A STRATEGIC MANAGEMENT FRAMEWORK FOR LEVERAGING KNOWLEDGE ASSETS

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Abstract

The management of organisational knowledge can be a key lever for improving performance, boosting productivity and creativity and facilitating innovation in corporate settings. The commonly used approaches for managing knowledge followed one of two perspectives: the process-centric (a primarily people-based approach that treats knowledge management as a social communication process) and a product-centric approach (that is mostly content-based and focuses on knowledge-related artefacts). This paper presents a strategic management framework that is knowledge asset-based and attempts to fuse the aforementioned two approaches in a balanced manner. The framework builds upon and extends the resource-based view of the firm by explicitly treating knowledge assets as the main driver for innovation and learning and by consistently examining the links of knowledge assets with all the main components of a strategic approach.

Keywords

Knowledge Management; Strategic Management; Resource-based View; Learning; Innovation.

Biographical Note

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1. Introduction

Organizations of all kinds are coming to the realization that knowledge is their greatest competitive asset. And as knowledge becomes the key strategic resource of the future, the need of organisations to develop a comprehensive understanding of knowledge strategies, processes and tools for the creation, transfer and deployment of this unique asset is becoming critical.

The task of developing and applying “Knowledge Management” (KM) as a new discipline is a challenging endeavour. This new discipline must successfully respond to the diverse needs of companies in a timely fashion. For businesses that must compete in a daily changing world, superior management of knowledge is the key to innovation, productivity, and growth.

This paper presents a strategic management framework to Knowledge Management (KM) that is theoretically sound, yet practical and easily applicable. The approach is explicitly based on managing an organisation’s knowledge assets in order to create value. The framework has been developed as part of a holistic knowledge management solution within two applied research and technology development projects and was validated in eight companies that belong to the financial services sector, the IT sector and the professional services sector.

The motivation to develop the framework was the realisation that practical KM efforts in organisations adopt one of two approaches: the process-centric approach, that mainly treats KM as a social communication process; and the product-centric approach, that focuses on knowledge artefacts, their creation, storage and reuse in computer-based corporate memories. We found evidence of this distinction not only in KM implementations in companies, but also in supporting methodologies and tools; see e.g. Mentzas et al (2000 and 2002).

However it is our belief that in order for organisations of the 21st century to add value to their product and service offerings a perspective is required that would fuse these two approaches. The presentation of a strategic management framework that provides a balanced fusion of these two KM views is the aim of this paper.

The paper is structured in the following way. The next section gives a brief overview of the process and product approaches in Knowledge Management, their origins and the implications of adopting them within industrial settings; it also outlines the need for their balanced fusion in practical KM applications. Section 3 discusses two of the main current approaches to strategic management, i.e. the competitive approach to strategy and the resource-based perspective of the firm and proceeds with their shortcomings in the knowledge economy. Section 4 outlines the conceptual
foundation of our framework, i.e. its focus on knowledge assets and knowledge objects, while sections 5, 6, 7 and 8 gives a detailed presentation of our knowledge-asset-centric strategic framework. Finally, the last section summarises our work and its research and managerial implications.

2. Process and Product Approaches in Knowledge Management

2.1. Knowledge and Knowledge Management

The task of developing and applying “Knowledge Management” (KM) as a new discipline is a challenging endeavour. This new discipline must successfully respond to the diverse needs of companies in a timely fashion. However, despite a wealth of books, reports and studies, neither researchers nor practitioners have an agreed definition of “Knowledge Management”. The term is used loosely to refer to a broad collection of organisational practices and approaches related to generating, capturing and sharing knowledge that is relevant to the organisation’s business. There are many interpretations as to what it exactly means and how to best address the emerging questions about how to effectively use its potential power; see e.g. Nonaka & Takeuchi (1995), Davenport & Prusak (1998), Edvinsson & Malone (1997) and Wiig (1995). Some would even argue that “Knowledge Management” is a contradiction in terms, being a hangover from an industrial era when control modes of thinking were dominant.

Whatever the term and the definition employed to describe it, knowledge management is increasingly seen, not merely as the latest management fashion, but as signalling the development of a more organic and holistic way of understanding and exploiting the role of organisational knowledge in the processes of managing and doing work.

A definition that is suitable for our purposes is the one given by Davenport and Prusak (1998), who define knowledge as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms". This definition highlights two important types of knowledge - explicit knowledge and tacit knowledge; see also Nonaka and Takeuchi (1995).

Tacit knowledge refers to that knowledge which is embedded in individual experience such as perspective and inferential knowledge. Tacit knowledge includes insights, hunches, intuitions, and skills that are highly personal and hard to formalise, making them difficult to communicate or share with others. Tacit knowledge is also deeply rooted in an individual’s commitment to a specific context as a craft or profession, a particular technology or product market, or the activities of a work-group or team. With other words tacit knowledge is deeply ingrained into the context, i.e. the owner’s view and imagination of the world and into his/her experience, which is previously acquired knowledge.

Explicit knowledge is knowledge that has been articulated in formal language and which can be easily transmitted among individuals. It can be expressed in scientific
formulae, codified procedures or a variety of other forms. It consists of three components: a language, information and a carrier. The language is used to express and code knowledge. Information is coded externalised knowledge. It is potential knowledge, which is realised when information is combined with context and experience of humans to form new tacit knowledge. The carrier is capable to incorporate coded knowledge and to store, preserve and transport knowledge through space and time independent of its human creators.

Both explicit knowledge and tacit knowledge are important for the organisation. Both must be recognised as providing value to the organisation. It is through the conversion of tacit to explicit knowledge and explicit to tacit knowledge in the organisation that creativity and innovation are released and the potential for value creation arises. The goal, then, is to leverage both explicit knowledge and tacit knowledge and to reduce the size of the organisational knowledge gaps.

The business and popular press abound with real-world industrial examples of initiatives that attempt to address these goals. Such initiatives may be classified within three strands. First, some companies, like Dow Chemical, address innovation in product development initiatives, either by making sure that knowledge is embedded in their products, or by identifying and reusing knowledge. Second, organisations like Texas and Chevron develop process and operational improvement initiatives that focus on the transfer of best practices by creating best practice databases and organising best practice sharing events. Third many companies (e.g. in the telecommunications and the banking sectors) develop customer and market initiatives, in which they mine customer data to make sense of who buys and why, and how to keep clients buying.

