Implicit Knowledge Management
The New Frontier of Corporate Capability

Introduction

Approximately 5 years ago, knowledge management was thrust from the world of academia into the corporate business strategy and IT platform. Eager to differentiate themselves on their intellectual capital, organizations sought to proactively and deliberately capture and make their collective wisdom and experience knowledge widely accessibly within the organization and among partners. Fundamental to this movement was the realization that knowledge existed in two basic forms: explicit knowledge which is easily codified and shared asynchronously; and tacit knowledge, which is experiential, intuitive and best communicated in face-to-face encounters. Many like to think that the two are separate and distinct. However pioneers in the industry have discovered there is a middle ground. With dedicated and focused efforts, some knowledge believed to be tacit can be transformed into explicit knowledge. This body of knowledge is the organization's *implicit* knowledge.

The value and leveragability of implicit knowledge is vast. However an organization must take several strategic steps in order to position it adequately. First, the sources and nature of the implicit bodies of knowledge must be identified and quantified. This is not an easy step. It demands a level of scrutiny beyond what is typically required for identifying tacit and explicit resources. Identification of implicit knowledge mandates taking a second look at all so-called tacit knowledge resources to determine whether that knowledge could be codified if subjected to some type of mining and translation process. Then, it requires implementing that mining and translation process. This article looks at how organizations might undertake such an investigation and introduces one such mining process known as Knowledge Harvesting®.

Positioning Implicit Knowledge Management Within the Knowledge Management Market at Large

The potential of the implicit knowledge management market seems vast at first glance. Consider that since the Delphi Group has been tracking the knowledge management market, it has exhibited a compound annual growth rate in excess of 60%. The projected size for the knowledge management in 1999 is $582 million. [INSERT CHART HERE]

Now consider where the majority of the market has focused its efforts and expenditures. There is a clear understanding across industries that the tacit knowledge base can account for as much as 75% of an organization's collective knowledge. A recent Delphi study found that on average, organizations believe that 42% of the corporate knowledge is housed exclusively in the brains of its employees. [INSERT CHART HERE] Despite this, the majority of the applications of knowledge management we have seen focus on the explicit knowledge base. In fact, when we asked organizations to identify the primary benefits of implementing knowledge management in their organizations, survey respondents said "providing an enhanced way to organize existing corporate knowledge", or "making individuals

more effective at sharing explicit knowledge", were the top two benefits. "New ways to expose tacit knowledge" ranked as the third benefit. [INSERT CHART HERE]

If the majority of an organization's knowledge is presumed to be tacit, then why would we focus on leveraging explicit knowledge? There are two good reasons. First, there is a general sense of immediate frustration that surrounds explicit knowledge. This frustration comes in the form of "I just want to know what we already know". Explicit knowledge management solutions rightfully represent low hanging fruit to the organization. The knowledge base has already been accumulated in one form or another. The task at hand is simply to organize it and present it in a manner that it is more readily available (the externalization and internalization applications of knowledge management).

Second, when the knowledge is explicit, technology can more readily be applied to enhance its value and make it accessible. This should not be taken as a statement to to minimize or understate the effort involved in creating an organized explicit knowledge repository that is continuously fed and leveraged. But, realistically, it does pale in complexity when compared with the task of organizing and managing tacit knowledge resources. Thus, it is often not until an organization has successfully managed its explicit knowledge that it will turn to its tacit knowledge resources —despite the potentially greater return.

