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Search, Knowledge Management, & the Practice of Law



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Introduction

All roads lead to Google. Few Internet users would take issue with this statement. The research for this paper started there, and its evolution returned to Google again and again. Google started as a Stanford Ph.D. research project, was incorporated as Google, Inc. in 1998, and started selling ads based on search key words in 2000.¹ The word “google” is now recognized as a verb in leading dictionaries,² and Google the company is one of the most dominant business organizations on the planet. To say that search is important to the global economy is probably understating its value. On the way to becoming a verb (as in “google it”) “search has moved from a useful service on the edge of most Internet users’ experience to the de facto interface for computing.”³

Search, in the form of Computer Assisted Legal Research (CALR), has been available to the legal industry from both Westlaw and Lexis since the early-to-mid 1970s.⁴ Today, via their online versions, both publishing giants are racing to provide Google-like ease of use and value added services that meet the legal industry’s specific requirements. The term “search” as used within this paper includes Google, LexisNexis, Westlaw, and other law/specialty related engines. It is used as an abstraction for any engine capable of searching the Internet, with Google simply being the most prominent and generic manifestation of both the concept and its ubiquity.

The focus of this paper is not search per se, but rather how search provides the raw material for a law firm’s knowledge management (KM) strategy and how this strategy might evolve, fueled by enabling technologies. Search is a key subset of these technologies. It is therefore KM within a law-firm context and the implications for firm competitiveness that comprises the principal analytical thread of this paper. An effective and continuous search strategy that feeds the creation and packaging of knowledge has implications with respect to underlying transaction costs.⁵ These changing transaction costs will be analyzed to determine what, if any, effect they might have on law-firm size going forward. Ronald Coase posited that firms would grow in size whenever they could better manage procurement costs internally as opposed to contracting in the open market.⁶ Since law firms require knowledge as input to their value chain, any significant change in knowledge acquisition costs has potential structural implications for the industry as a whole.

The argument presented here treats these enabling technologies as “disruptive technologies” as opposed to “sustaining technologies” and therefore posits a potential threat to

the legal industry's status quo.⁷ Larger, well-established firms often find it easier to deliver sustaining technologies because it appears that this is what customers are asking for; whereas startup/smaller firms, usually with less to lose, are more willing to deliver disruptive technologies—a bet that they better understand customer needs.⁸ In the process they hope to change the rules of the game, and by so doing acquire a defensible competitive advantage before larger firms can respond.⁹

Volumes have been written about KM initiatives and their underlying organizational human factors, processes, and technologies. Most of this body of research comes from outside the legal industry; however, legal-specific KM research has recently emerged.¹⁰ Where applicable, especially with respect to general principles, the entire body of research will be leveraged, but the intent is to always use law practice management examples and illustrations. While law firms are qualitatively distinct from widget manufacturers because they not only use knowledge as input but also produce knowledge as output, their business models are much less distinct from those of management consultancies. McKinsey has experimented internally with KM since 1993,¹¹ and other large consultancies were also early adopters of KM via Lotus Notes,¹² a leading integrated KM product now owned by IBM. In short, there is sufficient research, both within and outside the legal industry, to serve as an adequate point of reference for discussing the implications of these “new” disruptive technologies.

The intent of this paper is to provide practical insights into proven, but not widely adopted, technologies and processes and to explore their potential impact on law firms of all sizes. In this sense, this paper is decidedly practice-management centric; however, these concepts remain somewhat esoteric—especially KM—so that at a minimum some theoretical foundation must be established before diving into less chartered practice management waters. Theoretical underpinnings, sufficient to facilitate practice management analysis, are provided as required.

In short, whereas volumes have been written concerning search, knowledge management, and the practice of law; it is the interdisciplinary intersection of the three that is of concern here, and specifically the impact of the first two on the latter. This paper posits the use of browsers and Wiki's (think Wikipedia), both leveraging Internet protocols within the firm, as a low cost and maturing platform for KM. In addition, this paper posits that “story telling” is the primary vehicle for the transmission of knowledge and that the creation of narratives around a substantive

area of the law is the key objective—essentially reinforcing the idea that the problem is more organization centric than technology centric.¹³

This paper will proceed first with a discussion of KM. Once the destination is explored then the enabling power of “search” will become more self-evident. Although in practice the two concepts are not so readily separated.

Knowledge Management

The fundamental premise asserted here is that KM is primarily a “wicked problem.” H.J. Rittel and M. Webber first developed the concept of “wicked problems” (as in difficult) in their work on social planning.¹⁴ Wicked problems always occur within a social context and have certain key characteristics¹⁵—ones that provide a basic framework for considering the problem at hand:

1. *You don't understand the problem until you have developed the solution.* Essentially the problem is ill defined and “what the problem is” depends on whom you ask—different stakeholders will each have a completely different view. Most practitioners intuitively understand that there is a need for KM but are at loss to clearly define either what they mean or how to achieve the goal.
2. *Wicked problems have no stopping rule.* Since there is no definitive “problem” there can be no definitive “solution.” The stopping point is not determined by the problem's resolution but by running out of time and resources. Knowledge management initiatives are potentially more insidious in this regard since they are designed to be evergreen—which means some level of resources must be allocated for ongoing maintenance or they wither and die.
3. *Solutions to wicked problems are not right or wrong.* They are just “better” than others, or “worse” or “good enough”—there is little objective criteria by which they can be judged. Individual stakeholders will judge the outcome inconsistently and therefore each stakeholder must live with a certain amount of ambiguity in the results. Attorneys learn to live with uncertainty in the law (out of necessity), but as rational businesspeople they are less willing do so when hard-earned investment dollars are at risk—especially now (post dot.com bubble) when many high profile KM failures are well documented¹⁶.

4. *Every wicked problem is essentially unique and novel.* No two firms are exactly alike, and even practice areas within a given firm may be radically different with respect to management style or team dynamics. Essentially the KM problem does not lend itself to a cookbook or engineering based approach—if it did then Rittel and Webber would consider it a “tame problem” (e.g. like building a suspension bridge now that the science that underpins it is well understood).
5. *Every solution to a wicked problem is a “one shot operation.”* Every attempt made at solving the problem has consequences in terms of time and money spent and therein the “wickedness” is best exposed. You can’t really understand the problem until you try to solve it, yet each attempt reduces the number of subsequent attempts due to the constraints of scarce and finite resources. The chances of getting two significant bites at the apple are small.

Given these challenges, it is little wonder that many KM initiatives fail to live up to expectations, are abandoned, or become irrelevant to the firm’s mission.¹⁷ That said, there are techniques available that contribute significantly to minimizing the risks, and they all begin with a premise that the problem is “wicked.” For example, agile software development methodologies (i.e. most custom software development is now inherently recognized as “wicked”) assume that there are no adequate requirements upfront, that the problem definition is guaranteed to change over time, that stakeholders will better know what they want once a working model is built, and that stakeholder collaboration is critical to success.¹⁸

The remainder of this section looks at ways by which KM risks can be reduced within a law firm context and the potential for an enhanced value proposition for those firms that manage to get it “right.”

Definitions

Any discussion of KM requires some basic definitions. That there is no widespread agreement on definitions is illustrative of the discipline’s nascent level of inquiry. A review of the “classical” literature will likely produce as many definitions as there are sources. However, while definitions vary, they tend to vary mostly at the margins. The following are representative and will suffice.

The initial challenge is to make sense of the raw materials that KM utilizes. What follows is a formal definition of the three component building blocks: 1) Data—defined as a string of identified but unevaluated symbols (the foundation); 2) Information—defined as evaluated, validated, or useful data; and 3) Knowledge—defined as information in the context of understanding.¹⁹ Some authors describe a fourth level of aggregation and call it “wisdom.”²⁰

The next challenge is even more abstract—a definition of the domain itself. What does KM mean? At this level of abstraction, the definitions are even more divergent.²¹ The following working definition is adopted:

Knowledge management is the behaviors and processes by which a group of people maintains and increases their personal and collective actionable knowledge to compete, to increase performance and innovation, and to decrease risk.²²

The definition above purposely chooses to exclude any mention of technology, since the author (rightly) wants to deemphasize its role. However, as a practical matter, the only way to achieve the objective is to leverage technology. Therefore, some discussion of technology is both necessary and critical—without a viable and cost effective implementation, the practitioner is left rudderless at sea, navigating a vessel that cannot find its way to dry land.

Tacit versus Explicit Knowledge

Tacit knowledge is the knowledge that practitioners have in their brains—the “wetware” that has accumulated through education and experience, differentiating the novice from the expert. It is the most highly prized form of knowledge because it is the type responsible for creating value for the client and driving client satisfaction. It comes in a variety of sub-forms including 1) technical knowledge (“stuff” known about a particular domain); 2) knowledge about sources (“stuff” known about where to update what is known, and to determine what is new); and 3) knowledge about people (“stuff” known about what others know).²³ This is not an exhaustive list, simply a list that provides a useful conceptual model.

Explicit knowledge is the type of knowledge that is captured in documents, databases, Wiki’s and other repositories. It is the knowledge searched for both online and in print. It is contained both within the firm and external to it. In terms of KM, it is the “stuff” that is managed and the principal transfer mechanism. In addition, more and more conversations in various forms

are being captured in “new media”—blogs, audio, and video; all of which are becoming increasingly important components of explicit knowledge.

