Strategies for Managing Knowledge

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A resource-based approach tends to place more emphasis on the organisation's capabilities or core competences. A knowledge-based strategy formulation should thus start with the primary intangible resource: the competence of people
K.E. Sveiby (2001)

Learning Outcomes
After completing this chapter
- You will be aware of guiding principles for a successful KM strategy;
- You will be able to develop a KM strategy guided by five questions;
- You will know how to develop a «Best Practice» process;
- You can name the differences of KM strategies for process and project oriented organisations;
- You will be able to run a knowledge market.

5.1 The Need for a Knowledge-Oriented Strategy

Typically most organisations develop their strategy around a well-recognised business model. Therefore it would seem logical to map Knowledge Management (KM) issues to a recognised business model. The idea is to articulate the issues around business terms and not KM by itself. KM should be seen as a set of concepts that could be tailored to meet business needs (Dilip Bhatt 2000).

» While talking about knowledge management in companies, we should also see how organisational knowledge potential is converted every single day into successful practices that increase market share, strengthen competitive advantages and satisfy/inspire stakeholders. (Deiser 1996, p. 49)

The question therefore is:
- How can organisations leverage past experiences to be able to cope with today's dynamic business environment?
- How can firms develop the competences needed to compete successfully in the future?
- How can business strategy be driven by knowledge that can enhance the quality of products and services and accelerate the time to market thus giving the organisation a competitive edge. What we need is a sort of mental clearing house where knowledge and ideas are received, sorted, summarised, digested, clarified and compared.

A strategic knowledge gap analysis as shown in ◘ Fig. 5.1 might be helpful to answer these questions and identify knowledge and competence gaps to be closed.

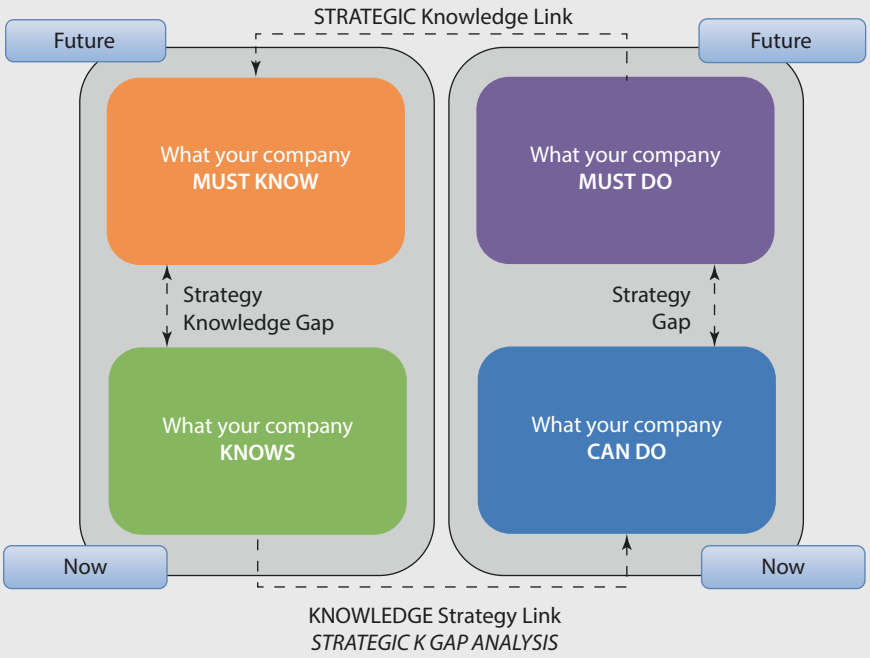


Fig. 5.1 Strategic K gap analysis

5.1.1 Guiding Principles for a Successful Knowledge Management Strategy

In developing a knowledge-oriented strategy firms should take into account the following guiding principles which we have identified based on an analysis of knowledge management initiatives:

- ***Total Knowledge Management:*** This involves integration of knowledge management in all the business processes. On the lines of Total Quality Management (TQM) which assumes that «*there is quality in everything we do*», one could also talk about Total Knowledge Management (TKM) in terms of creating, protecting and using knowledge in all business processes. Knowledge management will have a lasting effect only after one realises that «knowledge organisation» is an independent organisational dimension with corresponding resources and processes. However, just as a quality manager or an environment protection officer is not solely responsible for quality and environment in a company, a knowledge manager can take the responsibility of creation and transfer of knowledge only to a certain extent. The principles of knowledge management should be followed by everyone – be it inspirers, coaches or sponsors of knowledge.

- ***Value-based knowledge management:*** Knowledge management should be linked clearly to the objectives of a company. Generation of knowledge, transfer of knowledge and «*feeding*» the information system are not objectives by themselves. The purpose is not managing knowledge, instead managing the company under optimum utilisation of knowledge resource – *adding value by knowledge*. Value-based knowledge management can be considered similar to value-based management. From the viewpoint of knowledge management projects, this means concentrating on few definite objectives.
- ***Personal interaction and codification:*** It is necessary to select the suitable mix of personal interaction to share and learn and codification. Knowledge management initiatives often debate whether knowledge should be documented in databases or exchanged personally. Experience shows that both options complement each other. It is advisable to document knowledge that can be standardised, needs less explanation, is reusable and has a long period of validity. Individual, specific and complex solutions that are also based on personal relations or experiences should be transferred personally. According to Hansen, Nohria and Tierney (1999) you need to start by identifying what kind of organisation you have and what your information needs are, and then primarily focus either on a «personalisation» strategy (putting up infrastructure such as Communities of Practice to help people find each other and tap rich contextual information from other people) or a «codification» strategy, where information is identified, codified, and stored for later retrieval in some kind of effective information store.
- ***Knowledge has a market value:*** If knowledge is a valuable resource, it is bound to build a market for itself. There are knowledge sellers and knowledge buyers who operate through market balancing mechanisms under certain conditions. In a traditional hierarchical company or a bureaucratic organisation, it is often decided as to who knows what and who is responsible for a certain task. However, in a market-oriented control, the competences and service offers are built in the interplay of supply and demand. This is ensured through inevitable use of knowledge/information in the workflow.

5.1.2 Knowledge Management as Response to Tactical and Strategic Changes

According to Bukowitz and Williams (1999), KM initiatives are the result of the response to tactical and strategic changes and needs. Their model provides an overview of the strategy behind KM and depicts the process that defines the management strategy in order to build, sustain, divest and enhance assets. The model is based on the tactical processes of get, use, learn and contribute. It is a model that emphasises the «why» and «when» aspects. The strength of this model rests on its strategic focus based on the tactical processes, which essentially puts knowledge management action into context. The model is depicted in ◘ Fig. 5.2.