2.2 The Process and Product Approaches in KM

Knowledge management (KM) has moved from an early premature phase – characterised by considerable hype and confusion – to a state of relative maturity, in which the value it brings to business and government organisations is not disputed. The adopters of this new discipline have followed different approaches with varying emphasis on technology, cultural, organisational and managerial issues. Nevertheless, if one looks into the research landscape as well as into the business applications of KM, it is easy to notice that two main perspectives for knowledge management are usually employed: see e.g. Hansen et al (1999), Koehn and Abecker (1997) and Spek and Spijkevert (1997). Let’s call them the “product” and the “process” approaches.

The “product” approach implies that knowledge is a thing that can be located and manipulated as an independent object. Proponents of this approach claim that it is possible to capture, distribute, measure and manage knowledge. This approach mainly focuses on products and artefacts containing and representing knowledge; usually, this means managing documents, their creation, storage, and reuse in computer-based corporate memories. Examples include: best-practice databases and lessons-learned archives, case-bases which preserve older business-case experiences, knowledge taxonomies and formal knowledge structures, etc. This approach is also referred to as ‘content-centred’ or ‘codification’ approach.

Adopting a “product-centric” approach to KM means treating knowledge as an entity rather separate from the people who create and use it. The typical goal is to take
documents with explicit knowledge embedded in them — memos, reports, presentations, articles, etc. — and store them in a repository where they can be easily retrieved. Examples of companies that aim at a continual enhancement of their knowledge base — the collection of best practices, methods and reusable work products — include General Motors, Glaxo Wellcome and DaimlerChrysler.

The “process” approach puts emphasis on ways to promote, motivate, encourage, nurture or guide the process of knowing, and abolishes the idea of trying to capture and distribute knowledge. This view mainly understands KM as a social communication process, which can be improved by collaboration and cooperation support tools. In this approach, knowledge is closely tied to the person who developed it and is shared mainly through person-to-person contacts. The main purpose of Information and Communication Technology (ICT) in this case is to help people communicate knowledge, not store it. ICT tools in this case comprise e.g., e-mail, video-conferencing, workflow management systems, systems for the distributed authoring of hypertext documents, group-decision support systems, etc. This approach has also been referred to as the ‘collaboration’ or ‘personalisation’ approach.

Firms adopting a “process-centric” approach in their KM initiatives, focus on the creation of communities of interest or practice (self-organised groups which ‘naturally’ communicate with one another because they share common work practices, interests, or aims), to address knowledge generation and sharing. The emphasis in this case is on providing access to knowledge or facilitating its transfer among individuals. For example, companies like British Petroleum, Skandia, Buckman Laboratories and Matsushita strive to create corporate environments that nurture knowledge communities, in order to facilitate the exchange of ideas and collaboration across the organization.

Table 1, which is adapted from Sveiby (1997a), groups the origins of knowledge management according to the two approaches.

<table>
<thead>
<tr>
<th>Knowledge as a Product</th>
<th>Knowledge as a Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Organizational Theory</td>
</tr>
<tr>
<td></td>
<td>Sociology</td>
</tr>
<tr>
<td>Business Process Re-engineering</td>
<td>Artificial Intelligence</td>
</tr>
</tbody>
</table>

Table 1. The Origins of Knowledge Management [based on Sveiby (1997a)]

Table 2 summarises the basic characteristics of the two approaches in terms of their strategic, technological, and human resource-related directions; see also Hansen et al (1999) for an analysis.
### Table 2. Characteristics of the Process- and Product-centric KM Approaches

#### 2.3. The need to integrate the two approaches

The question that arises is: which companies and when, should adopt one or the other approach? The choice of the overall approach to be followed by a KM initiative should not be arbitrary, neither should it be ad hoc; it depends on the company characteristics, they ways the company delivers its products and services, its financial characteristics and its organisational culture.

One solution proposed in the literature is to relate the choice of the most appropriate approach to the vital characteristics of a company’s product or service; see Hansen et al (1999) and Table 3.

The product-centric approach is more likely to be followed by companies whose business strategy is based on standardised and mature products. The processes for developing and selling such products involve well-understood and well-organised tasks and the product knowledge is relatively rigid – thus more easily codified. In such cases, developing a strategy around the ‘knowledge as a product’ approach seems more suitable.
The process-centric approach on the other hand is more likely to be followed by companies whose value proposition is based on developing highly customised and / or extremely innovative products or services that meet unique customer needs. Because these needs vary dramatically, codified knowledge is of limited value. In those cases, adopting a “knowledge as a process” approach that mainly supports the sharing of knowledge, expertise and judgment, seems more appropriate.

<table>
<thead>
<tr>
<th>Knowledge as a “Product”</th>
<th>Standardisation of product or service</th>
<th>Maturity of product or service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge as a “Process”</td>
<td>Customised</td>
<td>Innovative</td>
</tr>
</tbody>
</table>

Table 3. Relation of KM approach to product characteristics

Such a roadmap may be useful for some extreme cases, but seems to be of limited value in supporting the decisions of companies that operate within the constantly challenging e-business world in which there is a clear need towards delivering product-service hybrids with distinct characteristics: their life time is linked to the life of the customer need; their major cost element is the cost of design; their main revenue model is subscription and user-fees; and their marketing objective is building communities of satisfied clients.

Hence the challenge faced by modern firms is to effectively exploit the intangibles that add value to these “offerings”: technical know-how, design of the offering, marketing and presentation, understanding of the customer need, etc., so that they can ‘integrate’ knowledge in their offerings and create new value by designing and developing new offerings.

These challenges call for the integration of the “knowledge as a process” approach (which will facilitate the leveraging of tacit, intangible knowledge) with the “knowledge as a product” approach (which will enable the consistent management of explicit knowledge, like e.g. best practices). So there is a real need for a balanced fusion of the two KM views. Such a fusion should clearly focus on the knowledge assets of the company, link strategic and operational issues in a consistent manner, and enable leveraging the key knowledge of the firm at various levels, i.e. at the individual, team and organisational levels.

The next section outlines the conceptual framework of our approach, which aims at explicitly providing for such a fusion.

