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Evaluating the Benefits of Knowledge Management

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1. Objective

This white paper is written to assist law firms in their software evaluation process. It presents a business case for knowledge management (KM), offers law firm decision makers a framework for analysis, and provides a set of tools to evaluate the benefits of knowledge sharing. It is hoped that the material will serve as a basis for discussion, giving lawyers, managers, librarians, and technologists a shared understanding of the key issues and business drivers of knowledge management, and allow interested parties to make informed choices. The discussion is, however, limited in scope to the assessment of knowledge management technologies. A firm planning a KM initiative or reassessing current efforts should also consider other project planning guidelines that are beyond the scope of this white paper, such as leadership, management buy-in, project scope, needs assessment, and resource requirements.

2. Knowledge Management

The first step in the evaluation of knowledge- sharing software is to develop among all interested parties a common understanding of the meaning of knowledge management, its goals, and its challenges. As groups work through this vital step, many will find their main obstacle to understanding lies less in comprehending the broad intent of knowledge managementÑfor many the meaning will be intuitive or even the application of common senseÑthan in seeing how such insights can be applied to specific work practices.

2.1. Definition

Knowledge management can be broadly defined as the identification and management of processes for leveraging the intellectual capital of organizations over time and place. As such, it applies to every job function and process and seeks to capture institutional learning and share best practices for the benefit of the entire firm and its clients.

2.2. Goals

A deeper understanding of KM can be gained by defining its goals.1 Most commentators writing on the subject highlight the primary purpose of KM as efficiency and productivity achieved through the reuse and sharing of experience and know-how. Often overlooked is the potentially more important goal of promoting quality of work product and practitioner training that can be shown to increase the value of the client service. In fact, knowledge management can serve a wide variety of purposes. According to Petter Gottschalk, of the Department of Technology Management at the Norwegian School of Management, "[e]ffective knowledge management pays off in fewer mistakes, less redundancy, quicker problem solving, better decision making, reduced research development costs, increased worker independence, enhanced customer relations, and improved service." 2 Among the many possibilities, law firms may consider the following:

- Productivity and efficiency
- Knowledge sharing, skill development, and training
- Competitive advantage, including market visibility as a high-tech firm
- Ability to direct work to skilled specialists
- Consistency of work product across offices or practice areas
- Faster delivery times
- Quality control
- Reduced frustration searching for documents
- Client collaboration

Each firm should determine the specific goals for its knowledge management program, because unless the goals are defined, it is impossible to measure success.

2.3. Challenges

Realizing the benefits of KM has proved elusive for law firms. It has been well documented that few initiatives have been successful. A brief review of the history of KM programs in law firms will serve to highlight some of the barriers to success.

Initial large-scale efforts to collect and organize documents were frequently based on document management software (DMS). Although a DMS serves primarily to manage current work product (sometimes referred to as work in progress), it was hoped that the technology could also manage reusable work product by asking fee earners to mark or profile documents with bibliographic and context (client and matter) information. This profiled data, together with full-text search features, would then provide researchers with the necessary tools to locate valuable documents. Unfortunately, few firms have been able to achieve this goal because fee earners lack the time or incentive to fully profile documents. Moreover, the process of profiling at the time of document creation often fails to distinguish valuable final documents from ancillary material.

In order to overcome some of the deficiencies of the DMS approach, some firms created separate document collections variously called brief banks or work product retrieval systems. And, instead of relying on fee earners to profile documents, firms have hired content managers or used staff to manage the content. However, most of these systems also failed to attain critical mass,3 and the few successful implementations have required expenditure of large sums to maintain the currentness of the work product. Among the obstacles faced by firms adopting this approach are the inability to collect documents from the DMS, lack of reliability and functionality of precedent databases developed in-house, and lack of coordination between the DMS and the precedent collection.

