
PROCESS KNOWLEDGE

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OVERVIEW

Throughout the next decade, organizations' work practices and IT systems will shift profoundly as the economy evolves from the industrial era to a knowledge-driven future. The short-lived information age—which provided a bridge between the old and new eras—saw IT as a way to increase efficiency and reduce costs. In contrast, companies in the knowledge age will focus on increasing effectiveness by establishing a strong foundation for knowledge management that includes not only IT, but also relies heavily on the corporation's individuals and its collective knowledge, business processes, work practices, and culture.

IT infrastructure alone will not transform entrenched work practices; organizations must unlearn destructive habits such as information hoarding, command and control thinking, and departmental competition that escalate costs and subtract value from goods and services. To compete for markets, profits, and growth in the knowledge age, organizations must be committed to information sharing, flexible processes, continuous improvement, and new work styles. Visionary companies will proactively foster collaboration, share knowledge, and organize around customer-centric processes. All organizations will eventually move in this direction, but risk losing competitive advantage if they delay too long.

Today's organization is on the threshold of a profound, permanent change as the economy shifts from the industrial age to the knowledge era. Although the term "industrial" conjures images of smokestacks and obsolete mills—the shift to knowledge as the essential competitive differentiator will ultimately impact all current-day industries. As this change unfolds and the economy transitions from one era to another, business and IT executives must understand the wide-reaching impact on business processes and work practices.

From a historical perspective, the industrial age has been a short-lived time in human history (see Figure 1). But virtually all modern organizations operating today are thoroughly grounded in industrial age concepts such as division of labor and efficiency. These concepts were developed in the 1800s when human labor was cheap and machines were expensive. Although that is no longer true in industrial nations—machines are now cheap and human labor, particularly knowledge work, is expensive—today's businesses are still organized according to these outdated industrial age principles. Even as computers were introduced in the 1970s and 1980s and the "information age" was heralded, business processes (based on division of labor concepts) were not changed, but were instead simply made more efficient through automation.

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Figure 1: The Emerging Knowledge Economy

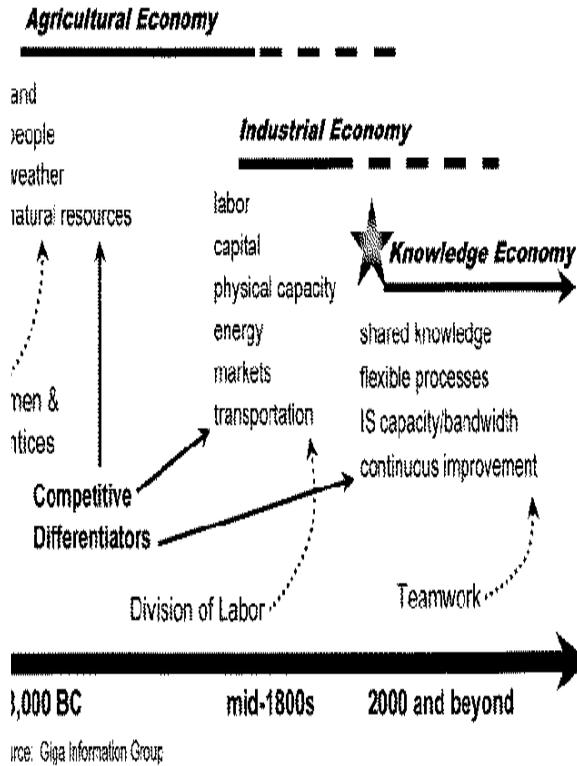


Figure 1: The Emerging Knowledge Economy

Efficiency vs. Effectiveness

The driving reason behind today's shift from the industrial age to the knowledge era is that virtually all businesses now depend upon information technology to develop and deliver products and services. As the IT infrastructure in companies becomes more pervasive, it will become increasingly difficult for companies to compete based on *efficiency* alone. Instead, knowledge will move to the forefront in helping companies compete more *effectively*. By collecting, sharing, disseminating and enhancing corporate knowledge, companies will be able to develop better (i.e. more competitive) products and services, and consciously implement customer-centric business processes. This trend will accelerate over the next 2-3 years as business use of the Internet and Web commerce develops at a faster pace, pushing companies to adapt their processes to a new way of doing business (see Figure 2). As the new era unfolds, organizations will be forced to approach capital, assets, business processes, work practices, organizational structure, and operations quite differently than in the past.

