



# Making the Most of Your Company's Knowledge: A Strategic Framework

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This paper develops a framework of four strategies for managing knowledge. Companies can leverage their knowledge throughout the organisation, expand their knowledge further based on existing expertise, appropriate knowledge from partners and other organisations, and develop completely new expertise by probing new technologies or markets. The two core processes of knowledge creation and transfer are central to the execution of these strategies, as is the company's domains of knowledge. The framework is based on conceptualisation about knowledge management practices at Unilever, a multinational fast-moving consumer goods company. © 2001 Elsevier Science Ltd. All rights reserved.

## **Introduction**

In the knowledge economy a key source of sustainable competitive advantage and superior profitability within an industry is how a company creates and shares its knowledge.<sup>1</sup> The strategic management field is currently developing new concepts and tools for guiding managers in their efforts to ride the waves of the knowledge economy. At the heart of this development are fundamentally new mental maps that give credence to the nature of knowledge. Currently strategic planners, for example, know perfectly well how to analyse the strengths and weakness of a company's tangible resources, as well as how to match these with opportunities and threats in the environment. They know how to use these analyses for capital resource allocation, for calculating discounted cash-flow from investments in tangible assets; but do they know equally well how to analyse knowledge and allocate resources accordingly to knowledge activities? A number of issues remain open, but one needs to be addressed first: what strategic

alternatives are available with respect to knowledge? It is very likely that strategic management in the knowledge economy will be quite different from the one we have grown used to over the last decades.<sup>2</sup> In this paper, we develop a framework for knowledge strategy, based on observing knowledge management practices at Unilever, one of the world's largest fast-moving consumer goods companies.<sup>a</sup> Unilever has been particularly active in knowledge management for the past 10 years and has achieved measurable results from these activities, such as a faster rate of innovation, increased efficiency in manufacturing and supply chain, and an acceleration of rolling out best practices.

For some time now, Unilever managers have been convinced about the role of knowledge as a key differentiator, and investment in innovation is substantial. Unilever's Corporate Purpose states: "We will bring our wealth of knowledge and international expertise to the service of local consumers ...." But, as the company has become more focused, and bottom-line improvements are bearing fruit, it is becoming increasingly important to ensure that the investments in knowledge contribute truly to top-line growth and profitability. In Unilever's Culinary Category, the management and development of knowledge and creativity is seen as a strategic priority and approached as such through a new way of strategising for knowledge and innovation.<sup>3</sup>

## **Developing your company's "knowledge domain"**

In order to get a better grasp of the term "knowledge domain", let us go directly to our case. Unilever is an Anglo-Dutch consumer goods company with corporate centres in London and Rotterdam. With annual sales of about \$48 billion, Unilever is one of the world's largest consumer products companies. It produces and markets a wide range of foods, home and personal care products, including well-known brands such as Lipton, Ragu, Flora, I Can't Believe It's Not Butter, Breyers, Omo, All, Calvin Klein Cosmetics, Elizabeth Arden and Dove. With a global presence, Unilever employs almost 290,000 people. About 2 per cent of annual turnover is invested in basic research and product innovations, leading to the filing of more than 400 patent applications annually. In several product areas Unilever has advanced and diverse methods for developing knowledge strategies, for creating and transferring knowledge.

Knowledge creation and transfer has been key to the development of the Culinary Category — which was formed in 1996 and covers products such as meal sauces, cold sauces and cooking ingredients. A Knowledge Initiative has been in place within this category since December 1996. In order to capture what the company knows and does not know in various functional and product areas, *Knowledge Workshops* have been organised to bring together key experts and practitioners from around the world. In a facilitated and structured way, learning and understanding are discussed and captured. Among the key results are

<sup>a</sup> This paper is co-authored by a senior executive of Unilever and two academics.

a shared vocabulary and terminology, the initiation of a *Community of Practice (CoP)*,<sup>4</sup> and the identification of knowledge gaps. This CoP has a core group consisting of the participants of the workshop (usually 10 to 12 members) and is expanded by the inclusion of other people in the same line of practice. The Knowledge Workshops define the Knowledge Domain to which the CoP participants contribute, for instance the manufacture of meal sauces around the world. A knowledge domain consists of relevant data, information, articulated knowledge, such as handbooks, manuals or presentations, and a list of key people and groups with tacit knowledge based on long-term work experiences. The purpose of these communities is to act as custodian for the Knowledge Domain, nurturing the sharing and creation of practices and knowledge that is key to the achievement of both company and personal objectives.

The portfolio of CoPs and knowledge domains is determined by their importance to the effectiveness of business operations, and whether the knowledge typically is tacit and bound to a smaller group of professional experts. For example, in sauce manufacturing the calibration of equipment, the layout of a production process, the reduction of downtime etc are all intimately linked to work experience of professionals operating locally. The purpose of the community is to ensure that the professionals collaborate across plants, geographical boundaries, and sometimes also functional boundaries. Such CoPs have already led to a number of significant benefits in Unilever, ranging from improved investment decisions, rollout of best practices and collaborative innovation across plants and firm boundaries. A senior business stakeholder champions each CoP. This ensures delivery to the business targets and appropriate visibility of the CoP's efforts and impact.