While it is important to distinguish a difference between tacit and explicit knowledge, the reality is that knowledge is amorphous, flowing back and forth between containers. An important part of the objective is to capture as much tacit knowledge as possible and make it explicit. Why? So that it can now become part of someone else’s “wetware.” Of course, since knowledge is a source of organizational power, it should not come as a surprise that enabling its transfer is one reason that the problem is “wicked.” Creating the “right” organizational environment and incentives to enable knowledge flow is also a reason the problem will always be “novel.” It makes the goal difficult to achieve and equally difficult for competitors to duplicate, presenting an opportunity to achieve a sustainable competitive advantage.

Firm KM Basics

There are a number of fundamental questions that need to be addressed in order to provide a foundation for the subsequent discussion. Here this paper acknowledges, and draws heavily from, Matthew Parsons’ seminal work entitled “Effective Knowledge Management for Law Firms.” First and foremost is the question regarding how much interest in KM exists on the part of law firm senior management? In a 2002 study, 70% of firms surveyed indicated that they already had a KM initiative underway, and 14% responded that they would launch one within the next 12 months.²⁴ This study provides anecdotal evidence that a high level of general interest survived post bubble. While specific drivers of this interest are elusive, it seems likely that competition from the large accounting firms and a fundamental belief that knowledge is critical to their businesses are important considerations.²⁵

Despite the interest, there appears to be little clarity regarding a way forward that yields measurable and justifiable economic returns considering the sizable investment that is often required. While this paper argues that a quantifiable return on investment is not a reasonable goal upfront, Parsons nonetheless clearly illustrates the four profit drivers that any law firm KM initiative should target—essentially showing that the impact on the “Profit Per Equity Partner” (PPEP) calculation (i.e.—“average realized rate” x “leverage” x “margin” x “utilization”) must be positive in an economically meaningful way.²⁶

An understanding of the ultimate end game (i.e. better economic performance for the firm) is crucial to a risk reduction strategy, since the maxim “you can’t manage what you don’t measure” is certainly as applicable to KM as it is to any other business initiative—perhaps more so in a pure knowledge industry such as the law.

Law Firm Economics

The initial argument contra KM within a law firm is that, while a widget manufacturer can increase revenue by becoming more efficient, the exact opposite is the likely short-term result in a law firm. If, via a KM initiative, a lawyer can now do in one hour what a client formerly (happily) paid four hours of billable time for, then three hours of revenue are lost each time a similar matter is addressed.²⁷ Law firms are hesitant to deal with this “billable hour conundrum,” and it seems that at least for now, the billable hour remains king.²⁸

While the efficiency argument may produce counter-intuitive results vis-à-vis the lawyer’s billable time, the same is not true with respect to efficiencies related to non-billable activities—here every dollar saved produces a positive effect on the bottom line.²⁹ In addition, the ability of a KM initiative to generate additional billable hours through more effective leverage of a partner’s or senior staff member’s time can have a significant positive impact on overall firm revenues.³⁰

The idea of leverage—getting more out of the firm’s most talented players by allowing them to drive additional high quality work, is central to this paper’s thesis. This includes more effective use of both attorneys and support staff. The analysis now turns to the essential predicates.

The Challenges

The challenges related to a successful law firm KM initiative are broken down into three categories of problems that must be addressed: people, process, and platform. Of the three, this paper posits that the people problem is the most significant, primarily because it requires changes to employee thought patterns and behaviors.³¹ Process problems have to do with the creation, maintenance, and usage of the knowledge base—that is, how the initiative is actualized. Finally, platform problems deal with the medium (i.e. the set of technologies) that is leveraged in the

actualization and its inherent requisite characteristics such as accessibility, availability, and reliability.

While having three distinct categories of problems provides a useful tool for analysis, the practitioner often experiences the three as one—especially since this paper posits an important role for process and technology, but not necessarily for “process experts” and “technologists” (more infra). This paper also posits that a substantive practice area within the firm should own the problem and the solution—others outside of it are necessary but non-essential.

The goal here is to pose the essence of the problem in each category and describe potential solutions, realizing that exhaustive treatment of each is beyond the scope of the paper.

People

One simple (but not simplistic) idea related to leveraging knowledge via the “wetware” in people’s brains is, “just hire a diverse set of smart people and let them talk.”³² While that insight gets to the heart of the matter, and comes from a “knowledge bridging” study done in the fiercely competitive bio-tech industry, it does not deal with the problem of how these conversations are structured or captured.

Assume, for the sake of argument, that a practice area within firm X does just that as part of its recruiting strategy. Further, assume that the characteristics of “smart” and “diverse” also extend to the support staff and that partner Y manages the group. Partner Y’s practice has been quite successful, but year-over-year growth in his contribution to PPEP has not met his expectations. He is aware that he has always been in the knowledge business³³ but now wants a more explicit strategy to increase leverage. Partner Y is fiercely independent and confident in his abilities, not at all threatened by his group’s top performers. He is a user of Wikipedia and is aware that Motorola now has around 3,200 Wikis corporate wide and around 2,600 blogs that provide the infrastructure for its knowledge management and collaboration strategy.³⁴ He knows that these tools are “user driven” and relatively inexpensive, but wants to be sure there is sufficient ROI before making a serious commitment. His group is open to the idea because they realize that future bonuses are tied to improved PPEP performance.

These basic assumptions will serve as a starting point for a hypothetical group considering a KM initiative. Notice that the assumptions wipe out a significant part of the “wickedness” of the problem. Partner Y is relatively enlightened and has completely avoided the

“form a committee, study the problem, invite in the vendors and “buy the solution”” approach.³⁵ In other words, through smarts, intuition or dumb luck he has managed to avoid the KM abyss. However, avoiding darkness is not the same as seeing the light, although it is admittedly a good first step. Partner Y is still faced with the non-trivial dilemma of conceptualizing and implementing a solution.

Law firm staffs, and that of other consultancies, are often categorized into three distinct groups: finders, minders, and grinders.³⁶ Finders bring in the work; minders manage delivery of work and relationships with clients; grinders do the actual work.³⁷ This is the quintessential view of the firm as a factory. It is the command-and-control model of business whose central organizational concept was borrowed from the military over a hundred years ago.³⁸ Peter Drucker, the world-renowned management guru, in a seminal Harvard Business Review article entitled “The Coming of the New Organization” (circa 1988), indicates that, while knowledge workers have resisted the model, it is really information technology that is driving the change in how firms are structured and run.³⁹

Although information technology, without question, has significantly impacted all industries, especially purely knowledge-based industries, successful business models resist change, and for good reason. It is contrary to common sense to change a business model that has worked so well.⁴⁰ The firm-as-factory model is surely one of the underlying reasons that initial law firm KM initiatives were viewed as top-down information technology automation projects which led to, at best, marginal results.⁴¹ Even the often-recycled success stories were, under close inspection, touted more for the improvement of the “brand” than for the underlying improvement in the firm’s economic performance.⁴² In short, historically, a compelling economic argument has been absent from the discussion of KM within a law-firm context.

The first challenge that partner Y faces is that these are uncharted waters, despite the volumes that have been written on the topic—there is a generalized sense in the legal community that something important is happening, but not many useful maps that will lead to the promised results. If automation is not the answer, then what is? Assume that partner Y is an art aficionado and dabbles in abstract painting in the little spare time that he has apart from his practice and familial responsibilities. He has the sense that he is embarked on a “creative” journey, and that alone is reason for pause, because his staff is already 100% utilized.

He made partner in five years by consistently billing well over 2000 hours per year and is intimately aware of the price he has paid for success. He is also aware of the ramifications that this level of utilization is causing industry wide, especially in large firms such as his,⁴³ although his outlook for the industry is not quite so pessimistic. He suspects that the firm-as-factory model that he leveraged may not be sustainable in its current form going forward, and that it may already be starting to show signs of age. He knows from his interest in art that creativity requires time to reflect, to experiment, to make mistakes, and the willingness to start over when the canvas refuses to yield to the artist's vision. Given his group's current utilization rate, he sees only non-existent slack time for creativity and the unattractive option of negatively impacting PPEP in order to improve it.

In other words, partner Y recognizes that he is trapped by the firm-as-factory utilization paradox—the logic of which seems inescapable—he must be willing to accept worse economic results before he can improve them. In the end, the logic of the paradox may indeed be inescapable, but perhaps leveraging his entire staff in a different way can significantly mitigate the negative impact to PPEP. Finders, minders and grinders are all references to attorneys; notice that support staff is nowhere included even though Drucker acknowledges that much of what a firm knows is in the minds of operations staff at the lowest level of the organization.⁴⁴

Partner Y's support staff is smart (a previous assumption); he has seen them do amazing things with documents, spreadsheets and user-created databases; moreover, they are not directly accountable for billable hours. Their work is more readily back filled and he knows that they—like the sergeants during his stint in the service—know best “the way things work around here.” In other words, he and his firm have both benefited from the democratization of computing,⁴⁵ and perhaps therein is a possible answer to the paradox. This paper posits that, instead of categorizing the group's staff as finders, minders and grinders, a better categorization from a KM perspective is into “rainmakers” and “rain collectors.” Rainmakers are directly responsible for revenue generation (finders, minders and grinders) and rain collectors (support staff) are responsible for everything else.