3. A Strategic Perspective to Knowledge Assets

The methodological of the knowledge-asset centric framework should ensure the fusion of the product-centric KM approach with the process-centric KM approach. What is needed is a conceptual, theoretical foundation that will guarantee this fusion and that would be underlying every aspect of the solution (software tool, consulting methodology, measurement system, etc.).
Both the process and the product-based approaches aim to support the identification, managing and leveraging of knowledge, through better managing of the organisation’s knowledge assets. Knowledge assets are the resources that organisations wish to cultivate. In essence, knowledge management aims to better manage the content, quality, value and transferability of knowledge assets.

The focus of our framework is on knowledge assets as the critical strategic resources of the firm. Such a focus is in line with the recent trend in the strategic management literature to leverage the internal resources of the firm in order to create value. The following paragraphs briefly outline two commonly used approaches to strategic management: the competitive strategy approach and the resource-based view, and proceeds with analysing our knowledge asset-centric approach as the proposed theoretical solution to integrating the product- and process-centric approaches.

3.1. The Competitive Approach to Strategy

The competitive strategy perspective posits that competitive advantage is derived from the firm’s environment, more precisely from the industry in which it competes. In fact, the goal of competitive strategy for a company or business unit is to “…find a position in the industry where the company can best defend itself against... competitive forces (entry, threats of substitution, bargaining power of buyers, bargaining power of suppliers, and rivalry among existing competitors) or can influence them in its favour”; see Porter (1980).

The competitive strategy perspective can be seen as an “outside-in” approach to understanding the basis of competitive advantage. This approach stresses that an effective competitive strategy calls for the firm to take offensive or defensive action to create a defendable position against competitive forces. Thus, industry conditions determine the rules of the game when it comes to the nature of competition and the strategies available to firms.

A major assumption of this perspective is that all relevant, industry-specific resources are distributed homogeneously and are perfectly mobile. That is, the basis for competition is not derived from the firm as such, but rather from the characteristics of the industry. Consequently, superior performance in an industry or strategic group results from this environmentally-derived competitive advantage.

A second assumption of this approach is that both demand and supply conditions are known, and, consequently, market conditions are relatively stable. In a stable demand environment, competition is viewed as a zero-sum market share rivalry between existing and potential firms. Also, because the demand side of the market is known or predictable, competitive advantage stems from the supply side.

Consequently, selecting the competitive advantage that yields the highest levels of economic performance requires intensive analysis of the industry structure, of suppliers, buyers, new entrants, and threats from substitutes, as discussed in depth by Porter (1980) and other authors within the industrial organization paradigm.

Thus, the essence of formulating a competitive strategy is to relate a company to its environment, analogous to the opportunities and threats part of the classical SWOT-
analysis. The essence of this approach was expressed by Porter (1980) as: “Worship the environment – not the inside [of the firm]”.

The two assumptions mentioned above (i.e. homogeneous distribution of resources and already known demand and supply conditions) have been raised in the resource-based view.

### 3.2. The Resource-Based View to Strategy

From the resource-based perspective the firm is seen as a portfolio of resources. What a firm can do to create competitive advantage is not simply a function of the opportunities in the environment (industry) but also of what resources the firm can assemble; see e.g. Wernerfelt (1984). The resource-based perspective is an “inside-out” approach to understanding the basis of competitive advantage.

The resource-based view (RBV) of the firm focuses attention on how firms achieve and sustain advantages and contends that the answer to this question lies in the possession of certain key resources. Sustained competitive advantage can be obtained if the firm effectively deploys these resources in its product-markets. The list of resources in any given firm is likely to be a long one.

One of the principal insights of the resource-based view is that not all resources are of equal importance or possess the potential to be a source of sustainable competitive advantage. Much attention has focused, therefore, on the characteristics of advantage-creating resources and various approaches have been followed in analysing the characteristics of advantage-creating resources. For example, Barney (1991) proposes that advantage-creating resources must meet four conditions, namely, value, rareness, inimitability and non-substitutability, while Grant (1991) argues that the levels of durability, transparency, transferability and replicability are important determinants.

Strategic, advantage-generating resources comprise three distinct sub-groups, namely tangible assets, intangible assets and capabilities.

**Tangible assets** refer to the fixed and current assets of an organization, which have a fixed long-run capacity. Examples include plant, equipment, land, other capital goods and stocks, debtors and bank deposits. Tangible assets have the properties of ownership, their value is relatively easy to measure and they are relatively weak at resisting duplication efforts by competitors.

**Intangible assets** include intellectual property such as trademarks and patents as well as brand and company reputation, company networks and databases. The presence of intangible assets accounts for the significant differences between the balance sheet valuation and stock market valuation of publicly quoted companies. Intangible assets have relatively unlimited capacity and firms can exploit their value by using them in-house, renting them (e.g. a licence) or selling them (e.g. selling a brand). They are relatively resistant to duplication efforts by competitors.

**Capabilities** have proved more difficult to delineate. Capabilities encompass the skills of individuals or groups as well as the organisational routines and interactions through which all the firm's resources are co-ordinated (Grant, 1991). Typical of the latter, for example, are teamwork, organizational culture and trust between management and
workers. Capabilities have limited capacity in the short run due to learning and change difficulties but have relatively unlimited capacity in the long run.

Although the resource-based view recognizes the importance and role of knowledge in firms achieving a competitive advantage, we argue that the RBV does not go far enough. Specifically, the RBV treats knowledge as a generic resource, rather than having special properties, and subsequently, does not make any distinction between different types of knowledge-based capabilities.

3.3. Characteristics of Knowledge Assets

Knowledge assets are different from other firm resources; see e.g. Glazer (1991) and Day and Wendler (1998).

Knowledge assets are not easily divisible or appropriable. This means that the same information and knowledge can be used by different economic entities at the same time. Moreover, knowledge assets are not inherently scarce (although they are often time-sensitive). This implies that they are not depletable.

Knowledge assets are essentially regenerative. This means that new relevant knowledge may emerge from a knowledge-intensive business process as additional output besides products and services.

Knowledge assets may not exhibit decreasing returns to use, but will often increase in value the more they are used. This characteristic is of crucial importance for senior management; see e.g. den Hartigh and Langerak (2001). 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 knowledge has been created, the initial development cost can be spread across rising volumes. Network effects can emerge as knowledge assets are used by more and more people. These knowledge-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.

As knowledge assets grow, they tend to branch and fragment. Today’s specialist skill becomes tomorrow’s ticket to play, as fields of knowledge grow deeper and more complex; or as Drucker (1997) puts it “knowledge constantly makes itself obsolete, with the result that today’s knowledge is tomorrow’s ignorance”. 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.

