

Best practice and beyond: Knowledge strategies

Value created by knowledge is often not captured

Five accounts of knowledge strategies

THE BUSINESS PRESS IS FILLED with accounts of the power of knowledge to reshape corporate fortunes. Conferences on knowledge management are announced with increasing frequency. Yet a closer look at the prescriptions on offer reveals that much of the discussion is about knowledge in the narrowest sense: the use of processes and technology to foster the spread of best practices across a company.

Here, we explore the practical implications of a wider view of knowledge for strategy formulation. As traditional structural advantages decay and more products and services enter the global competitive arena, strategies formed around knowledge can change the game and open up new paths to profitability.

The knowledge difference

Knowledge is an asset unlike any other. The first step in framing a knowledge strategy is to understand four characteristics in particular:

Extraordinary leverage and increasing returns. Most assets are subject to diminishing returns, but not knowledge. The bulk of the fixed cost in knowledge products usually lies in creation rather than in manufacturing or distribution. Once the knowledge has been created, the initial development cost can be spread across rising volumes.

Network effects can emerge as knowledge is used by more and more people. These users can simultaneously benefit from knowledge and increase its value

as they add to, adapt, and enrich the knowledge base. In traditional industrial economics, assets decline in value as more people use them. By contrast, knowledge assets can grow in value as they become a standard on which others can build.

Fragmentation, leakage, and the need for refreshment. As knowledge grows, it tends to branch and fragment. Today's specialist skill becomes tomorrow's ticket to play as fields of knowledge grow deeper and more complex. While knowledge assets that become standards can grow more and more valuable, others, like expiring patents or former trade secrets, can become less valuable as they are widely shared. A successful company must therefore continually refresh its knowledge base. The rapid and effective re-creation of knowledge can represent a substantial source of competitive advantage.

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Uncertain value. The value of an investment in knowledge is often difficult to estimate. Results may not come up to expectations; conversely, they may lead to extraordinary

knowledge development. Equally, a fruitful series of knowledge advances, each building on the last, may suddenly and unaccountably come to a halt.

Uncertain value-sharing. Even when knowledge investments create considerable value, it is hard to predict who will capture the lion's share of it. There are three reasons for this.

First, much knowledge is embedded in people's minds, and so cannot be owned and controlled in the way that plant and equipment can. To be sure, some can be codified, but the most valuable knowledge is often tacit. People know more than they can say, and are in a strong position to lay claim to the value they generate.

Second, knowledge can be a difficult asset to trade. Intellectual property rights are hard to enforce when a knowledge artifact such as a report or a software program can be readily copied without detection. Who owns knowledge developed jointly by several parties may be difficult to determine, even for the law courts.

Third, the need to cooperate with partners to generate knowledge and the unpredictability of the results mean that often the exact distribution of value cannot be agreed. The value realized by the partners may differ even if each holds identical unrestricted rights to the knowledge.

These four characteristics make investing in knowledge assets a tricky business. Traditional models of industry structure and conduct are an

inadequate basis for strategy because they do not help managers understand how value will be created, or who will capture most of it.

Knowledge opportunities

Despite the difficulties, some companies have developed and implemented powerful knowledge-based strategies. Here, we examine five of them.

McDonald's: Developing and transferring best practices

In many service industries, the ability to identify best practices and spread them across a dispersed network of locations is a key driver of value. Such a strategy can create powerful brands that are continually refreshed as knowledge about how to serve customers better travels across the network. In these circumstances, it may be all but impossible to tell whether value has been created by the brand or by knowledge. The two are inseparable. How much does McDonald's brand depend on, say, network-wide knowledge of how best to cook french fries?

The thoroughness of McDonald's best practice approach is legendary. By the time restaurant managers attend Hamburger University in Illinois, they will have received between 1,500 and 3,000 hours of regional training.

The company also gets comparable outlets to work together to benchmark performance, set aspirations, and make product mix and service decisions. These peer groups are supported by a real-time information system that transmits sales to headquarters hourly. Thanks to the system, the location of group members is immaterial; one group could include branches in Warsaw and Rio de Janeiro. At the same time, the system enables corporate headquarters to keep a tight grip on the valuable knowledge that links its outlets.

However, McDonald's is pursuing an essentially centralist model in which the corporation defines rigid standards not only for its products but for the processes that deliver them. The company's recent squabbles with franchisees over the introduction of the Arch Deluxe product and the 55¢ sandwich promotion illustrates the degree to which this formula can conflict with entrepreneurialism. Recent moves suggest that McDonald's may devolve more decision making to franchisees and seek to learn more from them, particularly about new business development.

Enron: Creating a new industry from embedded knowledge

Some companies succeed in defining new industries by exploiting knowledge opportunities that are overlooked in existing products and processes.

Until the early 1990s, Enron was a gas pipeline transmission company like many others. But its managers realized that embedded in what appeared to

be a commodity gas business was valuable information about product flow, supply, and demand. They established Enron Capital and Trade Resources to exploit this information through an innovative range of risk management contracts. The enterprise helped Enron grow its sales by 7 percent per year and its shareholder returns by 27 percent per year between 1988 and 1995.

Monsanto: Shaping corporate strategy around knowledge

Until the mid 1990s, Monsanto encompassed a \$3 billion chemicals group and a \$5 billion life sciences group. The latter, with its agriculture, nutrition, and healthcare products, was an innovation-based business, while the chemicals group, with its fiber, coating and adhesive, polymer modifier, and fire retardant products, was focused on best practice. Success for life sciences involved cultivating a small number of skilled scientists and managing a network of biotechnology partners; for chemicals, it was a matter of execution at low cost and high quality.