While partner Y sees clearly the economic attractiveness of enabling and collaborating with his support staff, he is well aware of the real or perceived social, cultural and educational differences between professional and non-professional staff. He understands that, while the responsibility for the KM vision is primarily his, with key input from the attorneys in his group;

the actual implementation will be a joint collaborative effort with support staff. Support staff will no doubt recognize the opportunity in participating in a cutting-edge KM initiative and commit to training the “temps” that will backfill some of their day-to-day responsibilities—still, no one on staff has experience with Wiki’s and blogs, let alone with the creative process they are about to embark upon. He also has no idea how the new group-collaboration dynamic is likely to work, if at all. But he is certain of one thing: the success or failure of his group’s collaborative strategy will rise or fall based on how well he manages what some KM commentators call creative abrasion,⁴⁶ the ability to get a high level of performance from a diverse work group.

Law firm KM literature recognizes the utilization paradox but has not as yet zeroed in on an expanded support-staff role.⁴⁷ Partner Y realizes that class distinctions are still prevalent in the legal industry, something he is keen on exploiting for the benefit of all. Having come from humble beginnings, he is well aware that the difference between professional and non-professional staff is often a story of missed, or purposefully forgone, opportunity rather than superior intelligence. Support staff, in any number of industries, but especially in a pure knowledge based industry, are poised to be the “steel workers” of the 21st century—the unsung heroes of the information age. They are often young, urban, technologically savvy, either already members of, or potential members of, the rising creative class.⁴⁸ There is also counter intuitive anecdotal evidence that support staff may in fact learn faster than professional staff,⁴⁹ being less worried about not looking smart in front of peers or the boss. But while partner Y may believe in his pop culture intuitions, it is his Wharton MBA that produces the most compelling argument. The raw economics of leveraging support staff and the limited risks associated with an Internet tools-based strategy, one that requires little IT support and allows for experimentation is what is driving his strategy.

This paper has used partner Y and his group to explore the “wickedness” of the problem—mostly related to people issues; what has not worked very well in the past and a strategy that might be more effective going forward. Partner Y has made a conscious decision to reject a step-by-step methodology advocated by some legal KM commentators.⁵⁰ Instead, he decided to give his group space to create, leveraging a quick prototyping approach that Tom Peters has described as “make a little, try a little, sell a little”⁵¹ and what John Kao in his book “The Art and Discipline of Business Creativity” has called “jamming.” Creating a “space” to work and play, which allows his group’s collective muse to develop—to have fun while doing

serious work⁵²— is the critical challenge. He is well aware that he is taking a road less traveled, especially within the staid nature of the legal industry—but it is one that has significant support in other disciplines.

There are, of course, no guarantees, but if the literature teaches anything it is this: KM within a law firm refuses to yield to the scientific method (i.e. it is not an engineering problem), a central premise of this paper. Still the recognition of core issues, the ability to learn from past mistakes, the willingness to take calculated risks and try new approaches are all important first steps. Partner Y is acutely aware that the challenge ahead is akin to rebuilding a ship at sea. The factory must continue to produce at the same time its core processes are enhanced and perhaps completely redesigned. He believes that his strategy of leveraging support staff and backfilling with temps will allow the group to proceed while minimizing the disruption.

Partner Y is willing to pull the plug on the investment if his objectives are not met, while at the same time he wants to allow ample opportunity for success. He believes that his relatively small and local (only his group) capital investment is enough to adequately fund the sandbox. This is not his firm's first venture into knowledge management, and he wants to avoid the smell of a mostly wasted investment that emerges from the firm's existing "knowledge landfills."⁵³ Other key partners have bought into his strategy because of his reputation for innovation, his ability to manage risks and a proven track record of leadership.

Although the people challenges are certainly the most daunting, partner Y still faces significant hurdles with respect to implementing a set of processes that will produce the desired ROI—a topic this paper addresses next.

Process

Partner Y is willing to take a calculated risk, but he has not lost sight of the fact that a positive impact on PPEP is the ultimate objective. In addition, despite his willingness to experiment with creativity, his Darwinian belief that "you eat what you kill" is unshaken. His objective is not to replace the firm-as-factory business model, but rather to create a better knowledge factory, one with a sustainable and difficult-to-duplicate competitive advantage. Central to this mission is an improvement in the processes that impact how knowledge is created and consumed.

Partner Y's group decided to use Confluence from Atlassian Software, an integrated Internet-based knowledge management repository that includes wiki's, blogs, email archiving, workspaces and search.⁵⁴ Confluence is already used by some of the world's largest organizations and professional services firms (e.g. Accenture and PricewaterhouseCoopers).⁵⁵ The initial license fee is \$1,200 USD for 25 users, more than sufficient for his current group.⁵⁶ Confluence uses a number of open source components and runs well on commodity hardware, thus posing few barriers to entry. Partner Y's initial capital investment, including hardware, is likely to be less than \$10,000.

The critical process questions are 1) how to train the support staff; 2) how to build and structure a critical mass of knowledge; 3) how to integrate KM into the group's day-to-day workflow; 4) and what qualitative characteristics are required in order to drive use? Each process challenge is examined in order to explore the possibilities. It is important to note that Confluence is a productized offering but is not "the solution." It is a component of a knowledge management platform. The solution will be "invented" by the group, tailored to their specific work processes and guided by their emerging vision—a continuous work in progress.

Training support staff starts with allowing them to become more familiar with Confluence by using Atlassian's hosted sample application as the initial sandbox. Here they are free to experiment, learn through trial and error, peruse the online help system and ask questions in the online forums. This kind of hands-on, user-directed training will allow them to immerse themselves in the Confluence community, interacting with Atlassian support and other knowledgeable users. They have been charged with reading all the case studies that appear to be on point. Partner Y has also hired an experienced Confluence consultant, but to coach rather than to provide formal training.

The deliverable from this exercise is a set of recommendations for the initial design of the knowledge base, including the required security/administration settings. Partner Y sees this as an opportunity to gauge, with feedback from the coach, his staff's capabilities, including how the team interacts when support staff reports their findings to the rest of the group.

Building a critical mass of knowledge is not as daunting for a law firm as it might be for a different kind of organization. Law firms already have a significant amount of knowledge captured in forms, profiles of past cases, model precedents, document management systems and other knowledge sources, all of which provide inherent value.⁵⁷ Partner Y has challenged his

group to make a subset of this information visible and searchable. This will eliminate the familiar writer's-block phenomenon of staring at a blank knowledge repository and not knowing where to start. It also gives the team raw material for experimenting with their proposed design.

Partner Y runs the intellectual property (IP) practice, which has experienced significant growth, but as previously mentioned his impact on PPEP has been flat over the last couple of years. In addition to leveraging internal knowledge, partner Y wants to integrate key knowledge sources from outside the firm. He is aware the Wikipedia (despite its recent bad press) has a robust set of general-purpose overviews related to the entire domain: copyright, trademark, and patents—both nationally and internationally.⁵⁸ This background information is useful as is, and need not be duplicated internally. In addition, there are leading authorities within the various sub-domains that publish blogs he wants his staff to track;⁵⁹ he wants links from the internal sub-domains pointing to these sources. In other words, he has given support staff the “green light to scour the Internet” (see Search *infra*) looking for relevant content, and learning to filter by sifting through the “good, the bad, and the ugly.” He has made it clear that this is not “play time” (i.e. despite the fact that his staff will find much of this work quite enjoyable) but part of the serious work required to build a world-class knowledge repository.

His thoughts on the initial structure of the knowledge repository are as follows: each sub-domain (e.g. copyright) will have its own workspace where both internal and external knowledge sources are aggregated; each matter within a domain will have its own page, including links to all documents related to it; model precedents within each domain will have their own page with links to the full text of key opinions that helped shape it; and each attorney will have his own internal blog, published only (at least initially) within the firm's electronic boundaries.

This structure is not cast in stone. It simply represents guidance to support staff from the initial “vision” brainstorming sessions. Partner Y is convinced that any notion of an optimal structure a priori is inconsistent with principles of solving wicked problems.⁶⁰ A slightly, or even radically, different structure is likely to emerge as his group better understands the problem. The fact that his group, and not the information technology group, is responsible for creating and modifying structure is consistent with emerging Enterprise 2.0 thinking.⁶¹

The integration of the knowledge repository into the day-to-day workflow of his group is, according to partner Y's initial thinking, comprised of two distinct and somewhat overlapping challenges, the first being the less complex of the two. Firms routinely create “metadata” during

the matter intake process including client name and location, industry and segment, responsible attorney and billing attorney, and matter type(s) and description.⁶² This information is then fed into various firm systems⁶³ and the knowledge repository is yet another system that requires it. This is an area where future automation might in fact be helpful but initially it will be performed manually, adding an additional burden to the process. Partner Y sees this as a relatively small incremental burden, still one that must be factored into any subsequent ROI calculation.

The second aspect of workflow has to do with creating knowledge artifacts that are dissimilar from the routine nature of the matter intake process. Partner Y and his team must still deal with the challenge of how “rain collectors” can assist “rainmakers” in providing what only they can provide—the context of how matters and deals are won and lost and how changes in the law and economic environment impact the practice. Capturing this tacit knowledge is his real objective. He is hoping that perhaps new media (e.g. audio and video) technologies might help, although their efficacy is unproven, and developing an effective capture process will be non-trivial. In short, creating an evolving practice narrative is his biggest challenge; yet central to the market differentiator that he is seeking. This is where the proverbial rubber meets the road.

