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Can Web-based Knowledge Sharing Tools Improve the Learning Process in an MBA Consulting Class?

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Business and education are both trying to accomplish the same goals — the creation and management of knowledge. This realization is quickly spreading through higher education as we continue to see the explosive growth of distance education. Universities around the country are gearing up to address the technology and learning needs of its customers with anyone, anywhere, anytime learning. Universities are investing in large deployments of information technology resources and are becoming like corporations with CIOs (Chief Information Officers), CTOs (Chief Technology Officers), and a new focus on how knowledge is captured, managed and deployed.

Through the use of collaborative and document sharing software, companies are capturing and managing knowledge. Significant investments are being made in Internet technologies to support the learning requirements of corporate America's knowledge workers. We see that the opportunity now exists for both education and business to collaborate and utilize the same tools to create, contribute and share knowledge.

With this paradigm in mind, we set out to test the premise that a group of MBA students in a consulting class could enhance their learning and understanding of the course content by utilizing corporate Web-based knowledge sharing tools.

Instructional Design

The design of our MBA class provided the perfect opportunity for our students to interact with actual clients in the local area. The MBA students acted as consultants in analyzing customer problems, identifying solutions, and proposing a statement of work to help solve the customers' issues. By acting as real consultants and utilizing consultant practices and tools, the MBA students embarked on a unique learning experience in capturing, synthesizing, and generating solutions based on the knowledge of a customer's business issues. Thus, the purpose of this study was to introduce Web-based knowledge sharing tools to an MBA consulting class and attempt to measure quantitatively and qualitatively whether the tools facilitated the learning experience and improved productivity.

As a partner in learning, the Internet Software and Solutions organization of Xerox Corporation donated Web-based knowledge sharing software, DocuShare, for use in the study, and provided initial training for the students, faculty and clients.

Results of the Experiment

At the end of an introductory consulting class, 18 students were asked to rate their perceptions of knowledge sharing as well as their ability to share ideas and documents using technology tools (primarily e-mail) with team members, faculty, and their clients from community businesses. In the advanced consulting class the next semester, we trained 16 students (15 from the previous class) as well as participating faculty and clients in using Docushare. The students were asked to use Docushare to share information in the various phases of their projects by entering and reviewing project documents throughout the semester. The purpose was to make their work-in-progress accessible to team members, faculty and clients without constraints of time or place. The different stakeholders also communicated via e-mail, telephone and face-to-face meetings. The students were also asked to describe their perceptions of Docushare in several focus groups at

different times throughout the semester and to respond to the same survey that they answered the previous semester.

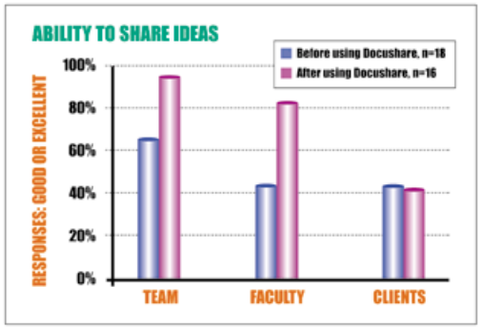
Results from the Before and After Surveys:

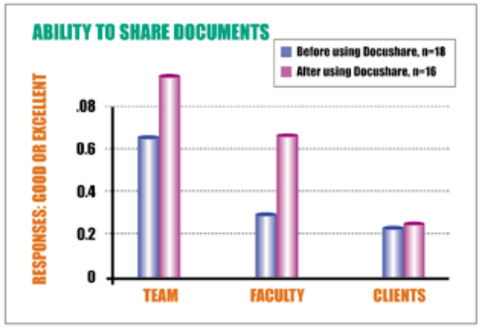
Figure 1 shows an increase in the ability of these students to share ideas using technology with team members and faculty after using Docushare. Similarly, Figure 2 shows that students perceived an enhanced ability to share documents with team members and faculty after using Docushare. After using Docushare, there was a greater increase in document sharing with faculty than with *students* because the student teams met almost on a daily basis. They therefore tended to share and edit documents in face-to-face meetings. We did not see an increase with clients, probably because many of the clients did not use computers frequently. In fact, because several of the clients were not used to using computers on a regular basis, several did not attempt to use the Docushare system at all. One set of clients did use Docushare and expressed their appreciation of the new collaboration technology. However, this particular client also met with their student team face-to-face on a weekly basis. Therefore, while they used Docushare, they did not use it as extensively as they would have if distance represented a barrier to communication.