The knowledge workshop and the CoP also typically identify what is termed "knowledge gaps". A technical or marketing problem might have been identified, but the knowledge on how to solve the problem is not available. In those cases, sub-groups among CoP participants are charged with the task of collecting data, information, and creating knowledge around how to solve the problem based on their existing work practices. This increases the depth of knowledge in the domain. In some cases, other professionals from Unilever must be invited to join the CoP on a short to medium-term basis to help solve the problem. These newcomers bring new work experiences, explicit procedures, information and data to the party. This enlarges the *scope* of knowledge in the domain.

On the company side, once the knowledge domain has been identified together with the key participants, manufacturing plant managers from around the world can contact domain leaders with technical queries ranging from a change in colour or taste of a meal sauce to an assessment of a new manufacturing technology. In Unilever, the knowledge domain appoints a "domain leader". This is not necessarily the most highly recognised expert in the field, but a "primus inter pares" that co-ordinates and

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integrates the work of the people contributing to the domain. Normally these participants also select their domain leader. The domain leader may in turn contact his domain members via e-mail, fax, or telephone or calls for a face-to-face meeting. Based on the discussions among the experts, the domain leaders can return to the plant manager with possible answers to the queries.

On the personal side, members of the community of practice learn, pick up small and large tricks of improving their own local manufacturing practice, and jointly develop a more refined language for analysing the manufacturing process. They can also test out ideas and concepts on a group of peers before starting to implement these in their local organisation. Normally, because the benefit to each of the participants of membership is direct and valuable, sharing knowledge within a knowledge domain is not necessarily considered to be a problem.

In general a company has several such knowledge domains at its disposal, and you have a choice in focusing on existing and new knowledge domains. First, you can decide to let knowledge develop from the existing knowledge domain,<sup>5</sup> that is, increase the depth and/or scope of the knowledge. Second, you can decide to create a new knowledge domain, that is, create new data, new information, and new tacit and explicit knowledge at the individual and collective levels, e.g., new CoPs, with loose connections to existing knowledge domains. This domain in turn can develop in depth and scope.

In the literature on knowledge management, we can distinguish two core knowledge processes: knowledge creation and knowledge transfer.<sup>6</sup> The target of a process for knowledge creation is to enhance the potential of creating innovations. According to Ikujiro Nonaka and others, such knowledge creation processes typically take place in five steps in a group of limited size (most authors recommend between 5–15).<sup>7</sup> First, knowledge domain members start by creating collective tacit knowledge by jointly experiencing new work processes, tasks, technological characteristics, use of technologies, customer sites, etc. This is not an easy process. Members of the knowledge domain must spend considerable time together, discuss and reflect upon their experiences, observe how their colleagues solve tasks and interact with technologies, explain and give sense to their own actions. In the next phase, the team attempts to make these collective experiences explicit, through agreeing on proper, just, and accurate descriptions of their experiences. These descriptions in turn are used in a brainstorming fashion to develop new product and service concepts based on their experiences.<sup>8</sup> In the third step, this concept then becomes subject to scrutiny. It is matched against market data, consumer trends, and technological requirements such as the process data, cost of manufacturing the finished product, strategies, goals and so forth. In this step, customers and suppliers might even be invited to give their views on the concept. A concept that successfully passes through this phase is transformed into a prototype process, product or service. Here, various design tools are at work, such as activity-based

costing, computer-aided manufacturing and design systems, workflow maps, process descriptions, historical production data, and so forth. While these four steps typically cover the major steps of knowledge creation, the fully-fledged process goes further by integrating the newly created knowledge in existing manufacturing, marketing and sales. An important issue of knowledge creation is to enhance the pace of innovation and to reduce the time span to commercial success in the market. Key factors here are, for example, leadership experiences in project management,<sup>9</sup> an available and easily accessible database of individualised customer preferences,<sup>10</sup> or someone who mobilises knowledge creation and co-ordinates various knowledge creation initiatives in the company.<sup>11</sup>

Whereas the knowledge creation process typically happens in communities of practice or other small-sized groups, your company should benefit from such knowledge on a larger scale. Here it is key to remember that knowledge transfer is a mechanism to be used selectively: not everybody in the company needs to know everything at all times. Specialisation secures the development of a knowledge domain, but occasionally other domains and functions have needs to be fulfilled. That is, knowledge domains, functions, departments, and business units should have the possibility to leverage knowledge through transfer processes.<sup>12</sup> To accelerate such processes in your company, three conditions should be satisfied.<sup>13</sup> First, the parties are aware of the opportunity to exchange the knowledge. Second, the parties involved expect the knowledge transfer to prove worthwhile for both parties. Third, the parties must be motivated to pursue the knowledge transfer — they must be interested in applying the knowledge transferred into their own activities to realise the benefits of the transfer. A typical knowledge transfer then starts with the identification of knowledge to be transferred, in which the potential benefits of the transfer are signalled to the receiving partner or to the sending partner.<sup>14</sup> A typical example in Unilever is the Category World Conferences, where global strategies and available knowledge and tools for implementing these strategies are transferred to key local company operatives. At the Culinary World Conference, for instance, tools for understanding consumers were shared to support market entry and business growth. Clear linkage between the corporate strategy and local strategies is provided during these conferences. Next, the receiver assesses the value of knowledge for local use, and the sender assesses the potential loss or gain. The next step covers packaging and dispatching of knowledge in such a way as to enhance the receiver's potential to act. Local training and instructions complement data and information, in order to make knowledge useable. The last step includes adaptation, in which the transferred knowledge is integrated with the local knowledge.