4. Conceptual Foundation of the Approach

The focus of this paper is not on what knowledge is; rather it is on what knowledge can do. Hence for the purpose of having a definition of knowledge we extend a
definition given by Nonaka (1991) according to which ‘knowledge is justified belief that increases an entity’s capacity for effective action’.

Our definition of knowledge is: The ideas, or understandings, which an entity possesses that are used to take effective action to achieve the entity's goal(s). Our focal point is the business domain and we examine individuals, teams, organisations and inter-organisational settings (e.g. virtual enterprises) as entity types that leverage knowledge to create business goals and achieve commercial values.

We consider knowledge management to be “a new discipline of enabling individuals, teams and entire organisations to collectively and systematically create, share and apply corporate knowledge assets to better achieve organisational efficiency, responsiveness, competency and innovation”.

Knowledge management encompasses the identification and mapping of knowledge assets within the organisation, the generation of new knowledge assets for competitive advantage, making knowledge assets accessible and sharing them across an organisation.

Our framework tackles the fact that knowledge management should be implemented as an on-going business task with two primary aspects:

- treating the knowledge component of business performance, reflected in strategy, processes, structure and systems at all levels of the organisation.
- making a direct connection between the organisational knowledge assets - both explicit and tacit - and improved business performance.

From a conceptual abstract point of view, for the integration of the process and product views we follow the work of Cook and Brown (1999) who strive to explain how knowledge is connected to the actions of individuals and groups. Their concept of knowing, i.e. putting knowledge into practice, is close to our concept of knowledge as a process. Cook and Brown (1999) call “what is ‘possessed’ knowledge and what is part of action ‘knowing’” (p.383). In other words knowing is putting knowledge in practice while knowledge is knowing at rest. They admit that “this does not mean that knowledge of abstract concepts and principles is useless to action, only that it is not the same as enacting the skills associated with it” (p.19). Cook and Brown (1999) also add that knowledge itself does not underlie or enable knowing, just as having a hammer may not mean one knows how to use it.

In this way we may introduce a static (“knowledge as a product”) mode, and a dynamic (“knowledge as a process”) mode in knowledge management. Knowledge represents the static mode as what we possess we do not always use, and knowing is the dynamic mode as it is representing a concrete, dynamic human action and it focuses on the interactions with the social and physical world. We are interested both in managing the "stock" of knowledge (that covers the "knowledge as an object" approach) and the "flow" of knowledge (that addresses the "knowledge as a process" approach) within the organisation; see Figure 1.
Our perspective is that ‘knowledge assets’ can be human – such as a person or a network of people, structural – such as a business process, or market – such as a brand name of a product. Naturally the product-centric approach is more concerned with accessing and organising knowledge assets while the process approach makes direct connections between the organisational knowledge assets - both explicit and tacit. Both approaches however are using some form of knowledge representation as a means of packaging and transferring knowledge either from a person to a system and vice versa or between people.

If we define as ‘knowledge objects’ the means of representing knowledge then the following statement outlines the relation between knowledge assets and knowledge objects: A knowledge asset creates, stores and / or disseminates knowledge objects.

For example: a person is a knowledge asset that can create new ideas, learnings, proposals, white papers (knowledge objects); a community of interest is a knowledge asset that can create new ideas, best practices (knowledge objects); a process is a knowledge asset that can create and/or store and disseminate best practices, company standards, R&D material (knowledge objects); a vision is a knowledge asset that can create a new mission statement, strategic plan, goals (knowledge objects).

A Knowledge Object represent the information required to be processed by humans and transformed into knowledge; see Figure 2. Knowledge derives from information through knowledge-creating activities that take place within and between humans. Typical knowledge-creating activities include; see e.g. Davenport and Prusak (1998):

- Comparison: how does information about this situation compares to other situations known?
- Consequences: what implications does the information have for decision and actions?
- Connections: how does this bit of knowledge relate to others?
Conversation: what do other people think about this information?

Figure 2. Knowledge assets and knowledge objects

The Knowledge Objects aim to facilitate and leverage such knowledge-creating activities by providing to human the information need. A Knowledge Object has the following characteristics:

- It acts as a catalyst, enabling the fusion of knowledge flows between people, with knowledge content discovery and retrieval, through technology. That is to say, a knowledge object acts, amongst other things, as the primary connecting node for all key components in a KM system (strategy, people, process, content, technology) - 'the KM glue'.

- It facilitates the knowledge transfer from person to person, or from information to person.

- A Knowledge Object is created and maintained by a KM process.

- A Knowledge Object is used to search, organise and disseminate knowledge content.

We conclude that the Knowledge Assets and Knowledge Objects are the common unifiers of the knowledge-asset framework that incorporates and integrates process and content. We have used these concepts as the 'resultant manifestation' in the design of a KM solution that fuses the process-centric approach with the product-centric approach; see Mentzas et al (2002).
5. **Overview of the Strategic Framework**

This section describes in greater detail our knowledge asset-centric framework (see also Figure 3), which represents the following types of elements:

- **the business-related Knowledge Assets** of the company. We examine three types of knowledge assets: human assets; structural assets; and market assets.

- **the Knowledge Networking Levels**, whose interdependencies facilitate the leveraging and flow of knowledge assets. The framework identifies four levels of knowledge networking: individual level; team level; organisational level; and inter-organisational level.

- **the Knowledge Management Infrastructure** which should be established within a company, in order to facilitate knowledge leveraging initiatives. We examine four components of the Knowledge Management Infrastructure: strategy; structure; processes; and systems.

Before proceeding with the analysis of the various elements of the framework, let’s see how the framework guarantees consistency with our definition of Knowledge Management. In the previous section we defined knowledge management as the “new discipline of enabling individuals, teams and entire organisations to collectively and systematically create, share and apply corporate knowledge assets to better achieve organisational efficiency, responsiveness, competency and innovation”.

Three important keywords of this definition are reflected in the framework: knowledge assets, collectively and systematically.

![Figure 3. Overview of the Knowledge Asset-centric Framework](image-url)
The emphasis on knowledge assets is reflected on the clear focus of the framework on knowledge assets. The emphasis on the creation, sharing and application of knowledge assets in a collective (versus an individualistic) manner is evident by the focus on network organisational forms and the definition of the levels of knowledge networking. Finally, the focus on a systematic (versus an ad hoc) approach to managing knowledge assets is evident in the strategic framework with the explicit inclusion of the four elements of the knowledge management infrastructure.

