

Chapter 1

The Knowledge Enterprise

Managers are expected to divide attention over an increasing number of important matters. Throughout the past ten years, managers in most organizations have invested a great deal of time in the improvement and streamlining of processes. Market focus, quality, flexibility and slimming down have been among their daily activities. Throughout Europe and North America, this has undeniably led to a number of distinct results. Quality and productivity have been improved in the 'no-nonsense' era. We are doing things quicker and faster using fewer people. At the same time, a gradual and creeping reversal is taking place which remains unnoticed to many managers. In the years to come, competitive advantage will be determined increasingly by the way in which firms deal with the knowledge factor. Price and quality have become preconditions for market entry. The future of firms will depend more and more on the ability to convert knowledge into good currency. Firms will have to evolve in this process into a 'knowledge enterprise'. This chapter concentrates on the risks of our preoccupation with quality, cost and market focus. It addresses the factors that contribute to the increasing knowledge intensity of business management. Finally, it sketches the challenge that is ahead of us: competition on the basis of knowledge.

Two years ago, business units were introduced by Firm A. The functional lines that were at the basis of the firm's organization from the Executive Board to the shop floor were replaced by market- and product-centred lines. The switches were reversed in virtually every department of the organization for the benefit of the market. Inroads were made even into the sanctuary of the corporate R&D laboratory, turning it into a support department. New creative ideas were expected to come from the market place. Now, at the internal quality award two years later, not one manager among those present would dare to throw doubt upon the accuracy of that decision. The president of the enterprise enthusiastically lists the results achieved: a cost reduction of 8 per cent and an increase in volume of 7 per cent, ISO certificates in modern frames in the hallway, higher scores in the customer surveys, and decreased absenteeism. Everybody toasts to the successes. The managers are grouped according to the new business set-up, rather than the way they used to stand together on such occasions: manufacturers with manufacturers, marketers with marketers. Still, after a while they go and have a chat with their old mates, and less positive stories are recounted. The R&D people observe that the market does not generate new ideas. They have done service work more than anything else in recent times, which has led to lots of cost-saving and quality-enhancing measures. Yet there was no challenge from the market. The marketers have taken these improvements almost as self-evident givens, but something is bugging them too: they are no longer bothered by stubborn developers who cannot be put off their ideas no matter what. There has come an end to the times where they were surprised by resourceful innovations that were sometimes invented in the illegal margins of the business.

Tour Operator B is urgently looking for a purchaser with a great knowledge of South-east Asia. The purchase group in question has been tampered with a huge turnover in recent years. This did not create too many problems initially, because it was possible to extend ongoing purchase contracts. Recently, however, Firm B has been in trouble and the lack of highly adept purchasers is felt. New active policy and new alternatives are required once again: new destinations

are becoming popular, and the well-known suppliers provide too little value while asking too much money. A head-hunter is called upon, who asks a phenomenal fee yet comes up with two good candidates after a long search. But the personnel department is in for a surprise: the first candidate works for another business unit of the same firm, while the second left the firm after a serious conflict a year ago.

Firm C has made a radical shift in production. The organization has been made more compact to a great extent, 'lean production' being the slogan of the organizational change process. Compared to eastern competitors, the plant employed too many indirect people. All those not directly needed for production were made redundant. The ratio indirect/direct personnel was reduced from 4 to 10, to 2 to 10. The maintenance of breakdown-sensitive machinery was integrated with operation, which did not cause too many problems initially. The experienced maintenance engineers were called upon to teach them the tricks of the trade. The production teams seemed to manage quite well in their new jobs. The production staff were ardent about their job extension. Machine up-time even improved because defects were fixed more rapidly. But then the older experienced engineers were sent away with their redundancy money. As a result, machines sometimes stand idle for days. The production teams are capable of handling the problems they are familiar with, but are increasingly confronted with new unknown technical problems. The know-how they need to be fed with continuously has dried out.