Knowledge transfer with external partners is also important. Strategic partnerships provide mutual access to other companies' knowledge.<sup>15</sup> Research and training agreements with universities and other research institutions provide companies with access to

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recent research knowledge.<sup>16</sup> In terms of learning from the outside, concrete learning targets are needed for the relationship. This has been shown to improve a company's ability to appropriate and integrate new knowledge rapidly from the partners. Furthermore, attention has to be paid to the management of knowledge flow, wanted and unwanted, between the firms, as well as the ability to absorb the new knowledge effectively.<sup>17</sup>

### **Formulating your company's knowledge strategies**

The term "Knowledge Strategy" denotes the employment of knowledge processes to an existing or new knowledge domain in order to achieve strategic goals (see Appendix A). First, this definition entails a process focus rather than a contents focus, and it assumes that knowledge is dynamic rather than static. Second, our view assumes that knowledge domains are starting points rather than end states. Imagine that you are setting out for a city unknown to you (i.e., you have no knowledge of the city except for its location on the map). However, you know your starting point; the city in which you live, your car, your petrol, your map, the music you take along for entertainment, and so on. The map is the strategy. It shows you the routes to your destination. At the same time, you have goals to satisfy, such as timing, the fuel you will use, a safe journey and so forth. The contents of the knowledge domain will gradually change as you drive through the unknown terrain. Third, our definition assumes that the processes that you apply to a knowledge domain impacts on the way that domain will change, in order to reach a strategic goal, for example of innovating, enhancing efficiency, and better managing risk. The core-processes of creation and transfer dominate the evolution of the domain. The strategist's choice is to strike a balance between existing and new knowledge domains, and the core-knowledge processes, and the firm's goals. Therefore, we fourthly assume that strategy means choice, and that the firm should allocate resources to knowledge domains and processes. Striking a balance between developing existing or new knowledge domains is difficult and must be pursued with care. There are strong trade-offs between pushing the outside of the envelope in a new science area, and improving the logistics in a warehouse. Some initial thinking should guide your resource allocation. If your industry is stable and mature, and few technological developments are underway more emphasis could be given to maintain and refine existing knowledge than building new knowledge. Perhaps partnering with other firms within the industry provides important new sources of insight and experience. When established industries are exposed to actual and potential substitutes (e.g., internet distribution of music for the packaged media industry), new knowledge about technologies and actions need to be rapidly supported. You will need to build the firm's capacity at absorbing these technologies and information, but this in turn is difficult unless you commit substantial

resources.<sup>18</sup> If you already operate in an emerging industry, such as biotechnology, media, or financial services, your commitment to building new knowledge should be higher than if your industry is stable. Research and development budgets compared with those of your competitors might be an indicator of how much you spend on developing new knowledge domains, but really, these measures are only tentative and rough. You need to examine activities and spending patterns in various functional areas throughout the firm in order to identify the level of activity on knowledge creation and transfer. Look for things such as technology investments, profiles of new hires, job-rotation and turnover of employees, training budgets, managerial career patterns, partnership with firms and other organisations, collaborations across functions, departments, countries and business units. You might also want to keep in mind that most industries are either exposed to substitutes in one form or the other, or subject to major transformation (e.g., telecommunications). Hence an over-reliance on what you know might be dangerous in the long run.

In order to help your resource allocation you can distinguish four generic knowledge strategies: leveraging, expanding, appropriating, and probing (Figure 1).

### The leveraging strategy

This strategy sets out from existing knowledge domains and focuses on transferring that knowledge throughout the organisation. In terms of strategic goal contributions, the leveraging strategy can first be orientated towards achieving efficiency in operations as well as reducing risks in operations. The strategy ensures that the company internally transfers existing knowledge from various knowledge domains, for example in areas such as product development, manufacturing, marketing and sales, human resources, purchasing, finance, and so forth. Efficiency increase results from local adaptation of cost-effective processes and services invented and developed elsewhere. Furthermore, knowledge transfer is essential to the consolidation of activities, as well as the standardisation of tasks. An internal benchmarking programme is a useful tool to achieve awareness of the potential

		Knowledge process	
		Transfer	Creation
Knowledge Domain	Existing	Leveraging strategy	Expanding strategy
	New	Appropriating strategy	Probing strategy

Figure 1. Four knowledge strategies

transfer opportunities, highlighting the benefits of a possible transfer and providing some motivation to locally appropriate knowledge. The benchmarking programme reveals differences in local practices and their performance effects.<sup>19</sup>

For Unilever, the Knowledge Workshops and Communities of Practice are an important means to leverage knowledge domains in the Culinary Category. The knowledge captured during the workshops is refined and shared by a larger community of experts and practitioners. Each of the CoP members will bring back results from their work in the community to their respective country or functional organisation. In this way, experience and good proven practice is shared and applied across the world very rapidly. For example, one area where knowledge was captured in knowledge workshops was in the construction of manufacturing sites for meal sauces. Thanks to knowledge leveraging strategies, documentation and hand-books have become available and recognised professionals identified and asked to work on new construction sites, Unilever has been able to reduce the time for designing, planning and commissioning the construction of a new plant by approximately 50 per cent.