Technology plays a large role in this decision too; the majority of the tools available focus on taming the corporate explicit knowledge base. The groupware and collaborative technologies used by individuals and teams have partially addressed tacit knowledge transfer. However, most of these technologies are prejudiced by old perspectives that hold that tacit knowledge management can only exist in the form of collaborative software tools that facilitate the exchange, and/or brokering of owners of knowledge. The reality is that many of these technologies can be leveraged against *implicit* knowledge as well! The task is to recognize and quantify what is implicit. To accomplish this, you will want to challenge the tenets of tacit knowledge. Where "know-how" has not been captured, you must not readily accept that this is because it cannot be. Individuals who readily proclaim that the logic behind their thought processes when executing specific tasks is too complex for language must be challenged. Thus, deep knowledge can't be captured and transferred. Another major point of resistance is linked to a general market perception of artificial intelligence and expert systems. Corporate America embraced these concepts a decade ago with great expectations, and poured hundreds of millions of dollars into their development. While there were some successes, they were far too limited to justify expectations and investments. As a result, AI and expert systems are today popularly considered to be technological and business failures. You should not equate implicit knowledge management with artificial intelligence or automated decision making. The goal of implicit knowledge management is to transfer knowledge so that it can be employed to enhance intelligence, not emulate or replace thinking. The transfer can occur if a structured approach to interviewing is employed and key elements of the human thought process, that believed to be tacit, are codified so that they can be used as building blocks to an automated or semi-automated module which will guide subsequent thinking and execution in similar business situations.

Tacit Versus Implicit Knowledge

Our experience has shown that often, much of the work done in businesses is not in the “deep tacit” realm. Rather, it is a logical, methodical thinking process that simply is not recognized as such, even by the thinker. This is the new frontier of corporate capability. Implicit knowledge management employs tools, techniques and methodologies that capture these previously elusive processes and make them more generally available to the organization. The thought processes used by your best thinkers become a leverageable asset of the organization. The basic trick behind this is the ability to dissect what an "expert" explains are the steps to executing a process. This requires the ability to not allow assumptions to be made, or for opinions to be readily accepted. Eventually the process logic or expertise should be codified into a series of related modules such as:

Process: An overall series of related tasks resulting in a single business outcome or product. The level of knowledge harvested here is general.

Module: Major sub-routines in the process, tasks grouped by a common theme. Processes may or may not have more than one module. The level of knowledge here is moderate.

Task: Is an individual step taken in order to accomplish a module.

You must also determine the cerebral inputs to these tasks - and define them as either

Guidance (directives that identify how to perform a process)

or

Support (suggestions and resources that explain why tasks are executed in a particular manner.

For example, you may think of preparing breakfast as a Process. Preparing coffee would then be viewed as a module. Tasks within this module would include directives such as obtain a coffee filter, place the filter into the coffee maker's filter, holder. obtain a sufficient amount of cold water for the desired number of cups of coffee. In this example, you would link these steps to available support and guidance. For example a preference for unbleached filters over bleached filters may be provided. Support would explain the reasoning behind that decision, i.e. unbleached filters do not result in excessive acidity in the coffee. Much of the success of harvesting resides in the ability of the interviewer to elicit form the expert the right level of detail, and to not readily assume that the reasoning behind certain approaches or tasks is not discernable. You may often have to walk the expert through how they arrived at the conclusions they now accept as tacit or instinctive behavior. For example, using our scenario above, an expert may avert that they always buy quality coffee beans from a quality coffee store. The interviewer at this point should have the expert explain how they determine if a store and bean is one of quality. There is often a thought process that can be mined, if there is patience and the guidelines above are used to dissect what is being said.

With that said, it must be stated that realistically, not all tacit knowledge can be transfigured into implicit knowledge. There will always be bodies of know-how and experience that remain tacit. For example, the essence and influence of an emotional response to a consequential failure or success adds

little to the knowledge pool. Also, don't look to tacit knowledge as an effective way to achieve alignment between company and personal values. Storytelling and mentoring are better ways to achieve value alignment. And, truthfully, there are some intellectual processes that are too novel for capture and transfer. The goal of implicit knowledge management is to determine how much of the tacit knowledge in your organization defies any form of codification, and to mine that which does not.

Getting Explicit About Implicit

Once the organization is willing to accept that some of its tacit knowledge can be captured, it can begin a process of identifying and documenting the portion we labeled implicit. This process is advanced by structured methodologies that employ interviewing techniques and a schema for the capturing of thought processes. One such methodology known as Knowledge Harvesting has been deployed in many organizations, resulting in successful establishment of implicit knowledge bases.