Knowledge Escapes from Attention

Today's organizations are facing a gradual, creeping, but at the same time fundamental and irreversible change. The danger of creeping changes is that one gets used to them, just like one gets used to traffic jams. Traffic jams become a little longer every day. And one day we won't even remember that there was a time they did not exist. Business travellers have adjusted to the creeping discomfort. They possess a wireless phone, and it won't be long until standard lease cars are

equipped with personal computers including modems and faxes. They are busy people, who cannot afford to do nothing. So they adapt. When people have to spread their attention, they tend to ignore certain signals. That's what people have in common with frogs (Van de Ven, 1988): when frogs are thrown in a pot filled with boiling water, they jump out. But when they are put on the stove in cold water, they will slowly boil to death.

Thus, Firm A starts to be aware that the formation of self-managing business units does not only have positive sides to it. The supply of new ideas that may be the base for tomorrow's business is running dry. This will be reflected in the portfolio of R&D projects within two years' time. Projects are increasingly tailored to today's business. There doesn't seem to be one single manager who dares to risk his neck for projects with a 'high risk/high reward' profile. The firm is becoming aware that if nothing is undertaken, the supply of knowledge will dry these new opportunities. This implies three things:

- The firm should invest more in long-term knowledge development;
- The knowledge potential within the firm should be utilized more effectively;
- It is imperative that the firm develop knowledge synergy with other firms and make use of the knowledge available at universities and other public research institutions.

Firm B has learned how to generate a higher turnover using fewer specialists. The tour operator has found a strong niche in the market for trips to the Far East. The purchase team has learned how to work efficiently to the extent that when a few team members left the firm, the remaining group members managed to cope with the work, and the firm is proud of that. But when substantial changes in the environment present themselves, the departure of one individual shows that a bomb is ticking away under the lucrative market niche. The firm discovers that the supply of new talent cannot be left to coincidence. Talents should be nurtured and kept up in a strongly fluctuating market. Rather than personnel *work*, where one looks for

a sheep with five feet, this requires personnel *policy*, which ensures the knowledge advantage of the firm. "Human resource management" is the term used for this in the 1990s.

'Lean production' is particularly a matter of counting and cutting for Firm C. Slimming down by a quick and effective diet rather than exercise and training. The financial result is expressed by a denominator: revenues divided by cost. Increasing revenues takes time, resources, and energy. Counting and cutting is an easy way out. The management of Firm C, without thinking about the consequences, has taken refuge in what Hamel and Prahalad (1994) refer to as *denominator management*. The firm is in trouble after the first wave of technological innovations. The capacity to process and internally transfer new production know-how has been kicked out. Machines stand idle for hours, which costs lots of money. Fresh blood from the labour market will solve this problem only in the long run. It will take at least two years for someone to be familiar with business-specific knowledge. With a lot of effort two maintenance engineers are found who are willing to return to the firm for two more years. But even they will have to become acquainted with the knowledge about the new systems.

What do these three examples show? They show that due to our focus on customer demands, quality procedures, cash flow and internal streamlining of processes we threaten to overlook one crucial factor: the *knowledge factor*. The knowledge not only needed to keep our processes going and to improve them continuously, but also the knowledge required to safeguard our position in the future. Knowledge that can be used to explore new opportunities and keep competitors at a distance.

Why is the Knowledge Factor Important Right Now?

Isn't it true that knowledge has always been a self-evident factor in company policy? Of course, knowledge is a self-evident factor in many firms. It's for that very reason that the Dutch business and trade

community invests more than 4 billion guilders in training. It's for that very reason that large companies such as Philips and Unilever have protected their prestigious R&D laboratories for such a long time, and governments underline the importance of knowledge infrastructure. (In Northwest Europe, more money is spent on fundamental research than in Japan.) It's for that same reason that the average company has carried along its overweight in terms of staff capacity for so long. Knowledge has long been such a self-evident factor that nobody was talking about it. However, there are three reasons why the knowledge factor should be given priority on the policy agenda of firms and institutions.