In the final analysis it is the narrative of the practice, captured in the “stories” contained therein, that partner Y values as the end game. He is convinced that the stories that need capturing are those typically told around the “water cooler” or in ad hoc pre & post mortem strategy/review sessions.⁶⁴ It is his deep conviction that any attempt to automate human beings completely out of the equation is not only wrong but completely misses the point.⁶⁵ It is a mixture of the old and the new, not unlike how knowledge was transferred from master to apprentice during the renaissance, and from generation to generation since time immemorial,⁶⁶ that he finds most interesting. A prominent KM commentator implicates the use of metaphor and analogy (i.e. storytelling constructs) as key to the tacit knowledge transfer that has driven the Japanese knowledge revolution.⁶⁷ It is through story telling that many top Japanese executives inspired innovative and game changing products.⁶⁸

Similar to the conventional wisdom that the most effective litigators are those who capture and present the human drama that surrounds the facts,⁶⁹ he believes that the most effective source of leverage from his KM initiative will come from the practice narrative, which embodies the even larger human drama that constitutes his practice. It is a conceptual space where one plus one does not always equal two, and may in fact be initially negative—something

that his “left brain” rejects but that his “right brain” is drawn to. The challenge is to merge the best of both.⁷⁰

A brief preview of the Search Funnel Triad (see Figure 3. *infra*) is in order, to put things into context. The purpose of capturing conversations is to drive more business. It is critical to partner Y’s leverage strategy. The more tacit knowledge he can capture, the more high-quality work he can drive through his most talented staff. In addition, margins may also improve from accelerated staff training. If successful, he can dramatically impact two of the four variables (i.e. “leverage” and “margin”) that make up the PPEP calculation.

Finally, it is not lost on partner Y that a high quality knowledge base will be instrumental to his sales activities going forward. Oliver Wendell Holmes once said that the law is not a “system of reason” or “a deduction from principles of ethics or admitted axioms” but rather what the “courts are likely to do in fact.”⁷¹ In other words, it is the predictive value of the law that is most important from the point of view of clients. He sees the knowledge base as having strategic predictive value.⁷² Here, his group’s knowledge repository may not only be instrumental in delivering an improved value proposition, but also strategic with respect to “building the brand.” He is well aware that some high prestige potential clients are already demanding a better “knowledge management story” from outside counsel.⁷³ Also, he has already considered the possibility that clients may ask for secure access to the knowledge base—something that he is not prepared to do in the short term, but nonetheless finds intriguing from a sales perspective.

Mostly absent from this discussion so far has been any mention of the infrastructure (i.e. the hardware, middleware, “security ware” and other required plumbing) necessary to make partner Y’s KM initiative work. This is by design, since partner Y is convinced that outsourcing the “speeds and feeds” is the most viable option in a post Katrina world.

Platform

Post hurricane Katrina there has been a renewed interest in law firm disaster recovery planning.⁷⁴ Professor Stephen Bainbridge’s blog post, based on a widely circulated email, documented that between 5,000 to 6,000 attorneys in New Orleans, one third of all attorneys in Louisiana, may have lost their offices, their libraries, their computers, their data and perhaps their clients.⁷⁵ In short, in the wake of hurricane Katrina not only was the physical infrastructure

of New Orleans devastated, but the computing infrastructure for many (if not most) of the city's law firms was as well.

The conventional view of “platform” is the combination of hardware, software and connectivity options that make up the KM infrastructure. Platform has become increasingly important now that knowledge workers are more “distributed”—requiring anywhere/anytime access. The platform needs to be as reliable as the nation's electric grid so that users can “plug in” on demand. It needs to be available 24/7 and 365 days a year. Partner Y has elected to leverage Internet-based technologies for a number of reasons, but an important one is the improved connectivity options. He is well aware that his internal knowledge repository can quickly become mission critical.

While Internet technologies address the connectivity issue, they do not address the high availability issue, including the disaster recovery issues that crippled the New Orleans legal community. They also do not address, without more, the kind of robust level of security, physical and otherwise, that is required. Partner Y believes that attorneys, and many other professional services providers, need to get out of the computer/data management business (i.e. the infrastructure aspects) and focus on practicing law, medicine, consulting etc. Managing these resources in house is becoming more and more a losing proposition. Why bother when these services are available from an information technology utility provider,⁷⁶ including “out of the box” disaster recovery management?⁷⁷ Partner Y has charged the firm's Director of Technology to investigate these options.

He believes that an outsourced platform can both reduce costs and result in higher levels of service. In his mind, Katrina exposed the myth that sensitive client data must of necessity be managed in house. To be sure, a trusted and stable partner is required, but any number of these are now providing the necessary services, any one of which might have had the New Orleans legal community up and running in a matter of days not months.

This section has explored KM and the challenges firms face in this brave new world where old approaches appear unsuitable and the new approaches are, just that, new—interesting perhaps, but also requiring that most firms deviate from their comfort zone. One thing is clear, a firm's KM strategy is likely to be the most visible manifestation and embodiment of how it accomplishes its mission and leverages its factors of production. Central to any KM initiative

will be the enabling technologies that are exerting an exogenous force on it, the most important of which is “search,” a topic addressed next.

Search

Man has been using search tools and technologies for a very, very long time—at least, according to some research, since the time that anthropologists’ first labeled our ancestors homo sapiens or “thinking man.”⁷⁸ It seems that humans have a “primal fear of being lost.”⁷⁹ The ability to venture forth and find our way back has been central to our survival.⁸⁰ We often become visibly agitated when we are lost and disoriented, whether on a road trip or searching the Internet. One might easily discern the fate that natural selection visited upon the hunter who could not find a food source or his way back to camp. The sense of panic that envelops us when our innate navigation systems fail is palpable. While the scope here is limited to our modern usage of search within a law firm context, millions of years of evolution have “wired” our brains in a particular fashion, and this wiring continues to impact our behavior in subtle, often hidden, and compelling ways.⁸¹

This paper will focus on the behavioral aspects of search from a practitioner’s perspective, but will also touch on some “innate” aspects of search when they tend to impact the former.

The Power of Search

In Ronald Coase’s seminal paper *The Nature of the Firm*, he provides a brilliant analytical framework for determining why firms exist and factors that impact their rate of growth and subsequent optimal size. Essentially his argument derives from the fact that price alone is not determinative of buying behavior because any market transaction has a number of related costs.⁸² These costs are now summarized as search, information, and contractual costs.⁸³ According to Coase, firms will continue to increase in size as long as their organizational structure allows them to manage these costs in a less expensive manner than transacting in the open market.⁸⁴ Also, Coase posits several factors that might limit growth. For example, the fact that as a firm grows in size and complexity it may be more difficult for the entrepreneur to make the most effective use of the factors of production.⁸⁵

While Coase’s transaction cost framework readily applies to an integrated manufacturing firm, a question may arise with respect to its applicability to a law/professional services firm. Law firms are not in the business of procuring raw materials or components in order to produce

widgets. They are in the business of procuring knowledge workers and other explicit forms of knowledge (e.g. treatises, journals, encyclopedias, online search services, online database services, etc.) and repackaging, adding value to, and selling this knowledge in the form of services and other work product. Upon closer inspection, however, there is no real distinction, only a difference in kind, with respect to transaction cost savings for GM versus those of a large law firm. A large law firm theoretically accrues transaction cost savings related to knowledge aggregation that would be incurred at a greater cost in the open market by small firms or by solo practitioners.

Given the complexity and volume of information now available, it would seem that search, in and of itself, would drive an increase in law firm size rather than a reduction. The greater the complexity and the greater the number of procurement options available in the marketplace, the increased potential for transaction costs savings. Coase was prescient enough to realize that technological enhancements would likely drive firm size up: “[c]hanges like the telephone and the telegraph which tend to reduce the cost of organizing spatially will tend to increase the size of the firm.” The inference here is that any technology that reduces the costs of organizing spatially, for example the Internet, contributes to the elimination of local geographical advantages. In fact, the number of lawyers in America’s top 100 grossing law firms has increased from 25,994 in 1986 to 70,161 in 2005 although revenue per lawyer has not kept pace.⁸⁶ It is interesting to note that this growth occurred throughout the entire dot.com boom and throughout Google’s journey to dominance post boom. Anecdotally, the obvious inference is that technology has helped big firms get bigger—but only if we apply the standard economics disclaimer of “all other things being equal.” There may be other plausible explanations for growth: large clients might prefer “full service firms” or clients are trying to reduce their own transaction costs by working with fewer firms. However, the point remains, despite claims to the contrary,⁸⁷ that there appears to be nothing inherent in enabling technologies themselves that argues in favor of a causal connection between them and a trend toward smaller firms. In fact, under a transaction cost analytical framework, the causal connection appears to run in the opposite direction, unless of course the efficiency constraints of “bigness” are reached as discussed below.

While growth in the number of lawyers in the AM 100 has been phenomenal, the revenue per lawyer number is less sanguine. The inference is that there are factors at work that tend to

constrain growth once some indeterminate critical mass is reached. It has long been recognized that internal communication costs increase as firms/teams get larger.⁸⁸ Coase also recognized these inefficiencies as growth constraints—resulting in the entrepreneur, or in the case of a large law firm a group of entrepreneurs, making less efficient use of the factors of production.⁸⁹ The clear inference from Coase is that not only do these inefficiencies limit growth; they might in fact lead to a reduction in firm size as transaction costs become less expensive in the open market.

