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# The Intelligent Organization

*Friedrich Bock*

**Successful organizations have to manage more than capital and labor. Savvy managers know that they must pay close attention to another key asset: knowledge. The author discusses how understanding the four dimensions of knowledge management—content, culture, process, and infrastructure—can help companies ensure that they have the right knowledge in the right place at the right time!**

*Last night you had a delightful dream. Your best sales manager won a huge contract with an important new client she had been pursuing for years. Throughout those years, this client had continued to use your competitor's product—not because it was a better product, but because it had a better user interface. Your competitor's R&D people must have done some heavy-duty customer testing and product marketing. Just to catch up, you had done the same. It took you quite some time to bring your R&D and marketing departments together to support common product and quality goals. And then you'd had those intensive discussions with suppliers, bringing in your production people to design a process for optimal parts supply. And you'd informed the distribution channels well in advance to prepare for special packaging. So it was no wonder that your sales manager won the account. Not only was your product greatly improved, but she had all the product information she needed to explain its real advantages to the client. And just as important, she could make a commitment—on-line with the production schedule—on the delivery week. And she could negotiate a favorable leasing rate, using financial models to ensure an adequate return.*

Whether your company supplies electronic equipment, provides service for mobile telephones, develops innovative health care products, or offers any of an enormous range of other products and services, you may have shared the vision underlying this dream: how wonderful it would be to have the right knowledge in the right place at the right time!

Business schools have long taught aspiring managers how to manage their companies' classically defined assets: capital and labor. Recently, they have focused on creating value for the benefit of all stakeholders by reengineering processes, remodeling organizations, and optimizing the value chain from suppliers to customers. However, they have not paid nearly the same attention to the flow of ideas, skills, and knowledge within a company.

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Interestingly, these “softer” assets are now being valued quite highly by the stock market. Traditionally, a company’s value was a multiple of its classical assets, perhaps by a factor of 5 or 10. For successful new knowledge-based services such as SAP, Reuters, or Oracle, however, the multiples are 20, 30, or even 40. Clearly, the market is placing a premium on such intangible assets as employee competence, brand strength, distribution channels, relationships with important clients, and even the expectation that the company will come up with innovative products and services in the future. All these forms of human capital—competencies, ideas, relationship systems, patterns, and networks—are based on knowledge and can be enhanced through careful knowledge management to yield the highest possible value. Knowledge, after all, is the only resource that increases through use.

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A learning organization is one skilled in acquiring, creating, transferring, and retaining knowledge—as well as transforming that knowledge into improved performance or innovative products and services. All these activities depend on human interaction. In many cases, people must be persuaded to accept knowledge from others. All too often, knowledge sharing breaks down because of the “not-invented here” syndrome or the inability of teams to align their efforts in the service of a shared purpose.

In addition to these cultural issues, the challenge of knowledge transfer is exacerbated by the fact that so much knowledge is tacit, rather than explicit. The transfer of explicit knowledge, which can be captured in formulas, policies, and procedures, is relatively easy. Far more complex is the transfer of tacit knowledge, such as experience and “tricks of the trade.” Tacit knowledge often comprises the hidden treasure of the organization, held, for example, by a superb purchasing team, an intuitive molecular engineer, or a department skilled at responsive handling of customers. The art of knowledge management includes both codifying tacit knowledge for broader access and applying explicit knowledge to gain mastery (Exhibit 1).

