

REAL WORLD CASE

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Infosys Technologies: The Implementation Challenges of Knowledge Management Initiatives

Infosys Technologies, headquartered in Bangalore, India, is one of the world's largest software development contractors, with revenue of \$1.6 billion in fiscal 2005 and employing over 50,000 software engineers and other staff in early 2006. The company has a long history of trying to leverage knowledge created by its employees for corporate advantage. Its adage "learn once, use anywhere" reinforces the continual learning and reflection required for knowledge accumulation and reuse. It also draws attention to a core belief that knowledge belongs not only to those employees who create it but to the entire company.

Infosys began efforts to transform its employees' knowledge into an organizationwide resource in the early 1990s. In 1999, a central knowledge management (KM) group was created to facilitate a companywide KM program, including the creation of an intranet knowledge portal called KShop for the accumulation and reuse of organizational knowledge.

But by early 2000, patronage of KShop by employees remained low. Employees within various project teams and practice communities continued to use their informal networks to access knowledge in times of need. Local repositories of specialized knowledge continued to proliferate within project teams and practice communities. In other words, processes at different levels of the knowledge system were not coupling and reinforcing one another.

In response, during the first quarter of 2001, the KM group implemented a major initiative called "the knowledge currency unit (KCU) incentive" scheme to jump-start contributions to KShop. According to the scheme, Infosys employees who contributed or reviewed contributions to KShop

would be awarded KCUs, which they could accumulate and exchange for monetary rewards or prizes. In addition, employees' cumulative KCU scores would be displayed on a scoreboard on KShop, thereby increasing the visibility and standing of prolific contributors.

These initiatives began yielding results, especially after the KCU incentive scheme was introduced. For instance, within a year of introduction of the KCU scheme, more than 2,400 new knowledge assets project proposals, case studies, and reusable software codes were contributed to KShop, with nearly 20 percent of Infosys employees contributing at least one knowledge asset. Over 130,000 KCUs were generated by the KM group and distributed among contributing and reviewing employees.

Even as these events unfolded, the KM group began wondering if the KCU incentive scheme had become *too* successful. One concern had to do with employees experiencing information overload and, consequently, higher search costs for reusable knowledge. As a member of the KM team commented: "Some people have told us informally that they are finding it faster to do things on their own or to ask someone they know instead of searching the repository for reusable content."

Complicating matters, the explosive growth in the number of contributions began placing a heavy burden on the limited number of volunteer reviewers. A shortage of reviewers made it difficult for the KM group to ensure that contributions were reviewed for quality and relevance before being published on KShop. With review processes still struggling to keep pace with the accelerating pace of contributions, assets of uncertain quality began appearing on KShop. When even contributions of questionable quality began receiving high-quality ratings from colleagues, the rating scheme itself came under scrutiny.

Concerns also began emerging about the possible impacts of the KCU scheme on knowledge processes at the other levels of the organization. One such concern was the potential for the KCU incentive scheme to destroy the spirit of community and the asking culture within the company. What employees would have given freely to one another previously was now being monetized through the KCU incentive scheme. "Why not gain some rewards and recognition for my knowledge contributions, especially when others are doing so?" was the question being asked by employees who had shared their knowledge earlier for free. An additional concern was the real possibility that some project teams and practice groups, disappointed with KShop, could revert to building and relying on their own local repositories instead of contributing to the central portal.

Sensing the potential of the KCU incentive scheme to compromise the companywide KM program, the KM group took several actions. First, it intervened to decouple knowledge sharing from the economic incentives that threatened

FIGURE 10.17



Infosys Technologies is one of the world's largest and most successful software development contractors.

the spirit of community and the perceived utility of KShop. Specifically, in April 2002, the KM group modified the KCU incentive scheme to emphasize recognition and personal visibility for knowledge-sharing contributions more than monetary rewards. It formulated a new composite KCU score that emphasized the usefulness and benefit of contributions to Infosys as rated not just by volunteer reviewers or colleagues but also by actual users. Moreover, to increase the accountability of reviewers and users who rated contributions to KShop, the KM group began demanding tangible proof to justify any high ratings. Finally, the KM group significantly reduced the number of KCUs awarded for reviewing contributions to KShop and raised the bar for cashing in the KCU incentive points for monetary rewards. The KM group hoped that these steps would shift the motivation to share knowledge away from monetary rewards.

A second set of initiatives focused on improving KM practices within project teams and practice communities. Intense time pressure in completing projects within stringent deadlines reduced knowledge codification efforts within teams. To address this issue, the KM group modified forms and project templates to facilitate extraction of knowledge using automated tools. The group also implemented a project-tracking tool on KShop to log details and deliverables pertaining to every project within Infosys. The objective of these initiatives was to enable the codification and extraction of knowledge even as teams carried out their routine project-related tasks.

Despite these attempts, knowledge codification continued to vary across project teams. To address this shortcoming, the KM group introduced a hierarchy of roles to broker knowledge sharing among project teams, practice communities, and the wider organization. Within each project team, one volunteer member would be designated as the KM prime. The KM prime would be responsible for identifying and facilitating the fulfillment of the team's knowledge needs for each project. The KM prime would also ensure that, after the completion of each project, the team codified and shared critical knowledge gained during the project with the rest of the company.

At the practice community and wider organizational levels, the KM group created the role of knowledge champions to spearhead and facilitate knowledge sharing and reuse in critical or emerging technologies and methodologies. Furthermore, the KM group encouraged employees to swap stories on KShop with the view of promoting widespread sharing of tacit individual and team-level knowledge and experiences.