6. Knowledge Assets

The strategic framework focuses on three types of knowledge assets, which are dynamically interwoven: human knowledge assets, that generate organisational capabilities; structural knowledge assets, that generalise the human capabilities; and market knowledge assets, that gauge the products and services of the company; see also Figure 4.

![Knowledge Assets Diagram]

Figure 4. Types of knowledge assets

Human knowledge assets are the capabilities of the individuals that are required to provide solutions to the customers of the company. People are the “owners” of human knowledge assets; they “rent” their knowledge assets to the company. Human assets grow when the working environment fosters and facilitates knowledge creation and sharing; when more people know in depth what knowledge is actually useful to the organisation and when the company “uses” more of what people know. As human assets grow the results are higher concentration of skills in what's important for the company; increased innovation and participation; and increase of people working in areas that are critical for the business.
Structural knowledge assets are the organisational capabilities to meet market requirements. They comprise what’s left when people go home and they provide the structure and continuity that people need to perform within the business environment. To build structural knowledge assets an organisation must provide knowledge-related leadership, i.e. policy and strategy that take explicitly knowledge leveraging into account; build the necessary structure and culture for knowledge creation and sharing; provide information technology support (e.g. communication systems, documentation systems, etc.). As structural knowledge assets grow individual capabilities turn to grow and become organisational capabilities, the company’s performance is improved and people are better supported and become more productive in the business context.

Market knowledge assets refer to knowledge about the market, the company’s clients, partners, competitors, etc, i.e. knowledge about the value created from the company’s relationships with the people and organisations with which business is conducted. Market knowledge assets gauge, evaluate and value the company’s products and services. They are the final outcome of investments in human and structural knowledge assets. To build market assets an organisation must deliver customised solutions more quickly; involve partners in all phases of product development; and provide feedback that customers can practically use. As market assets grow the results will include higher trust levels in the company’s supply chain and clear customer value.

7. Knowledge Management Infrastructure

In order to guarantee a systematic approach to leveraging knowledge assets, a company has to define, develop and consistently nurture four issues related to knowledge management: a knowledge strategy, i.e. the strategic issues of knowledge management as they are embodied in the company’s vision, mission and values; a knowledge structure, i.e. the organisational structures required for facilitating knowledge management, e.g. Chief Knowledge Officers, knowledge analysts, etc.; knowledge processes, i.e. the business processes dedicated to the capture, organisation, transfer and application of knowledge assets; and knowledge systems, that is all the information and communication technology systems that support knowledge processes. These four issues comprise the elements of the Knowledge Management Infrastructure (KMI) of the framework; see Figure 3.

7.1. Knowledge Strategy

The “strategy” component of the KMI refers to the company’s values and mission, i.e. the knowledge-related strategic values of the company, the specific knowledge-related business objectives, the explicit and/or implicit links of knowledge strategy to business strategic objectives/goals.

Knowledge Management is meaningless without the old-fashioned objectives of serving customers and beating competitors. If a company does not have its fundamentals in place, all the corporate learning, information technology, or knowledge databases are mere costly diversions. As Manville and Foote (1997) put it: “the old truth is still the best truth: a company has to know the kind of value it intends to provide and to whom. Only then can it link its knowledge resources in ways that make a difference: serving customers around the world in a coordinated, consistent manner; responding quickly and effectively to changing competitive conditions; and
offering its products or services to customers more quickly, cheaply, efficiently, and innovatively”.

Realising the complete vision of an innovative, knowledge-sharing organisation is probably a long-term objective for most companies. Organisations should focus on both obtaining real benefit through ‘quick-win’ projects and the long-term vision. Complete realisation of the vision of knowledge management depends on organisational maturity in terms of having the right culture as well as on technological sophistication.

The goal of strategic planning is to help quickly focus on knowledge that counts and delivers value to the firm. Based on the corporate strategy and objectives a clear knowledge management strategy needs to be defined to help the firm set forth the criteria for choosing the knowledge assets the firm plans to pursue and how it will go about capturing, sharing and using them.

KM strategy sets forth the criteria for choosing which knowledge assets a firm plans to pursue and how it will go about capturing and sharing them. For the successful implementation of a knowledge management program the strategic thrust of the initiative has to be closely aligned with the overall vision, strategy and objectives of the organisation. Hence, this activity will help the KM initiation team to focus on the business area or the process that adds the greatest value.

Traces of the overall strategy of the organisation can be found in the annual business plan of the company, vision statements, annual reports, press releases and executive interviews with the press, Long range plan statements, SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses, submissions to stock exchanges, and any other documents in which future direction and market position are discussed.

The strengths, weaknesses, opportunities, and threats (SWOT) analysis, put forward by Michael Porter is a useful technique that can be used at this stage to identify the organisation’s strengths (core competencies), weaknesses and opportunities (improvement needs) and threats (critical success factors). The objective is to sustain the company’s strengths, mitigate its weaknesses, avoid threats and grab opportunities. Such a technique is in good accordance with the competitive approach to strategy, described in brief above. As already mentioned, Porter’s five forces model, though much respected, has recently been criticised for its focus on entire industries instead of individual companies.

Our approach on the other hand focuses on a company’s core resources, and especially on knowledge as the main strategic resource for achieving competitive advantage. Therefore, to articulate the overall strategy, a company must explicate its strategic intent, identify knowledge required to actually execute that strategic choice, and reveal its strategic knowledge gaps by comparing these to its actual knowledge assets.

The strategy development process for knowledge management initiative could be summarised in the form of the template shown in figure 5. The KM Business case is the main vehicle for obtaining top management approval.
7.2. Knowledge Processes

The knowledge “processes” component of strategic framework can be classified within the following five groups (see also Figure 6): acquisition, organisation, sharing, use and creation of knowledge assets. For a similar analysis see also Romhardt and Probst (1997).

Knowledge acquisition processes include e.g. the identification of knowledge needs, the capture and collection and/or import of knowledge assets, etc. Before investing heavily in the development of new capabilities, companies should know what knowledge and expertise exist both inside and outside them. One way to increase internal knowledge transparency is by creating knowledge maps, which support systematic...
access to parts of the organisational knowledge base. Knowledge import is also critical. The explosive growth and simultaneous fragmentation of knowledge have made it all but impossible for companies to build up all the know-how they need for market success by themselves. Instead, they have to buy critical capabilities, often from many knowledge markets, using focused acquisition strategies.

