

## 2003 Excellence in Practice Citation

Organizational Learning



**Caterpillar Inc.**  
Peoria, Illinois

### *Knowledge Sharing*

#### **SUMMARY**

A corporate university's knowledge sharing mission was to provide efficient, reliable, and easy access to knowledge and to enable collaboration across the value chain for the purpose of improving performance. Bringing the existing, internally developed knowledge sharing tool into the corporate university was a strategic decision. Use of the tool quickly spread to other functional areas of the corporation, as well as through the value chain (dealers, customers, and suppliers).

#### **BACKGROUND**

An internally developed, web-based knowledge sharing tool was an outgrowth of a variety of related needs. The organization had broken into business units and with that came some loss of continuity, a sense of moving in multiple directions, and some "reinvention of the wheel" as functions were spread across business units. In addition with increasing use of the corporate intranet, information overload was becoming an issue – how could individuals and the organization keep track of, judge the usefulness, and manage the flood of information and ideas. The knowledge sharing tool was the answer to those needs. Originally, use of the knowledge sharing tool was localized primarily to a single functional area in the organization.

Parallel to the initial development and implementation of the knowledge sharing tool, a global team of managers was commissioned to develop a proposal for enabling the organization to become a learning-focused company. The team's proposal received strong executive endorsement and the organization's corporate university was founded January 2001 with knowledge sharing as one of three foundation elements.

The corporate university's knowledge sharing mission was to provide efficient, reliable, and easy access to knowledge and to enable collaboration across the value chain for the purpose of improving performance. Bringing the existing knowledge sharing tool into the corporate university was a strategic decision. Use of the tool quickly spread to other functional areas of the corporation, as well

as through the value chain (dealers, customers, and suppliers). Goals have not changed from the original – share what we know as effectively, efficiently, and broadly as possible.

The knowledge sharing tool is still in use and is continuously improved. Moving from proof of concept in 1998 to pilot in 1999/2000, the knowledge sharing tool was absorbed into the corporate university in 2001. Features and functions are added as user needs dictate. It is in full production with the second version of the user interface. Plans are in place for expanding functionality and expanding deployment beyond the current stage.

Knowledge sharing and the knowledge sharing tool are implemented throughout the organization – functionally and globally. In addition, the concept and use of the tool are expanding within the corporation, among retirees, and among dealers, suppliers, and customers. While management and salaried employees are the primary users of the knowledge sharing tool, it is available to anyone with the necessary security identification – including the production workforce. There are currently 24,000 unique community members and 2400 communities of practice. Each community of practice has a Community Manager -- a role that is not tied to a specific functional area or salary grade. Rather, the Community Managers are strong facilitators who are highly engaged in the subject matter of the community – salary grade is not a criterion for selection.

Currently, four full time management employees from the corporate university are devoted to the knowledge sharing tool. In the early stages (proof of concept and pilot), one full time resource was devoted to the tool supplemented by partial resources (e.g., a summer intern). The current yearly budget includes the four staff and related expenses, as well as costs related to maintenance and enhancement.

In a corporate culture that encourages sharing, the knowledge sharing tool is a key enabler. Overall use has increased significantly as shown by a number of measures: number of unique users, range of use – number and nature of communities, growth rate, and functionality provided. The knowledge sharing tool encourages informal learning and supports best practice transfer. A recent search within the tool on the term “best practices” surfaced over 1600 entries related to best practices from a broad range of disciplines and functional areas.

## **DOCUMENTATION**

### **Needs Identification**

- 1. Describe the problem or need for which this practice is designed and implemented. How was this problem identified, and how was it determined that this practice was an appropriate response?*

With strong executive sponsorship and as the culmination of intensive research and benchmarking by a global team of managers, in January of 2001, the corporate university opened its doors. Establishing the university was the response to a clearly identified need to institutionalize continual learning as a means of increasing the organization's intellectual capital and further differentiating its distribution channel. Faced with competitive pressure and changing demographics (not just internally, but across the value chain), the organization needed to prepare for the future.

The global team of managers identified three strategic elements that would lay the foundation for institutionalizing continual learning:

Creating a culture that supports learning – a culture where people are recognized and rewarded for learning, teaching, and sharing knowledge – all in support of achieving business results

Knowledge sharing – creating and nurturing an environment where information is readily accessible and shared seamlessly throughout the organization and with the organization's value chain

Developing leadership -- recognizing the vital role that leaders play in forming a culture through acting as role models for learning and for sharing knowledge

With the formation of the corporate university, the decision was made to leverage use of a tool that already existed in a functional area of the organization to support the knowledge sharing element of corporate university strategy.

The knowledge sharing tool had enjoyed strong success in its original functional area, enabling that area to manage and share information in ways it had been unable to do before. For example, a new employee in Europe posted a question to a community of practice and received responses from six different business units (three within an hour of posting) – located in the US. Two of the responses referenced a detailed study from one of the business units on the question's topic and all respondents offered personal assistance to the new employee.