Due to any number of factors, including systemic problems related to migrating from legacy systems and processes, the velocity of decision-making and the innovator’s dilemma,⁹⁰ smaller firms might be better positioned to leverage enabling technologies. The innovator’s dilemma posits that it far easier for successful organizations to continue investing in “sustaining technologies” than it is to risk the uncertainty of investing in “disruptive technologies.”⁹¹ However, there is theoretically “nothing” (admittedly not allowing here for corporate culture and group purchasing paradigms) that would prevent innovative practice areas within larger firms to move faster than the “mother ship,” and therefore, this paper makes no further assumptions about which firms might best leverage the new factors of production.

Before discussing how disruptive technologies might impact the legal industry it is instructive to reflect on the current state of technology use in law firms and why emerging technologies address a qualitatively distinct problem set. The Information Triad⁹² is a useful model for reviewing the current state of the art, initially with respect to a widget manufacturer, and then with respect to a law firm analog.

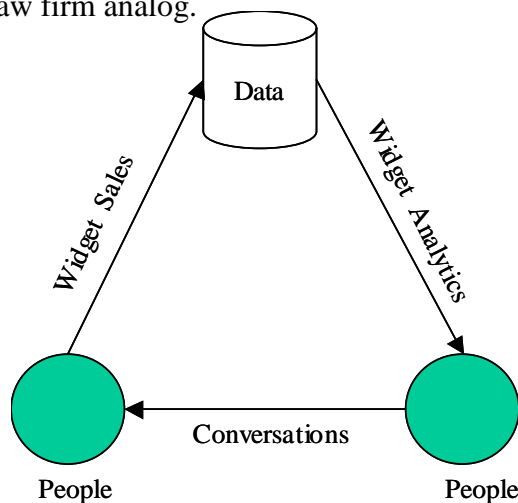


Figure 1. Widget Manufacturer Triad

The Information Triad model, as described by Marc Demarest, posits three distinct stages in the information technology (IT) evolution of a firm.⁹³ The first stage is the capture of transactions related to what the company sells or does. In the example in Figure 1 these transactions concern the sale of widgets. In practice there is a set of related systems whose primary purpose is accounting—these are typically referred to as “back office systems.” Demarest refers to this stage as online transaction processing (OLTP). Stage two in the model uses the data captured from sales transactions and “slices and dices” the information in order to derive “information” from raw data (widget analytics). For example, systems used in this stage, quite distinct from systems used in stage one, might answer the question: “how many widgets were sold in the central Florida region in the month of April 2006 as compared to April 2005?” Demarest refers to stage two of IT evolution as decision support systems (DSS).⁹⁴ The key point to notice is that stage one and stage two systems deal exclusively with what the firm does, neither speaks to or captures information related to “how” the firm accomplishes its mission. The third stage of the Triad, one that Demarest labels “business communications” and is more generically labeled in Figure 1 as “conversations,” is “focused on providing the infrastructure and agency to connect people to people, across space, time and organizational regimes” in order to create a “platform” for turning information into knowledge⁹⁵—which helps the firm drive additional sales transactions. This third stage is the domain of KM systems and processes and where this paper’s analysis is targeted.

Let us now turn to the law firm analog of the Triad in order to demonstrate that IT evolution within law firms has followed a parallel track.

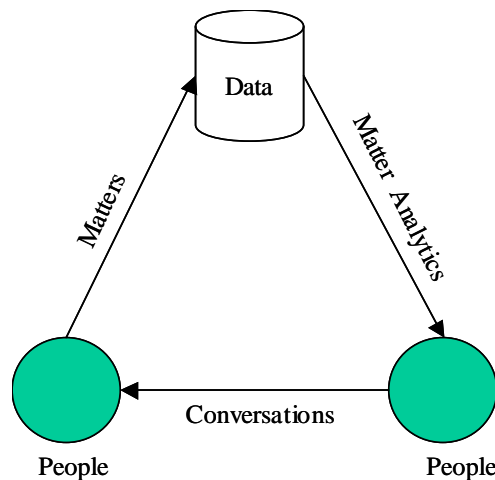


Figure 2. Law Firm Triad

As Figure 2 illustrates law firms capture information about matters and deals in order to account for sales revenue. These OLTP systems are used primarily for accounting and billing purposes, although they may also serve other important functions such as conflict of interest searches. Matter analytics, the equivalent of law firm DSS systems, are useful in answering questions regarding types of matters handled and, for large firms, in what geographies. These systems play an important role vis-à-vis law firm marketing. Nevertheless, the analytics are still concerned with what type of results the firm obtained, and not how these results were obtained. Similar to widget firms, neither stage one nor stage two speak to or capture any information related to how the firm accomplishes its mission. How the firm accomplishes its mission is stored primarily as tacit knowledge in the minds of its employees and in various files and documents, electronic or otherwise, which comprises the firm’s knowledge infrastructure.

By definition all law firms manage knowledge. The question is whether it is a default/ad hoc approach to managing knowledge, or whether there is a conscious and strategic choice to focus on managing knowledge for competitive advantage. This paper focuses on enabling technologies and processes that address the latter, but for now let us assume that this is the desired state and return to how search can help accomplish this goal. The Triad metaphor, used in a slightly different context, will be used to demonstrate how search fits into a KM strategy. Previously, this paper argued that a firm’s KM strategy is the manifestation and embodiment of how it accomplishes its mission and to what degree it is making effective use of the new factors of production—search is arguably most important of these new factors.

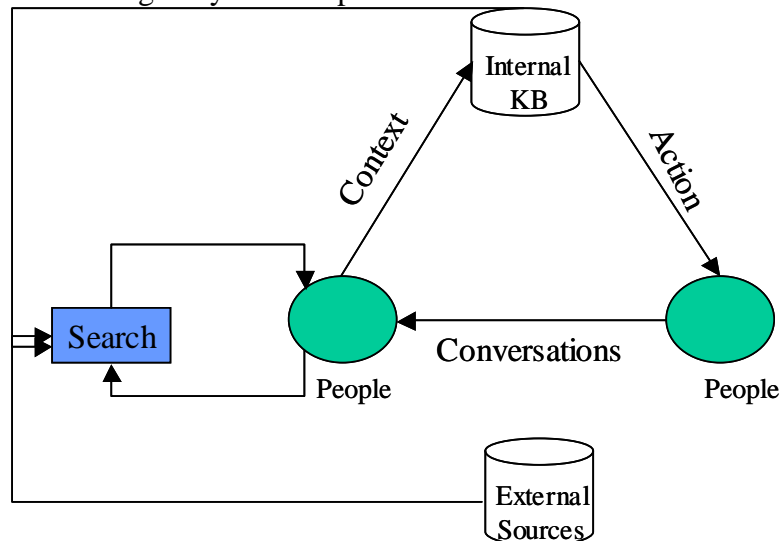


Figure 3. The Search Funnel Triad

The Search Funnel Triad posits that searching for information is the primary starting mechanism by which a firm populates its knowledge base. Researchers have long agonized over the distinction between data, information, and knowledge.⁹⁶ Data is often defined as “facts”, information as “data with meaning”, and knowledge as “justified beliefs and know how.”⁹⁷ Here the term “information” is used to encompass both “data and information.” The key distinction, from a law practice perspective, is between information and knowledge. The underlying assumption is that search results produce information. Information is placed into the firm’s knowledge base within a specific context. For purposes of illustration, a specific practice area within a firm: intellectual property, personal injury, or commercial law will serve as the primary context. In practice the knowledge base may take many forms, however going forward it is likely to consist of a set of web pages, for example an internal Wikipedia⁹⁸, and related resources that represents the firm’s practice know how.

How knowledge is created and managed was addressed supra, for now it is only important to recognize that the Search Funnel Triad allows for the capture of know how. Practitioners leverage the knowledge base and other resources to deliver services and work product. This is the “Action” stage. The delivery of services and work product leads to further conversations, both within and external to the firm, which subsequently leads to additional search behavior. Over time, a critical mass of know how resides in the knowledge base and more and more time is spent using it rather than building it. It is clear that the building process is a continuous one because either the law changes, the economic environment changes, the firm’s delivery strategy changes, or more than likely some combination of all of these. Notice that the Search process in Figure 3 is not only a means for populating the knowledge base— it is also the primary metaphor for using it. Google⁹⁹ and some of its competitors¹⁰⁰ are already offering products that allow the power and simplicity of Internet based search to operate within the electronic boundaries of the firm. While these enterprise offerings are not free, the extension of search as the ubiquitous computing metaphor continues to gather momentum.

The Search Imperatives

Reporters are often taught to answer five basic questions as preparation for writing about any particular topic: who, what, where, why and when—and how is an equally interesting

question.¹⁰¹ These questions also serve as a useful analytical framework for discussing use of search technologies within a firm.

Why search?

In many ways this is clearly a rhetorical question but exploring distinct search categories helps to underpin search's relevance to the practice of law. First and foremost, practitioners search for primary authority, relevant precedence, both controlling and persuasive, and pertinent statutes that will aid them in resolving a matter or providing advice to a client. Secondary authority is searched to provide persuasive authority and background or context within a substantive area of law. Online searching might enable these activities to be done better, faster and cheaper, but it is essentially the same kind of activity that practitioners have been doing since the reporters and other authority first appeared in print.

There are now however, search applications that are quite different in scope and in kind than those of the past—ones that have little historical analog. The ability to search nationally and internationally for near “real time” analysis of recent decisions by recognized experts in particular substantive areas of the law, via blogs and other new media formats, has profound KM implications. Especially now, considering that this analysis was previously unavailable to any firm, regardless of size. In addition, the ability to search online for collateral information on parties, judges, opposing counsel, expert witnesses and domain knowledge is without comparative precedent in the print world. Imagine capturing the most relevant of the information above in partner Y's repository, all within a narrative most suitable to his practice.