Knowledge organisation includes the interpretation, analysis codification, indexing, aggregation, filtering, synthesising, packaging, archiving, and link of knowledge assets to their context. Of course critical tasks include the maintenance and knowledge “purging” functions. After knowledge has been acquired or created, it must be carefully organised and preserved. Many companies complain that in the process of reorganisation they have lost part of their corporate memory. This collective amnesia is often the result of the destruction of informal networks, which steer important but little-observed processes. To avoid the loss of valuable expertise, companies must shape the processes of selecting valuable knowledge for preservation, ensuring its suitable storage, and regularly incorporating it into the knowledge base. Companies should identify core areas of their organisational knowledge base and establish a pragmatic selection process for knowledge to be saved.

Knowledge sharing includes mechanisms for knowledge asset distribution (such as pro-active distribution, event-based distribution, subscription-based distribution, etc), schemes such as “targeted” push and/or pull sharing, the commercialisation of available knowledge, the development of trust in corporate knowledge, etc. In making knowledge assets available and usable across the whole organisation, the critical questions are: who should know what, to what level of detail, and how can the organisation support these processes of knowledge distribution? Information technology supported knowledge sharing infrastructures can facilitate the efficient knowledge exchange within the business environment and connect formerly separated experts through an electronic network. Efficient knowledge sharing can generate not only time and quality advantages, but also a direct rise in customer satisfaction.

Knowledge creation consists of all activities intended to produce new knowledge both at the individual and the collective level. The main processes for individual knowledge creation rely on creativity and on systematic problem solving. Creativity may be called the chaotic component of the knowledge development process and the capability of problem solving the systematic component. A knowledge management system must support both components, for example through traditional tools such as corporate proposal systems that may be revitalised or reused. Collective knowledge creation involves the learning dynamics of teams. Management must ensure that team members have complementary skills and that each group as a whole has defined realistic goals. Moreover, cultural issues like an atmosphere of openness and trust, play significant role and allow the intensity of communication that makes collective learning results superior to individual ones. The establishment of internal think tanks, learning arenas or centres of competence may support these processes. In a process of self-reflection, every team should identify critical “lessons learned” at the conclusion of each project and pass the information on to future teams in the form of a short, clear report that allows others to learn from that experience.

Knowledge use includes the application of knowledge assets in corporate services or products and in supporting the delivery of value to customer. The productive deployment of organisational knowledge assets in the actual delivery of products
and/or services is the heart of knowledge management. Successful identification and distribution of critical knowledge does not ensure its daily use. Without consistent use, there is a high probability that any knowledge management effort will decay in quality, and the investment will be wasted. The potential user of knowledge has to see a real advantage in order to change his or her behaviour and “adopt” the knowledge assets provided.

7.3. Knowledge Structure

The need for an explicit, formal organisational structure that directs, facilitates and supports the knowledge management-related activities within a company has been identified and discussed in recent academic as well as business literature. There exist a variety of job titles related to leveraging knowledge assets, such as Knowledge Architect, Knowledge Manager, as well as more traditional titles such as VP Customer Care and Manager of Systems and Applications. However, one can analyse various jobs at three levels: leadership-level positions (e.g. CKOs); management positions (e.g. knowledge managers); and technical positions (e.g. knowledge analysts).

Whatever the role and responsibilities of leadership related to knowledge leveraging, few doubt that it is an essential ingredient of competition. Leadership in knowledge management is not about tools and technologies. It is about the fast rising influence of a new generation of managers tasked with leveraging the collective mind and the know-how of intellectually driven companies. One significant issue is related to whether organisations have mistakenly applied a very traditional, hierarchical organisational model to the practice of knowledge leveraging. Research has shown that a common belief is that the CKO may be an anomaly - a hierarchical construct applied to what is naturally a diffuse process; see e.g. Delphi Group (1998). A general observation is that since knowledge management is being applied in line of business applications, a single knowledge leader, across all lines of business is a tough sell to the business managers. In addition, there have been concerns that the CKO becomes just another layer of unnecessary bureaucracy. A fundamental concern that is associated with putting a CKO into place is the potential for sub-optimisation; that the company may end up with someone whose vision of knowledge management dilutes the effectiveness of managing knowledge in each of the particular business units, projects or teams. Forward thinking companies have accepted that, without regard to what it is called, the importance of better leveraging enterprise knowledge is a permanent fixture of the organisation; a new way to look at how you organise your people and/or your information or both. However, knowledge leadership may be viewed as a temporary role. For many companies, positions of knowledge leadership are considered an interim measure, which would get knowledge management to critical mass.

Research on the unique qualifications of knowledge leaders has shown that there is no single profile. But there are some general characteristics. The most notable include: hybrid IT/business experience; at least 10 years (and often much more) of line of business experience; an entrepreneurial attitude and a fair amount of interest in building careers for the future; see Delphi Group (1998). Knowledge leadership positions should provide vision, awareness of purpose, standardisation of best practices and stewardship. However, most organisations have already identified ownership for at least the first two categories of responsibility. What remains is the
need for best practices and stewardship. These are not necessarily well suited for hierarchical ownership in the case of knowledge-based practices. Hence knowledge leaders should be educators of best practices, stewards of the frameworks that facilitate knowledge creation and sharing, but they are not the owners. Knowledge leadership will build the bridges and the culture, but it is ultimately the knowledge workers themselves who will build their own reasons to use knowledge management. Leadership level positions should combine an orientation to structured, explicit knowledge with an intuitive feel for precisely how cultural and behavioural factors may impede or enable the leveraging of knowledge in an enterprise. Measurement and economic return should also be key points of focus.

Examples of responsibilities of leadership level management roles usually include the following:

- lead the development of the knowledge strategy, focusing the firm’s resources on the type of knowledge it needs to manage most;

- responsible for planning and executing knowledge management initiatives as well as for designing, implementing, and overseeing the firm’s knowledge infrastructure;

- responsible for directing the development and management of processes and technologies that enable staff to leverage organisational knowledge towards business goals;

- responsible for managing the firm’s knowledge managers, giving a sense of community, establishing professional standards, and managing their careers.