In recent years, some farsighted firms have sought to overcome the work flow deficiencies of separate work product retrieval systems through the use of a portal.4 While a portal can serve many goals, one of its objectives is the systematization of the work flow process so that final documents at the end of a client representation can be automatically added to precedent collections. However, this approach has not been broadly adopted due to cost, lengthy payback periods, and software development risks.

Despite the substantial challenges, many firms continue to invest heavily in KM initiatives. The reason lies in the fact that law firms recognize the value of knowledge sharing because they understand they are in the knowledge business. As John Hokkanen, knowledge manager at Latham & Watkins, observes, "Done well or done poorly, all law firms engage in different forms of KM."5 On a daily basis, lawyers spend time looking for past precedent and creating and storing new material. Moreover, the introduction of computers and the rapid conversion of paper documents into electronic files have created vast resources, tantalizingly close at hand.

The history of law firm KM programs also illustrates that the complex goals of knowledge sharing cannot be solved by technology and information systems alone. In fact, many commentators observe that the primary barrier to knowledge management relates to the cultural challenges of changing the way attorneys practice to accommodate the needs of knowledge sharing. We can add substance to the "cultural" challenge statements by analyzing the process of KM, illustrated in Figure 1, and evaluating the incentives (and automated procedures), if any, currently available or that can be made available, at each stage of the process. In summary, the challenge of viable KM systems in law firms is not the availability of information, but rather the tools and procedures to unlock this rich resource. Some firms have been willing to spend attorney and staff time collecting and managing documents; many others have been waiting for an advanced technology solution that offers the promise of creating a virtuous feedback loop.

3. West km™

West km, applying the experiences of law firm in-house development, focuses on the creation of valuable precedent collections and provides powerful tools to access work product. All features are designed to be easy to use and are available through a Web browser. The suite of tools, collectively known as West km, seamlessly extends the trusted and proven functionality of Westlaw¨, KeyCite¨, and KeySearchª to the firm's private information collections, integrates and leverages the firm's existing information resources, and provides new functionality designed to increase the value of work product repositories.

First, by extending Westlaw functionality, lawyers can simultaneously search law firm documents6 and Westlaw content using familiar Westlaw search syntax and browse document result lists displayed in a familiar format. Researchers can refine the search by returning to the search form and editing the last query. Navigate on through the document lists is also presented in a familiar manner allowing researchers to toggle between law firm and Westlaw content, view highlighted search terms, and cycle through each document in the list and each search term in the document. Accordingly, by leveraging users' existing search skills, law firms will not need to undertake the time and expense of training users on new search technologies, and their existing skills can be immediately applied to searching internal firm content.

With the integration of KeyCite and KeySearch into the firm's internal work product repositories, researchers can now search for valuable precedent using West's taxonomy and the extensive array of predefined searches on Westlaw. KeyCite integration offers additional functionality to relate documents and rapidly perform dynamic citation checks. Lawyers can quickly and easily generate and display a citations list based not only on public domain records (including cases, statutes, and secondary sources) but also on the firm's internal work product. KeyCite flags are shown in the citations list and are embedded into the firm's internal documents, visually displaying citation flags and providing hypertext links to both Westlaw and internal documents.

Second, West km leverages the firm's existing technology platforms by integrating document profile information maintained in the firm's document management system or, if the firm does not operate a DMS, from the document's property fields. In planned later releases of West km, the system will integrate with, and display information from, the firm's financial management system (containing client, matter, and other information regarding the document's context) and from contact management or customer relationship management software. Providing access to authorship and document context information will give attorneys additional data to quickly determine the value of a particular document.

Third, West km provides a new suite of features to enhance the firm's ability to create and maintain valuable precedent collections and give lawyers new tools to rapidly locate relevant material and evaluate the utility of documents. The software includes procedures to help manage the document approval, or "vetting," process. Administrative tools are also included to track search and retrieval statistics generating standard form usage reports that can be used for cost recovery purposes. Law firms will also be able to use these tracking tools to determine the most frequently used documents and thereby adopt an automated triage process to identify key documents meriting further coding and annotation.