The Speed and Complexity of Knowledge Development are Increasing Rapidly

Ten years ago, it was possible in a medium-sized firm to quickly localize the most important changes. Projects had a start A and an ending B. They took place in Departments C and D. The project applied Methods E and F, and used Specialties G and H. The postal services shifted to the electronic reading of postcodes, and newspapers got to be edited electronically. Bicycle firms introduced an electronically steered induction welding technology for the production of bicycle frames. Department stores started to sell insurance policies, and chemical paint companies water-based coatings. It was fairly easy to describe the knowledge required to do these things. Additionally, it was not difficult to ascertain when the introduction of new knowledge could start and when this knowledge could become productive.

If we look at our business processes, it seems as if there is no beginning and end to the changes that our organizations are facing. Change projects continually merge into one another. Innovation has become a continuous process: nothing is constant, except change itself. It's not only the time boundaries that merge into each other. The knowledge used by organizations is increasingly composed knowledge. The number of specialties rapidly increases, and these

specialties must somehow be linked as one goes on. The development of products, services and processes is no more than the responsibility of a few departments in the firm. Each specialty adds its own know-how. The list of indicators for the speed and complexity of the knowledge development is different for every individual organization. Whether we work in a hospital, insurance company, or pharmaceutical company, the results of the analysis is the same time and again: things are going quicker and they are becoming more complex.

Metamorphosis

In some companies, this development takes place as a true revolution. Firms that were known as being 'low tech' five or ten years ago have undergone a metamorphosis that only few people would have believed possible. A striking example of such a firm is the Dutch subsidiary company of the American garbage disposal firm BFI. BFI has developed since 1987 into a market share leader in the service sector in the Netherlands, with an annual turnover of 650 million guilders. In 1997, the Dutch BFI subsidiary was taken over by the French SITA. Its market leadership developed not only in a process of constant acquisitions, but is based mainly on the way in which knowledge was added continuously at every level — each function and each region. 'Making sure the garbage cans are emptied adequately' was the core of the business eight years ago. Entrepreneurs were able to benefit from the distinct growth of the market with a strong focus on customers, much effort and enthusing leadership. Management was 'management by driving around'. The entrepreneurs drove around in their cars to solve problems. There were no personnel policy and no reward system, no commercial department, price control and automation plans. These entrepreneurs were steering on intuition rather than numbers. In the early 1990s, however, it became clear that trees don't grow into the sky. When a number of firms were taken over, their results appeared to be a big problem, which was obscured by the substantial property it had built up in the past years. More serious, however, was the lack

of transparency of the business processes in this environment-sensitive sector. In the sector as a whole, this lack of transparency had led to lapses. The authorities had no intention to tolerate these any longer. This implied that transparency, quality and process control became critical conditions for the legitimization of the sector. Additionally, the authorities tightened the rules, and it became clear that future growth was impossible without paying attention to services with a higher added value. The firms were not able to benefit from the strongly developing technologies.

For six years, BFI Nederland invested in virtually every area of knowledge:

- Money flows have been made transparent. Controllers were recruited and new administrative tools were introduced to make costs and profits visible and substantiate targets.
- Information technology has become a priority, focusing on an integral approach to the entire business process, with routing being the hard core.
- Professional personnel policy has been introduced paying attention to careers, assessments, training, internal consultations, work and health, and rewarding policy.
- Investments have been made in training programmes, particularly for the middle management. Most of these training programmes are based on the principle 'train the trainers'. Middle management are expected to transfer the newly acquired knowledge about such matters as safety, quality and health to their own organization. Meanwhile, this has led to fewer accidents, less damage, and lower absenteeism.
- A commercial office and field service has been set up in order to give shape to relation management and develop new services.
- A legal department replaces the lawyers that used to be called in *ad hoc*. The legal knowledge relevant to this sector is now anchored in the firm itself.
- The technology of garbage disposal has been made pivotal. At the central level, a technology group has been established.

Within six years' time, the firm changed from a conglomerate of hardworking garbage disposers into a cleverly operating professional firm capable of taking responsibility vis-à-vis the economy and society. Remarkably, the central staff (40 versus a total of 2,100 employees) has not become top-heavy. The principle was that knowledge should be carried as low in the organization as possible.