In innovation-oriented Knowledge Workshops, knowledge is shared across disciplines, including successes and failures, which allows for faster innovation. By sharing knowledge in this way, building upon trust between the participants, the risk of repeat mistakes and “re-inventing the wheel” is significantly reduced, and creativity and entrepreneurship are nurtured. One of the first examples of this was a debriefing of a large innovation project. The project, which focused on the development of a new product technology, started mid-1995 and officially ended at the end of 1998 when it was clear that the product innovation target would not be met due to technical difficulties and changing market realities. Typically, when projects stop without meeting the targets, all involved tend to move on quickly to new projects and challenges, often without properly recording the lessons learned. It is crucial that a firm learns from both successes and failures. Moreover, although a project can be terminated because targets have not been achieved, this does not imply failure, or that no valuable learning has taken place, which could well be applied in other projects. The project management team therefore decided to organise a debriefing on the project to capture and secure the learning of the project in a structured way and to be able to disseminate the captured knowledge to other research or application projects. Most of the team members from the project were present during the debriefing. Independently, a new Culinary project on dressings had been proposed, which could take up most of the learnings. Therefore, two delegates from the new project were present at the debriefing. This exercise is now known in Unilever as “Knowledge Debrief”.

Two types of learnings were captured during the Knowledge Debrief: *technical* learning in each of the science and application areas involved, and *process* learnings, that related to the way the project and the team functioned, and how prospective failure

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*It is crucial that a firm learns from both successes and failures*

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could have been determined earlier. Both these types are crucial for continuous improvement. The *process learnings* were captured during individual interviews with the participants prior to the meeting, focusing on the five worst and the five best things that the participants felt happened during the project. The results of these interviews were grouped and discussed plenary at the start of the workshop. The *technical learnings* were captured by focusing on key product attributes such as taste, aroma and texture in relation to the consumer attributes that were set at the beginning of the project. All recommendations, both technical and process related, were prioritised and turned into actions, timings and responsibilities and were followed up successfully. Senior management was present at the start and end of the workshop to reinforce the message that terminated projects constitute a benefit to the company (indicating the willingness to take risks) as long as lessons are learned and failure is not repeated.

Information and communication technologies (ICT) also play an important role in leveraging knowledge across domains in the company. For example community software (such as community platforms, e-groups, or Geocrawler) allow organisational members to form but also to organise and maintain their community interaction across geographical boundaries and time zones at very low cost. Coupled with database software, or web-technology with search engines, ICT also helps to create a repository that allows parties to become aware of the opportunity to exchange the knowledge. Such repositories of knowledge, say of manufacturing handbooks or software development tools, can be coupled with “chat groups” where people can enter tips and hints on how, where and when to use the available material. Hence, the parties can judge whether the knowledge transfer proves worthwhile. Seeing that the knowledge has turned out to be valuable on one comparable site or part of the organisation, these chat groups can also motivate individuals within the organisation to pursue the transfer and apply the knowledge locally.<sup>20</sup>

The leveraging strategy also affects the ability to manage risk. Sharing existing knowledge within or between knowledge domains throughout the organisation will reduce the risk of overtaxing resources. Locally, members of the organisation can increase the scope and the depth of their knowledge to accomplish tasks successfully. They gain access to new data and information, they acquire new tools and procedures to solve new tasks, win new insights, and so forth. By sharing existing knowledge on competitors and regulatory environments, the organisation will become increasingly aware of competitors’ moves and possible policy changes that could affect the performance of the company.

A good example of risk reduction in Unilever has been the development of a Knowledge-Based System for Microbiological Design Approval (MiDAS). MiDAS incorporates a wealth of knowledge and experience of specialists in Unilever about microbiological safety in product and process design. The system allows a process or product developer to enter a product and

process design and obtain an immediate assessment of the microbiological safety of the proposed product. Previously, the developers would have to actually make the product and send a sample to the central laboratory. It would take quite some time to get such feedback, modify the product and repeat the approval process. The experts were not available at the right time and place, and were overwhelmed by “trivial” product clearance work, allowing them little time for innovation. The product developers on the other hand, were tempted to take more risks by not officially clearing slight modifications, increasing the risk of contamination and subsequent market impact. The MiDAS system does not give final clearance, but it allows quick prototype development. In the vast majority of product and process systems suggested, the central department offers a quick clearance.

Table 1 summarises the major impact on the leveraging strategy on the business goals of efficiency, innovation, and better risk management.