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Figure 2: E-Commerce Will Drive Business Processes

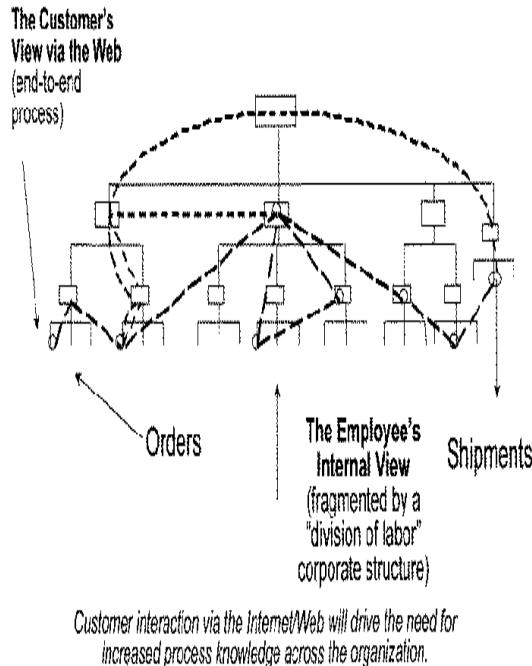


Figure 2: Commerce Will Drive Business Processes

Concepts that have driven companies during the industrial age and the short-lived information age include:

- managing physical assets and physical capacity
- managing money as capital
- identifying/servicing markets
- locating near transportation centers
- guaranteeing access to commodities and energy sources
- organizing and dividing the automated workforce into white-collar "assembly lines"
- using IT for efficiency gains and cost reduction

In contrast, knowledge-era companies will focus on:

- treating knowledge as a new source of capital (e.g., encouraging its collection, dissemination, and sharing organization-wide)

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- implementing an IT infrastructure that supports rapid information access and collaboration across workgroups, the enterprise, and the extended enterprise
- focusing on processes, knowledge, and continuous improvements to increase effectiveness
- developing flexible work practices
- transitioning from clerical/blue-collar workers to professional knowledge workers

The Context for Knowledge

Embracing the knowledge economy will not be easy—companies must not only address IT issues, but also *proactively* foster collaboration, share knowledge, and organize around customer-centric processes. Although vendors imply otherwise, IT infrastructure alone will not transform entrenched work practices. In fact, projects that focus exclusively on technology will fail.

Knowledge management pioneers initially focused on technology, but soon realized that IT alone would not ensure success. Rather, a strategy that includes people, corporate culture, measurement, and reuse is also critical (see Figure 3). Although IT skills in data warehousing, intelligent search and retrieval, document management, intranets, groupware, process management and knowledge applications are core competencies for knowledge management projects, business and organizational development skills (such as business strategy, change management, content development, and education/training) are even more important to a project's success.

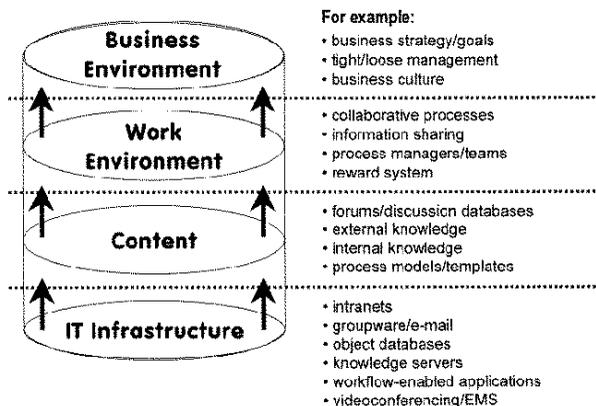


Figure 3: The Context of Knowledge

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Most importantly, organizations must unlearn destructive habits such as information hoarding, command and control management styles, and turf battles between competing functional groups. Changing these entrenched behavioral patterns and reorienting workers to collaborate will require explicit incentives, particularly in the early stages. Over time, the need for financial incentives will diminish, especially as the value of sharing and collaborating creates its own intrinsic rewards. (Examples include performing a job better and with less effort because of collaboration with colleagues or increasing the quality of deliverables because of knowledge sharing within a workgroup).