Knowledge is useful for a company and can be used by individuals or groups only if it is present in an explicit form. Thus, from this point of view, it is the task of the knowledge management team to arrange and direct a process of generating organisational

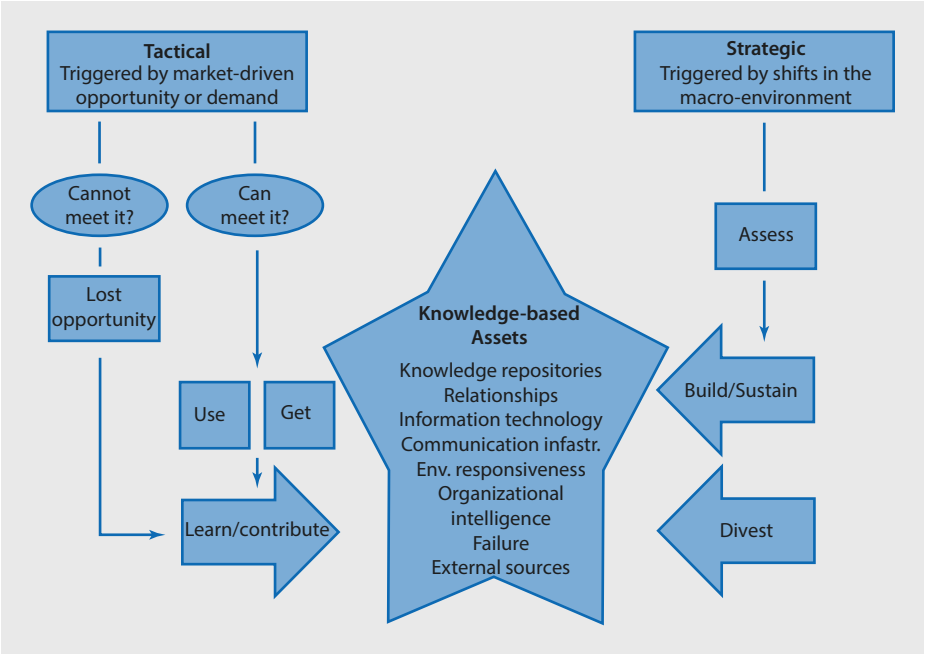


Fig. 5.2 The KM process framework by Bukowitz and Williams (1999) (Source: ► http://www.knowledge-management-tools.net/three-km-models.html)

knowledge. As discussed in ► Chap. 2, Nonaka and Takeuchi have defined organisational knowledge creation as the capability of a company as a whole to create new knowledge, distribute it throughout the organisation and embed it in products, services and systems. Their Spiral Model SECI demonstrates how tacit knowledge gets converted to explicit and then back again to tacit. Strategies should therefore revolve around the tactical processes which focus on capturing and converting individual knowledge for achieving organisational goals.

5.2 Developing a Knowledge Management Strategy: Five Questions

The strategic objective of knowledge management is to convert knowledge into competitive advantages that can be measured as business success. Considering the content of the objectives, we can express them as normative, strategic and operative knowledge objectives that vary in significance in different phases of business development.

Normative knowledge objectives (know-why) refer to the desired values and behaviour that are relevant for a long-term and lasting competitiveness.

Strategic knowledge objectives (know-what) shape the manner in which we can convert our existing knowledge into success of the business and help identify knowledge required for producing new strategic options in order to get the desired growth.

Operative knowledge objectives (know-how) refer to «*daily business*», i.e. control over processes and project. Mobilising operative knowledge to create value and satisfy customers.

Implementing knowledge management firstly means making oneself aware of the importance of knowledge as a competitive resource. In order to develop a knowledge management strategy the following five questions can provide guidance:

- **Question 1:** Are our stakeholders (especially management, employees and investors) sensitive to the importance of knowledge as resource for our business success?
- **Question 2:** Which strategies do we want to support by mobilising knowledge?
- **Question 3:** Which knowledge do we have today and which knowledge do we need in the future to sustain competitiveness?
- **Question 4:** How do we handle our knowledge resources, which factors promote creation and use of knowledge and what are the barriers to it?
- **Question 5:** How should we organise and develop our knowledge to cope with present and future knowledge competition?

Let us look at each question.

Question 1: Are our stakeholders sensitive to the importance of knowledge as resource for the business success?

We will start by coming back to the analysis presented in ► Chap. 1 considering markets, solutions for customer problems and investors. It is recommended to reflect on the role of specific knowledge and competences to strengthen unique selling propositions of products and services and how to inhibit imitation and create sustainable competitive advantage based on our knowledge.

Another way of identifying «knowledge sensitivity» of an organisation is to ask the employees and management to identify specific instances relating to timely access to relevant information and knowledge. It would be interesting to find some answers to the following questions:

- Have we lost orders because we could not mobilise the right information about customer requirements and because of the solutions we offered?
- Have we put ourselves in an embarrassing situation in front of customers because we have no information about what we had offered 2 years back?
- Was the profit margin low because we did not use our experience?
- Have we hired a consultant in the company because we do not know that similar competence is present in our company?
- Are best practices in terms of knowledge documentation, transfer and learning from each other documented?
- Are investors evaluing intellectual capital before taking investment decisions or lending capital?

Based on the responses to these questions, if we come to a conclusion that managing knowledge resources systematically contributes largely to business success, we should move to the next step:

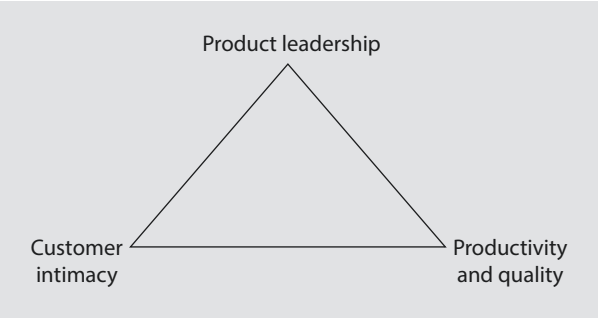


Fig. 5.3 Strategic objectives according to Traecy and Wiersema

Question 2: Which strategies do we want to support by mobilising knowledge?

Successful organisations concentrate their efforts on a particular area and excel at it, rather than trying to offer everything to everyone and failing to excel at anything. According to Traecy and Wiersema (1993), there are three higher-level strategic company objectives: Product Leadership, Customer Intimacy and Operational Excellence

This suggests that there are three primary elements to any competitive business: the business itself, its product(s) and its customers – see Fig. 5.3. Each of these components represents the focus of attention for one of the value disciplines. The focus is on the product(s) when pursuing «Product Leadership»; the focus is on the customers and their requirements when pursuing «Customer Intimacy»; and the focus is on the organisation itself and its delivery processes, when pursuing «Operational Excellence». Depending on the organisation's focus KM strategies are developed.