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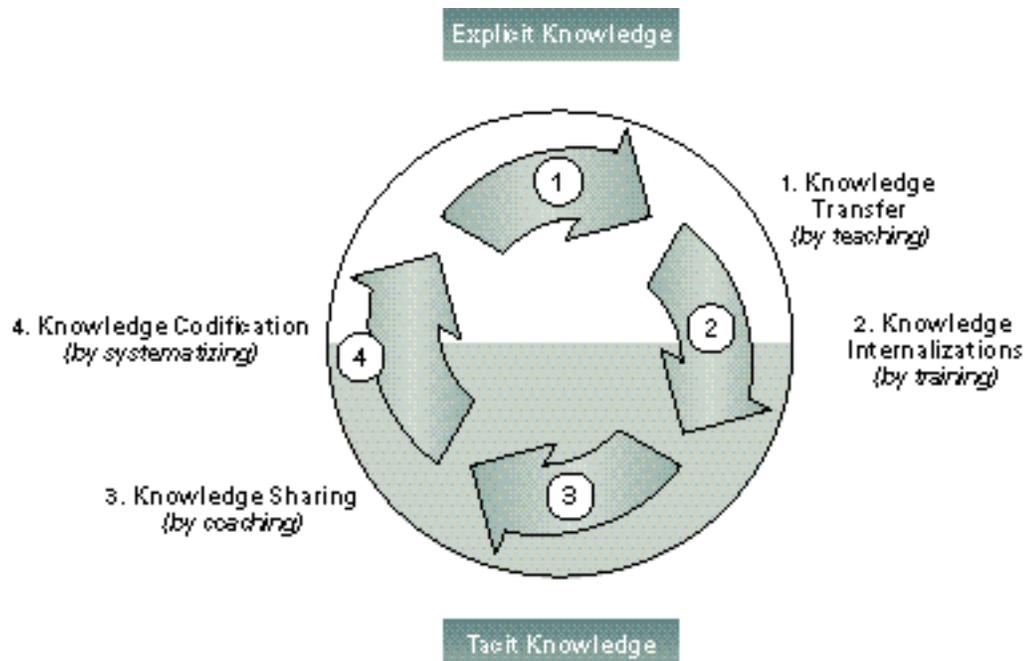
*Organizations that depend heavily on information have installed CKOs to find hidden knowledge, make it accessible, and promote its use.*

Today managers are accustomed to defining core processes, such as material flow, production, product creation, and strategic planning. The flow of knowledge, similarly, should be defined and managed in a process. Toward this end, many companies have installed Chief Knowledge Officers (CKOs), who carefully track the flow of knowledge from its source to its destination. Organizations that depend heavily on information—companies in banking, insurance, pharmaceuticals, utilities, computers, and chemicals—have installed CKOs to find hidden knowledge, make it accessible, and promote its use. Interestingly, according to a recent survey, the perceived value of CKOs is higher in Europe (33 percent) than in the United States (21 percent), where the CKO function is often executed by line management, such as R&D management.<sup>1</sup>

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Exhibit 1  
Capturing Both Explicit and Tacit Knowledge

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Many corporations have started to invest heavily in technical infrastructure to provide a platform for knowledge transfer. Such investments should be made carefully, with a view toward the return. Isolated knowledge “nests” might not want to transport information to the new net or can do so only with enormous costs. Furthermore, not all knowledge has to be shared with everybody in the company. A general indiscriminating “knowledge transfer fad” will create cost, inefficiency, and confusion. Far too often, companies vastly underestimate the need for internal back-up, support, or design capabilities to structure and implement the appropriate thesaurus or to organize the access rights.

At Arthur D. Little, we find it useful to think about knowledge management in terms of four integrated dimensions: content, culture, process, and infrastructure (Exhibit 2).

### Content

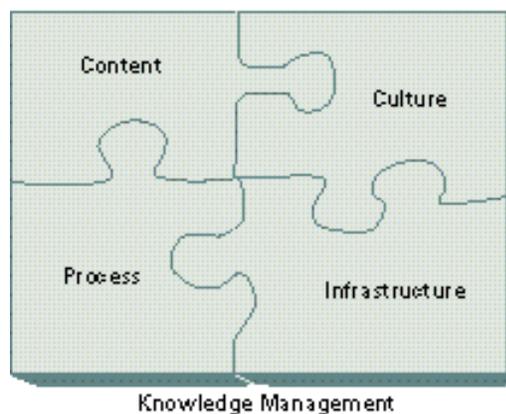
*It is essential to define strategically relevant knowledge—knowledge that meets the needs of your business.*

It is essential to define strategically relevant knowledge—knowledge that meets the needs of your business, both now and in the future. If your company lacks innovation potential, you should pay special attention to the knowledge creation process, seeking only knowledge relevant to that process.

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Exhibit 2  
Four Integrated Dimensions of Knowledge Management

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Any knowledge management project should start with this question: What knowledge is relevant for my business? Following ADL's High Performance Business model, the question can be translated into the more specific knowledge needs of the organization's stakeholders and all its main processes. It is helpful to concentrate on strategically important issues that can be implemented fast and will create momentum.