Furthermore, there is at least one search application, and perhaps others, that did not exist, and could not have existed, in a pre-digitized universe—electronic discovery. The upheaval that electronic discovery is causing in the legal industry cannot be understated.¹⁰² The recent electronic discovery inspired changes to the Federal Rules of Civil Procedure are driving heretofore-unprecedented legal technology literacy challenges.¹⁰³ This in an industry that is often considered a laggard in technological adoption.

In short, the brave new world of legal search is dynamic, evolving, and qualitatively different from its earlier incarnation. The primacy of search within the legal industry can only be “hinted at”, but to paraphrase the erudite Yogi Berra: “its future ain't what it use to be.”

Where do we search?

Again, on its face this might seem like a rhetorical question, but there are interesting and non-obvious insights waiting once we start to “peel back the onion.” First of all it must be recognized that the question has a certain duality associated with it that was not as important in the past, from a practice perspective, as it is today. The duality has to do with a particular spatial quality of search: 1) that we are searching “in” particular places: online, public libraries, firm libraries and; 2) we are also searching “from” certain places: work, courtrooms, homes, planes and Starbucks to name a few.

The central point here is that practitioners are, like almost all knowledge workers, becoming more and more mobile in their work habits. They have a need to access resources on an anywhere, anytime basis. While the online world provides this level of access, there are significant firm resources, for example most matter management systems, which are not as easily leveraged due to the fact that legacy technologies do not provide the requisite infrastructure support “out of the box.” For our purposes legacy technologies and systems may be defined as those that do not leverage Internet protocols directly (e.g. Windows applications). Although access technologies for legacy systems now make anywhere, anytime connectivity possible, and law firms are certainly taking advantage of them,¹⁰⁴ the experience is not nearly as seamless and cost effective as native Internet use.

This paper addressed platform considerations supra in the context of KM and firm competitiveness. However, it bears reemphasizing that anywhere, anytime access to resources, both within and outside the firm, is an important foundational component of any viable KM strategy.

When do we search?

This question begins to illustrate the fact that the search imperatives are not stand alone discrete concepts, but have relationships and dependencies one to the other. The obvious answer here is that practitioners want to search whenever they have a need for information. But that need may not coincide with the required access. The “when question” is dependent on both access, mostly an infrastructure concern, and on key characteristics of what results are anticipated, mostly a function of content and its structure. That is, we tend to search whenever we can get quick results by typing in a few keywords in a browser, because the browser facilitates this kind

of search. It knows how to process the request and return results in a format that we are accustomed to. If what we need to search is in a relational database, then we need a specialized query tool and/or knowledge of a query language (e.g. SQL). Both of which may dramatically constrain when we search, and how often.

There may also be an answer to the “when question” that has more to do with evolution and “hard wired” human behavioral characteristics than any post-modern concept of rationality. Marcia Bates, using a multi-discipline approach to building an integrated model for information seeking and searching, poses the following intriguing questions:¹⁰⁵

Why do physicians not use the medical literature, rather than relying on the drug company salesman for information about a new drug? Why will our students not get up and walk a hundred meters to access a key journal article in the library? The natural human tendency in information seeking is to fall back on passive sampling and selecting behaviors derived from millions of years of [evolution]. . . .It is not surprising, then, that the methods of access designed by librarians are generally little used.¹⁰⁶

What she only hints at in the passage above is that we tend to search when it is easy to do so. One of the primary reasons postulated for Google’s phenomenal success is its vaunted ease of use.¹⁰⁷ Simply typing a few relevant keywords is enough to quickly get meaningful results.¹⁰⁸ There is no need to make that 100-meter walk across campus to the library when the world’s largest library is a few clicks away.

This by no means implies that fast and easy is best, but only that fast and easy is often “good enough.” The same is true for legal research: why crack open that reporter or legal encyclopedia when Westlaw and Lexis are a few clicks away? First year law students understand that there are rational reasons for choosing print sources over electronic sources, and moreover, that print sources are sometimes better and faster, but the ease of use addiction may be more complex than mere “laziness”—it may have as much to do with the “lizard brain” and the way human beings respond to information needs.¹⁰⁹ The reason may have to do with the fact that “over 99% of our species evolutionary history (about 10 million years) has been spent in hunter-gatherer societies”¹¹⁰ and perhaps we sense that searching should only be allocated a small percentage of our time, having other pressing things to tend to. In short, to become more effective researchers we may in fact need to “unlearn” some innate behavior. We may know that another approach is more effective, but our “hard wiring” is suggesting otherwise.

Notice that finding and using information are two distinct modalities. There is anecdotal evidence that print still dominates as a medium for use.¹¹¹ The paperless office may be pure fiction and not something that is inherently desirable. But usage, from the perspective of consumption, is conceptually distinct from ease of use with respect to search—it is the latter that has significant import vis-à-vis KM and its ultimate success or demise within a firm.

What are we searching for?

While the “why” question pointed to several specific categories of information that might drive a practitioner’s queries, the “what” question is probably many orders of magnitude broader, even within a specific industry and practice area. It deals with the kinds of queries created by specific keywords. As you might imagine, the potential queries are as varied, complex and rich as natural language will allow.

In a 2003 study by Piper Jaffrey, an advertising and investment-banking consultancy, they found that 550 million online searches were done on a daily basis and that this figure was growing at a 10-20% rate internationally and at a 30% rate within the United States. If these figures are correct, the number of queries done on a daily basis is now over 5 billion a month.¹¹² While the legal industry’s share of this activity will no doubt be a small percentage, it is nonetheless a potentially large, and growing, number.

From a practice management perspective the “what” question also reflects another dimension of interest, and that is related to the “containers” that drive search results. Usually the breakdown is between structured data, which is data stored in databases, for example a matter management database, and unstructured data, which comprises everything else: documents, web pages, email, print, audio, and video. Online searches via Google and other engines handle unstructured data in a technically elegant fashion for users because the browser has “built in” capabilities for handling documents of various types and because the engines perform transparent indexing that delivers reasonably fast results.

However, firms need to search both structured and unstructured data, both within the electronic boundaries of the firm as well as outside of it. In short, the platform provided by the online search engines only suffices to fulfill part of a firm’s search solution space. The remaining part of the solution space, within the firm, has proved to be a daunting challenge for law firm

KM initiatives. This paper posited the adoption of Internet based technologies as the internal solution and described available technologies and products for doing so.

Who searches?

If the question is a generic one with respect to Internet users then the answer is nearly everyone. A Pew Internet & American Life Project released results from a 2004 study that indicated that 85% of American Internet users, or 107 million U.S. citizens, use online search engines.¹¹³ Of this number greater than two thirds are active users, defined as using a search engine more than once or twice a week.¹¹⁴ Again, legal industry specific numbers are clearly only a microcosm of overall use, but certainly the industry as a whole fits the profile of the technology elite that drive the usage: usually comprised of the young or better educated.¹¹⁵

What about specifically within the legal industry, who are the primary users of search technology? Certainly, even this market niche is quite broad and would include attorneys, judges, legal academics, legal librarians, paralegals, legal administrators and many others. It is safe to say, although empirical evidence is hard to come by, that more and more the use of search technologies in all of these categories is growing. Ease of use is driving the democratization of search in the legal industry from the few to the many. The economic consequences of these behavioral changes within the firm are little understood, but these changes certainly have potential transaction cost implications that are analyzed further in the Law Firm Roadmap section.

How do we search?

For the majority of search applications the answer to this question is by typing keywords into a search engine via a browser, at least with respect to online resources outside of the firm. Search applications within firms vary widely depending on the specific applications and infrastructure used. As mentioned previously, internal search applications are complicated by the need to search both structured data and unstructured data and the fact that an internal search platform is either non-existent, or relatively crude as compared to the Internet.

Google¹¹⁶ and others¹¹⁷ are moving to bring the ease of use of Internet search within the firm's electronic boundaries. It seems likely that the browser, or something like it, will become the de facto man machine interface for all search applications. In addition, technologies similar to those used within Wikipedia are being developed as repositories for internal knowledge bases,

all capable of being searched via browser-based technologies. This paper posited the use of browsers and Wiki's, both leveraging Internet protocols within the firm, as a low cost and maturing platform for KM.

The use of Internet based technologies within the firm is nothing new, it simply provides an appropriate metaphor for discussing how KM initiatives might be actualized in a manner: 1) likely to be where the KM technology is headed; and 2) easily understood by most readers.

Search as a Piece of the Puzzle

Search is no doubt a fascinating topic in its own right but given the level of casual familiarity that many practitioner's now have with it, the tempting question to ask is so what? Certainly the integration of search into the daily lives of most knowledge workers supports the argument that while search may be an important aspect of what they do, it certainly does not lead, without more, to anything like a competitive advantage, either personally or for their respective employers. Why? Precisely because most everyone can do it (albeit not all with the same level of aptitude)—moreover, as generation X, Y and Z enter the workforce, many have been doing it for quite some time.

But search as a critical component to building a knowledge base (see the Search Funnel Triad supra) is quite a different matter. Here, as part of a KM strategy, search is not a "one off" tactical activity whose goal is to find a discrete piece of information, but rather a more strategic activity whose objective is to add search results to an evolving and organic narrative around a substantive area of the law. It is the ability to plug search results into a narrative, one that provides the requisite holistic context, which provides search with its enabling characteristic.