### The expansion strategy

This strategy proceeds from the existing knowledge domain of the organisation and targets knowledge creation by drawing on existing data, information, and knowledge. The emphasis is on increasing the scope and depth of knowledge by refining what is known and by bringing in additional expertise relevant for knowledge creation. Some of this expertise could come from partner firms, or partner firms could provide data, information and knowledge in order to fuel the knowledge creation process. The process occurs in various knowledge-creating groups throughout a company, and the aim here is to utilise an existing knowledge domain. This can be achieved for example by combining new and existing explicit knowledge, by creating new product and service concepts based on tacit knowledge, or by socialising members around certain problems, tasks, and work processes. Research and development as well as market research are key activities to facilitate expansion of the domain. However, since the knowledge domain can be centred on practices, data, information, experience relevant to any business operation or business process, the expansion strategy should be conceived of more broadly. Knowledge creation happens in a research laboratory, but it can be equally powerful and important in manufac-

**Table 1. The leveraging strategy impacts on strategic goals**

Efficiency	Share knowledge in the organisation, e.g., on manufacturing, product development, marketing, sales
Innovation	Share knowledge between domains to improve innovation processes
Managing Risk	Share knowledge to reduce risk of overtaxing resources Share knowledge on competitors and regulatory environment

turing or accounting. Some of the same ideas hold that we spoke about above: a group shares some insights and experiences, they attempt to reflect systematically on what they have learnt, and bring out concepts that in turn are up for scrutiny.

This strategy affects strategic goals in three ways. Better understanding of key processes, such as bottlenecks in manufacturing or product-development, can allow for substantial cost-reduction. In Unilever, a common flavour language is used as a tool to facilitate general communication in terms of flavours, independent of regional and cultural differences, background and experience of the user. In the absence of a common flavour language, people would speak and describe flavours in hedonistic rather than objective terms. Unilever had extensive expertise in this area, mainly in its Research Labs, but the common flavour language and associated training has made this knowledge more widely accessible, generating many local opportunities for improvement, innovation and rollout.

Second, the strategy helps to achieve innovations. Existing consumer data, customer focus groups, information about new technologies, new manufacturing procedures etc will be combined by the group in new ways to create incremental innovations, such as variants of existing products or the launch of an existing product in a new market. During the Knowledge Workshops in the Culinary Category, *Knowledge Gaps* are identified in the Knowledge Domain. Understanding where there are significant gaps in strategically important knowledge ensures that the R&D programme of the Culinary Category is focused, and progress can be better monitored. Knowledge gaps indicate to knowledge domain members where they need to seek new insights, invest their time and energy.

Third, creating new knowledge based on existing knowledge domains will also enhance your ability to manage risk, primarily by leveraging, thus reducing the hazard of overtaxing knowledge and resources. The expansion strategy focuses on new knowledge that enables members of the organisation to build up competence and skills locally. This in turn could make the company less exposed to the risk of gradual deterioration of the value of historical technical knowledge. Creating new knowledge, increasing depth and scope of knowledge on competitors and the regulatory environment can also help to reduce risks associated with policy changes and competitors' actions.

Table 2 summarises the major impact of the expansion strategy on the business goals of efficiency, innovation, and better risk management.

### **The appropriation strategy**

This strategy is predominantly an externally orientated strategy. Here, the key challenge is to build up a new knowledge domain by transfer of knowledge from external sources. The difference between appropriation strategy and the last strategy is that here a knowledge domain does not pre-exist within the firm. Appropriation can occur by means of acquisitions or strategic partner-

**Table 2. The expanding strategy impacts on strategic goals**

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Efficiency	Expanding on knowledge related to existing processes
Innovation	Creating new process and product innovations from existing knowledge domain
Managing Risk	Developing knowledge domains to reduce risk of overtaxing resources Developing knowledge domains to reduce the exposure to the risk of deterioration Developing knowledge domains on the regulatory and competitive environment

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ships with selected companies, research institutions, universities or other external organisations. The appropriation strategy can help to achieve operational efficiencies. In pursuit of appropriation strategies, Unilever is actively developing partnerships and alliances with academia, societal groups and corporate parties. Examples include the Marine Stewardship Council established by Unilever and the World Wildlife Fund to ensure sustainable fishery. One of the challenges for large food companies today is to ensure that raw material supply is kept at a level where the resources can renew themselves. The Marine Stewardship Council makes good business sense: Unilever is the world's largest fish processor, and a significant part of its business relies on understanding how to ensure a sufficient supply of fish. By working closely together with this now independent body, Unilever has built up significant understanding of sustainable fisheries and its impact on consumer products and supply chains. Prior to this collaboration knowledge on sustainable fisheries in Unilever was fragmented and scattered broadly through the organisation.

The appropriation strategy also helps to attain innovation goals. Innovation with a partner is a common strategy for companies. The partner company provides market, manufacturing, and product knowledge that can provide a unique platform for building up new knowledge, products, and services internally. The appropriation strategy can be translated into concrete learning targets for the company. A new group must be given the responsibility for building up the new knowledge domain, but with a focus not so much on creating knowledge within the firm, but building the domain by capturing and transferring knowledge from partners. The learning targets guide the group's acquisition of new knowledge, and when the targets are clearly formulated, the likelihood of effectively appropriating the new knowledge is higher.<sup>21</sup> For example, the recent alliances with Microsoft, America Online, NetGrocer and WomenOnline ensure the development and exploitation of understanding on how to interact with consumers through new online channels. Bringing together Unilever's fast marketing expertise, from which partners can benefit greatly, with leading-edge technology capability allows the development of a new knowledge domain on e-business and business-to-consumer solutions. This new knowl-

edge domain will be of high strategic importance in the future. In the area of basic research, collaborations with leading academic groups, and in some cases the installation of top institutes with universities are ways in which Unilever secures leading-edge science that delivers radical innovations. For instance, the Unilever Centre for Molecular Informatics, established with Cambridge University, develops theory and tools to derive knowledge from vast amounts of molecular data. Progress in high throughput data screening is already providing Unilever with the ability to speed up product testing and hence innovation.

