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What Happens After “Going Live” With ERP Systems? Competence Centers Can Support Effective Institutionalization

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Abstract

The process of initiating, implementing and institutionalizing an enterprise resource planning (ERP) software package in an organization is non-trivial. Competence centers (CC) have been proposed as a means to support organizational performance during the ongoing operations and maintenance phase of the life cycle. CC can be designed to support only the technical aspects of ERP software maintenance (e.g., updating tables as the business changes), but they can also be a resource for end user education, training, and support. In addition, they can be a focus of ongoing improvements in business processes and can enable retention of organizational knowledge about the rationale for software configuration decisions, which is critical for future upgrades, migrations, and conversions. This paper describes the role a CC can play by examining the problems that one firm experienced after it “went live” with ERP. We conclude with some suggestions for future research.

Introduction

The novelty of ERP systems and the difficulties companies face in implementing them have placed the emphasis of research and practice squarely on the “project phase” of the ERP life cycle (Bancroft, 1996). But ERP system implementation does not end when the systems are up and running. Users need on-going support, and organizations face a variety of issues such as fixing problems, upgrading to new versions of the software, and managing organizational performance with the system to achieve desired benefits.

Recognizing that disbanding the project team when the software is up and running is a recipe for organizational disaster, ERP vendors have advocated an approach for preserving technical knowledge, enhancing system use, and preparing for migration. This approach is called competence centers (CC). There is some debate over whether the role of the CC should be purely technical (akin to the “maintenance” function of home-grown systems) or whether it should also encompass end user education, training, and support and ongoing business process improvement. We argue for a broader

view of the CC’s function—a view which encompasses the initiation, implementation, and institutionalization phases of organizational change (White & Nelson, 1990). We illustrate our argument with reference to a case analysis of one organization’s post-implementation experience with ERP.

ERP at XYZ Corporation

Division Z is part of multi-national XYZ Corporation, a global energy and engineering firm comprising 1,000 companies in 140 countries. Division Z manufactures components and systems that serve the entire supply chain of the electrical power industry. In 1997, Division Z’s revenues were \$330 million, and employees numbered 1500. The company is facing over-capacity and pricing pressures. ERP was selected to 1) support standardization of data and processes and the post-merger integration of the operations of three formerly independent companies, and 2) facilitate a strategy of providing customers with total electrical power systems solutions.

In-depth, open-ended interviews were conducted with 17 key people in Division Z over a period of a week. Interviews lasted 90-120 minutes and focused on the problems encountered during the implementation and ongoing operation of the system, as well as the causes and consequences of these problems. The 17 people interviewed included 16 internal people (some of whom have since become former employees) in operations, finance, and IS and one external IT consultant. Interviews were recorded on audiotape and notes were transcribed. Additional information was obtained from the company web site, project documentation and presentations. While on site, researchers conducted a feedback seminar on their findings, during which interviewees and management commented on the findings.

Data analysis revealed three persistent and undesirable conditions related to operation of the ERP system:

Disparity between mandatory and optional users:
People interacting with the system could be identified as belonging to two groups. There were people whose work required them to use the system; an example was the

accountants who could not do their work without using the system. But there were also people whose work did not require using the system; an example was the middle managers. While middle managers might have performed better had they used ERP system generated reports, they did not do so. Only mandatory users interacted with the system as expected by the system's implementors.

Low data quality: Many end users perceived the ERP system as a filing cabinet in which they simply had to enter data; but they lacked the vision of ERP as a strategic tool for organizational planning and control. They were only concerned about data relating to their own functional area; they did not understand that people in other areas also used ERP data to perform their jobs. Consequently, the data entered were often incomplete or inaccurate, and the accountants spent long hours tracking erroneous data back to the source and correcting them. Low data quality and workarounds to deal with it quickly became institutionalized in this organization.