Results of the Focus Groups:

The purpose of the focus groups was to collectively explore student perceptions on the benefits or drawbacks of using this new technology at several different times throughout the semester. Several interesting observations resulted. During one of the focus groups, the students defined “team productivity” as the ability to accomplish tangible results in a short period of time. They defined “quality” as not having to revise something; getting it close to perfect the first time. Thus, we were interested to see whether they perceived this new Web-based knowledge-sharing tool as improving team productivity and quality in this course. In addition, since this course represents a partnership in learning between students and community businesses, we were similarly interested in whether Web-based knowledge sharing tools would improve productivity and quality of communication (ideas and documents) among these stakeholders as well as with the faculty.

The results can be divided into two major categories: Sharing Documents and Sharing Knowledge.





1) Sharing Documents

Over half of the students expressed their appreciation of having a central repository where students, faculty and clients could view the status of projects irrespective of time or place. They also saw potential value in this form of communication for larger teams and when participants were dispersed geographically. For example, one student mentioned: “This is a way we can share knowledge with fellow students in a more beneficial way than the current system.”

However, over half of the students also felt that e-mail was an easier, quicker, more efficient way to communicate with team members, faculty and clients. Many also expressed their preference for richer face-to-face communication over telephone or the Internet. As one student stated: “The vast majority of the time, the client and our team met and worked face-to-face. There was not a need to send our work to each other.” Another interesting comment was: “Sometimes too much technology can get in the way, especially if there are no complex needs.”

Several students mentioned the difficulty of breaking old habits in

which they had a high familiarity, comfort level, and established routines, such as with e-mail. They mentioned that good training at the start and incentives to use the system would help overcome the resistance to using the new technology and incorporating it as another normal work routine. Examples would include points towards their grade and specific homework assignments using the new technology.

2) Sharing knowledge:

While most respondents thought that face-to-face communication and e-mail represented better vehicles for the exchange of ideas, most of them also recognized that this becomes more difficult outside of the traditional classroom setting. They also found communicating with their external clients to be challenging at times and would have preferred that their clients use the Web-based knowledge-sharing system. As one student said: “It was very convenient to use for editing and storing because it required no space and didn’t require trading disks. It could have been a useful communication tool, but our clients didn’t seem interested in using it.”

Therefore, face-to-face communication was preferred for spontaneous feedback and brainstorming overall. However, e-mail was the preferred vehicle with team members, faculty and clients when time or distance prevented personal meetings for feedback and transmission of ideas.

Almost all of the students discussed the value of this Web-based knowledge-sharing software in terms of the ability to share documents. As mentioned, they appreciated the value of one central “knowledge repository” where team members, faculty and clients had constant access to documents for review and feedback. Similarly, they mentioned that the value would increase as more relevant information was added, such as proposals, finished projects, surveys, demographic data, databases, journals, book titles and Web addresses. Essentially, they saw Docushare as a potential gold mine of accumulated information. However, they also pointed out the need to keep the information organized and updated to maintain its value.

This infers a distinction between synchronous and asynchronous

learning. When the respondents mentioned their preference for personal communication for feedback and brainstorming, they were referring to synchronous communication that is instantaneous or real-time. However, with asynchronous learning, students can access information anytime at their discretion. Information is made available to students to digest and reflect upon, irrespective of time or physical location.

With respect to this study, the students' responses infer that synchronous communication and learning that involves immediate feedback work best with personal communication methods such as face-to-face meetings or the telephone. However, they see value in asynchronous communication and learning methods as a means of sharing knowledge and building a knowledge base.

Another issue expressed by our respondents was their preference for e-mail over this new technology. There are probably two reasons for this. First, they expressed an existing comfort level with e-mail that was difficult to break. As one student said, "It's hard to break the e-mail dependency." Second, the technology must match the need or work routine. In this case, students perceived that e-mail was advantageous for asynchronous communication. However, they perceived the Web-based knowledge-sharing software as advantageous for working on and storing information as a central knowledge repository. Finally, in terms of the impact of this new technology on productivity and quality, several students commented on the ability to have documents in a central repository as instrumental in making the process of editing and revising quicker and easier.

Implications for Learning Through Web-Based Knowledge-Sharing

The results from the survey and focus groups indicate perceived value in an organized, up-to-date knowledge repository. Based on the experiences and responses from this course, the repository should serve two major functions.