Today's Challenge is To Be Found in the Exploitation of Knowledge

The customer struggle in Europe and the United States of America is no longer about quality and price first. Price and quality have become conditions for entry in a lot of markets. They are the conditions under which existing products and services can be sold. In other words, they are the defensive weapons used to protect a firm's market share. The use of defensive weapons is becoming increasingly difficult for western companies. Due to low wages in Eastern Europe and Central Asia and craftsmanship in Eastern Asia, ground must be conceded continuously. Thus, television plants move to Poland, the data entry of banks is transferred to India, and Dutch shrimps are peeled in Morocco. A recent example is the transfer of reference works on CD-Roms, which European publishers subcontract to firms in India.

Competitive advantage and growth require unique products and services. The weapon of attack is the added value that other firms and institutions cannot deliver. In Europe, such added value does not come from raw material (with the exception of the natural gas reserves and North-sea oil) or from unskilled labour. Rather, more than ever, the added value will come from exclusive knowledge in the future. Knowledge that is continuously in motion and difficult to imitate. Hence, innovation of goods, services, and processes will become the only remaining source of differentiation capacity for Western firms (Andreasen *et al.*, 1995; Wijers, 1994). There are several ways to build up such capacity:

- The integration of products and services;
- The shift of bulk products (and services) to specialties;
- The purchase of process knowledge;
- Renewed interest in radical innovation;
- Globalization.

The Firm as a Hi-Tech Service Provider

'Not only do we deliver products, we also provide our clients with clear-cut solutions. We've become problem solvers.' Using similar phrases, firms indicate a revolution in the way they think and behave. The value added to the client's value chain by the supplier is what counts: the advantages experienced by the client in his or her own (business) household. This implies that the supplier must be able to get under the client's skin, so to speak. The supplier's own product know-how must be combined with the client's process know-how. For example, cattle feed firm Hendrikx Voeders not only supplies cattle feed, it also gives advice about the design of stables. And Van Lanschot bankers are concerned not only with banking, but equally with such important target groups as physicians and lawyers to help them with their bookkeeping. One of the Dutch producers of hydraulic systems, Hydraudyne, has its engineers involved in the development of driving simulators sit in regional buses for months in order that they learn about the profession of a bus driver. DSM Andeno (a producer of pharmaceutical intermediates) demonstrates its possibilities at the client's in order for the client to anticipate the power of his supplier when developing his own products.

The Firm as a Specialist

Closely linked to the first tendency is the shift from bulk to specialties, particularly in firms that are highly sensitive to economic fluctuation. Specialties are products and services with a high added value that are

supplied in small amounts according to customer specification. This tendency is strongly increasing in the raw material industry. Firms like DSM Andeno, AVEBE and Gist-brocades (Chapter 4) opt for this strategy because it makes them less susceptible to economic fluctuation of bulk products. This strategy implies that innovation becomes a continuous process. Before starting a substantial upgrading, the development of the next version of the product or service has announced itself. This route is increasingly followed in the services sector. Examples are the insurance company that specializes in insuring dangerous industrial transports, the bank that develops into the home banker of physicians and lawyers, and the IT firm that has acquired a reputation in the graphical industry.

The Firm Opening Up New Horizons

Throughout the past ten years, a great deal of firms have worked hard to target the development of new products and services to the market place. They were forced to increase the development speed, enhance the quality of products and services, and gear directly for today's customer demands. In so doing, attention has shifted from the radical 'novel' innovation to incremental innovation. It is becoming clear now that this development has tipped too far to the defensive side of things. Firms should be concerned not only with today's market, but with tomorrow's market as well. Today's hits are usually based on yesterday's breakthroughs. This was the conclusion at Gist-brocades (Chapter 4) of an internal business group comparison. This insight is slowly (too slowly in many firms) gaining recognition in firms that wish to (continue to) be in the forefront. Hamel and Prahalad (1994) speak of *Strategy by Stretch*: firms gear for targets that challenge its employees to accomplish what is virtually impossible. There is hardly one sector of industry in which similar major challenges are lacking:

- The automobile industry: the economical car;
- The chemical industry: 'ecologically-sound' processes and products;

- Information technology and the electronic industry: integration of data, image and sound.