Absence of overview: Most interviewees expressed frustration that no one in the organization had a good overview of the whole ERP system implementation. People became experts in their own domain through use of the system, and to a certain extent they were familiar with activities lying at the boundaries of their responsibilities. Beyond this, employees were unsure about the functionality of the system, the use and need for the data they entered, and the system's overall purpose. A consequence was that managers had difficulty identifying strategies for cross-functional organizational improvement.

These conditions illustrate the need for a competence center. Competence centers can be a focal point for retention of technical and business knowledge about the whole implementation. In addition, they can provide for end user training (initial and advanced) and support and for ongoing business process improvement. By setting up and staffing competence centers before or at the time of "going live," organizations create a mechanism for dealing with the inevitable problems of "shakedown" and ongoing operations.

Competence Centers

Baan, a leading ERP vendor, defines the competence center as "a structured approach to managing competencies in order to support the IT life cycle in combination with the changing business." Structurally, a CC can be a department, but it could also be a network or virtual organization of skilled people. A CC is not limited to knowledge about one ERP package, but may also include other software. (source: www.baanbusiness.com 1/22/98)

In our understanding, a CC can be thought of as a particular type of "center of excellence," a structure used by global service firms to manage knowledge (Moore and Birkenshaw, 1998). A competence center gives equal priority to serving four critical organizational needs in addition to technical support: user education, training, support, and continuous improvement. Core CC staff are drawn from the ERP project team; membership may include some external resources. CC staffing should include a mix of technical, operational, and organization development skills. It may be valuable to rotate people through the CC to disseminate competence throughout the organization, particularly if multiple ERP projects are planned. The CC can report to operations, IS, or a combination. The following four issues are critical decisions when chartering a competence center:

Purpose of the competence center: The overall purpose of a CC is to continuously pursue business benefits from the ERP implementation. Although initial goals probably focused on getting the system up and running, long-term goals involve obtaining and sustaining business benefits. Without a focus on long-term business results, support for the ERP system may degenerate into routine fire-fighting. (See also Clemons, 1998).

Staffing: By definition, a CC calls for a multidisciplinary team of people with different backgrounds. Neither IT nor operational staff should be the sole persons in such a center. Additionally, the center can be staffed with people from outside the organization. These could be third-party consultants or vendor personnel. There are mutual benefits to be gained from such alliances with outsiders. External parties contribute their general knowledge from similar situations, and in exchange they develop case-specific knowledge.

Activities: The CC faces ongoing decisions about whether to alter the ERP system configuration or to alter the organization's use of the ERP package. As the case of Division X shows, undesirable situations can arise and become institutionalized in ERP implementations. In such situations, the CC may conclude that the system was poorly configured or that people are not using the system properly. The CC needs the knowledge, skills, and resources to cope effectively with either situation.

Outcomes: In order for a CC to make a difference, organizations need to decide on the authority and reporting structure of the CC. A CC may be given the power to induce change, or it may be set up as an advisory group to management.

Issues for Research and Practice

Our review of CC literature and practice suggests that while the CC concept started broad, it gradually narrowed in focus to purely technical issues. We believe that CC should focus broadly on organizational performance improvement (e.g. focus on user skills and dissemination of best practices) in addition to a technical focus (e.g. retaining technical skills and knowledge of configuration choices). But it is ultimately an empirical question. Do organizations benefit as much from technically focused CCs as from more broadly focused ones?

The second generation of ERP systems may move toward greater supply-chain integration, including suppliers and customers as well as the focal organization (Cambridge Information Network study, cited in www.ERPWORLD.COM, February 15, 1999). Can CCs help organizations to achieve this shift? Can the CC concept be extended to include the entire supply chain?

The nascent organizational memory literature is dominated by an IS perspective. Competence centers house organizational memory in a structure designed to combine IS, business, and organizational concerns. As such, competence centers provide an opportunity to extend organizational memory research.

As organizations turn to standard software packages, the role of internal IS specialists is changing. Research is needed to understand important changes in skill requirements. What is required in terms of system and business process knowledge for IS practitioners to serve ERP-using organizations in the future?

These are just a few of the important research questions related to the use of competence centers by organizations that implement ERP systems.

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