First, it should serve as a means of collaborating with a variety of constituencies including team members, faculty and clients, by sharing documents in a central location. This enables those involved to see work-in-progress, comment, and edit on a real-time basis, making the process transparent and efficient.

Second, the repository should act as a knowledge archive where all stakeholders can find relevant information, such as past projects, and sources of research information including sample surveys, demographic and industry data, research and trade journals, and Web sites. The accumulation of knowledge can have a profound impact on improvements in productivity as students, clients and faculty learn to share knowledge, eliminating many redundant processes and maximizing the efficiency of everyone's time and efforts. These efficiencies should lead to improvements in productivity by creating synergies in the sharing of knowledge and ideas.

This technology can be similarly applied to most college courses, and perhaps to education at any grade level. The ability to place work in a central repository for review by teachers, fellow students or parents would be valuable. Similarly, having a secure, central repository of class information and outside resources would be of great value in any classroom. Since the system we used was Web-based, the links to Internet sites could literally open an entire world of knowledge to the users. As most educators have discovered, knowledge potential from Internet access is almost limitless. With the tools we used in our MBA Consulting class, educators can design and deploy an "education portal" to store, manage, and retrieve that knowledge, opening new doors to the teaching and learning process.

How to achieve this? Again, we can learn from the lessons of others. The research of Orlikowski, Ciborra et al, Failla, Wynn, Greengard, and Solomon supports the following recommendations for the successful introduction and implementation of a new technology like Docushare into a classroom situation or an organizational setting.

- Good training right from the start.
- A culture and leadership that actively support and encourage the new technology.

- Active communication of the benefits and relative advantage of the new technology to the users.

- Incentives to use the system and become comfortable with it — for it to ultimately become part of the normal work routine. (The easy way to accomplish this in academics would be to use points that help the students earn a better grade. To encourage client usage, benefits to the clients must similarly be stressed.)

- Active involvement and ownership of the system by the participants.

In conclusion, the use of Web-based knowledge-sharing tools can have a significant impact on student productivity and the learning process. In this study, MBA consulting students, working with their clients and faculty, have captured and documented “moments of discovery” that demonstrate their knowledge about the customer, their business processes, their approach to the customer’s problem, and the proposed solution. The students have created, contributed, and shared content to a knowledge repository that provides a historical record of their critical thinking skills, problem solving skills, writing skills, and project management skills. Educators and other students can easily draw upon this knowledge base and assess the students’ demonstration of their knowledge and experience in management consulting. This record of knowledge will always be there and will hopefully be available for future students to draw upon in other classes, in job interviews, and in on-the-job situations.

Education can no longer take place in a just a brick and mortar setting. Collaboration with partners-in-learning, like Xerox Corporation and others, opens doors to education to understand and utilize the tools and practices that are needed to effectively run a business, a program or a project. As we see technology becoming more a part of the fabric of our daily lives, and no longer an obstacle, we can begin to weave and share content into a community of lifelong learners in education, business, organizations, cultural institutions, and the general public. With these knowledge-sharing tools, we all can share and play a part in the growth and success of our educational process.

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References

Bikson, Tora K. 1996. “Groupware at the World Bank.” In Groupware & Teamwork, edited by Claudio U. Ciborra: John Wiley & Sons, Ltd.

Ciborra, Claudio U. “Groupware & Teamwork: Invisible Aid or Hindrance.” In Groupware & Teamwork, edited by Claudio U. Ciborra, 1-21: John Wiley & Sons, Ltd., 1996.

Failla, Angelo. 1996. “Technologies for Co-ordinating in a Software Factory.” In Groupware & Teamwork, edited by Claudio U. Ciborra, 61-88: John Wiley & Sons, Ltd.

Greengard, Samuel. 1998. “Will Your Culture Support KM (Knowledge Management)?” Workforce 77, no. 10: 93-94.

Orlikowski, Wanda. 1996. “Evolving with Notes: Organizational Change and Groupware Technology.” In Groupware & Teamwork, edited by Claudio U. Ciborra, 23-59: John Wiley & Sons, Ltd.

Solomon, Charlene. 1998. “Sharing Information Across Borders & Time Zones.” Workforce 3, no. 2-Supplemental: 12-18.

Wynn, Eleanor. 1996. “Groupware in a Regional Health Insurer: Local Innovations & Formative Context in Transition.” In Groupware & Teamwork, edited by Claudio U. Ciborra, 211-236: John Wiley & Sons, Ltd.