Focus area	Objective of KM strategy
Products	Constantly developing new ideas and launching them in the market quickly
Relationship with their customers	Increase customer satisfaction and retention by better understanding the customer's needs and preferences
Internal processes	Sharing best practices between different units, reducing costs and improving efficiency

Product leadership strives at capturing and creating market shares with new and innovative products. Ideally, product leadership means being the first company to bring a new product in the market and create market potential for it. Product leadership is achieved by continuous technological innovations, their conversion into product innovations and consequent formation of new business fields.

From the knowledge viewpoint, product leadership requires high renewal power from within, a process of knowledge creation in which new knowledge is created continuously using existing knowledge (according to principles described by Nonaka and

Takeuchi). Early identification or anticipation of market trends as well as basic technological developments is necessary for achieving product leadership.

The second strategic objective is called «**Customer Intimacy**» which is not the same as closeness to the customer or the term «*customer as partner*» (Wiersema 1996). Customer Intimacy means knowing more about the requirements and preferences of customers than the competitors, guiding customer individually and building trust in order to learn and grow together. The Individual Inc. Clipping-Service (see case study) is a good example of this customer intimacy. Knowledge is built keeping the customer in mind which benefits the customer because of more focused supply of information and therefore the customer feels better served and is bonded to the company. From knowledge viewpoint, the learning process here is structured by and with the customers. Customer order processes are redesigned from the knowledge perspectives. Customer intimacy also means customer-related information management and offering complete solutions under the «*one face to the customer*» motto.

Productivity and quality (**Operational Excellence**) is the third strategic objective of a company. This includes learning quickly using intelligent processes, not repeating mistakes, avoiding double work and transferring best practices efficiently. Fast learning processes in and across the company are vital to survive, especially in markets with high price deterioration and short product lifecycles. If an electronics manufacturing company is expected to register a price fall of 10–20% every year, it should be compensated widely by more efficient processes.

All the three objectives can be achieved only if necessary financial and knowledge resources are available. Therefore, fulfilment of strategic goals is supported by sensitising the stakeholders to the importance of knowledge for achieving company's objectives. A transparent presentation of Intellectual Capital can be the first step in this direction.

Question 3: What knowledge do we have today and what knowledge will we need in the future to sustain competitiveness?

While we can describe and evaluate our present knowledge, there are limits on determining which knowledge we need in future in a turbulent market environment. However, there are certain approaches which help in foreseeing the future. Using the concept of «*Technology Road Maps*» which describe the development of future technologies and build specific, definable competences, we can create knowledge Road Maps to identify future needs.

As core competences (we have discussed the concept in ► Chap. 2) are of particular importance for sustaining competitive advantage think about the knowledge and competences (i.e. the ability to apply your knowledge to take the right actions in the right moment) you have and you will need to support your core competences. Think in terms of which knowledge we need to mobilise and to develop to support the criteria of relevance, difficulty of imitation and breadth of application:

1. Relevance: Firstly, the competence must give your customer something that strongly influences him or her to choose your product or service. If it does not, then it has no effect on your competitive position and is not a core competence.

Fig. 5.4 Strategic knowledge analysis

2. Difficulty of Imitation: Secondly, the core competence should be difficult to imitate. This allows you to provide products that are better than those of your competition. And because you're continually working to improve these skills, means that you can sustain its competitive position.
3. Breadth of Application: Thirdly, it should be something that opens up a good number of potential markets. If it only opens up a few small, niche markets, then success in these markets will not be enough to sustain significant growth.

A simple approach to define knowledge and competence needs in the future is to focus on customers, own strengths and competitors and develop answers to the following questions of a **strategic knowledge analysis** (see Fig. 5.4). A workshop with employees across hierarchies and departments helps to unify perceptions and create a joint vision where the organisation stands and needs to go.

While taking the step from strategic to operative knowledge management, we should ask ourselves the following question.

Question 4: How do we handle our knowledge resources, which factors promote creation and use of knowledge and what are the barriers to it?

As in the earlier sections, we here invite you to assess your actual situation in this short analysis of «knowledge and learning» (see Fig. 5.5).

Company insensitive to knowledge	1	2	3	4	5	Knowledge-intensive company
Knowledge and learning						
Information is synonymous to knowledge						Knowledge is developed from Information
We learn slowly from other companies						We learn quickly from other companies
We transfer knowledge ineffectively in our company						We have effective knowledge transfer within the organisation
There is no transparency in knowledge						Transparency in knowledge is establishedthrough yellow pages, knowledge maps etc.
We do very little to protect our knowledge						We protect ourselves from loss of knowledge
We are shy of emphasising best practices						We emphasise best practices and expertise
Training and development is directed towards individual learning processes						Training and development practices teamwork and knowledge transfer beyond business units
Employees are "sent" for training						Employeses control their own learning process actively
There is no institutionalised KM						KM, processes and roles are implemented
Inefficient groups of transfer of knowledge						Competence networks gather and transfer know-how
We don't have any cooperative projects						Cooperative projects in the company encourage teamwork
We don't have any systematic and open benchmarking						We emphasise best practices through benchmarking (internal and external)
In our company, offices and social rooms are demarcated						Our offices and social rooms encourage teamwork

Fig. 5.5 Assessment of knowledge management situation

If one does not want to be oriented to a pre-structured questionnaire, one has other options like the *fishbone diagram* (also called Ishikawa diagram), well-known in quality management, mind-mapping or a strength-weakness analysis in order to compile problem areas of knowledge management and their correlation. This compilation takes place in a structured manner in a research group. The method suggested here helps the company develop objectives for knowledge-oriented management in a structured manner. They can then be included in the overall concept. For this purpose, it is necessary to answer question 5.

Empirical surveys of knowledge management

In numerous empirical surveys, organizations were asked which benefits they expect from KM and which factors promote or prevent creation and transfer of knowledge. The result of the selected surveys is summed up in the following table. It becomes clear that the company culture, incentive systems and management support are more important than the technical systems.

Expectation from knowledge management	Prevents creation and transfer of knowledge	Promotes creation and transfer of knowledge
Increasing product quality	Lack of time	Company culture
Increasing innovative ability	Lack of awareness	Support by/responsibility of the upper level management
Improving customer proximity	Inadequate incentive systems	Push and pull of information and knowledge
Using resources efficiently	Incomplete and user-unfriendly IT	Contributions to knowledge management are important for career development
Safeguarding the capacity to compete	Inner values create barriers	IT as integrator and catalyst for exchange of knowledge
Asserting/creating market position	Fear of change	Organised exchange options
Increasing performance	Lack of management support	Increasing freedom of action, autonomy of the smallest unit
		Transparency in knowledge requirements

Question 5: How should we organise to cope with current and future knowledge competition?