Daimler-Benz, for example, has learned from its new projects, such as the A class, the M class, and the SMART car, from which it has extracted important and quickly implementable learning fields and offered them to its classical lines, such as its S, E, and C classes. Among the areas of learning it has transferred are newly developed capabilities in several areas: addressing new target groups, starting completely new manufacturing sites, constructing new safety systems for new classes of passenger cars, and achieving high integration with fewer suppliers in worldwide projects. These capabilities will provide rich knowledge to the classic lines, which in turn have contributed their immense technical knowledge to the new cars.

*Far too many companies take this approach: let's collect everything we know and put it on the network where someone might find it. The result, inevitably, is an abundance of data and lots of redundant information.*

Far too many companies take the opposite approach: let's collect everything we know and put it on the network where someone might find it. The result, inevitably, is an abundance of data and lots of redundant information. Cross-functional teams seeking useful insight are obliged to analyze the data, distill the information, and from it deduce whatever knowledge they can—even if they need to know only 'Are we still in the green zone and what is the trend?' In the future, knowledge management keyboards will look like flight simulators, where information is layered and the user can double-click on any item to learn more.

To determine what knowledge is relevant and useful, it might be advisable to run a knowledge audit to map your organization's knowledge base. This can be particularly helpful when you are planning a strategic move into new segments, regions, or services, or contemplating a merger, or constructing an intelligent network.

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## Culture

Research has shown culture to be the principal determinant of the success of knowledge management. Astonishingly, it is also the most neglected aspect. As a result of this neglect, cultural issues often take more than 50 percent of project time and create enormous complexity—with all-too-familiar results. Most organizations still endure costly “turf” battles and rely on local solutions, rather than seeking and emulating best practices within the company or outside. And individuals still hoard personal knowledge to justify their indispensability. In a recent ADL survey of senior managers, only 15 percent of the participants said that their companies reward the sharing of knowledge between functions, divisions, or sites. An outstanding exception is Holderbank—the world’s largest cement manufacturer—which has as the motto for its worldwide learning program “Steal with pride—share with delight.” Holderbank identifies its best practices at more than 50 international sites, assigns “taker” and “giver” roles to pairs of colleagues, and measures improvements. Importantly, the “taker” of information receives at least as much positive recognition in the corporation as the giver.

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Changing behavior demands leadership. People who are being asked to change need clear, recognizable signals from their highest-ranking colleagues. They need to understand the logic behind the change policies and the consequences of failing to follow them. In working to change behavior, it is essential to analyze the patterns of unwritten rules that guide day-to-day activities, reflecting the hopes and needs of the employees. Managers must understand the mental models that explain the fear of transferring knowledge and the rejection of better ideas.

Another aspect of culture is the choice of relevant knowledge transfer media. This choice often determines a project’s success. It makes no sense to install an expensive intranet if the target group does not use its desktop computers. For these employees, a publication or regular

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discussion groups focusing on specific gaps that have been identified in the knowledge map would better serve the purpose. Big knowledge fairs can also be helpful.