Smaller firms, too, can take large steps. It's not only the small advanced pioneers ('high technology start-ups') that, not impeded by bureaucracy, force breakthroughs which are impossible in large firms. Thus, exporting to a neighbouring, bigger country may be a large step for a small furniture firm. Equally, the use of pure natural raw materials can be a revolution for a small-sized food producer.

The Firm as a Supplier of Know-How

The production potential arising in Eastern Europe and Asia not only presents a threat, it also offers a new opportunity for the high-wage countries, i.e., the export of product and production know-how. For example, it is becoming more and more difficult to translate the Dutch knowledge of agricultural high technology into profits on the basis of Dutch production. However, there exist vast opportunities for this know-how in terms of worldwide export. The suppliers in Dutch market greenhouse horticulture increasingly concentrate on the export of complete production systems.

The Firm as a Global Player

Globalization means that knowledge-intensive products are sold and produced worldwide. But it also means that marketing and R&D are diffused more and more in global terms. Global presence has the following advantages:

- Being able to develop in a knowledge-intensive environment;
- Being able to produce in the most productive environment;
- Being able to sell in the most consumptive environment.

Such global diffusion places astronomical demands upon the utilization of the knowledge factor. The knowledge flow between R&D, marketing and production is vulnerable in every organization, even more so in firms hindered by both organizational and geographical boundaries. The global player must invest additional resources in his or her organization to keep the free flow of essential know-how going.

The Knowledge Factor Places High Demands on the Organization

'We must do more using fewer resources.' This is briefly the meaning behind the concept of 'leverage of resources' introduced by Hamel and Prahalad (1994). Europe and the United States have an enormous potential of knowledge, but make bad use of the potential. This is largely an organizational problem. Many organizations are still dominated by functional concentration, where department boundaries are classified according to type, based on a vertical principle: chemical analysts with chemical analysts, purchasers with purchasers, developers with developers. In the compartmentalized organization, horizontal processes require a high degree of control, which has four consequences:

- it takes too long for new ideas to be put into good currency in the market place;
- it costs too much time and effort to align functional units;
- the quality is below customer expectations because responsibilities are left to other functions;
- the firm loses track of the market.

Inherent in this model of organization is a view of the labour factor as being on the cost rather than the asset side, where people are exchangeable units that can be recruited to fill vacancies, or, alternatively, made redundant in the context of high-gear productivity enhancement.

Most firms and institutions try to break through the dominance of the functional organization (Cobbenhagen *et al.*, 1994). Increasingly,

priority is given to horizontal processes, which bring the market back in sight. This organizational streamlining is given shape at the business level in the business unit, where a direct link is made between the three basic functions of the organization: marketing, R&D and production. This strongly decentralizes the decision making about the course to be followed in a business. At the project level, multidisciplinary teams and strong project leadership are used to try to break the walls erected between the functions. Personnel work becomes *personnel policy* (human resource management) in that perspective. People are carriers of the unique knowledge and skills that serve as a source for each improvement and innovation, assets rather than costs. Research among 62 Dutch firms (Cobbenhagen *et al.*, 1994) has revealed that innovative frontrunners have progressed further in this streamlining process than members of the pack in the same market. However, a great deal of firms have hardly made the first steps in breaking with compartmentalization.

Additionally, the introduction of new market-oriented horizontal structures, such as the business unit, is no panacea. The business unit is not the ultimate answer to all organizational problems. New solutions bring with them new problems. This becomes clear especially in firms that have played a pioneering role in the transfer of responsibilities to the business unit. A basis for and prospect of long-term knowledge development threatens to be lost, putting the boundaries of the business under pressure once again. Not only the boundaries between the business units of one single company, but also those between companies. This demonstrates that the exploitation of the knowledge factor requires new organizational solutions that are not affected by the arbitrary boundaries put up in organizations.

