assessment, such as financial analyses and projections and books and articles that demonstrate Wal-Mart’s brilliance in supply chain management, customer service, and store operations.

There is a community that operates under a very different regime of truth, for whom the answer to the question about Wal-Mart being a good company is an equally emphatic “No way.” It points to information that is not part of the business establishment’s pool of knowledge and that centers around the company’s labor practices, lack of promotion of women, blocking of workers’ efforts to unionize and its healthcare policies. Wal-Mart has suffered from its not including these information resources in its KM/IS capabilities in that it did not recognize how much impact they were having on the firm’s reputation. Now, it has set up a “truth squad” and “war room” (Barbaro, 2005) to monitor and respond to the public attacks. In other words, it has added the previously “untrue” and “irrelevant” information to its KM/IS base.

Knowledge regimes affect what information is gathered and how it is classified and thus how it is used. Consider the “knowledge work” of the author of this paper and of many of his colleagues in the business school information systems community. As academics, they publish journal articles. As practitioners, many have also published books aimed at a more general audience. They have also written chapters in books that aim at providing a multi-disciplinary, academically-sound but business-focused presentation that does not fit into the specialized journals. All these types of publication mobilize the same knowledge – what Drucker calls what is between two ears and only between two ears.

For convenience, let us call the composite writer/professor/consultant I.S. Guy. If you carry out a search on “I.S. Guy” + “knowledge management” on Google, there will be X thousand “hits.” On Scholar Google there will be just a few hundred. Look at any page from one of Guy’s academic articles and compare it with one from his business books; the very physical appearance of the text is different. Were Guy being reviewed for tenure at a university, many of the publications that he is most proud of would not count, such as those published in the *Harvard Business Review*. Conversely, the journal articles that Guy is equally proud of are unread and perhaps unreadable by business people.

Yet all the publications come from the same knowledge base – the person and what is between the ears – plus from the information that Guy has absorbed, stored and continuously accesses. New information, knowledge and expertise that he builds gets disseminated through these vehicles.

What is different between the academic articles and business books is not just a matter of format. They reflect entirely different regimes of truth, particularly the authentication and verification rules that establish the validity of the information contained in them and their acceptability to the relevant community. In academic publishing, the validity of knowledge is dependent on its being thoroughly and reliably grounded. The regime of truth basically emphasizes evidence over opinion, through citations, references and methodology-based evidence (experiments, surveys, models, and theory). Its very entry into the process of the IS academic community’s professional knowledge is triggered through peer review. (Ekbia and Kling describe this is the core of the regime of truth and contrast it with that of, say, *The Wall Street Journal*, where the power lies in editorial review and acceptance for publication.) There are fine distinctions involved between refereed and non-refereed journals, “A” list journals, and types of conference proceedings. Under this regime of truth, books largely do not count for the tenure process, and a widely-read *Harvard Business Review* or *New York Times* Op Ed piece carry no weight and may even be a negative in that the time spent on them diverted the researcher’s efforts and reduced his or her peer contribution.

Business publishing is very different. Here, the mode of presentation of knowledge is very free form. It is fully acceptable to write in the first person, for instance, as the highly influential Peter Drucker and Charles Handy often did. Citations and footnotes are largely kept to a suitable minimum whereas in academic publications, they push to a maximum. Whereas prestige in the academic community rests on articles, the most influential combination of impacts has often been a *Harvard Business Review* article followed by a book (Business Process Reengineering is an example here), even though the *Review* is open to criticism about the superficiality of much of its content and many business books are one-idea based assertions that would make an excellent monograph. Authentication and verification very much rest on the credibility and prestige of the author. The quality of writing is a primary consideration in publication, whereas in the academic journal field it is decidedly secondary to content quality.