After the modified KCU scheme was introduced, those who had contributed to KShop just to secure monetary rewards reduced their participation. For instance, in the two quarters immediately following the introduction of the modified KCU scheme, the number of new contributors per quarter declined by nearly 37 percent, whereas the number of new knowledge assets contributed to KShop per quarter declined by approximately 26 percent. After this significant initial decline, however, the number of new knowledge assets contributed to KShop slowly stabilized and then increased at a more manageable pace. Finally, users of KShop reported lower search costs and significant increases in the quality and utility of knowledge assets available through the portal.

Looking into the future, the KM group was optimistic that the KM prime and knowledge champion roles in project groups and development communities would yield positive outcomes. A manager who had been associated with the KM initiative from the beginning reflected on the challenges faced in the implementation process at Infosys:

We are coming to realize that knowledge management requires much more than just technology. We have to pay attention to the cultural and social facets of knowledge management as well. We have to continually campaign and evangelize besides investing the time and resources to manage the content. Knowledge management initially appears to be a deceptively simple task. But, make just one wrong move, and it is difficult to convince people to come back.

Source: Raghu Garud and Arun Kumaraswamy, "Vicious and Virtuous Circles in the Management of Knowledge: The Case of Infosys Technologies," *MIS Quarterly*, March 2005; Julie Schlosser, "Infosys U.," *Fortune*, March 20, 2006.

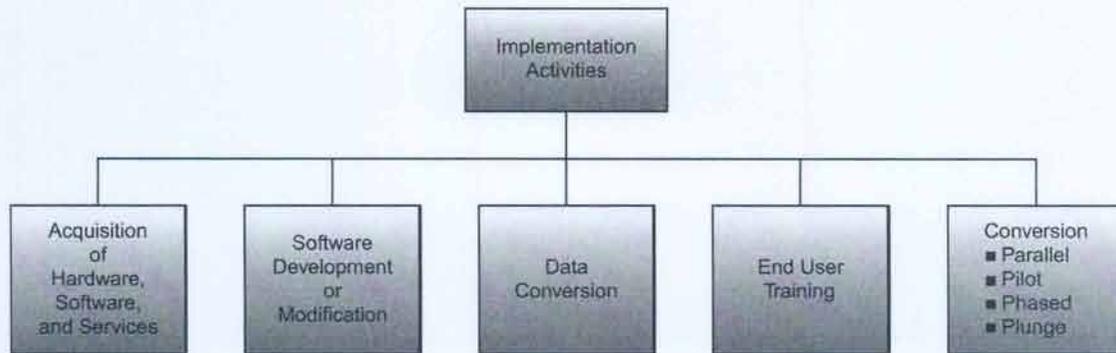
CASE STUDY QUESTIONS

1. Why do you think the knowledge management system at Infosys faced such serious implementation challenges? Defend your answer with examples from the case.
2. What steps did the KM group at Infosys take to improve participation in the KM system? Why were some of these initiatives counterproductive? The KM group responded with corrective initiatives. Do you think these will succeed? Why or why not?
3. What change management initiatives should the KM group have initiated at Infosys before attempting to develop and implement knowledge management at the company? Defend your proposals, paying particular attention to the final quote in the case by a long-time KM manager at Infosys.

REAL WORLD ACTIVITIES

1. Research the Internet to find examples of successful implementations of knowledge management systems. What successes do these companies claim, and what reasons do they give for their successful KM initiatives?
2. If knowledge management would succeed anywhere, one would think it would be a smashing success at a progressive successful IT company like Infosys. Break into small groups with your classmates to discuss what change management and other implementation strategies and tactics you would use to ensure a successful KM initiative at Infosys, one of the companies you found in your previous Internet research, or a company of your choice.

FIGURE 10.18 An overview of the implementation process. Implementation activities are needed to transform a newly developed information system into an operational system for end users.



Although a thorough discussion of project management is far beyond the scope of this text, we can nonetheless look at the big picture and acquaint ourselves with the necessary steps in the process. It is important to note that the skills and knowledge necessary to be a good project manager will translate into virtually any project environment, and people who have acquired them are regularly sought after by most organizations.

What Is a Project?

A **project** is a special set of activities with a clear beginning and end. Every project has a set of *goals, objectives, and tasks*. Also, every project must deal with a set of *limitations or constraints*. Finally, though the content can vary from one project to the next, there are many important similarities in the process. The first, and probably the greatest, contribution of the modern project management approach is to identify the project as a series of steps or phases. The SDLC is a project management approach tailored toward the design and development of information systems. Before we return our focus to a specific project management approach such as the SDLC, let's look at a more generic picture of project management and see how it compares. No matter what the project, three elements will be necessary to manage it effectively and efficiently: *process, tools, and techniques*.

The Process of Project Management

The modern project management approach has identified five phases in the process. Figure 10.20 illustrates the five phases.

FIGURE 10.19

An example of the implementation process activities and timelines for a company installing an intranet-based employee benefits system in its human resource management department.

Intranet Implementation Activities	Month 1	Month 2	Month 3	Month 4
Acquire and install server hardware and software	█			
Train administrators	█			
Acquire and install browser software	█	█		
Acquire and install publishing software	█	█		
Train benefits employees on publishing software	█	█		
Convert benefits manuals and add revisions	█	█		
Create Web-based tutorials for the intranet	█	█	█	
Hold rollout meetings		█	█	█