In order to answer this question it is necessary to decide on the approach which we want to take towards a knowledge organisation.

Development of knowledge, generation of new business fields, internal development as well as learning from external knowledge resources requires the ***cultivation of knowledge ecologies***, i.e. contexts favourable for developing knowledge and motivating employees to create, share and use knowledge across business units and the entire company. The knowledge ecology emphasises the process character of knowledge and the elements of self-organisation in order to function in a fast changing environment. Organisations are recognised as dynamically learning systems that revolve in a continuous process by examining their own surroundings and themselves (the autopoietic systems).

In this sense Nonaka and Konno (1998) applied the Japanese ***concept of*** «***Ba***» to organisational theory. Ba (equivalent to «place» in English) is a shared space for emerging relationships. It can be a physical, virtual, or mental space. Knowledge, in contrast

to information, cannot be separated from the context – it is embedded in Ba. To support the process of knowledge creation, a foundation in Ba is required.

Efforts to understand the complex dynamics of self-creating organisation through rigid regulations and control fail in the light of complexity and speed of the change. A company that has open culture, provides space and offers incentives for entrepreneurial initiative as well as teamwork forms the basis of knowledge ecology. Development and utilisation of knowledge cannot always be planned. Instead, this process is ad hoc, intuitive and left to coincidence to some extent.

In practice, we find a wide variety of approaches to knowledge-based management depending on the characteristics of firms, sectors and countries.[1] We will first quote some examples of KM initiatives of different firms and subsequently take a deeper look into knowledge management approaches.

For *Chevron*, knowledge management is largely identical to effective transfer of knowledge within and into the company. Knowledge transfer is connected to the Total Quality Management of a company. «*ShareNet*» and best-practice processes are some of the ways used by *Siemens* to design its knowledge transfer. It also encourages «*knowledge networking*» in sales and creates communities of practice. A team at the company level coordinates numerous initiatives of the departments (Davenport and Probst 2000). At MindTree, communities of practice plays an important role while at Eureka Forbes, the Senate helps to capture organisational learning. Learning from the projects is considered of great importance particularly in consulting firms.

Some companies incorporate knowledge management in the functional areas, especially research and development. The benchmarking survey of the American Productivity and Quality Centre (APQC 1996) showed that US companies have varying perceptions and approaches towards knowledge management. Majority of the 11 *best practice companies* that were compared consider knowledge management synonymous to knowledge transfer.

Other companies see knowledge management from the aspect of management of the intellectual capital. The Swiss hearing aid manufacturer, *Phonak*, encourages open communication beyond the hierarchical and professional boundaries thus turning a canteen into a market place of ideas. An environment is created to encourage exchange of information and teamwork. *General Electric* sets ambitious objectives and value systems supported by an incentive system that promotes teamwork beyond the boundaries of business units and encourages openness to learn from outside. An insurance company relies on international synergy management in order to make expert knowledge available to its groups. Even the small and medium enterprises are increasingly recognising the importance of knowledge management.

All the aforementioned companies attribute their success to the fact that they used knowledge to gain competitive advantage. In other words, the investors get good returns through nurturing and exploitation of «intellectual capital». Analyses of the case studies published about knowledge-based management reveal a lot of emphasis on better use of the available knowledge («*Economies of re-use*») by disseminating «Best Practices», making knowledge available in processes or learning from past project experience. The

1 There is no comprehensive and up-to date overview, for summarising statements refer to ► http://www.kbos.net/uploadfiles/Knowledge%20Management%20implementation%20trends.pdf or see the annual results of the «MAKE»-award.

ability to act in turbulent and fast changing environments requires merging innovation and knowledge management. New knowledge is generated at the boundary of the existing knowledge.

In the following we will look deeper at four typical KM strategies or approaches which are not exclusive but can be combined.

5.3 Focused Strategies: Innovation, Process and Project Perspectives

5.3.1 Innovation-Oriented KM Strategy

Innovation means systematically combining knowledge afresh to generate value for the customer. Successful innovation management is thus based on a conscious handling of knowledge as a resource. On the other hand, innovation problems are knowledge problems. Let us look at the most important reasons for the failure of innovation projects: The inability to align technological innovations to the needs of the market and of the customers is rooted in a lack of knowledge transparency across markets and customers and an inefficient knowledge transfer across functional boundaries. Strategy, Marketing and R&D fail to share their knowledge. Innovations do not materialise or they fail, because the entire Know-How available in the organisation is not applied in the product. Innovations also fail because organisations do not learn systematically from successful projects or from the failed ones. Experts are not encouraged and fostered in a focused manner, and knowledge is lost.

Organisations and employees are rarely short of knowledge and ideas. The implementation of these ideas and knowledge in new or improved products, processes and business areas is the main problem.

An innovation oriented KM strategy should put particular emphasis in the ***cultivation of knowledge ecologies,*** i.e. contexts favourable for developing knowledge and motivating employees to create, share and use knowledge across business units and the entire company. In the following we will some important elements of an innovation oriented KM strategy:

- ***Setting knowledge goals:*** Based on the organisational goals and innovation strategy, it should be determined which knowledge (e.g. core technologies) represents a relevant resource from the strategic point of view, and which capabilities need to be worked upon. These goals could be normative, strategic and/or operative in nature.
- ***Identifying knowledge:*** To start with, transparency has to be established as to which knowledge and competence is available internally and externally with regard to experts, capabilities and experiences. Knowledge maps, knowledge brokers and scouts, etc. make their way into the organisations only gradually.
- ***Acquiring knowledge:*** Concerted external procurement of knowledge by taking over innovative companies, forming alliances or recruiting experts etc. helps build future competencies faster than may be possible through own resources and efforts. «Shopping» in international knowledge markets is an important part of innovation processes. Crowd sourcing and innovation jams tap resources of employees and their families, clients and the interested public at large.

Mini Case

► www.innocentive.com – A Platform to Tap External Knowledge[2]

InnoCentive was launched by the pharmaceutical company Eli Lilly to connect with people who could help develop drugs and speed them to market by inviting other organisations to join. It has since become a major platform to draw upon outside expertise. The process works in the following way:

1. Open a project room. When you find a challenge summary of interest, log in and the challenge agreement in order to open a project room. A project room is a secure space where you can view the confidential detailed description, see technical requirements, ask the Seeker questions, and submit solutions.
2. Let your creative juices flow! If you get stuck, consider finding a teammate, reviewing the solver resources, or messaging the seeker from within your project room.
3. Submit a solution. You can modify or replace your solutions up until the deadline.