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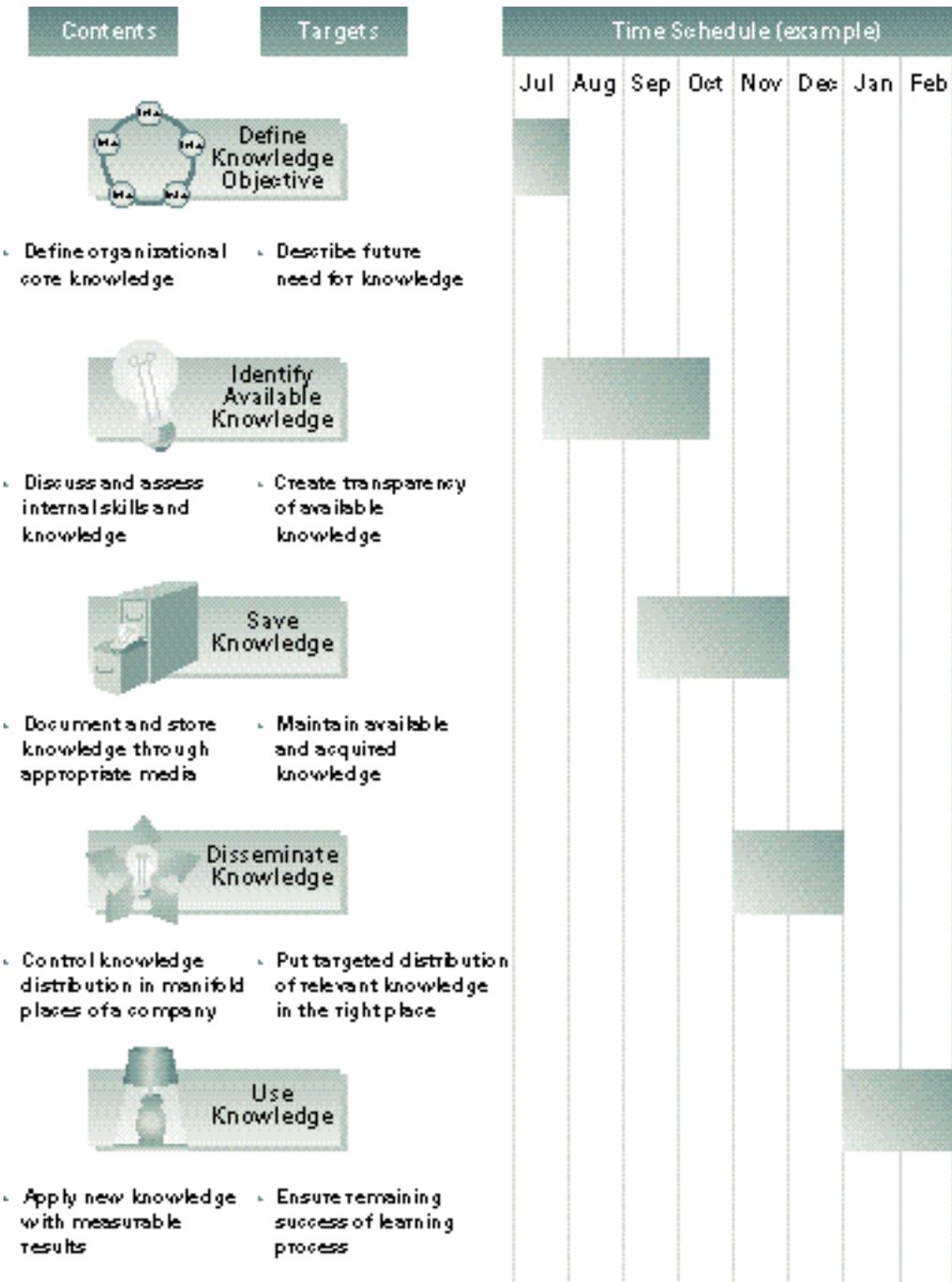
For management, the golden rule is to promote knowledge transfer. Knowledge management must be integrated into performance objectives and reviews in the form of measurable targets. Such targets might include, for example, the accessibility of strategically or operationally important data on a server, the percentage of goals met by cross-functional teams, the reduction of cycle time, the degree of knowledge integration with key suppliers, or the efficacy of customer contacts. The Swedish financial service company Skandia has already condensed a number of intellectual-capital-related indicators, such as market share (including a customer satisfaction index), employee retention, and performance against quality goals, into an asset factor, which it integrates into its balance sheet.

## Process

The introduction of knowledge management into a company should follow a natural, logically related sequence of tasks to minimize effort and cost (Exhibit 3). The first task is to identify the core knowledge the company needs—both now and in the future—to meet its goals. To determine future needs, the company cannot simply extrapolate from the present, but should use the techniques of ambition-driven strategy to create possible scenarios for the industry and describe the company's future role within those scenarios. The ability to acquire the strategic knowledge necessary for that future role will be a key factor for success and possibly for survival. If that knowledge is not available inside the company, you must generate it—possibly through acquisition.