Improved security and usability work resulting in a user interface redesign prepared the tool for use by a broader range of users within the organization and throughout the value chain. Ownership by the corporate university, interface redesign, and improved security set the stage for a significant (and continuing) increase in use of the tool across the organization and its value chain.

## **Design Values**

*2. Please describe how this practice takes into account the best interests of both the organization and the employees targeted.*

The knowledge sharing tool effectively leverages the intellectual capital of the organization and its value chain by providing collaborative space and access to

expertise across the globe through communities of practice. The communities (which are grouped based on key corporate business processes) cross business unit, geographic, and value chain boundaries and range in size from small teams to thousands of people. In many ways the knowledge sharing helps drive appreciation for diversity – a good idea is a good idea and is not localized to a given job or job level or global location.

Because the knowledge sharing tool makes it easy to collaborate over distances, provides easy access to experts, contains a wealth of best practices and lessons learned, and is organized based on key corporate business processes, it provides a variety of additional organizational and employee benefits. Among these benefits are speed to knowledge (and use of knowledge resulting in improved performance at the individual and organizational levels); cost reduction/avoidance through leveraged use of best practices and lessons learned; and 24 x 7 availability as a forum for innovation and the generation of new knowledge. The knowledge sharing tool provides an environment that enables people to take risks, drive innovation, and achieve higher quality results more quickly than would otherwise be possible.

## **Alignment**

*3. How is this practice in alignment with the performance identified, as described in question 1 of this section?*

The web-based knowledge sharing tool facilitates collaboration at many levels, and provides the capability to effectively and efficiently manage the capture, review, and dissemination of many types of information and new knowledge, including lessons learned, new technology, research results, and more.

The rapid and continuing growth in number of communities (2400 active communities as of this writing), in unique community members (24,000), and in number of new community discussion, are testaments to the value the tool brings to the knowledge sharing process and to achieving the corporate university's knowledge sharing mission.

The knowledge sharing process and associated tool is centered on communities of practice - groups of individuals that share an interest in a topic. The relationships in a community of practice provide easy and reliable access to knowledge and collaboration with others for the purpose of improving performance. Communities of practice cross business unit, geographic, cultural, and salary grade boundaries.

*4. Please describe how this practice integrates training, learning, and performance improvement practices, and aligns itself with organizational goals to achieve desired outcomes.*

The knowledge sharing tool is an important informal learning and performance support tool. It provides access to standards (internal and external), guides and tools, knowledge entries, community discussions, experts, and archives. It provides a place to capture new ideas, document best practices, obtain just-in-time answers to questions enabling new people to integrate more quickly and reduce time to productivity. The tool provides a space for jointly generating new knowledge, not just capture of existing knowledge. Organized based on key corporate business processes, a given community can be cross-referenced to other communities within or outside a given key business process enabling horizontal and vertical sharing and collaboration.

5. *What evidence is there of partnerships within and outside the organization (e.g., senior management, frontline supervisors, unions, external training suppliers, consortia)?*

The knowledge sharing tool encourages partnerships both within and outside the organization. In addition to organization employees, the members of a given community may be from dealers, suppliers, and some customers. Community managers represent a cross-section of salary grades (not limited to a given level). While every community has a security profile that determine who has access, employees can “request access” to communities that they do not meet the security profile requirements. Approximately one-third of all activity involve non employees.

As a forum for generating new knowledge, users post information on how a problem was solved, discuss the solution with others, and together generate a better method. The knowledge sharing tool functions as a place to post information and hold threaded discussions enabling users to both receive and provide feedback to issues. This back-and-forth dialogue may lead to an improved solution or a new method to achieve goals that might not have developed from either party working alone. The internet accessibility of the knowledge sharing tool enables users from a variety of areas to work on the same issues while bringing a range of perspectives and experiences into play.

### **Evaluation Strategy**

6. *How is this practice evaluated? What factors are included in your calculations (e.g., time, costs, staff count, lost phone calls, customer satisfaction)? Are the financial costs of this practice evaluated? If so, how? How often is this practice evaluated?*

An independent study revealed a substantial return on investment (ROI) for the knowledge sharing tool. The ROI calculation was based on  $((\text{Benefits}-\text{Cost})/\text{Cost} \times 100)$ . Using the ROI calculation, a value proposition was extrapolated through 2007. To monitor progress toward achieving the value proposition, yearly goals for growth rate and activity levels are established, then monitored and reported

monthly (overall and by Business Unit) to stakeholders within and outside the learning community. In addition, the home page of the knowledge sharing tool contains a link to measures such as number of new communities and number of new knowledge entries – information that is available to anyone who uses the knowledge sharing tool.

Evaluation of the practice goes beyond traditional measures. Periodic usability evaluation studies and a qualitative study by a major university are part of the continuous improvement of the knowledge sharing tool.