The companies – or seekers – pay solvers anywhere from $5000 to $1,000,000 per solution. (They also pay InnoCentive a fee to participate.) Some of the most prolific solvers have even quit their day jobs to focus on finding the answers to problems full-time.

- ***Developing knowledge:*** New forms of development processes in networks and teams, better idea generation and evaluation and more efficient processes are central to this element of knowledge. The analysis of knowledge development – e.g. using the Nonaka and Takeuchi model of knowledge spiral – forms the basis for understanding innovation processes.
- ***Sharing knowledge:*** In order to make isolated knowledge in the organisation of use for the whole organisation, «Knowledge sharing» is an imperative prerequisite. The key question is: Who needs to know or do what and to what extent, and how can I facilitate knowledge sharing?
- ***Utilising knowledge:*** The willingness to share knowledge must be accompanied by the willingness of employees to put this knowledge to use. Through appropriate motivation, Organisations should ensure that knowledge created with great efforts and identified as strategically important is also applied in the day to day activities, and that such knowledge does not fall prey to the general reluctance of the organisation.
- ***Retaining knowledge:*** To avoid loosing valuable expertise easily, know-how risks must be managed; i.e. the processes of selecting the know-how that is worthy of protection, storing it appropriately and of its regular update must be designed consciously. Also, measures and instruments for protecting the know-how must be implemented on time.
- ***Evaluating knowledge:*** In accordance with the formulated knowledge goals, methods for measuring normative, strategic and operative knowledge goals are necessary. The quality of the formulated goals is revealed latest at the time of evaluation. Abstract goal formulations such as «We want to become a learning organisation», can have negative consequences in this case. Knowledge-oriented cultural analyses, intensifying of methods of training control as well as the comprehensive concept of Balanced Scorecard are the steps in the right direction. Only by measuring the central variables of the knowledge management process, the management loop can be closed.

2 For more information on crowdsourcing see Howe (2006); Chesbrough et al. (2006).

These core processes of knowledge management will be successful, if they are embedded in environments conducive for fostering knowledge. They are based on one vision «Adding value through knowledge – The basis of our success». This vision should be implemented by practicing values such as trust, openness for innovations, fault tolerance, authenticity, just to name a few. The desired behaviour of executives and of employees on the basis of these values should be described, and the actual behaviour should be measured. Reward systems should honour cooperation and collective knowledge development based on the overall performance of the organisation. A culture of innovation and knowledge rests on people and their motivation to build knowledge. A project manager of an innovation project summarises his experiences thus: «Perhaps, right from the beginning, one should have addressed the human aspect of the issue instead of prioritising information and communications technology».

Case Study

«Sense» Increases Innovation Performance

A rather unusual knowledge management was established in the pharmaceutical development unit of a major drug firm. The unit had 50 employees (chemists, pharmacists, biologists, chemical engineers, laboratory assistants) responsible for developing generic dosage form into product form ready for the market. Thus, the concerned employees take a centre stage apparently linked to the targeted results. To improve performance and reduce stress the «Sense» initiative was launched by middle management.

$$\text{Sense}^2 = \text{sense}\left(\text{by being human}\right) \times \text{sense}\left(\text{by visible results}\right)$$

Sense by being human is based on the following three elements: building trust, creating space and giving time. A monthly orientation meeting was arranged in order to build trust. The members of management speak openly and frankly about how they are handling things they like and things that disturb them. This increased the estimation of trust enormously. Extremely high common goals were set, thus demanding strong trust. Successes were celebrated spontaneously and conspicuously.

In order to create space, a recreation room was converted into a creative kitchen (physical space) wherein the employees could meet each other and share knowledge. Four completely integrated development teams were created with experts from all the departments (physical space). Each of these teams was assigned a clearly defined number of projects to be handled. Furthermore, three IT communication platforms were arranged (virtual space) that enable fast exchange of information (laboratory results, project advancement etc.).

In order to give time, the overhead presentations were skipped to a large extent in the monthly meetings so that one could explain the team results in form of stories (story telling) and hold discussions accordingly. Posters highlighting the mottos «*You explain, I will listen, I will ask questions*» and «*operative rush does not replace mental calm*» were displayed in all laboratories and offices.

Knowledge can come into being, grow, be shared and used by building trust, creating space and giving time. The following **results** were achieved based on the criteria of speed, innovation and networking: development time was brought down by 25–50% (speed). The number of patent applications increased threefold (innovation). The cooperation projects with universities and other external specialised institutions were enhanced significantly (networking).

Source: Adapted from Krischker and Raneburger. Presentation for the competition «the 10 most effective KM tools».

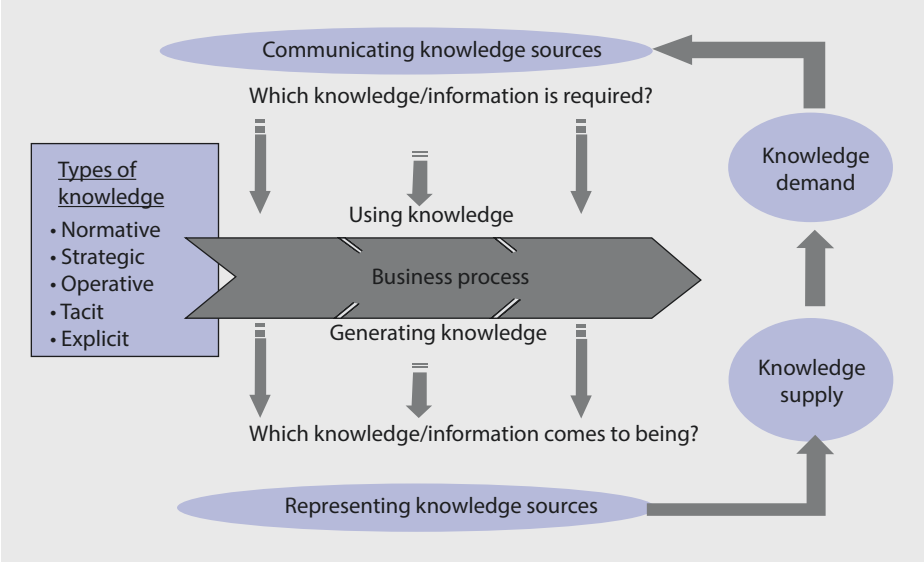
5.3.2 Process-Oriented KM Strategy

The late 1980s and early 1990s saw a widespread focus on business process reengineering, peaking at the time that Hammer & Champy published in (1993) «Reengineering the Corporation», along with an increased recognition of the importance of business processes as a primary means of adding value. A number of authors (cf. Davenport & Prusak 1998; Maier and Remus 2002; Kohl et al. 2015) discuss the issues relevant to applying process models to knowledge work while differentiating between processes that apply knowledge and processes intended to create knowledge. Business processes are both knowledge demanding and knowledge generating (see ◘ Fig. 5.6). Process-oriented knowledge management initiatives are designed to provide employees with task-related knowledge in the organisation's operative business processes.