Using the suite of tools and new modules as they become available, law firms will be able to build and maintain robust work product collections and automatically apply the technology to very large document collections. In sum, the technology suite offers law firms many benefits, including the ability to:

- find, share, and reuse the firm's intellectual capital (and access external resources) and promote productivity, quality, and consistency;
- leverage the firm's know-how and experience and promote client value;
- build a resource of institutional knowledge and promote training, skill development, and job satisfaction;
- leverage the firm's existing investment in document management, contact management, and financial management systems;
- automate quality review using KeyCite; and
- develop a culture of sharing and collaboration.

4. Evaluating the Benefits of West km1

A demonstration of West km will illustrate the system's many uses and benefits. But how can firms feel comfortable that among the many choices available to them they have selected the most appropriate technology? How can firms evaluate and measure the benefits of the system?

In the current economic climate, law firms are carefully examining their software expenditures. In fact, all industries and professions are expressing a growing interest in measuring the value of software. According to an Information Week survey conducted in 2002, "more than 80% of companies now require a[n] ROI [return on investment] analysis to justify any new IT initiative." In other words, technology consumers are more sophisticated and seek more information about the costs and benefits of potential technology solutions. The analysis marks the maturing of technology, because automation projects are now subject to the same financial scrutiny as any other business investment.

Despite the growing interest in metrics, no simple objective tool can be offered to measure the value of automation. Many studies have shown that there is no direct correlation between profitability and technology investment. The relationship is complex and indirect. First, analysis must account for causation, because in most cases, technology serves a role within a larger context of numerous other processes, and its cause-effect relationship cannot be considered in isolation. Second, any measurement tool must handle the issue of equivalency, because many of the benefitsÑsometimes called "soft benefits" Ñ cannot be easily converted into financial value. Nevertheless, an understanding of the measurement tools will, in itself, assist firms in better managing their technology initiatives and maximizing the value of their investment.

4.1. Return on Investment and "Hard" Returns

The most frequently tendered measurement tool is called the return on investment, ROI. It is an appealing yardstick of value due to its compelling simplicity and self-evident meaning. In financial circles, ROI is a measure of a company's performance. It is the company's total income (before interest, taxes, or dividends) divided by the company's total capital. However, most business managers think of ROI as the return (or incremental gain) from a project divided by its cost. Additional precision can be achieved by discounting the return to its present value, reflecting the fact that future income is less valuable than current income because money can be invested and can generate interest income. The formula for ROI can be expressed as follows:

ROI = PV(Incremental Gain) / Total Cost of Project
Where: PV is present value.

This simple equation shows that positive financial results can be realized by increasing income, decreasing costs, or accelerating returns. The analysis is readily applicable to financial investments and many product development efforts. But the formula requires some modification in the context of law firms in order to correct the common misunderstanding that KM is questionable because its purpose is to improve productivity, and such efficiency translates into fewer hours, and therefore less income to the firm. In fact, the assumptions implicit in the statement are questionable. First, the objective of KM is not simply (or solely) efficiency; it can also be directed at increasing quality and value. Second, law firm profitability models differ from the standard formula expressed above. As proposed by David Maister, working at the Harvard Business School, law firm profitability can be calculated by the following formula:

Net Profit Per Partner = (Leverage +1)(Billable Rate)(Utilization)(Realization)(Margin)
Where:

- Leverage is the ratio of non-partner professionals (associates, paralegals, and of counsel who have billable hours) to partners.
- Billable Rate is the average billable rate of all fee earners.
- Utilization is the average number of billable hours for fee earners in a year.
- Realization is the percentage of work done that is billed and collected.
- Margin is the ratio of gross income to net income, calculated by subtracting expense for each partner from gross revenue received for each partner, and expressing the net income as a percentage of the gross income.

This formula demonstrates that law firms can achieve positive financial results from any one or more of the following: (a) increasing utilization (shorthand for working longer hours); (b) increasing billing rates; (c) increasing leverage either by adding associates or by delegating work to the least costly personnel; (d) increasing realization; or (e) decreasing expense. Using the greater precision of the profit formula, law firms can target their KM programs to gain competitive advantage.