The appropriation strategy also helps to manage risk. By capturing new knowledge from the external environment, rather than developing it in-house, the risk of overtaxing resources decreases.<sup>22</sup> In addition, the risk of a deterioration in the value of knowledge can be better managed. Companies that develop a web of partnerships, for example focused on alternative technologies serving the same basic customer needs, can more effectively monitor emerging technology developments.<sup>23</sup> The appropriation strategy can also be aimed at gaining new knowledge about the competitive environment. Strategic alliances with existing or potential competitors might provide new knowledge about their strategies, technologies and personnel resources, thereby enhancing the internal capability to predict their future strategic moves.

Table 3 summarises the major impact of the appropriation strategy on the business goals of efficiency, innovation and better risk management.

### The probing strategy

This strategy gives one or several teams the responsibility to build up a new knowledge domain from scratch. Here knowledge creation is somehow different compared with the case of the expansion strategy. First of all, for an existing knowledge domain, key professionals have already been identified, and second, there is knowledge available where you can judge the relevance for further expansion of the domain. For example, entries in the knowledge repository (for example, a database with software

**Table 3. The appropriating strategy impacts on strategic goals**

Efficiency	Transferring new knowledge from partners, e.g., in manufacturing, sales, marketing and product development
Innovation	Transferring new knowledge from partners for future innovation
Managing Risk	Transferring new knowledge from partners to reduce risk of overtaxing resources Transferring new knowledge from partners to reduce exposure to risk of deteriorating knowledge domain Transferring new knowledge on regulatory environment and competitors

development tools) coupled with results from chat groups give you a rough indication of whether or not what you have is good enough to build upon.

The probing strategy requires a different approach. Here you must identify participants with an interest in doing something new within the company, and these individuals in turn need to build their own community around a loose idea or vision of a future knowledge domain. In some ways, these individuals become “corporate revolutionaries” who create knowledge that in turn can become imperative to the long-term performance and survival of your firm.<sup>24</sup> Further, gathering or developing new relevant data sets, creating new information, and new tacit and explicit, individual and social knowledge, are important parts of probing. This strategy has a twofold impact on strategic goals. First, it may contribute to achieving innovations. Radical innovations, beyond mere variants of existing products, or technologies employed by competitors, will result from new data, insights, models, concepts and technologies. It can also help the company see business processes and tasks in a new light, and thereby have some impact on the efficiency goals. Creating new knowledge in a new knowledge domain will always be risky, because it potentially overtaxes the existing resources of the company, and dramatically exposes the company to risks of competitor retaliation<sup>25</sup> and it might break a necessary coherence between the new knowledge and the existing scope of business the firm is engaged in. However, the probing strategy, reduces exposure to knowledge deterioration risks because it allows a more balanced portfolio of existing knowledge (enabling the company to act on current business opportunities), alongside new knowledge (enabling the company to exploit future business opportunities).

In order to break with existing patterns of thinking and established routines, the company can often benefit from executing something unconventional. For example, “indwelling” in the lives of consumers and customers. At the heart of Unilever’s corporate purpose is the ambition to be a truly multi-local multinational company understanding and anticipating the everyday needs of people everywhere and meeting these with branded products and services. To achieve such a deep consumer understanding, Unilever market researchers and marketers are immersed in the lifestyle, habits and attitudes of the consumer. The company employs a variety of methods and approaches to get at this tacit knowledge and this method-kit becomes a focal point in the development of the new consumer knowledge domains. In these domains, immersion by product developers and marketers gives radically new insights into tacit consumer knowledge, which sometimes changes the definition of a whole market segment. Knowledge creation here often happens at the premises of customers and consumers. Insights into lifestyles, norms, the use of technology, strong and weak social ties, habit reinforcing and weakening behaviour, life-changing experiences and so on lead to dramatically new segmentation forms and bring out entirely

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*The company can often benefit from executing something unconventional*

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new areas of knowledge Unilever's marketers perfect, both within the Culinary Category and in other categories.

Table 4 summarises the major impact of the appropriation strategy on the business goals of innovation, and better risk management.

### **Final thoughts: take a proactive approach to company knowledge**

In this paper, we have addressed some fundamental questions concerning strategic management in the knowledge economy. We began by urging managers to obtain an overview of knowledge in the company, not as a loosely coupled cluster of experts, but as vibrant domains where experts create and share knowledge on a continuous basis. Once such knowledge domains have been identified and "mapped", managers can start to think about further development, primarily through knowledge creation and transfer between and within knowledge domains. Knowledge strategy is the allocation of resources to knowledge creation and transfer for the sake of developing existing and new knowledge domains. The four strategies we developed in this paper are: leveraging existing knowledge throughout the company; expanding on existing knowledge within the company; appropriating new knowledge from outside the company to build up a new knowledge domain; and finally, probing new knowledge within the company. If you want to make the most out of your company's knowledge, we believe knowledge strategy formulation and choice need to be tightly coupled with other strategising activities within the company because the development of a knowledge-based advantage requires adequate attention and resource allocation paralleling the development of other types of company advantages. A company benefits from taking a proactive approach to its knowledge and expertise, rather than just letting knowledge drift and evolve at the periphery of management's attention. In this sense, strategising in the knowledge economy is about moving away from "driving ahead by looking in the rear-view mirror" to "driving ahead by knowing what is around the corner".