The developments outlined above force us to take the knowledge factor seriously. They force us to view the organization as a system in which knowledge is developed, processed, transferred, used and supplied. Where investments in knowledge are made to gain a deciding advantage in the market.

The Knowledge Enterprise

Effective managers and professionals in organizations have developed the capacity to 'read' situations (Morgan, 1986). At the back of their minds they think out various scenarios and their associate action patterns. They are aware that new insights arise by reading the situation from a different perspective. They are open-minded and flexible, and are able to postpone judgement as long as the image in their mind is incomplete; and they are aware that new insight into a situation does not arise until they look at problems through a different pair of glasses. This book offers that very new pair of glasses: the view of the knowledge entrepreneur.

Five Basic Elements

Similar to the management of cash and materials flows, the firm chooses a system approach. In this perspective, the firm can be understood as a knowledge system. However, the concept of 'knowledge system' is already being used in a more narrow sense — in the area of information technology. For this reason, the authors of this book have chosen to use the term 'knowledge enterprise'. (Thus, the concept of knowledge enterprise covers more than the usual 'knowledge management'.) Entrepreneurship means movement: setting and keeping an organization in motion based on a vision; making choices by weighing opportunities and risks; making better choices by learning from one's own and other people's experiences; and supplying adequate organizational tools to utilize opportunities and reduce risks. These are the basic elements of the knowledge enterprise.

The Vision

How does one become a knowledge entrepreneur? By being aware that knowledge matters, that strategic objectives can be reached only

when they *can* be reached. By understanding that competencies of the organization are the basis for its differentiation capacity, for its identity and for its reason to exist. This insight gives a sense of urgency for change and movement. The present chapter has particularly focused on this aspect.

The Knowledge Ambition

‘What do I want to be good at and what do I want to be better at?’ The result of this choice is the *knowledge ambition*: ‘Doing the right things’. When defining the knowledge ambition (Chapter 2) of the organization, competencies will be named and assessed. What are the current competencies? How important are they for the organization? What are the core competencies that enable the firm to distinguish from others? Which are the firm’s enabling competencies, essential in order to create added value, and which are exchangeable? The knowledge ambition shows the focus of knowledge development, which indicates what must be done to achieve a knowledge objective, because stagnation means lagging behind. This focus also shows the limitation of the competencies that really matter, which might imply that some competencies must be given up.

Knowledge Development

Visions and ambitions are important, but make no sense unless they can be achieved effectively. This also holds true of strategic objectives, and, equally, the knowledge enterprise. Knowledge must be developed, maintained, transferred and used: ‘Doing the right things right.’ Insight into the process of knowledge development and diffusion in the organization is indispensable. What is important is the working of the organization as a knowledge system, the strategies of knowledge development, and the different types of knowledge flows. Chapter 3 will focus on these issues.

The Learning Organization

Knowledge development is a learning process *per se*, which is anchored in the organization. Individuals, groups, and business units can be viewed in that learning process as carriers of knowledge. In other words, knowledge development is a function of the learning organization. This has three important implications. First, knowledge development is irretrievably linked with the structure and culture of the organization, which largely determine a firm's capability to turn investments in knowledge into good currency in the market place. Second, knowledge development can never be separated from business development. The past of an organization leaves its mark on the future. Thus, the supplier of bulk products that wants to shift to specialties with a higher added value will long be haunted by the structure and culture of mass manufacturing. Third, knowledge development within organizations can never take place in isolation from its environment. These three 'contextual' features of knowledge development make it extremely difficult to imitate best-practice cases. It's just like school: you don't learn anything by cheating (except cheating). That is the reason why the practical examples in Chapter 4 have been written with another intention: to provide insight into the transition process that firms have to go through when realizing their knowledge ambition. This insight helps when we try to learn from our own actions. It enables us to reflect on the choices we make.