Although the profit formula offers additional precision, the difficulties of validating ROI have caused many commentators to minimize the value of financial measure tools. But obstacles to accurate measurement should not have the effect of discarding the valuable goals of productivity and leverage. Productivity and leverage are, in fact, the most important goals for a KM program. Fortunately, a small degree of improvement in any of the financial measures will generate substantial returns and offset the cost of West km. In fact, most firms will be able to show positive ROI by improving realization rates by less than 1%; comparing the cost of West km to average profit rates. For example, consider a firm with a leverage ratio of 3, an aggregate billable rate of $175, working on average 2,000 hours per year, having a realization rate of 95%, and an expense margin of 43%. In these circumstances, net profit per partner (NPP) will be $571,900. If the firm were to focus on realization rates and, through improvements in productivity and knowledge sharing, realize a small increase in the realization rate of 1% (from 95% to 96%), then NPP will increase by $6,020. Accordingly, one important use of financial measurement tools is to focus KM efforts on those areas likely to realize the greatest returns, such as practice areas with realization rates below firm or industry averages.

(a) Productivity

Effective knowledge sharing has been shown to substantially increase productivity. Virtually all documents drafted in law firms are based on prior precedent contained in explicit documentation or tacit knowledge. Unfortunately, in many cases, attorneys cannot quickly locate useful material and must accordingly "reinvent the wheel," work from inadequate precedent, or occupy the non-billable time of others through broadcast e-mail messages requesting sample documents. West km helps law firms realize productivity gains by providing access to work product collections using familiar, powerful, and reliable tools giving attorneys access to the firm's best thinking. And the software enables law firms to further refine their precedent collections by identifying the most important and frequently used documents.

It is, however, frequently observed that improved productivity in law firms has an unfortunate side effect of reducing income. But this is not always true, even under the hourly compensation system. Efficiency can yield higher profits for law firms. This situation can occur when the firm's price for legal services exceeds market expectations, causing a reduction in billing realization, whereby the firm either discounts its rates prior to billing or the client does not pay the full amount. In this circumstance, often occurring in highly competitive markets, the firm can increase its profit margins by reducing the time spent working on the matter. Moreover, in the long run, clients are unlikely to reward inefficiency and will increasingly expect private counsel to adopt practice efficiencies. Using KM technologies, the firm can seek efficiency gains broadly across all practice areas or target particular market segments facing the greatest competition.

(b) Leverage

Just as efficiency can improve profitability, leverage can have the same effect where knowledge transfer enhances the quality of work performance. The transfer of knowledge is, in fact, the essence of knowledge management. Using West km to capture prior work product, exemplars, and other material developed by senior and skilled practitioners, junior associates, legal assistants, and non-attorneys can perform valuable client work and charge a rate commensurate with their enhanced performance. Accordingly, the application of leverage is simply recognition of the fact that billing rates increase with experience, and such experience can be gained through hands-on practice, training, and the use of technology. As a result, computer systems are being enlisted as part of professional development to supplement mentoring programs and provide training opportunities for attorneys. In addition to such broad-based skill development, KM initiatives can focus knowledge transfer on specific practice areas, developing the skills of associates, legal assistants, and non-lawyers to perform higher-level work through the development of forms, practice guides, and document assembly.

4.2. Payback Period

Another frequently used financial tool to evaluate a technology project is the payback period, defined as the period of time required to recover the cost of investment. In practice, this measurement device is an example of a rule of thumb stating that value is maximized and risk is mitigated if the payback period is reduced. Frequently, this tool is used to compare alternative investments. Applying this standard, West km compares favorably to other knowledge management systems requiring the collection and profiling of large numbers of documents before the system attains critical mass, because West km instantly codes and prepares documents for access and does not require the firm to set up or maintain complex computer systems.