The cost of Knowledge Creation is high, as it is difficult to predict results from creativity. However, in light of the increasing pressure to innovate and with high employee mobility, managing the effectiveness of knowledge creation is becoming crucial for business success. One way of managing these costs is to provide

**Table 4. The probing strategy impacts on strategic goals**

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Efficiency	Creating new knowledge that can improve business process
Innovation	Creating new knowledge for radical product and process innovation, and better adaptation
Managing Risk	Reducing exposure to risk of existing knowledge domain deterioration

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structure and tools that will stimulate *focused creativity*. In Unilever, this is to some extent achieved through creativity workshops and tools, and through innovation management. But in particular, multi-disciplinary and international teams are critical to manage knowledge creation effectiveness and efficiency. In Unilever, the term “liberating rigour” is used to stress the importance of standardising and simplifying where it is possible. This releases the creative energy to those areas where it really brings value to consumers.

The Unilever experience should inspire other firms to adopt the knowledge strategy framework. As firms base more and more of their business on the uniqueness and novelty of their knowledge base, an economic approach to knowledge will become inevitable for the future prosperity and survivability of most business organisations. Thinking in terms of knowledge domains guides managers in both their goal setting and resource allocation. Sharing a language that outlines strategies and courses of action will be instrumental to the follow-up on the development of knowledge in the firm. However, while this economic perspective is highly appealing, one should never forget that knowledge is inherently fluid, social and evolving through practice. Eventually, to get the knowledge domains to work as vibrant, energetic, creative, social arenas, managers need to enable rather than control knowledge creation and transfer processes.

## **Appendix A. Some Notes on the Method of this study**

Our method has been a case study of knowledge management practices and approaches in Unilever, and the study’s goal was to provide a new perspective on knowledge strategy. Unilever was selected because of access as well as its interesting and novel management approaches.<sup>26</sup> The company also has relatively long experience in knowledge management activities, dating back more than 10 years, which have evolved to a strategic level. This makes Unilever a critical case for studying knowledge strategy, rather than other more operational aspects of knowledge management. Our research proceeded in two stages, first through preliminary reporting of the knowledge management initiative in the culinary category, and second an in-depth study of knowledge management comprising a wider scope in the firm. We do not claim to report a full overview of knowledge management approaches within such a diverse, innovative, and geographically dispersed company, but in both stages we chose data where contributions were made to the strategies (constructs). We used multiple sources of evidence, including documents (e.g., internal and external reports on Unilever’s knowledge management approaches, such as a comprehensive report on innovation management and one on communities of practice), archival records on projects that have used knowledge management, interviews with experts from the company who have been involved in knowledge management initiatives in a functional or project-

based role, and participant observation from knowledge workshops and training programmes related to knowledge management and innovation. Two research reports on manufacturing communities of practice in the Culinary Category, as well as the history of an innovation project resulted from the first phase of the research. These were used for internal discussions in the company in order to ensure a fit with the propositions, data, outline of the case history, and the conclusions drawn by the researchers. These reports confirmed a strong overlap between managers' own perceptions of the knowledge domains and knowledge management initiatives, and the researchers' attempt to "bracket" and capture those experiences. The reports are available from the first and third authors.

A key issue in qualitative strategy research is to have a sufficiently long period of interaction between the firm and the researchers, where more than two years is considered necessary for generating empirical insights into change processes and new management approaches.<sup>27</sup> Knowledge management introduction and implementation often involves considerable change for the company in question.<sup>28</sup> The data collection in Unilever lasted for almost three years of intimate work with the firm. Another key issue is enhancing construct validity:<sup>29</sup> making concepts adequately capture important organisational events, processes, decisions and actions. Beyond reporting back to Unilever and discussing the two research reports with a select group of managers, we tried to improve such validity by co-authoring the article with a senior manager. Having had an active role in knowledge management at Unilever's corporate level for the last five years, the manager also reported on his personal experiences through this writing. The strategic constructs in our framework are gradually becoming increasingly used terminology within Unilever, and they were based on development work with the company.

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## References

1. See for instance *The New Economy: A primer*. Research report, Cambridge Technology Partners, Cambridge, MA (1999) and M. Boisot *Knowledge Assets: Securing Competitive Advantage in the Knowledge Economy*, Oxford University Press, New York (1998).
2. J. Sampler, Redefining industry structure for the information age, *Strategic Management Journal* **19**, 343–356 (1998).
3. N. W. A. FitzGerald, Value from the centre in G. W. Dauphinais, G. Means and C. Price (eds), *Wisdom of the CEO*, pp. 25–31. Wiley, New York (1999).
4. E. Wenger, *Communities of Practice*, Cambridge University Press, Cambridge (1998).
5. Please note that existing base knowledge means that we use the existing base as a starting point for developing the knowledge domain. This is to remain consistent with the view that knowledge truly is in flow.