There are many very practical implications of this difference in regimes of truth. They range from a literal power issue of who controls the publication channels and how authors can best position to get their work published to a deceptively simple question: how is information about the information organized? In other words, what should be the principles for designing a KM/IS resource built on the literature? The difference in the results of a search for I.S. Guy’s work on knowledge management using Google versus Google Scholar shows the degree to which different principles produce different outcomes; what in effect are different domains of information and hence knowledge. Google Scholar essentially reports on Guy’s standing in the academic community since it filters the available online information by numbers of citations. It ignores Guy’s press interviews, conference announcements that discuss him and all articles and books that are not cited in scholarly work.

From the perspective of user choice, the two different regimes of truth lead to two different domains of usefulness and awareness for information-seekers. From the view of information systems design, they pose a very complex problem for, say the builder of a Semantic Web application for professionals in the knowledge management field. *Whose* semantics should provide the base for the ontology and metadata choices?

Knowing Versus Knowledge

Foucault is a controversial figure best known in the field of philosophy. Philosophy may seem a long way away from the practical issues of LIS and KM implementation but there is a growing though minority view in the KM field that philosophy is a missing “reference discipline” for KM – and by implication for LIS. A reference discipline is an established field of intellectual investigation, with a clear body of theory, and high standards of methodology and publication. The main value in a multidisciplinary field such as KM/IS in drawing on such a discipline is to add new rigor and relevance. Given how

obscure and convoluted much of philosophy is (Martin Heidegger claimed this as a virtue: “making itself intelligible was suicide for philosophy”, it is somewhat ironic that it is relevance rather than rigor that is drawing KM researchers to explore philosophy. The main reason for this is that while knowledge management (and information systems and services) largely view information as an artifact to be managed and stored and thus made a knowledge resource, once the focus of investigation shifts to knowledge mobilization, it becomes clear that the highly cognitive and pragmatic conception built around the “triple hierarchy” (Ekbja and Kling, 2001) of data-information-knowledge linkage does not capture “knowing” rather than “knowledge.” The KM field has long recognized this and finessed the problem by distinguishing between explicit and tacit knowledge, with explicit knowledge being the information and associated logic and procedures that can be captured and encoded. Tacit knowledge is basically the knowledge people have that they cannot articulate; how they know what they know (Nonaka, Polyani). Many KM/IS initiatives are based on finding ways of making precious and individualistic tacit knowledge explicit (Nonaka and Takeuchi, 1995; Polyani, 1958), which may well be a contradiction in terms (See Keen and Tan for a discussion of the middle ground between tacit and explicit knowledge: implicit knowledge that is taken for granted and internalized but that can be made explicit through reflection and discussion.)

The mainstream of modern philosophy dismantles most axioms of KM/IS. Richard Rorty captures its general trend in his phrase “the linguistic turn.” (Rorty, 1991) Rather than defining knowledge in terms of information, the linguistic turn examines how language shapes “reality.” Key thinkers in this regard who provide many new avenues of exploration for KM/IS include Habermas, who is increasingly cited in the KM field for his work on communicative rationality and the “public sphere” as a space of discourse that, in KM/IS terms, builds communities of practice (Habermas, 1989); Wittgenstein whose “meaning as use” contrasts strongly with the standard KM/IS conception of information as representation (Wittgenstein, 1958); Searle, whose speech act theory has directly led to promising lines of development in coordination technology (Searle, 1995); Keen, 1992 provides a discussion of the application of Searle’s line of thought to software designed to coordinate business processes); and the postmodernists who challenge the conception of “objective” and absolute truth, unitary personal identities and “grand narratives”. Postmodernists see a new world of simulacra and hyperreality (Baudrillard, 1994) marked by fragmentation of authority, commoditization of knowledge, and deep skepticism about official truths. In a world of constant change, we adopt multiple identities (including online persona in chat rooms and games) and mass media generates an “information” world of irony, pastiche, playfulness and magical realism. That is a far more accurate description of blogs than standard KM/IS conceptions of modernist rationality and objectivity in publishing.