In addition to the knowledge leadership position, at least two other positions are needed: the knowledge (initiative) manager and the knowledge analyst. Davenport (1996) claims that the knowledge manager is analogous to the leader of a reengineering project or a strategic planning group. In fact, knowledge management initiatives are similar to these more familiar types of projects insofar as they are process oriented and advance some strategic goal. Hence knowledge initiative managers should have facility with project, change and technology management. Good candidates may have led successful research, reengineering or behaviour-changing IT projects in the past. They should also have a strong sense of their own limitations. There is, however, a critical issue to be tackled: when those who lead such initiatives learn a great deal about the knowledge domain being managed, they may come to feel that they know more about the field than anyone in the company. The resulting arrogance is detrimental to the initiative's success.

Examples of the responsibilities of knowledge manager positions include:

- promoting and educating staff on knowledge sharing processes, technologies, and resources.

- identifying and sharing external information from research groups, marketing publications, Internet web sites, etc.
• collaborating with firm experts to write detailed learning histories and capture "best practices".

• developing new formats and mechanisms to effectively share knowledge assets and monitoring / measuring the use of knowledge bases and tools.

• co-ordinating with other knowledge management team members to ensure consistency and synergy.

Knowledge analysts are people able to capture knowledge assets, organise them to a form anyone can use, and periodically update and edit those knowledge assets. These skills are not really taught anywhere, but the closest approximation may be found in journalism schools. Davenport (1996) claims that an alternative source to journalists is the group that was christened "knowledge engineers" in the heyday of expert systems. Knowledge analyst roles require a combination of "hard" elements (structured knowledge, technology and tangible benefits) with "softer" traits (a sense of the cultural, political and personal aspects of knowledge management). Obviously, it's not easy to find all this in one person; at a minimum, knowledge management teams should combine these hard and soft orientations, and each member must respect all required skill sets.

Examples of the responsibilities of knowledge analyst positions include the following:

• capturing and organising knowledge assets and supporting the use of knowledge-oriented software packages.

• managing and monitoring knowledge tools (e.g. discussion databases).

• making knowledge assets appealing and persuading by designing and implementing target-group-based distribution facilities and informative displays.

### 7.4. Knowledge Systems

We believe that the role of technological systems is to enhance human possibility. Such systems should free the members of knowledge networks (be they individuals, teams or organisations) and facilitate the creation, sharing and application of knowledge assets. In an effort to provide a framework that is generic enough to support any organisation but at the same time provide clear and concrete directions for the implementation of a KM initiative we define the core services that need to be offered for systematic knowledge management rather, than examine the technologies available. The services should span the whole knowledge life-cycle, from knowledge acquisition to knowledge use. At the core of the knowledge ‘systems” are six core services; also Figure 7.
Indexing, mapping and classification services are usually facilitated by knowledge maps that define the channels and the mechanisms available for knowledge asset categorisation. When put to work, the knowledge map will provide a representation of available knowledge assets and knowledge objects (e.g. document bases, topics, sources, narrative summaries, higher-level descriptions, etc.). Automated indexing routines can be facilitated in order to ensure complete synchronisation of indices and data sources.

Search and retrieval services should provide transparent access to multi-platform, heterogeneous sources, including Internet and intranet sites, file servers, databases, popular proprietary formats, and legacy information systems. Various types of search services should be accommodated, i.e. hierarchical (e.g. traversing hyperlinks), attribute (query-type searching), and content (e.g. crawler-type searching of popular WWW search engines).

Storage and meta-data handling services are core services that are facilitated by the use of technologies that span from relational database management systems and document management systems to AI-based corporate memories. No matter the technology being used, such services have layered storage capabilities that provide different abstraction levels, and provide assistance to users for the execution of knowledge organisation processes. Metadata services should define and insert new knowledge elements into the different layers of the storage system.

Distribution, publication and filtering services may include: subscription-based approaches on internal (such as bulletin boards) and external (such as WWW sites) information sources; and push and “smart-pull” approaches coupled with intelligent, selective mechanisms of content relevance assessment that will provide useful knowledge while preventing information overload.

Collaboration services are offered by technologies providing rich, shared, virtual workspaces in which interactions occur between people who share a common goal. Indicative collaboration services include email, messaging, on-line discussions, electronic scheduling and meeting, video and audio conferencing, virtual workshops, just-in-time workgroup alerting, etc.

Integration services provide for integration with application and tools that are currently used within the organisation (e.g. word-processors, spreadsheets, databases,
etc.) This way, the infrastructure will tap into the flow of information that is already happening in the organisation, and therefore will improve acceptability by the users.

### 7.5 Knowledge Networking Levels

Networks of people and networked organizations are emerging because the classic hierarchy of the bureaucratic model is slow to respond to the recent changes in the business environment. In the network, activities still need to be co-ordinated and integrated, but this integration relies on knowledge and relationships and a clear common sense of purpose. This has led to ideas about “work as a network of conversations” and the “hypertext organization”; see Nonaka and Takeuchi (1995).

Networks may take various organisational forms, ranging from communities of practice between individuals with similar experiences and or purposes to supply chains of companies that exchange knowledge within their industry.

The levels of knowledge networking correspond to what Nonaka calls the “ontological dimension” in his model of organisations as knowledge creating mechanisms; see Nonaka (1994). This ontological dimension refers to the social interactions, which begin at the individual level and then by communication between organisational boundaries let knowledge expand and grow-up.

According to Nonaka and Ray (1993) if new knowledge is relevant to the needs of the organization, it is likely to permeate through groups and divisions and thereby extend the community of interaction dealing with that knowledge. New knowledge that has a potential to support more advantageous ways of doing things is likely to be retained as a subject for further debate within the network and may also lead to an extension of the network. For example, what eventually proves to be a successful product might emanate from a R&D department and gradually acquire a greater circle of interested parties within the organization as the dimensions of its potential impact become more clear. As news of the emerging product travels beyond the organization, the circle will grow still wider embracing competitors, customers, firms dealing with complementary technologies and so on. Thus the network will go beyond the original "hard core" of knowledge creators to include those that are in some way affected by the exploitation of that knowledge.

However, there is no reason to suppose that there will be linear sequence of expansion – starting from the individual, progressing to the group and subsequently to the organization and beyond. The knowledge network could span departmental and organizational boundaries from the outset. Possible members of this community such as suppliers, customers and competitors might all enter the knowledge networks at any time.

We claim that such knowledge networks – either between individuals, or teams, or even organisations – are the principal organisational form for collective knowledge asset creation, sharing and application.