## Results

*7. What specific participant behaviors are observed as a result of this practice, and how do these behaviors contribute to the goals of the practice? Are the impacts of these behaviors short-term or long-term? How do these behaviors differ from the results of previous practices?*

The average person is a member in four communities of practice. There are 24,000 unique users, but the number of community members is rapidly approaching 100,000. Multiple community memberships across disciplines and functional areas, as well as the ability to cross-reference entries, furthers the sharing of knowledge **across** communities and helps prevent siloed thinking.

Individuals and teams are not constrained to use the knowledge sharing tool in a specific way. Each community of practice uses the tool in the way that best fits the needs of the community. Some communities use the tool to collaborate on a specific project – reviewing draft documents, discussing and reaching consensus on issues, monitoring work plans. Other communities use the tool to store and retrieve existing knowledge – creating a type of corporate library. Still other communities use the tool for on-going problem solving – generating new knowledge. As new uses of the tool are identified, they are shared via a community of practice specifically for community managers.

The global learning community has embraced use of the knowledge sharing tool. The community uses the tool to collaborate on development of specific learning products; to deploy learning product to the global learning community, as a means of collecting needs assessment information, as communication tool within the governance process of the corporate university, and as a means to leverage work within one area learning community to other areas.

*8. What was the impact of the practice on your organization? Are the impacts of these behaviors short-term or long-term?*

The concept of knowledge sharing is not new to the organization. Prior to establishment of the corporate university and development of the knowledge sharing tool, employees shared what they knew, but without the global reach and

speed required today. A study conducted by a major university of the use of the knowledge sharing tool throughout the organization revealed the following significant impacts:

Provides an easy way of finding valid information (as opposed to Internet searches)

Those using the tool found it a valid source of information that is both reliable and pertinent to their jobs. Searching the knowledge sharing tool was much more productive than searching the Internet which can be frustrating and unproductive. Users expressed confidence in the quality and reliability of information found in the knowledge sharing tool.

Enables finding needed and timely information, as well as the experts who can comment on the information

Information by itself is a valuable resource, but being able to discuss the information with recognized experts is a tremendous benefit. Quite often newly acquired information raises new questions. Or there may be questions on how knowledge generated in one situation might be applied to a similar but different issue. Dialogues with experts may also elicit information that is relevant but was not previously posted.

Provides an aid for new employees and people in new positions/locations who need help

Use of the knowledge sharing tool enables those new to the organization or new to a job answer the following questions: Where can I find information on how to do my job? Who can I ask for help?

Provides access to best practices and lessons learned

Documenting what we have learned and making it broadly accessible means that what was learned and used in one situation ends up helping to solve problems in several future situations. The result is significant reduction in "reinventing wheels". In fact, this is a major impetus for getting people to post knowledge entries in the knowledge sharing tool. It is a self-feeding process, as one person or group finds an answer they can use, they are more likely to post the solution to another problem, believing it may help someone else just as they were helped. This has led to increased collaboration and knowledge sharing across the organization and its value chain.

Acts as a forum for generating new knowledge

The knowledge sharing tool functions as a place to post information and hold threaded discussions enabling users to both receive and provide feedback to issues. This back-and-forth dialogue may lead to an improved solution or a new method to achieve goals that might not have developed from either party working alone. The accessibility of the tool enables users

from a variety of areas and affiliations to work on the same issues while bringing a range of perspectives and experiences into play.

Gives various geographically dispersed areas a place to work together and learn from each other

Global access enables the best and the brightest to assist any unit anywhere. In addition, it provides a means to surface and keep current on differences in international standards and regulations.

Enables users to find out who and where the experts are

Knowing “whom to ask” for assistance, opinions, or advice is important in any organization. The bigger the organization, the harder it is to locate those individuals with the answers. The knowledge sharing tool provides a means for individuals to reach out to quickly and easily find the experts, regardless of geography.

Promotes informal learning

The functionality of the knowledge sharing tool allows informal learning to occur on a global scale. At the same time, the structure of the tool and the processes for managing information surrounding it, provides an assurance of the quality and reliability of the information feeding informal learning.

## Shared Learning

9. *What have been some of the specific lessons learned from designing this practice for the purposes of continuous learning improvement? Please discuss whether and how this practice might be transferred and replicated both internally and external to your organization.*

Lessons learned and improvements implemented:

- Importance of ease of use – the redesigned user interface was a improvement as the target audience for the tool broadened.
- Document management and archival – increased use resulted in significant increase in the number of documents to manage. A new process was designed and implemented to enable community managers to review and archive information on a regular basis. Archived documents remain available to community users, but in a separate area of the community.

Lessons learned and improvements “pending”:

- Need for integration with/ direct “connection with” the corporate learning management system – such integration will enable combining the power of formal and informal learning.
- User interface “in language” – the user interface is currently available only in English (although the documents and discussions within a given community can be, and are, in other languages). As use of the tool

spreads and to further promote global use, it will be increasingly important to provide the user interface in languages other than English.

Transfer/replication:

- Plans are in place and being implemented for further expansion to dealers, suppliers, customers, and other affiliates.

## **Contact**

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