Eight dimensions of Knowledge Harvesting will be used in the presentation of these case studies. The dimensions are:

1. **Focus**—Establishing a business case and goals for managing tacit knowledge, and selection and prioritization of processes or strategies for harvesting.
2. **Find**—Identification of experts and mining existing printed documentation.
3. **Elicit**—Interviewing experts to harvest their tacit knowledge.
4. **Organize**—Arranging the harvested knowledge into categories—guidance and support information.
5. **Package**—Using the organization's goals and assessing the target stakeholders to select the most appropriate medium for packaging and sharing the knowledge asset.
6. **Share**—Placing the knowledge asset in an electronic repository, so that it is accessible to stakeholders who "need to know."
7. **Apply**—Stakeholders access the knowledge asset at point of need, and use this expertise in their daily work.
8. **Evaluate & Adapt**—The asset is evolved and matured, based on records of use and feedback from stakeholders.

Case Study #1—A Specialty Chemicals Company

1. **Focus**—In 1996, this international organization established a landmark strategic goal—to make the transition from a traditional, hierarchical organizational structure to a structure focused on processes and results. The organization's CEO and senior managers needed a way to help each of the 1,500 people in their workforce define and describe their roles in the organization's new structure. They decided that creation of an individualized Work Profile by each employee would be the first step in this planned paradigm shift. The CEO set June 15, 1998 as the deadline for all employees to complete a self-generated Work Profile.
2. **Find**—The CEO and three individuals from the company's Human Resources Department contributed their expertise to develop a process that employees could use to self-create their own individual work profile, and thus describe and define their role in the new organizational structure.
3. **Elicit**—From September through December 1997, knowledge of these experts regarding the process for creating Work Profiles, and the methodology for administering the Work Profiling system for the organization.

4. **Organize**—From December 1997 through March 1998, the harvested knowledge was organized into guidance (modules, tasks, and elements) and support information (information to support the user's understanding).
5. **Package**—Based on the organization's goal and an assessment of the needs of the target users, "learning while doing" software was selected as the medium for packaging the Work Profiling methodology.
6. **Share**—The Work Profiles software module is now accessible to all employees on the organization's Intranet. One person in the Human Resources department now manages the system. The current Work Profiles for all employees (including the CEO) are also shared on the Intranet.
7. **Apply**—The CEO's deadline for completion of all Work Profiles (June 15, 1998) was met. All employees now use the software to self-create and update their Work Profiles, with the same proficiency and results as a Human Resources "expert"..
8. **Evaluate & Adapt**—Based on feedback from all employees, the Work Profiling software is now in the process of being adapted, and Version 2.0 is pending.

Case Study #2—A Petroleum Company

1. **Focus**—This organization's goal was to capture the management system processes developed for the largest North Sea oil drilling project of the decade. Harvesting tasks included capturing from key personnel:

- the processes used to create the management system for the project, so that the company could evaluate these processes as "best practices" for managing both data and communication in existing and future projects.
- an assessment of risks for the performance of the management system.
- an assessment of the user interface for the project's management software application that was then under development.

2. **Find**—The key personnel involved in creating the management system processes were oriented and prepared for their role as experts in the process.
3. **Elicit**— Sixty hours of interview sessions were conducted with these experts, over the course of one week.
4. **Organize**—The harvested knowledge was organized into guidance and support information (information to support understanding) in approximately 50 hours.
5. **Package**—Based on the organization's goals and assessment of the needs of the target users, worksheets were created. From the knowledge captured, additional information included:

- A detailed list of potential areas of risk in the management system, which the company was able to use to its advantage.
- A tool that can be used by virtually any employee to assess risk in the management system of any future project.
- A process map with support information detailing the "Life Cycle of a Project," that can be used in developing any future project within the company.
- A training simulation for the personnel who would run the drilling operation.
- Written critique and suggestions for improving the user interface of the computerized management system.

6. **Share**—The knowledge assets were shared with the project's managers, and key personnel who had contributed their expertise in the harvesting sessions.