4.3. Return on Information and "Soft Benefits"

West km, as highlighted in section 3, offers a number of soft benefits, so called because their value cannot be easily quantified in objective or especially financial terms. Some argue that soft benefits can be included in the ROI calculation, but that they should be discounted heavily.7 But, this approach begs the question of how soft benefits can be valued in the first place before they are subject to some arbitrary discount factor.

While soft benefits are, indeed, difficult to measure, their value should not be ignored or even minimized. In many respects, the soft benefits of KM focus on the "cultural" barriers to successful knowledge management implementation. As noted above, such cultural issues relate primarily to the process of knowledge management and the incentives, or in many cases, lack of incentives, currently available to create virtuous feedback cycles. It is submitted that the KM cycle, illustrated in Figure 1, offers a framework for the analysis and measurement of the soft benefits of KM. Firms can inquire about how frequently attorneys use the KM database to start their research or whether they rely on broadcast e-mail messages? Do attorneys contribute documents to the KM system? Are KM repositories shared between practice groups? How many documents are maintained in the KM repository? Are the documents current? Are the documents periodically reviewed? Do lawyers find the system easy to use?

Law firms can separately analyze each of these issues, and it may be appropriate to do so when a firm encounters problems energizing the cycle of capturing and reusing knowledge. In addition, firms can apply a broad measure of valuation that calculates the "return on information." This method, based on the work of Paul Strassman, author of the best-selling books The Squandered Computer and Information Productivity, proposes an objective measure of utilization. Applying Strassman's insights, we can develop a tool to measure the cost of information (COI). This approach avoids the issues of causation and equivalency that are problematic in ROI analysis by focusing directly on the effectiveness of an investment in generating intellectual capital by measuring the rate at which technology expense is converted into valuable information assets. A formula for COI can be expressed as follows:

Cost of Information = Document Preparation Cost / Rate of Reuse
Where:

- Document preparation cost is either the unit cost of profiling each document or the total cost of the system divided by the number of documents organized by such system.
- Rate of reuse is the average number of documents in the system divided by the total number of times a document is reused in a designated period, such as a year.

The formula allows law firms to determine how much it costs to prepare a document for reuse. For example, if a firm spends on average $30 to prepare a document for inclusion in the firm's work product retrieval system, and documents in the system are used on average three times in one year, the cost of information is $10, or, in other words, the law firm must spend $10 for each occasion the document is reused.

Using the formula to compare a range of KM initiatives will confirm that the return on information is not an absolute value but can be evaluated only relative to utility.

- Bibliographic Coding. The cost of efforts to code documents with bibliographic data can be estimated based on the experience of litigation support systems. A number of companies offer services to code or profile documents produced in the discovery process of litigation. The coding of bibliographic information may record the author, date, title, recipients, and other objective data about the document. Depending on the number of items of data collected and the average length of the documents, the cost may range from $2 to $10 per document. While litigation support systems serve vital roles in the process of document production control, thereby justifying the cost, it can be fairly observed that few attorneys use the software. We may therefore conclude that although the costs of bibliographic coding are low, the value in the opinion of attorneys may not justify the expense. For example, if the coding costs were $5 per document, but attorneys use only one in five documents, the cost of information would be $25. This analysis partially explains why a DMS containing bibliographic information alone has not become a viable platform for work product retrieval.
- Subject Matter and Context Coding. Law firms that have been successful in developing work product retrieval systems have generally relied on trained lawyers with no or low billable hour requirements to collect and maintain precedent collections. Documents in these systems are profiled with subject matter and context information. Estimates of the cost of document preparation range from $15 to $25 per document. We can therefore assume that firms continuing their investment in such work product systems consider the value to be returned. In fact, despite the higher document preparation cost, the firm's COI may be lower than bibliographic coding systems. Based on the costs stated above, and assuming documents are used on average five times per year, the firm's COI would range from $3 to $5.
- Advanced Search Tools. Finally, COI analysis can also be applied to advanced search technologies that may be used to provide access to very large document collections. Calculating the cost of document preparation can be computed by dividing the number of documents maintained on the system by the total

cost of the search technology. For example, if the search system costs $300,000 to install and provides access to 1 million documents, the unit cost per document will be $.30. But given the breadth of the collection, it may be assumed that only a portion of the documents will be retrieved and used. If, in our example, 100,000 documents are retrieved and used, the COI will be $3.