Either group might have succeeded on its own. But the knowledge strategies of the two groups were entirely dissimilar; so were the staff who executed them. Recognizing the difficulty of pursuing two incompatible strategies simultaneously, Monsanto spun off the chemicals group to concentrate on the life sciences business.

Oticon: Fostering and commercializing innovation

By the late 1980s, Oticon, the Danish manufacturer of hearing aids, had seen its market share and profitability decline as competitors introduced more advanced and cheaper products. When Lars Kolind became CEO in 1990, he realized that technological innovation and time to market would be critical success factors. He set out to create an environment that would promote the flow of knowledge and encourage entrepreneurial behavior.

Organization charts, offices, job descriptions, and formal roles were abandoned. Employees were expected to choose their own projects and work in fast-moving crossfunctional teams. The office building was redesigned to enhance communication between design and manufacturing. Kolind banned paper from the office, believing that it bred bureaucracy.

These changes produced dramatic results. Return on equity climbed from the low single digits in the late 1980s to over 25 percent in the 1990s as Oticon developed and rapidly commercialized innovations such as the digital hearing aid.

Netscape: Creating a standard by releasing proprietary knowledge

In 1997, Netscape started to see a rapid decline in its share of the Internet browser market as Microsoft's Explorer gained share at the expense of its Communicator and Navigator products. In March 1998, it made the source

code (fundamental programming instructions) of its browser products available, at no cost and under generous licensing provisions, to anyone who visits its Internet Web site. The company is apparently giving away knowledge that cost millions of dollars to generate – knowledge that most companies would guard jealously.

In taking this step, Netscape is betting on two things. First, by making its products widely available, it hopes to secure its share of a complementary product: software for the servers that browser programs access. Second, it hopes that millions of software developers will adapt and enhance its products, producing variants such as browsers for children.

The value of a knowledge business can sometimes be boosted by actions that might appear to destroy value

While it is too early to tell whether these bets will pay off, we might consider the strategy pursued by Incyte Pharmaceutical, which achieved a market capitalization of over \$600

million in six years by licensing its gene sequencing knowledge non-exclusively to large pharmaceutical companies. In so doing, it gained access to the knowledge of its partners and created a standard platform for the provision of all genomic data that becomes increasingly valuable as more companies use it.

In the same way, Netscape is betting that the efforts of many programmers outside the company will turn its products into a valuable standard. By contrast with Incyte, and with other software firms that make source code available to selected developers under carefully negotiated arrangements, most of Netscape's developers will be unknown to the company, at least initially.

Creating knowledge strategies

Are these isolated examples, or can knowledge strategies be developed systematically? We believe they can if companies follow four crucial steps:

Ask diagnostic questions. To find out where and how knowledge matters in the business, pose questions like these:

- ◆ If our operating margins fell sharply – perhaps as the result of a price war or an irrational competitor's actions – do we have service or information businesses that could remain profitable?
- ◆ Are exciting ideas emerging within the company but failing to be commercialized?
- ◆ If ideas are not reaching the market, what incentives, structures, or management processes seem to be blocking them?

- ◆ If our company has more money than ideas, are there opportunities to form partnerships with companies that may be more “in the flow” of innovative ideas?
- ◆ Could we cut costs, reduce time to market, improve customer service, or increase margins by sharing best practices more effectively? Could our best practices be applied to the activities of competitors or related firms? If so, should we consider acquisitions or joint ventures?
- ◆ Is the “not invented here” syndrome so strong that we are missing attractive business opportunities? Would a broader surface area, achieved through more contact with a wider range of innovative companies, increase our value?

Understand the implications of knowledge for organizational design. Because of the characteristics of knowledge assets described above, classic organization designs may not work in a knowledge environment. The need to manage tacit knowledge, for instance, imposes a natural limit on the size of operating units.

IDEO, the industrial design firm, has some 300 professionals worldwide, but operates a total of ten offices (including four in the Palo Alto/San Francisco Bay area alone) in order that none should have more than 50 people. Similarly, the Swedish software consultancy WM-data employs 3,800 people but stipulates that there be no more than 50 to a unit.

Adjust the company’s external posture and conduct. The fragmenting nature of knowledge and the possibility of increasing returns means that the value of a knowledge business can sometimes be boosted by actions that might appear to destroy value. To the extent that information (codified knowledge) can create standards, a company might choose to give it away, as Netscape does, or sell it at the cost of transmission so as to tie customers in to other, more profitable knowledge services. In some cases, companies will elect to embed service businesses within traditional manufacturing businesses.

Measure and monitor knowledge. The tacit and “soft” nature of knowledge businesses might suggest that knowledge development cannot be measured. A growing body of literature and experience suggests otherwise, and shows that effective, credible measurement systems can be a powerful means of driving a knowledge strategy forward. Simple financial measures are unlikely to be enough.

WM-data monitors the utilization of its consulting personnel week by week, as well as tracking the profit and value added per revenue-earning staff member. But it also measures longer-term indicators: the stability of its

workforce, the average age of personnel, the stability and longevity of the customer base, and the development of competence in its knowledge workers.

These four steps must be iterative and parallel rather than linear. Knowledge is so dependent on individuals that a rigid distinction between strategy and organization is inappropriate. In practice, successful knowledge strategies involve almost every aspect of a company's organizational design. They are therefore a matter for chief executives and senior managers, not a technical issue confined to heads of R&D and corporate information. 