The Tools

In order to redesign the knowledge enterprise one needs tools (Part 3). First, instruments of analysis (see the Appendix) to be able to categorize and assess competencies and to map the knowledge flows. Such an analysis provides the point of departure for the redesign, which distinguishes three types of tools:

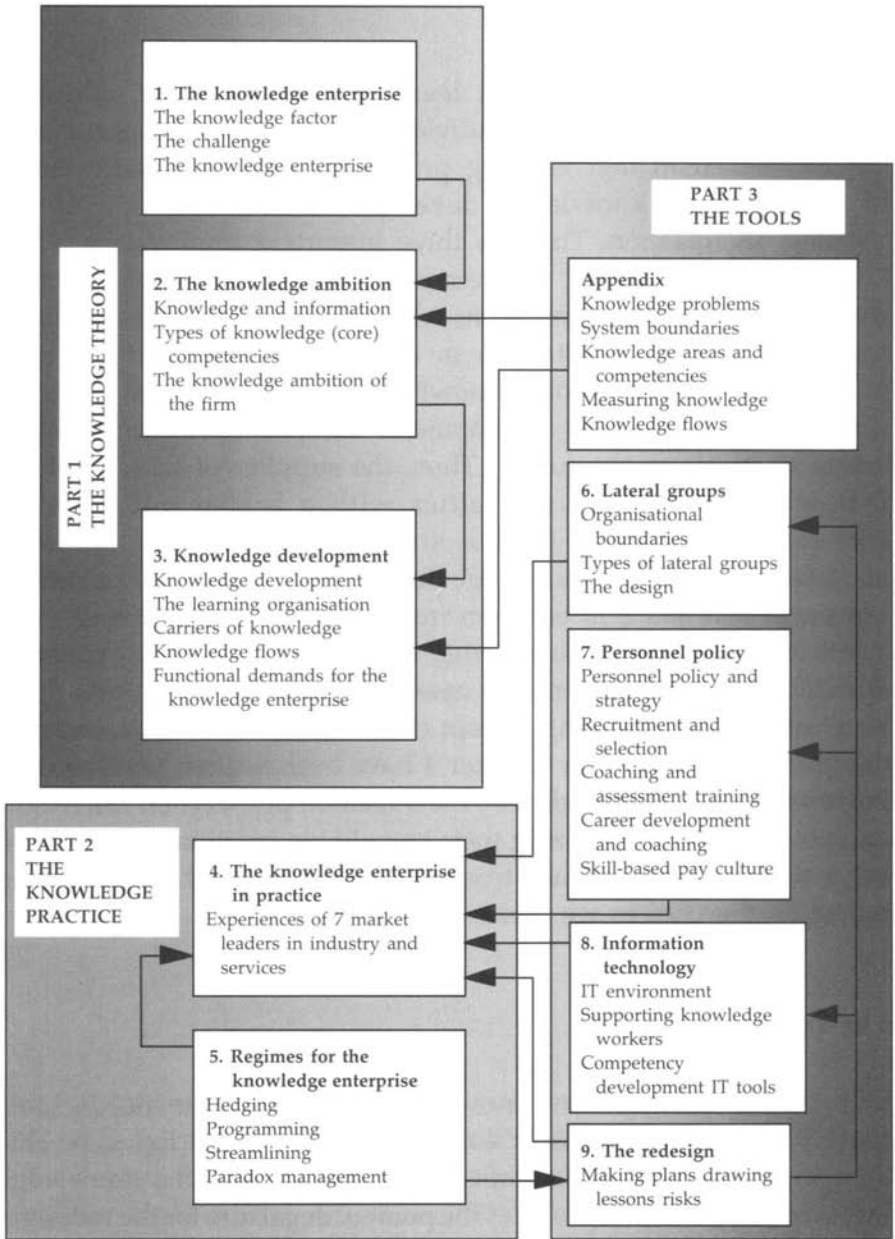


Figure 1.1

- Organizational lateral linkages (Chapter 6);
- Personnel policy (Chapter 7);
- Information technology (Chapter 8).

Remarkably, the separate design instruments are not new or unique *per se*. The toolkit of the knowledge entrepreneur is filled with well-known management instruments. The difference lies in the use and combination of the tools. The last chapter presents a practically phased model as guideline for the redesign.