Knowledge networks are relationships among entities (individuals, teams, organisations) working on a common concern and they embed dynamism for collective and systematic knowledge asset creation and sharing. The structure of a knowledge network implies principles of coordination that not only enhance the individual capabilities of member entities, but themselves lead to capabilities that are
not isolated to the network’s members. Cooperation can also engender capabilities in the relationship itself, such that the members develop principles of coordination that improve their joint performance. Or they might involve more complex rules governing the process by which innovations are collectively produced and shared. In this sense, the network is itself knowledge, not in the sense of providing access to distributed information and capabilities, but in representing a form of coordination guided by enduring principles of organization.

Knowledge networks have five critical characteristics that differentiate them from other similar organisational structures and mainly from communities of practice; see e.g. Wenger (1999) and Wenger and Snyder (2000). These characteristics are following: knowledge networks are responsible for creating, sharing, protecting and cultivating common knowledge assets; knowledge networks are working networks and they are purpose-driven; knowledge networks require organisational commitment beyond the commitment of their participating members; knowledge networks are built on expertise, not just interest – or common practice – alone; and knowledge networks aim at the development and strengthening of the learning capacity of all members.

Within the strategic framework we distinguish between four levels of knowledge networking: individual; team; organisation; and inter-Organisation; see Figure 3. The individual level refers to the capabilities, experience, competencies and personal development issues treated at the individual level of the knowledge worker. The team and organisational levels include the internal company networks, i.e. the informal, self-organising or the formal networks of people involved in related activities (e.g. project teams) that are built within an organisation. The level of inter-organisational networks refers to inter-enterprise relationships, value networks where each focuses on core competencies, as well as on the accessibility to external, developed capabilities. Hence networks with customers, competitors, subcontractors, partners etc. are included in this level.

7.6. **Linking Learning to Knowledge Networks**

Learning initiatives at the individual level and corporate-wide knowledge management need to be designed and implemented as one consistent and continuous “closed-loop” system to increase human performance around measurable business objectives. They also need to be integrated into the work processes and the applications that support these processes.

Knowledge workers need to acquire the prerequisite skills through training prior to job performance, they need to have proper knowledge support as they perform their tasks, and then they need to be able to reflect on “lessons learned” during performance to improve their own individual learning as well as contribute innovations into the organizational level. This newly acquired individual and organizational knowledge is then applied as knowledge workers, either individually or in teams, continue to learn and perform; see Figure 8.
The need for inter-organisational knowledge networking stems from the need for enhanced externalization. The ability to connect quickly and meaningfully with business partners and customers to improve the movement and potential quality of information, knowledge, goods and services is now a competitive imperative. In the past, most enterprises hid their information behind layers of bureaucracy and secrecy. But we're entering a new phase. Companies are rapidly "devolving" from self-contained, vertically integrated organizations to virtual entities that rely on business partners to fulfill major parts of their supply chains.

This imperative will manifest itself in more collaboration between enterprises, with the most successful ones developing "keiretsus" that enable greater focus and business discipline by their partners. Keiretsu is the term for the postwar Japanese model of inter-company cooperation, in which vertically linked industrial conglomerates were typically linked horizontally via banks and trading companies.

Keiretsus historically were based on tradition, cross-investment and hidden (personal) agreements. It has been argued that 21st century keiretsus will be ephemeral and open, loosely coupled but tightly integrated when necessary, and with generally little or no cross-ownership. They will be built on cooperation - especially information and knowledge sharing - along and across interdependent supply chains. The relationship of Dell Computer Corp. or Compaq Computer Corp. with Seagate Technology Inc., Intel Corp., Microsoft Corp., 3Com Corp. and others represents the beginning of such modern keiretsus. Interorganisational knowledge networking, i.e. sharing a company’s knowledge about processes and engaging and enveloping their partners’ processes, is crucial in this effort to externalize. Such knowledge networking has the potential to create new products, services and markets.
8. Using the Strategic Framework

The knowledge asset-centric framework can be a valuable tool to creating awareness for knowledge management within a company. It can be used as an integrated and consistent approach for initiating and monitoring knowledge management initiatives since it can guarantee an efficient treatment of the linkages between all the inter-related components of a KM effort.

Take for example the definition of what knowledge is crucial for a company (“strategy”). This issue has major implications for the directions of an IT system to be developed (“systems”) – e.g. whether it should be based on strict document management or on more loose collaboration facilities – as well as on organisational issues (“structure”) – e.g. how does the company promote organisational changes and roles that facilitate the capture of such knowledge – and even on knowledge-related process issues (“process”) – e.g. how are the specific tasks and activities of knowledge capture integrated within the normal flow of work.

Other examples may be linking skills management (“individual”) to overall company directions (“strategy”) for leveraging knowledge assets, may have implications for the design of an IT system (“systems”), as well as on the organisational roles of executives overseeing the company-wide effort (“structure”), while getting the most of customer knowledge (“interorganisational”) within the company’s crucial knowledge (“assets”) may generates a number of strategic questions (“strategy”) of how the company views its supply chain and its relation to clients, as well as technological questions (“systems”) of how the company might interact with its clients in order to capture their knowledge.

The knowledge asset-centric framework has been practically applied in eight companies that belong to the financial services sector, the IT sector and the professional services sector; its application has been useful for generating awareness for KM and for developing concrete strategies for the KM initiatives of the firms; for descriptions of the cases see Apostolou and Mentzas (2002) and Mentzas et al (2002).

9. Conclusions

The management of organisational knowledge has drawn the attention of academics, consultants and practitioners as a key lever for improving performance, boosting productivity and creativity and facilitating innovation in organisational settings. The methods, tools and the actual KM implementations in various companies have mainly followed one of two perspectives, which in this paper we called the process-centric and the product-centric approach. The former is primarily people-based and treats KM as a social communication process; the latter is mostly content-based and focuses on knowledge-related artefacts.

In this paper we presented a knowledge asset-based strategic management framework that fuses these two approaches in a balanced manner. The framework builds upon and extends the resource-based view of the firm by explicitly treating knowledge assets as the main driver for innovation and learning and by consistently examining the links of knowledge assets with all the main components of a strategic approach that can guarantee successful leveraging of knowledge. The framework provided here
has proved its usefulness in various corporate environments. It has also been incorporated within an integrated approach that builds on the knowledge-asset-centric view to encompass the IT systems, organisational structures and business processes that are required for a holistic KM initiative.

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