Knowledge and Processes

Knowledge management and process automation are closely linked, but are often seen as unrelated disciplines—largely because there are two vastly different perspectives for business processes (see Figure 4). Most companies organize, automate, and manage work from a functional context—an industrial age holdover of dividing labor into discrete parts to maximize efficiency. (Accounts payable residing in the accounting department is an example of a functional process.) A much smaller percentage of companies have organized their workers into collaborative teams responsible for the completion of an entire process from end-to-end. Companies that are organized to support cross-functional business processes soon learn that it is essential to share product-related and process-related knowledge across functional boundaries.

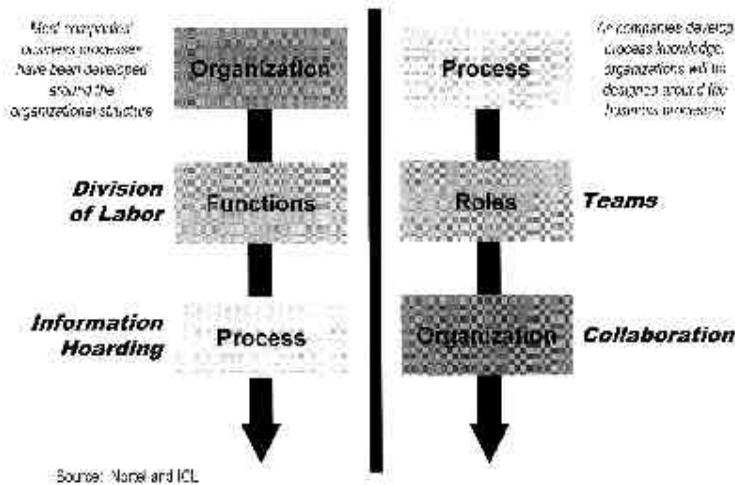


Figure 4: Two Different Perspectives on Processes

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Workflow software can have a vital role in the knowledge era but, in this context, workflow implementations will be vastly different from simply pushing work from clerk to clerk in order to speed up a fragmented business process. Instead, workflow software will be used as a repository for business rules, making it possible not only for companies to change the business logic without re-writing applications, but also to collect, disseminate and enhance their “process knowledge” (see Figure 5). Two parallel trends will occur: (1) workflow will be subsumed into application development tools, middleware, frameworks, and databases; and (2) workflow will become an essential collaboration tool for e-mail and groupware. Companies automating complex processes will increasingly rely on workflow embedded in document management systems (e.g., Documentum) and business software (e.g., SAP) or build workflow-enabled solutions using mainstream development and collaboration tools.

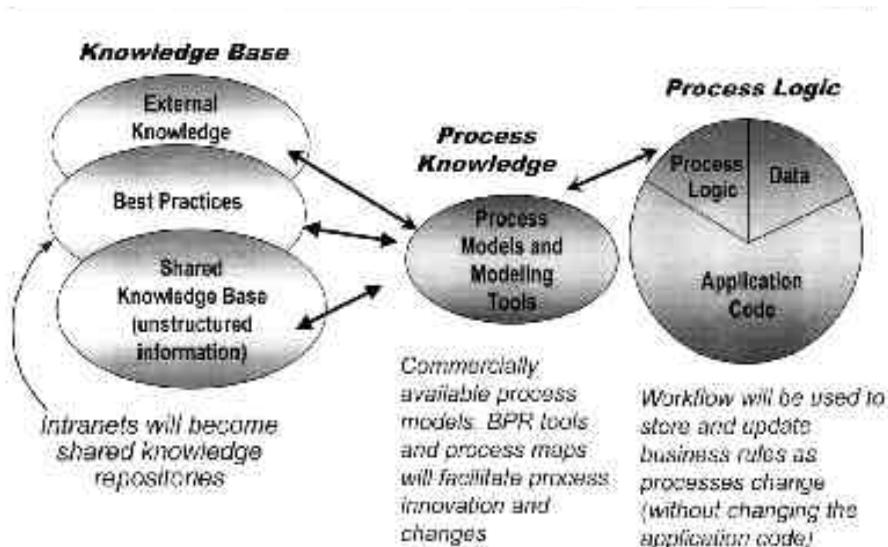


Figure 5: Tools for Developing Process Knowledge

Companies should not underestimate the challenges of developing “process knowledge.” In many ways, the workflow market has not lived up to expectations. The single biggest reason workflow has not fulfilled its potential is that *managing and automating work processes is extremely hard work*. Put more simply—most companies are not organized by processes, managers are not rewarded for overseeing processes, employees are not trained to understand processes, and IS does not focus on automating processes. Other reasons include:

- Vendors have sold workflow for BPR and process improvement but mainstream IS

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instead focuses on buying application development tools. Yet it is difficult to “sell” workflow to business executives because, unlike the workflow embedded in Documentum or SAP, stand-alone workflow tools lack compelling business applications.

- Most software developers do not readily see the need to use workflow as a repository for business rules. From their perspective, workflow within a single application domain is simply the process component of the application and does not require a separate tool.
- Workflow vendors have focused on application developers; however, developers are not often involved in large-scale multi-application design. Instead, workflow is most relevant to architects, who—unfortunately for workflow vendors—do not often buy software.

Despite these challenges, visionary companies with process awareness will begin to develop knowledge repositories for managing, automating, and continuously improving processes. These repositories will contain internal and external best practices, process templates, and process patterns for workgroups and individuals that will be reused as processes evolve. Potentially, this effort will be facilitated by process repositories that may become commercially available over time.

Knowledge Management Projects

Knowledge management projects should start as pilot/prototype projects, and fortunately most of them do. Typically, the project champions driving knowledge management projects range from CIOs focusing on IT infrastructure to senior operational managers focusing on process automation. In rare instances, the champions are CEOs trying to transform their companies into “learning organizations.”

If considering a project, one way to identify the scope of the project is to examine the knowledge intensity of the business process and the knowledge intensity required when developing/providing the product or service. Not all processes and products have the same level of knowledge intensity (see Figure 6). For example, some processes/products would benefit most from process automation, while others should focus first on sharing knowledge required to develop the product or deliver the service.

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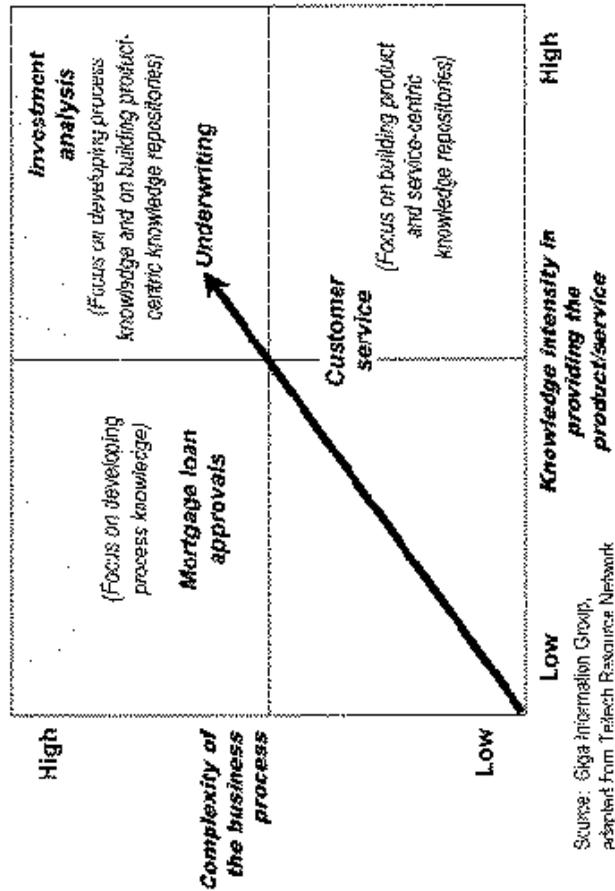


Figure 6: Identifying Knowledge and Process Needs

Transformation across the entire organization is possible, but not easy. It requires fortitude, tolerance for change, an unrelenting commitment to collaboration at all levels of the organization, an IT infrastructure for communication and sharing, and—most importantly—a strategic commitment to the business imperative that the knowledge age heralds.