Qureshi and Keen examine the link between knowledge and identity that is implicit in the linguistic turn and postmodernism (with perhaps a very dash of deconstructionism added for flavor – just a dash since there can be no field that can match its obscurantism and perverse argumentative nihilism) that together suggest that knowledge and information are in the person. They suggest that in their everyday work, individuals distinguish between their “accountable” that is part of their professional identity and responsible and that needs to be well-articulated and shared, their “discretionary” knowledge that they share with trusted associates, and autonomous knowledge that is nobody’s business. (Qureshi and Keen, 2005) They argue that organizations are most anxious to stimulate the sharing of discretionary knowledge but that to achieve this they need to separate the technology platforms and modes of invitation, access and use from those designed for sharing accountable knowledge. In a case study, they show that this separation can vanquish the “knowledge paradox” of all parties that agree that knowledge-sharing and collaboration are vital for innovation but which most of them resist.

Knowledge Fusion: Fitting the “Partitions” Together

The discussion in the preceding section runs the risk of muddling the issues and throwing everything up in the air – deconstructing knowledge and information. In order to help KM/IS researchers and practitioners build on the solid achievements of the field and at the same time extend its focus, Keen and Tan’s Knowledge Fusion framework proposes a “partitioning” approach to theory building and application. The core partition is the field as is: KM/IS development. The second partition that links to it is Mobilization. Together, KM/IS development and mobilization constitute the institutional, professional and organizational mission. See Keen and Tan (forthcoming) for a review of the grounded theory-based development and application of the framework. (Keen and Tan, 2006)

Development needs enriching intellectually and pragmatically via a third partition of KM/IS Regimes and Mobilization by the fourth partition of Knowing. Each partition is a domain of study and debate in and of itself, with its own reference disciplines and intellectual base.

The 9/11 Commission Report

This article ends with a cautionary tale that in and of itself helps explain why a Knowledge Fusion perspective is now needed to meet the new challenges KM/IS faces. It comes from a powerful, comprehensive and very detailed document that supports the arguments presented here. It is a tale of very successful information and knowledge *management* that is a complete disaster in knowledge *mobilization*. It comes from the lengthy report produced by the 9/11 Commission, set up after the terrorist destruction of the World Trade Center in New York. (Government Commission on Terrorist Attacks, 2004) Its most disturbing feature is that it shows very clearly that the KM/IS issues were very well handled to the extent that the names and actions of the terrorists were known, there had been plenty of alerts and hundreds of billions of dollars invested in information-gathering activities. Two Presidents, their CIA and FBI Directors and the heads of the Justice, State Department and many other agencies had been engaged actively and intensely in addressing a crisis that they all knew was coming and that it would come from Osama bin Laden. Key organizational players, most particularly the FBI and CIA had been completely reorganized to address long-standing historical problems in inter-agency cooperation and information-sharing. Those agencies hire only exceptionally intelligent and motivated individuals. As the Report states "Everyone did their best on the basis of what they knew." The CIA Director stated to the Commission that "the system was blinking red" with unprecedented severity. The government knew of "spectacular near-term attacks" and was "desperate" to stop them.

Thus, the 9/11 Commission Report describes a KM/IS success. But in terms of knowledge mobilization, what it carefully and neutrally summarizes is a massive failure. From that perspective, it is useful in the context of this conference and of KM/IS research and practice to recognize the vital need to complement the supply side innovation focus with the demand side behavioral realities. Here are some of the main points made by the Commission, with comments added:

Knowledge and information were highly compartmentalized and efforts to coordinate them blocked by knowledge regimes, especially by regimes of authentication and verification. For example, elaborate protocols had been established between the Federal Aviation Authority, which had complete responsibility for civilian aircraft operations across U.S. air space, and NORAD, the military equivalent. This was obviously essential to coordinate responses to emergencies and to minimize unnecessary alarms. The protocol for the FAA to request military assistance from NORAD involved multiple levels of notification and approval, from pilot to FAA controller to supervisor to the FAA hijack coordinator. The request went from there to the Pentagon and on to NORAD to authorize the launch of the planes.