7. **Apply**—The organization identified the following results as "key learnings":
- The knowledge captured from harvesting provided major insights into the risks involved in developing and implementing any application or suite of applications in project management. (These were thought to be identifiable and discernable only through tacit abilities.)
- Findings were used to focus on risk areas in key management systems as the company approached start-up of this application.
- Particular elements of the project's management system were identified as "best practices" to be promoted and shared with other divisions and project teams within the company.
- The Management Application Risk Assessment Tool was reviewed, and is being considered for "best practice" in assessing risks, and identifying actions required to mitigate them for any project.
- The Training Simulation was seen as complementary to the organization's other knowledge management tools, and plans were made to repeat it and integrate it into standard practice.

8. **Evaluate & Adapt**—The knowledge assets created for this organization were put to use immediately. They have been shared within the organization, and adapted to the needs of other project teams.

Case Study #3—A Paper Company

1. **Focus**—When a key employee in this company's Credit Management department had to schedule an extended leave of absence, this organization focused immediately on their need to capture his working knowledge of one of the department's key processes.
2. **Find**—The employee contributed his expertise via a series of interviews over the course of his last few days before his leave began.
3. **Elicit**—One of the organization's coworkers who was trained in elicitation/implicit interviewing techniques conducted the sessions.
4. **Organize**—The employee who harvested the knowledge organized it into guidance and support information (information to support understanding).
5. **Package**—Based on the organization's goals for this knowledge asset and an assessment of the needs of the target users, the asset's guidance and support information were packaged in HTML and Javascript pages.
6. **Share**—The asset is now available to stakeholders on the organization's Intranet.
7. **Apply**—The asset is currently being applied in the daily work of those within the Credit Management department. Prior to process/departmental novices are now executing this critical process with the same aptitude as their expert manager.
8. **Evaluate & Adapt**—Evaluation and adaptation are planned for a later date.

From one example to the next, the exact nature of the implicit knowledge, and the effort involved with mining it varied, however, in each case, three key benefits were achieved:

- The organization was protected from the knowledge degradation which results from personnel losses, employee defections and lack of availability of needed experts at the right time and place.
- The speed of doing business was accelerated through the deliberate articulation and availability of the organization's implicit knowledge base.
- The tangible knowledge assets of the organization were significantly increased.

But, above all else, consider that new opportunities will result from the ability to create the implicit knowledge base. When harvested, implicit knowledge is embedded into reusable software modules. That knowledge not only becomes accessible and tangible internally, it is also capable of being transferred or sold as product (i.e. knowledge modules.) Expertise in non-proprietary subjects has value that can sold, licensed or traded to other organizations. Software programs and sub-modules can be mixed, matched, aggregated, and divided into similar but different programs. E-business is the ideal vehicle for providing a marketplace for software knowledge assets. Monetary values can be ascribed to knowledge assets, making it possible for them to be more readily included on corporate balance sheets.

Cost?

When an organization embarks on an initiative that addresses tacit knowledge, its efforts should go beyond merely tracking internal sources of expertise and providing collaborative work environments. Mining the many forms of tacit knowledge requires the organization give attention to the subtle heuristics and circumstantial information associated with individuals and with teams —how it can be elicited, organized, packaged, and reapplied. The challenge arises when the knowledge assets reside outside of explicit repositories and in the brains of its employees. That is when you have to determine how much could be made implicit, the value of making it implicit and the cost of undertaking the practice of making it implicit (a cost justification). It has been our experience that often a justification can be made.

The winners in the emerging knowledge-based economy will be those organizations that understand "return on time"– the ability to leverage what they know to respond more quickly than their competitors. Many components of tacit knowledge fuel these decisions —organization-wide understanding of core competencies in products, services and processes, combined with the ability to quickly make that volatile knowledge available across global organizations. Transfer has to be on a "just in time" basis or it is simply not effective. We are not talking about generalized "helpful" knowledge or sketchy bullet-point overviews either, but gritty details, up to date best practices, and explicit direction on how to undertake specific processes and make critical decisions to get the job accomplished properly.

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