A process-oriented KM strategy should therefore begin with an information and knowledge analysis of business processes as shown in ◘ Fig. 5.6. Based on this, expertise and knowledge sources should be made transparent for every stage of the process. Knowledge supply should be integrated in the work process so that using knowledge becomes inevitable. There are a number of software solutions available for this purpose.

Apart from transferring knowledge within the business processes, knowledge should also be exchanged beyond processes. The significance of the integration process with three components – value-based integration, operative integration and knowledge-based integration – was emphasised for the organisational concept of Entrepreneurial Corporation.

«*Knowledge integration processes*» in a company can be designed analogous to its business processes. Take for example three typical processes of a manufacturing company – product engineering process, order process and purchasing process. These similar processes largely take place independent of each other in different business areas or



◘ **Fig. 5.6** Information and knowledge analyses of business processes

units of a company. The knowledge integration process superimposes the business processes by interweaving the otherwise loose threads of business processes. Knowledge integration processes can aim at optimising the purchasing processes throughout the divisions of a company. The product engineering processes, order processes and buying processes can also be harmonised better within and across business units. For this competence centres, teams or Communities of Practice should be established (p.e purchasing competence centre, global purchasing team, Purchasing CoP).

From Best Practices to Standardisation

A typical knowledge integration process is the «Best Practice process» with the goal to improve business processes by learning from others. A Best Practice process can be structured within and across organisations.

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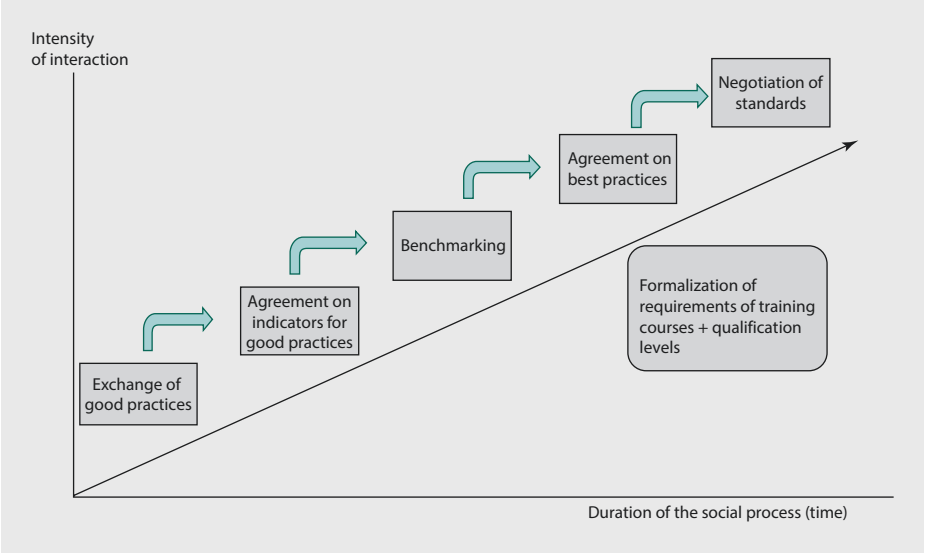
Best Practices in organisations generally comprise of methods, procedures and ways of working which lead to higher productivity, quality, added value and higher customer benefits. Best Practices change continuously with our learning processes. The potential earnings of transfer from Best Practices are usually very high (see ◘ Fig. 5.7).

Definition

Best practices are those practices that have been shown to produce superior results; selected by a systematic process; and judged as exemplary, good, or successfully demonstrated. «Best Practices» are a moving target as they change with experience and innovation.



◘ **Fig. 5.7** How best practices emerge (Source: Thomas Rieger)

From «Good Practices» to Standards[3]

In the following five steps, we describe how, based on (intuitively) realised good practices, an understanding process for standardisation gradually results in a specialised community or in a professional field.

Step 1: Identification and exchange of Good Practices Collection of «Success Stories», of narrations of what, as perceived by the practitioners, «worked». Here intuition plays a big role.

Step 2: Understanding of indicators for Good Practices The «Community» of practitioners works out criteria which indicate a «Good Practice». For instance, such criteria could be effectiveness, productivity and social effects. This step is a «start» of systematisation. Resistance may result from the apprehension that individually reported Good Practices may not suffice the indicators or criteria.

Step 3: Benchmarking Ideally, benchmarking is formalised, although often it takes the form of sum of specific interactions such as conferences, congresses, discussions in scientific publications for instance (refer remarks on benchmarking given below). Possible sources of resistance are rooted in problems of trust and the tendency to avoid the high effort involved in the benchmarking procedure, or the fear of not being «good» or «the first».

Step 4: Understanding of «Best Practices» Based on the benchmarking, evaluation criteria are refined and Best Practices are described in detail. From this level onwards, a significant pressure for standardisation begins; these «tricks of the trade» can also be used as standard for executing work in a professional manner. Resistance may arise from the fear for the pressure to change, if (among others due to Benchmarking) it is assumed that one's practices are not accepted as Best Practices.

Step 5: Standardisation In this step, the defined «Best Practices» are described in detail. They are stipulated in a work instruction, a standard, and a regulation or in some other form as a recommendation or mandatory procedure. This level is the most «politicised»: Deviations may have immediate economic and legal consequences (non-saleability of goods and services, liability claims etc.). The significance of trade and commercial instrumentalisation increases. Source of resistance: Is the same as in case of transition to Best Practices; although now driven by significantly stronger conflicts of interests, since deviations from standards have consequences.

Mini Case

Lighthouse Principle: The «Best in Class» Programme

A French industrial enterprise optimises its production with the «best in class» programme, i.e. with a competition of production centres of its subsidiaries in France, Thailand, Philippines, Brazil, Mexico and USA. Every month, the manufacturing plants compare their data pertaining to productivity, quality and effectiveness. What do the better plants do? Everyone is allowed to copy. In a quarterly newsletter, the best subsidiaries express their views yet again in detail. The managers meet all 6 months for intensive exchange of information and knowledge.
Source: Seifert (1996), p. 134.