The relevant KM/IS issue here is that the key coordination role is that of the FAA *hijack* coordinator. The entire knowledge regime was built on the assumption that any crisis would be caused by a hijacker. The plane would be readily identifiable and there would be plenty of time to respond. Indeed, in dealing with hijackings, careful avoidance of hasty reaction had been shown time and again to be essential. American Airline's Flight 77 deviated from its flight plan at 8.54 a.m. The first notice to the military came at 9.34. No one at the FAA ever asked for assistance. There was no reason to, given the knowledge management practices built for handling a hijacking. That regime had led to what the Commission identified as one of the four main areas of failure: imagination. (The others were policy, capabilities and management.) "Obvious scenarios were slow to work their way into the thinking of aviation security experts," such as an aircraft being used as a bomb.

A major problem, perhaps even the single most pervasive one and the most damaging to effective knowledge mobilization, was the cult of KM/IS in the FBI. The organizational structure of the agency rests on its 56 field offices, each with a single agent-in-charge. In an effort to improve KM/IS and responsiveness, reorganizations had decentralized authority to the AICs, who now had substantial discretion and independence. Their priorities were based on their mission, which had always been legally restricted to investigating domestic not foreign crimes. Their main performance metric was the rate of closure of open cases; counterterrorism was a series of open cases that generally were never closed. The field offices' localized presence meant that they focused on the types of traditional crime most prevalent in their area. In order to avoid duplication of effort and potential conflicts, the FBI had established a principle of the office of origin, a single office in charge of a whole operation. They paid little attention to information that did not fit into their mission, priorities and sense of identity.

Efforts had been made to complement this highly localized and decentralized system with central coordination and support, but senior FBI managers in the operational division resisted the intrusion, and thwarted reallocation of personnel and funding. (This helps explain why the agency so notoriously failed to hire the translators needed to handle the mass of information it accumulated from and about the terrorists.) Central information systems were very poor; in 2005, the FBI wrote off \$X on a failed central information architecture and set of repositories. In the 16-week course devoted to counterintel-

ligence and terrorism, just three days were committed to addressing data collection. The field agencies owned their data. The Report comments that each unit saw itself as “sole gatekeeper” and that there was a “culture of duty to the information.” The field of counterintelligence was vital for the agency as a whole but very open-ended and “not career-enhancing.” Too much information-sharing among FBI agents could be “a career-stopper”; “politics blocked the arteries of information-sharing.”

“Everyone did the best with what they knew.” The information needed to respond was available. 9/11 was not a surprise. The FBI and CIA had been reorganized to increase responsiveness. Intelligence systems had produced the needed alerts. It seems fair to give the KM/IS initiatives at least an A-grade of good, though could do better. But the overall organizational result was a systemic disaster whose consequences have reshaped the USA’s institutions, legal processes, politics and economics. In terms of knowledge mobilization, the grade is a straight F – could not have done worse.

Obviously (and hopefully) 9/11 is a unique case. It is fully reasonable for KM/IS professionals to respond that their own interests, skills and contribution to research and practice is very much focused on less dramatic arenas and on more constrained domains of application. They solve the problems of supply side innovation and inventiveness. Others must handle the issues of politics, organizational change, motivation, incentive systems and the like that influence how those innovations get to live or die in the world of their application. A counter to that view is at the core of the analysis and arguments presented in this paper: if KM/IS professionals wish to make an impact in the sphere of application then all these factors must be part of their own knowledge base and of their designs and strategies for planning, policy, education, implementation, and support.

This article ends with the point made at its start: it is the *success* of so many KM/IS initiatives that makes what we term here Knowledge Fusion a necessary extension of its focus. It has created so many new user choices that it is now the study of choice rather than the development of systems and tools worth choosing that will drive the future generation of social and economic goods through KM/IS research and practice.

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