It may be observed that the COI formula focuses solely on the cost component and does not provide information concerning how effectively the reuse of precedent accomplishes the firm's soft goals. Depending on the firm's broader objectives, such as attorney training, quality, and consistency of work product, or reduced frustration in locating documents, measurement devices can be employed to survey accomplishment of such objectives. For example, the firm may use a client satisfaction survey to determine whether its goals have been met. Whether a firm determines to periodically measure the performance of its KM initiative, a universal standard of success is usage itself. In other words, achieving the goals of quality, consistency, or satisfaction is dependent on lawyers, staff, and clients using the system. And, by deploying West km, law firms will have immediate and continuous access to usage statistics giving management feedback on the utility and value of the software.

West km offers all of the document profile and search features reviewed in the comparisons above, together with additional tools to help law firms build and use valuable precedent collections. Because West km automates the indexing of documents, it can be applied to very large document collections (without incurring the substantial cost of document coding), and by offering user-friendly document retrieval tools, the software maximizes system usage. Therefore, by combining breadth of information with high usage, West km can offer the lowest COI and offer all law firms the opportunity to build valuable KM repositories.

5. Summary

The design philosophy of West km is to construct a robust platform for knowledge sharing by providing access to precedent collections through familiar and powerful technologies. Building on a sustainable architecture, West km offers a series of value-added tools to automate the collection and maintenance of valuable, reusable precedent. West km seeks to address the complex challenges of knowledge sharing by offering robust tools to realize the financial or hard returns of KM and through automation enables law firms to overcome the cultural barriers to knowledge transfer by reducing the costs of precedent collection, allowing firms to focus on their precious human resources. It is recommended that law firms apply an understanding of financial measurement tools, such as ROI, to target their KM efforts, monitor results periodically to validate long-term success, and rely upon the return on information to measure short-term goals. Applying available measurement tools, West km has been designed to maximize hard returns and soft benefits.

- Return on investmentÑenhance profitability through productivity and leverage.
- Return on informationÑachieve soft benefits of knowledge sharing.
- Reduce costsÑmaximize value by automatically indexing large document collections and increase rates of reuse with familiar technologies.
- Immediate paybackÑ avoid time-consuming and expensive coding projects.
- Low riskÑrely on technology built and supported by the world's leading provider of legal research systems.
- FlexibleÑapply the technology firmwide or selectively for the benefit of particular practice areas.

Footnotes

1 It is a valuable and highly recommended exercise for decision makers to discuss and define the precise goals and benefits of their KM program.

2 Gottschalk P., "Use of IT for Knowledge Management in Law Firms," 1999 (3) The Journal of Information, Law and Technology (JILT), http://elj.warwick.ac.uk/jilt/99-3/gottschalk.html.

3 A useful tool to evaluate the success of a work product database is to compare the number of documents in the firm's DMS with the number of the documents in the work product collection and to further examine the edit or last modified date of the documents in order to determine the currentness of the collection.

4 A portal is a fully integrated suite of tools usually presented in a Web browser that can customize information and applications for a variety of personal, collaborative, and work views.

5 John Hokkanen, "Why Implement Knowledge Management? Justifying the Investment," Law Practice Management 47 (March 2002).

6 Internal documents are stored and maintained inside the firm's firewall and are available only to people authorized in accordance with the firm's network access policies.

7 See Christopher Koch, "Valuing the Soft Stuff" in "Risks to ROI," a sidebar to "Why Doesn't Your ROI Add Up? You Do the Math," http://www.darwinmag.com/read/030102/roi.html.

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