After identifying your knowledge needs, you should determine what the company already knows. How many researchers or technicians in the same company are trying to solve the same or similar problems without knowing about each other's work? How many related projects are

Exhibit 3  
A Process for Introducing Knowledge Management



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running in parallel without coordination or transfer of important results? Despite having more information than ever before, management has lost real knowledge of its firms' capabilities, knowledge bases, and people. Rediscovering this decentralized "organizational brain"—and making it accessible—is a competitive factor. Knowledge audits can create maps of specialists, available research results, and knowledge-creation sources. The business cards of Hewlett-Packard employees provide, beside the name and the web address, the bearer's knowledge field. Dow Chemical has created tremendous value from its intellectual capital, such as patents and licenses, by selling the nonstrategic ones and combining the rest for intelligent protection of product markets. By studying the blank spots on the knowledge map, management can take action to acquire the missing knowledge.

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In addition to capturing their "unharvested" innovative ideas, companies need processes for knowledge creation. Even in industries that depend heavily on knowledge, such as pharmaceuticals, aircraft, or chemicals (which spend 3 to 7 percent of their revenues on R&D), many good solutions have been developed "undercover" because the organization had no process for systematic innovation outside the mainstream of its current thinking. And some large companies protect the development of new products by physically separating these projects from the "mother ship"—often neglecting to put in place the open culture and processes for sharing information across the whole organization to create knowledge. Similarly, industry segmentation can create barriers to innovation, whereas the combination of information from industry segments has led to the development of new products, e.g., optics and electronics gave rise to optoelectronics.

Once identified, knowledge must be captured in some form and then reproduced. Traditional tools for disseminating knowledge include teaching, training, and coaching. Tacit knowledge is sometimes best transferred through "piggy backing"—accompanying the person who has the knowledge and carefully watching and learning. How could

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you capture on a data file the knowledge of an excellent manager in a purchasing department who knows intuitively where and when to argue, or the refined “nose” of an experienced controller who smells project complications—before the problems occur? Explicit knowledge, in contrast, can be written down or captured on audiotape or videotape.

Knowledge has no value unless the employees or teams who need it actually receive it, accept it, and apply it. People must be encouraged to overcome the not-invented-here syndrome and the reflexive assumption that however good an idea is, the “way things are done around here” doesn’t allow its implementation. The person receiving the new idea has the responsibility to adapt it to his or her situation. The consequences of this knowledge transfer should be measurable: did we learn to improve quality, did we reduce cost, have we come up with a new product idea, and did we have the right information to convince the potential customer?

### Infrastructure

The infrastructure that supports knowledge management must be adapted to the company’s needs and not vice versa. Nat West has chosen a “green book,” Daimler-Benz an intranet, and Holderbank CD-ROM technology—each an optimal medium for the needs of the company in question. Many organizations start the knowledge process by installing the knowledge-sharing medium—only to run into unpleasant surprises in terms of cost and complexity. The knowledge-sharing medium must be carefully chosen to fit the actual knowledge behavior in the organization and, of course, cost consideration. Currently, there is a great tendency to install intranets with or without Lotus Notes. Such systems provide fast access, the ability to define user groups, appealing user interfaces, and global availability. But the organization must do some intensive thinking—before installing the system—to make sure that the structure of the server allows enough flexibility for variable access.

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*The design of any knowledge infrastructure must clearly specify updating responsibilities, data structure, help desks, knowledge managers, access rights, and data security.*

Furthermore, the implementation of the knowledge management process is not a one-time activity. Knowledge gets old and declines in value. New knowledge must be sought, captured, and applied. The design of any knowledge infrastructure must clearly specify updating responsibilities, data structure, help desks, knowledge managers, access rights, and data security. Furthermore, all companies already have knowledge systems, financial data, management reports, marketing figures. It often takes considerable effort to convince the people in charge of these functions to communicate subsets of their knowledge to their corresponding colleagues in other parts of the company, to align the systems to permit data-sharing, or to install common measures for knowledge.

While there is no single best way to pursue knowledge management, it certainly makes sense, before jumping into multimillion-dollar system installations, to take a good hard look into the four dimensions of knowledge management: content, culture, process, and infrastructure. The ability to manage knowledge as a third critical asset—together with labor and capital—will increasingly determine organizations' competitive viability.

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<sup>1</sup> *D. Amidon and D. Skyrme, Survey of Business Intelligence 1997.*

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