3 This section was authored by Dr. Thomas Rieger, ComoConsult.

Benchmarking and Benchlearning to Improve Processes

Benchmarking, the structured comparison of processes and activities is an indispensable part of knowledge transfer, learning and «negotiation» what is Best Practice. First of all, benchmarking makes us aware of what we are doing. Benchmarking often turns implicit knowledge into explicit. Processes are questioned and success criteria are made transparent. We can accelerate our learning processes and create pressure to change through comparison with other business units or companies (Camp 1989).

A related approach more focused on mutual learning is «**Benchlearning**». It is a process, in which a systematic and integrated connection of performance comparisons and measures of mutual learning are created in order to identify good practices by indicator based, comparative learning systems. «Benchlearning is the implementation of an evidence-based learning process in which a systematic connection between performance comparisons and measures of mutual learning is created.» (► http://www.pesboard.eu/EN/pesboard/Benchlearning/benchlearning_node.html).

There are several suggestions of benchmarking and benchlearning steps, which all include the following elements[4]

1. **Demarcate area of analysis:** Because benchmarking can be applied to any business process or function, an exploratory research might be useful to know better on which aspects to concentrate in order to have a high return in relation to the effort.
2. **Identify other organisations that have similar processes or activities:** For instance, if one were interested in improving hand-offs in addiction treatment one would identify other fields that also have hand-off challenges. These could include air traffic control, cell phone switching between towers, transfer of patients from surgery to recovery rooms.
3. **Identify organisations that are leaders in these areas:** Look for the very best units within an organisation, in any industry or in any country. Consult customers, suppliers, financial analysts, trade associations, and magazines to determine which companies are worthy of study.
4. **Develop metrics for practices and survey:** Develop detailed surveys of measures and practices used to identify business process alternatives and leading companies. Surveys are typically masked to protect confidential data by neutral associations and consultants.
5. **Exchange detailed information and learn jointly, identify leading edge practices:** Companies typically agree to mutually exchange information beneficial to all parties in a benchmarking group and share the results within the group. This might include company visits, experts rounds and practitioner workshops
6. **Implement new and improved business practices:** Take the leading edge practices and develop implementation plans which include identification of specific opportunities, funding the project and selling the ideas to the organisation for the purpose of gaining demonstrated value from the process.

4 Adapted from Camp (1989) and ► http://en.wikipedia.org/wiki/Benchmarking

Benchmarking results should be accessible to the interested employees. In this process, similar business units, plants and projects think together about ways of making improvements. However, benchmarking is restricted by the fact that it is based on the actual situation. It is not directed at «*what would have been possible*» *or to* «*next practice*».

Benchmarking should be conducted on a regularly basis. Thus, the criterion is improved, development becomes visible and learning process is accelerated. From a «*best-practices database*», it should be possible to pull out information on which methods and processes were used, what were the experiences with new methods etc. Hence, creation and maintenance of best-practices databases is an important component of knowledge management.

Case Study

Learning to Improve Processes – Two Examples

Electronics manufacturer Through knowledge transfer, an electronics manufacturer was in a position to create the capacity equivalent to an entirely new chip factory from the existing fabrication plant, thereby avoiding approximately $ 500 million investment. The impetus for improvement came from benchmarking of 12 wafer fabrications of the company that were distributed in several business areas. The firm supported knowledge transfer that motivated exchange process, updated a best practices database continuously and created Best Practices Facilitator Network. These facilitators are employees who collect best practices under the framework of their functions of quality management and transfer them in a systematic form.

An **Oil and Gas company** has introduced a best practice process under its total quality management and communicates this process in its «Best Practice Resource Map.» This «knowledge map» that is available electronically as well as in paper form contains a list of experts classified as per the topics of quality management (criteria of American Baldrich Quality Award). The company's vision states «create an organization that learns faster and better than competitors through benchmarking, sharing and implementing best practices, learning from experience and continual individual learning and personal growth.» There are two reasons for the success of this approach. Transfer of knowledge is integrated in the total quality management and is therefore not an additional independent approach in the company. The course of knowledge transfer is visualised in comprehensive form, knowledge sellers are identified so that knowledge buyers can orient themselves quickly from the «who knows what» perspective.

5.3.3 Project-Oriented KM Strategy

In project-based organisations like consulting or construction firms knowledge management has to support the project cycle. A knowledge organisation encourages and supports learning from projects and ensures an efficient and effective progress right from initiation of the project up to the final processing of project results (cf. Yeong and Lim 2010). ◘ Figure 5.8 describes how knowledge can be used or processed at every step of a project cycle.

In the project initiation phase, it is possible to resort to organisational knowledge about customers, processes or methods by means of process documentations, customer relationship management (CRM) systems or databases on project experiences. **While**

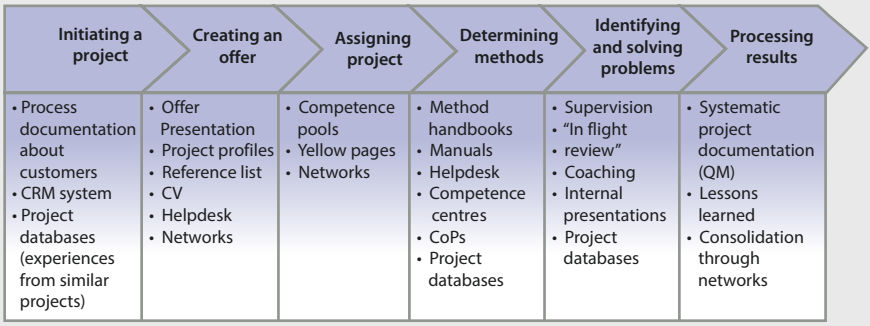


Fig. 5.8 Knowledge organisation in project cycles

preparing an offer, templates, profiles, support of reference projects and lessons learnt from similar projects provide guidance. Experts and project personnel can be identified by means of competence pools, yellow pages or networks. While **executing the project**, it is possible to resort to organisational knowledge sources such as methods handbook, manuals, help desks, competence centres, CoPs and project databases in order to ensure that existing knowledge is used and learning speed increases. The knowledge organisation keeps instruments like supervision and in-flight review ready in order to **identify and solve the problems** in the ongoing process.

At the end of a project cycle, it is necessary to transfer the knowledge that is generated in the organisation by means like systematic project documentation or lessons learnt reports or a debriefing or in the form of consolidation and transfer of experiences through the network.

In every project, the members of the team get experiences that could be of great significance to the future teams with similar problems. Often, these experiences are not raised systematically at the end of a project and are therefore available as a whole for the organisation.

«Lessons learnt» represent the essence of experiences collected in a project or in a position. In order to gain suitable benefits from lessons learnt, it is first necessary to have a suitable context for its safety. Lack of time, different priorities and lack of readiness of the participants often hinders systematic regeneration of organisational activities. However, subsequent benefit is not possible unless experiences are safeguarded. (see KM-Tool «after action review» at the end of ► Chap. 3).