Of course, despite the enabling technologies that are now available, it remains a daunting challenge to actually implement a viable, let alone a market differentiating, KM initiative. Why? The problem has proved bewildering because of challenges related to, among others, people, process and platform—as discussed previously in the Knowledge Management section.

Search and Knowledge Management Revisited

The role of search can now be placed in its proper context as the key enabling technology in a firm's KM initiative (see Figure 3 supra). Search is the metaphor for both growing and using the internal knowledge repository. The vast resources on the Internet are available to Partner Y's group for adding additional context sensitive information to the practice narrative. In other

words, much of what is searched for can be integrated into the internal knowledge repository, eliminating the need for resource wasting repetitive search activity. Also, the resulting knowledge in the repository is more effectively leveraged, primarily because it is part of a narrative, and not just discrete pieces of disconnected information. There is a potential high opportunity cost for ineffective search use.¹¹⁸

Thus far the discussion of search has been disassociated from its pedagogical use. While there may be a significant amount of “bad” content on the Internet, the careful diligent searcher can often find quality and up to date content from thought leaders in both business and academia. The interested knowledge worker has a wide selection of competent instructors at his or her disposal. That said, the problem of bad content is not a trivial one. The group must remain vigilant with respect to best practices related to “authoritative sources,” both from within and without the firm, and the consequential “trust” issues that ensue if not adhered to.¹¹⁹

Review the assumptions made related to Partner Y and his group. Assume they are valid for the sake of argument. An observer might conclude that the group is poised for success. That is not what this paper posits. To borrow from Tom Peters, and consistent with solving wicked problems, the group is poised to “fail fast.”¹²⁰ You cannot understand a wicked problem until you attempt to solve it,¹²¹ and therefore, by definition, the group’s initial attempts are likely to fail. It is only by quickly learning from failure that the group has a chance at success. The vast resources available on the Internet are invaluable cost effective learning tools, especially given the rate of change in the digital universe.

In short, if partner Y is to be successful at all, it will be due to the creation of a “learning lab” in the midst of the factory. He believes that Arie de Geus, renowned organizational learning expert, had it right: “the ability to learn faster than your competition may be the only sustainable competitive advantage.”¹²²

Law Practice Roadmap

This paper has explored the potential impact of search and knowledge management on the practice of law. It is unclear to what extent this impact will be transformative, actually changing the nature of how law is practiced. Given the obstacles, it seems that the changes are likely to be evolutionary rather than revolutionary. However, no one would have predicted five short years ago that some of these same technologies would have transformed mainstream

journalism; or that Google and open source software, in approximately the same period, would become a serious threat to Microsoft's monopoly.

The transformative effects of these enabling technologies are, if anything, unpredictable. In terms of Coasesian transaction costs analysis, it remains to be seen if the benefits of these enabling technologies accrue to larger firms or to their more nimble smaller brethren. In other words, will the Coasesian inefficiencies inherent in large firms trump their natural advantages? The technologies themselves are clearly agnostic, but as John F. Kennedy once said: "Progress is a nice word, but change is its motivator, and change has many enemies."

In short, progress may entail changing the firm's view of itself—a reinvention of how it works and whom it hires. Those invested in the status quo are likely to resist and even those convinced that change is necessary are likely to be at a loss on how to proceed. Historically, larger firms, across industries, have found it difficult to affect change in their social, cultural, and organizational traditions. There is no reason to suspect that the legal industry is any different, except that large law firms are often run as an aggregation of small (somewhat independent) business units, and this could be a critical distinction.

The accelerating commoditization of enabling technologies provides few barriers to entry for smaller firms. This leveling effect accentuates the shift from capital to knowledge as the most important factor of production. While these changes might not be transformative, they are likely to dramatically impact the postindustrial practice of law, helping shape emerging competitive advantages and market differentiators.

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- ¹ Wikipedia, *Google*, http://en.wikipedia.org/wiki/Google#_note-5 (last modified January 1, 2007)
- ² *Id.*
- ³ John Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture*, 4 (Penguin Group 2005)
- ⁴ Carol M. Bast, Margie A. Hawkins, *Foundations of Legal Research and Writing*, 279 (2d ed., West 2002)
- ⁵ See Ronald Coase, *The Nature of the Firm*, 8 (1937)
- ⁶ *Id.*
- ⁷ Clayton M. Cristensen, 2, *The Innovator's Dilemma*, (HarperCollins 2003)
- ⁸ See generally *Id.*
- ⁹ *Id.*
- ¹⁰ See Richard Susskind, *Transforming the Law* (Oxford University Press 2000)
- ¹¹ L. Prusak, *Where did knowledge management come from?*, Volume 40 IBM Systems Journal (November 4, 1001), <http://www.research.ibm.com/journal/sj/404/prusak.html>
- ¹² *Lotus, IBM and Knowledge Management* (<http://www.gdrc.org/kmgmt/lotuskm.pdf>)
- ¹³ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 21 (Oxford University Press 2004)
- ¹⁴ Rittel, H., and M. Webber; *Dilemmas in a General Theory of Planning*, 4 Policy Sciences 155-169 (1973)
- ¹⁵ Jeff Conklin, *Wicked Problems and Social Complexity*, 8-9, <http://www.cognexus.org/wpf/wickedproblems.pdf>
- ¹⁶ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 23 (Oxford University Press 2004)
- ¹⁷ See Mario Benassi, Paolo Bouquet and Roberta Cuel, *Success and Failure Criteria for Knowledge Management Systems*, <http://fandango.cs.unitn.it/~rcuel/docs/EURAM-2003-Benassi-Bouquet-Cuel.pdf>
- ¹⁸ Wikipedia, *Agile Software Development*, http://en.wikipedia.org/wiki/Agile_software_development (last updated December 29, 2006)
- ¹⁹ Peter Morville, *Ambient Findability: What We Find Changes Who We Become*, 46 (O'Reilly 2005)
- ²⁰ Jim Botkin, *Smart Business: How Knowledge Communities Can Revolutionize Your Company*, 28 (Simon & Schuster 1999)
- ²¹ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 26-27 (Oxford University Press 2004)
- ²² *Id.* at 26
- ²³ *Id.* at 55
- ²⁴ *Id.* at 14
- ²⁵ *Id.* at 15-16
- ²⁶ *Id.* at 32-33
- ²⁷ *Id.* at 35
- ²⁸ *Id.* at 5
- ²⁹ *Id.* at 36
- ³⁰ *Id.* at 29 (Parsons brilliantly illustrates this with a number of examples and tables in his "economics of law firms" chapter)
- ³¹ Jim Botkin, *Smart Business: How Knowledge Communities Can Revolutionize Your Company*, 6 (Simon & Schuster 1999)
- ³² David H. Hsu and Kwanghui Lim, *Knowledge Bridging by Biotechnology Start-ups*, Knowledge@Wharton (July 12, 2006), <http://knowledge.wharton.upenn.edu/article.cfm?articleid=1518>
- ³³ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 27 (Oxford University Press 2004)
- ³⁴ Stan Gibson, *Wikis are Alive and Kicking in the Enterprise*, eWeek (November, 20, 2006), <http://www.eweek.com/article2/0,1759,2061135,00.asp>
- ³⁵ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 20 (Oxford University Press 2004)
- ³⁶ Ronald W. Staudt, *Perspectives on Knowledge Management in Law Firms*, 5, <http://law.lexisnexis.com/literature/WhitePaperTS3draftv2.pdf>
- ³⁷ *Id.*
- ³⁸ Peter F. Drucker, *Harvard Business Review on Knowledge Management: The Coming of the New Organization*, 3 (Harvard Business School Press 1998)
- ³⁹ *Id.*
- ⁴⁰ Clayton M. Cristensen, *The Innovator's Dilemma*, (HarperCollins 2003)
- ⁴¹ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 23 (Oxford University Press 2004)

⁴² *Id.* at 24

⁴³ See Patrick J. Schlitz, *On Being a Happy, Healthy, and Ethical Member of an Unhappy, Unhealthy, and Unethical Profession*, 52 Vand. L. Rev. 871 (1999)

⁴⁴ Peter F. Drucker, *Harvard Business Review on Knowledge Management: The Coming of the New Organization*, 5 (Harvard Business School Press 1998)

⁴⁵ Thomas L. Friedman, *The Lexus and the Olive Tree: Understanding Globalization*, 47 (Anchor 2000)

⁴⁶ Dorothy Leonard and Susaan Straus, *Harvard Business Review on Knowledge Management: Putting Your Company's Whole Brain to Work*, 110 (Harvard Business School Press 1998)

⁴⁷ See Sandra Higgison, *From Laggard to Leader? How the Legal Sector is finally embracing KM*, 8 Managing Partner (7/5/2005),

<http://www.mpmagazine.com/xq/asp/sid.0/volume.8/issue.2/qx/displayissue.htm>

⁴⁸ Richard Florida, *The Rise of the Creative Class*, 166 (Basic Books 2003)

⁴⁹ Chris Argyris, *Harvard Business Review on Knowledge Management: Teaching Smart People How to Learn*, 92 (Harvard Business School Press 1998)

⁵⁰ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 84-85 (Oxford University Press 2004)

⁵¹ Tom Peters, *In the new economy, all work is project work. And you are your projects! Here's how to make them all go Wow!*, 24 Fast Company, (April 1999), <http://www.fastcompany.com/online/24/wowproj.html>

⁵² David Gurteen, *Knowledge Management and Creativity*, 2 Journal of Knowledge Management (September 1998),