6. See for example T. Davenport and L. Prusak, *Working Knowledge*, Harvard Business School Press, Cambridge, MA (1998). A good overview of contemporary efforts can be found in R. L. Ruggles, 9ed.) *Knowledge Management Tools*, 9th ed., Butterworth-Heinemann, Boston, MA (1997). A good companion piece with a higher level of detail on knowledge management tools is V. Allee, *The Knowledge Evolution: Expanding Organizational Intelligence*, Butterworth-Heinemann, Boston, MA (1997).
7. The five stage process is explained further in I. Nonaka and H. Takeuchi, *The Knowledge Creating Company*, Oxford University Press, New York (1995); G. von Krogh, K. Ichijo and I. Nonaka, *Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and Unleash the Power of Innovation*, Oxford University Press, New York (2000); and I. Nonaka, A dynamic theory of organizational knowledge creation, *Organization Science* 5, 337–351 (1994). See also I. Tuomi *Corporate Knowledge: Theory and Practice of Intelligent Organizations*, Metaxis, Helsinki (1999), and D. Leonard and S. Sensiper, The role of tacit knowledge in group innovation, *California Management Review* 40(3), 112–132 (1998).
8. Leonard and Sensiper (1998) (see Reference 7).
9. D. Leonard, *Wellsprings of Knowledge*, Harvard Business School Press, Boston, MA (1995).
10. Fortune, The Customized, digitised, have-it-your-way economy, *Fortune* (28 September), 68–78 (1998).
11. von Krogh et al. (2000) (see Reference 7).
12. See also R. M. Grant, Towards a knowledge-based theory of the firm, *Strategic Management Journal* 17(2S), 109–123 (1996); and R. M. Grant, Prospering in dynamically-competitive environments: organizational capability as knowledge integration, *Organization Science* 7, 375–388 (1996).
13. J. E. Nahapiet and S. Ghoshal, Social capital, intellectual capital, and the organisational advantage, *Academy of Management Review* 2, 242–266 (1998). An important companion piece discussing individual motives for knowledge transfer is M. Osterloh and B. Fre, Knowledge sharing and motivation, *Organization Science* (forthcoming).
14. Here Davenport and Prusak (1998) (see Reference 6) talk about “sellers” and “buyers” of knowledge and the need to create market conditions in which sellers and buyers are known to each other.
15. An early contribution to this argument was J. L. Badaracco, *The Knowledge Link: How Firms Compete through Strategic Alliances*, Harvard Business School Press, Boston, MA (1991). See also T. Khanna, R. Gulati and N. Nohria, The dynamics of learning alliances: competition, cooperation, and relative scope, *Strategic Management Journal* 19, 193–210 (1998); A. C. Inkpen and A. Dinur, Knowledge management processes and international joint ventures, *Organization Science* 9, 454–468 (1998).
16. W. Powell, Learning from collaboration: knowledge net-

- works in the biotechnology and pharmaceutical industries, *California Management Review* **40**(Spring), 228–241 (1998).
17. G. Hamel, Competition for competence and interpartner learning within international alliances, *Strategic Management Journal* **12**, 83–103 (1991).
  18. W. Cohen and D. Levinthal, Absorptive capacity: a new perspective on learning and innovation, *Administrative Science Quarterly* **35**, 128–152 (1990).
  19. C. O'Dell and J. Grayson, If only we knew what we know: Identification and transfer of internal best practices, *California Management Review* **40**(Spring), 154–174 (1998).
  20. Seeing that knowledge works elsewhere, and having knowledge appraised and approved by people you trust might be a powerful motivator to undertake knowledge transfer. See G. Szulanski, Exploring internal stickiness: impediments to the transfer of best practice within the firm, *Strategic Management Journal* **17**(1S), 17–44 (1996).
  21. Hamel (1991) (see Reference 17).
  22. D. Teece, Capturing value from knowledge assets: the new economy, markets for know-how, and intangible assets, *California Management Review* **40**(Spring), 55–79 (1998).
  23. T. Gonard and T. Durand, Public research/industry relationships: efficiency conditions, *International Business Review* **3**, 469–490 (1994).
  24. G. Hamel *Leading the Revolution*, Harvard Business School Press, Cambridge, MA (2000). In some emerging industries, like biotechnology, such the intensity of probing significantly impacts on a firm's market value compared to more mature industries where knowledge is more settled [D. M. DeCarolis and D. L. Dees, The impact of stocks and flows of organizational knowledge on firm performance: An empirical investigation of the biotechnology industry, *Strategic Management Journal* **20**, 953–968 (1999)].
  25. See, for example, R. Rummelt, Toward a strategic theory of the firm, in R. Lamb (ed), *Competitive Strategic Management*, pp. 137–158, Prentice-Hall, Englewood Cliffs, NJ (1984).
  26. R. K. Yin, *Case Study Research: Design and Methods*, Sage, Newbury Park (1984).
  27. S. Ghoshal and C. A. Bartlett, Linking organizational context and managerial action: the dimensions of quality of management, *Strategic Management Journal* **15**, 91–112 (1995).
  28. A. K. Gupta and V. Govindarajan, Knowledge management's social dimension: lessons from Nucor Steel, *Sloan Management Review* **42**, 71–80 (2000).
  29. T. Hedrick, L. Bickman and D. J. Rog, *Applied Research Design: A Practical Guide*, Sage, Newbury Park (1993).