⁵³ Matthew Parsons, *Effective Knowledge Management for Law Firms*, 78 (Oxford University Press 2004)

⁵⁴ See Atlassian, *Confluence: the Enterprise Wiki Software*, <http://www.atlassian.com/software/confluence/>

⁵⁵ See Atlassian, *Confluence Customers*, <http://www.atlassian.com/software/confluence/customers.jsp>

⁵⁶ See Atlassian, *Confluence Licensing and Pricing*, <http://www.atlassian.com/software/confluence/pricing.jsp>

⁵⁷ Chris Boyd and Ron Friedman, *Knowledge Management: Powering a KM Windmill*, International Legal Technology Association (June 2006),

http://peertopeer.org/files/tbl_s6Publications/PDF33/119/Knowledge%20Management.pdf

⁵⁸ Wikipedia, *Intellectual Property*, http://en.wikipedia.org/wiki/Intellectual_property (last update December 28, 2006)

⁵⁹ See William Paltry, *The Patry Copyright Blog*, <http://williampatry.blogspot.com/>; See Also Martin Schwimmer and Glenn Mitchell, *The Trademark Blog*, <http://www.schwimmerlegal.com/>

⁶⁰ Jeff Conklin, *Wicked Problems and Social Complexity*, 8-9, <http://www.cognexus.org/wpf/wickedproblems.pdf>

⁶¹ See Andrew McAfee, *The Impact of Information Technology (IT) on Businesses and their Leaders*, http://blog.hbs.edu/faculty/amcafee/index.php/faculty_amcafee_v3/C25/ (last updated May 20, 2006)

⁶² Chris Boyd and Ron Friedman, *Knowledge Management: Powering a KM Windmill*, International Legal Technology Association (June 2006),

http://peertopeer.org/files/tbl_s6Publications/PDF33/119/Knowledge%20Management.pdf

⁶³ *Id.*

⁶⁴ J.C. Thomas, W.A. Kellogg, and T. Erickson, *The knowledge management puzzle; Human and social factors in knowledge management*, 40 IBM Systems Journal 871 (2001)

⁶⁵ Carlos A. Leyva, *Silicon Stories*, 161 (TheB2Bdepot Press 2002)

⁶⁶ *Id.*

⁶⁷ Ikujiro Nonaka, *Harvard Business Review on Knowledge Management: The Knowledge-Creating Company*, 24-25 (Harvard Business School Press 1998)

⁶⁸ *Id.*

⁶⁹ See Lawrence D. Rosenberg, *Using the Lessons of Aristotle to Present Outstanding Oral Arguments*, <http://www.abanet.org/litigation/members/docs/sac2006.pdf>

⁷⁰ Dorothy Leonard and Susaan Straus, *Harvard Business Review on Knowledge Management: Putting Your Company's Whole Brain to Work*, 112 (Harvard Business School Press 1998)

⁷¹ Oliver Wendell Holmes, *The Path of the Law*, 10 Harvard Law Review 457, 458 (1897)

⁷² Francis Averill, colleague, *Peer Review Workshop of Search, Knowledge Management and the Practice of Law* (Stetson College of Law, Jan. 31, 2007) (indicating from the perspective of Holmes' "The Path of the Law", that the proposed knowledge base had "predictive value" in a manner consistent with Holmes' practical view)

⁷³ Cisco, *Cisco General Counsel on State of Technology in the Law*, http://blogs.cisco.com/news/2007/01/cisco_general_counsel_on_state.html (last visited March 19, 2007)

⁷⁴ See American Bar Association, *Hurricane Katrina Disaster Resources*, <http://www.abanet.org/katrina/technology.html>

-
- ⁷⁵ See Stephen Bainbridge, *Law and Lawyers Post Katrina*, http://web.archive.org/web/20051028001519/http://www.professorbainbridge.com/2005/08/la_lawprofs.html
- ⁷⁶ See Nicholas Carr, *The End of Corporate Computing*, <http://www.nicholasgcarr.com/articlesmt/archives/endofcorporatecomputing.shtml#download>
- ⁷⁷ See Vericenter, *IT Disaster Recovery*, http://www.vericenter.com/solutions/it_disaster_recovery/index.aspx
- ⁷⁸ Peter Morville, *Ambient Findability: What We Find Changes Who We Become*, 20-21 (O'Reilly 2005)
- ⁷⁹ *Id.* at 16
- ⁸⁰ *Id.*
- ⁸¹ *Id.* at 20-21
- ⁸² Ronald Coase, *The Nature of the Firm*, 4 (1937)
- ⁸³ Wikipedia, *Transaction Cost*, http://en.wikipedia.org/wiki/Transaction_cost (last modified December 19, 2006)
- ⁸⁴ Ronald Coase, *The Nature of the Firm*, 8 (1937)
- ⁸⁵ *Id.* at 7
- ⁸⁶ Alison Frankel, *2006 AM Law Firms Feel Growth Pains*, *The American Lawyer* (May, 1 2006), <http://www.law.com/jsp/article.jsp?id=1145964629358>
- ⁸⁷ Skip Walter, *Technology, Rulings Level Playing Field Between Large, Small Firms*, *The National Law Journal* (August 30, 2004), <http://www.law.com/jsp/law/sfb/lawArticleSFB.jsp?id=1090180436424>
- ⁸⁸ Fred P. Brooks, Jr., *The Mythical Man Month: Essays on Software Engineering*, 18 (Addison-Wesley Professional 1995)
- ⁸⁹ Ronald Coase, *The Nature of the Firm*, 6-7 (1937)
- ⁹⁰ Clayton M. Cristensen, *The Innovator's Dilemma*, (HarperCollins 2003)
- ⁹¹ *Id.*
- ⁹² Marc Demarest, *The Information Triad: A Model Of Past, Current And Future Information Technology Utilization In The Firm*, <http://www.noumenal.com/marc/triad1.pdf>
- ⁹³ *Id.* at 3
- ⁹⁴ *Id.* at 6
- ⁹⁵ *Id.* at 8.
- ⁹⁶ See Dick Stenmark, *Knowledge, Data, Information and Knowledge Definitions*, <http://www.viktoria.se/~dixi/km/chap3.htm>
- ⁹⁷ *Id.*
- ⁹⁸ Wikipedia, *Welcome to Wikipedia*, http://en.wikipedia.org/wiki/Main_Page (last accessed January 3, 2007)
- ⁹⁹ Google, *Enterprise Solutions*, <http://www.google.com/enterprise/> (last accessed January 3, 2007)
- ¹⁰⁰ Recommind, *Home Page*, <http://www.recommind.com/> (last accessed January 3, 2007)
- ¹⁰¹ John Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture*, 19 (Penguin Group 2005)
- ¹⁰² Brian Banineau, *Discovering a Mess*, <http://www.computerworld.com/blogs/node/2787> (last updated June 16, 2006)
- ¹⁰³ Dennis Kennedy and Tom Mighell, *EDD-ucating Yourself About Electronic Discovery*, *Law Practice Management* (October, 2006), <http://www.abanet.org/lpm/lpt/articles/slc10061.shtml>
- ¹⁰⁴ CRM Today, *Top Law Firms Testify to Productivity Benefits and ROI with Citrix Online Access*, <http://www.crm2day.com/news/crm/117189.php> (last updated January, 31, 2006)
- ¹⁰⁵ Peter Morville, *Ambient Findability: What We Find Changes Who We Become*, 61 (O'Reilly 2005)
- ¹⁰⁶ Marcia J. Bates, *Towards an Integrated Model of Information Seeking and Searching* (Lisbon, Portugal, September 11-13, 2002)
- ¹⁰⁷ Chris Sherman, *Google Power: Unleash the Full Potential of Google*, 20 (McGraw-Hill 2005)
- ¹⁰⁸ *Id.*
- ¹⁰⁹ Peter Morville, *Ambient Findability: What We Find Changes Who We Become*, 56 (O'Reilly 2005)
- ¹¹⁰ *Id.* at 57
- ¹¹¹ Study of New England Journal of Medicine Comparing Print and Online Readership, Anderson, K. *Learned Publishing* 2004
- ¹¹² John Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture*, 26 (Penguin Group 2005)
- ¹¹³ *Id.* at 25
- ¹¹⁴ *Id.*

¹¹⁵ *Id.* at 26

¹¹⁶ Google, *Enterprise Solutions*, <http://www.google.com/enterprise/> (last accessed January 3, 2007)

¹¹⁷ Recommind, *Home Page*, <http://www.recommind.com/> (last accessed January 3, 2007)

¹¹⁸ Susan Friedman, *The high Cost of not finding information*, KMWorld.com (March 1, 2004)
<http://www.kmworld.com/Articles/ReadArticle.aspx?ArticleID=9534>

¹¹⁹ Kristen Adams, Professor of Law, *Peer Review Workshop of Search, Knowledge Management and the Practice of Law* (Stetson College of Law, Jan. 31, 2007) (indicating, from personal experience, that lack of trust can essentially render any knowledge base virtually useless)

¹²⁰ Tom Peters, *Producing WOW! Business Results and an Inspired Culture*,
<http://www.tompeterscompany.com/company/merger/>

¹²¹ Jeff Conklin, *Wicked Problems and Social Complexity*, 8-9, <http://www.cognexus.org/wpf/wickedproblems.pdf>

¹²² A. P. de Geus, *Planning as Learning*, Harvard Business Review 70 (March/April 1988)