Debriefing
Debriefing is a method for simple, systematic collection and documentation of know-how obtained from an experience. By means of interviews and workshops, a trained «*third person*» collects knowledge of an individual employee (in an interview) or a team (in a workshop). The documentation of this knowledge is likewise undertaken by the «*third person*» who is also called «debriefer». He puts the collected know-how in an agreed form that enables future users to see the content quickly without any expert support.

Debriefers should be adequately trained to be able to conduct a workshop or an interview systematically even on difficult, conflict-laden subjects. Even for documentation, one requires an equally huge know-how. In order to be accepted as competent dialog partners, the debriefers should have at least their own basic know-how in subjects handled by them. They should take a neutral position and should not be involved directly in the topic to be handled or in the project being considered.

The subject to be handled in an interview or a workshop should be selected in such a way that the interview does not last more than 2–3 h. Even a workshop for collecting the knowledge of a team should remain restricted to half or one day. Longer debriefings neither cater to the scope of the information to be recorded nor to its documentation. If the subjects are comprehensive, it is better to conduct more debriefings restricted to each topic.

5.4 Organisations as Knowledge Markets

5.4.1 The Knowledge Market Concept

In organisations continuously new knowledge is created, people gain experiences, thus creating a wide ranging offer of knowledge. On the other hand people are continuously seeking information and knowledge in order to solve specific problems. Knowledge moves through organisations, it is exchanged, bought, found, generated and applied to work. We can therefore describe organisations using the metaphor of knowledge markets. The market metaphor helps to understand the driving forces and barriers of managing knowledge and to develop effective enabling conditions and market mechanisms for the generation and exchange of knowledge. Markets have multiple functions and like markets for physical goods or financial markets there are knowledge markets.

Why go to a market?
… I have something to sell,
… I need to buy a specific good,
… I have no specific need, but want to be seduced by an attractive offer,
… I want to get the news,
… markets inspire me.

Following this metaphor in an organisation, we have knowledge sellers and knowledge buyers and intermediaries such as knowledge brokers and market places and (virtual) spaces which allow knowledge sellers and buyers to interact. In order to create knowledge markets and make them work we have to define enabling conditions as well as principles and rules and develop the supporting knowledge media and infrastructure. In the following we will deal with each of these aspects.

A market-oriented concept of knowledge management establishes an internal social market economy, in other words, internal knowledge-based market economy[5] (◘ Fig. 5.9).

5 General Electric, Annual Reports 1994, 1995, 1996.

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Fig. 5.9 Governance concept of knowledge markets as «internal social market economy» (Source: Wunderer 1996, p. 7)

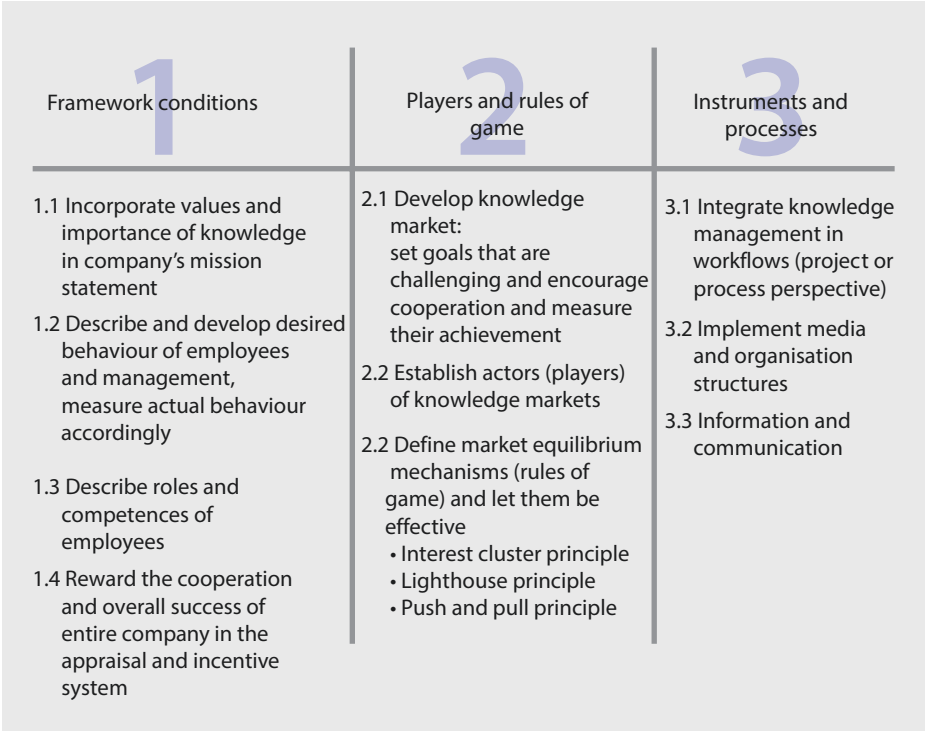


Fig. 5.10 The knowledge market concept

The knowledge market concept was developed by North (1998) based on many action research projects. This concept should encourage entrepreneurial action and cooperation by directing it towards objectives and values of the entire company so as to ensure short-term success of business units and long-term competence creation of entire company.

In order to achieve this, it is necessary to fulfil three conditions for effective creation and transfer of knowledge in a company (see Fig. 5.10):

- ***Enabling framework conditions:*** Create attractive market conditions. Corporate mission statements, management principles and incentive systems should connect the success of business units and contribution to development of the entire company. Individual competence creation as well as their contributions to the organisational knowledge base should be rewarded.
- ***Players and rules of game:*** Rules for knowledge markets should be defined. The manner of articulating supply and demand of knowledge, bringing sellers and buyers in contact and exchanging knowledge should be decided using these rules of the game. They should also be used to set rules for exchanging knowledge.
- ***Instruments, processes and structures for interaction on the knowledge market:*** For the creation and transfer of knowledge, it is necessary to develop efficient instruments and media that implement rules in their knowledge game. What does this actually mean? Firstly, it is necessary to achieve transparency with regards to **who knows what** in the company. For this purpose, companies have developed various instruments and approaches such as *"yellow pages" or "knowledge maps*" often linked to telephone directories, instant messaging to internal facebook-like applications (p.e. Yammer)

Once knowledge supply is made transparent, it is time to bring sellers and buyers in contact with each other. There are many ways of establishing an exchange: Formal and informal, personal interaction or via electronic platforms. The informal and formal networks, often called as Knowledge can be exchanged and developed for example by networks, collaborative projects consisting of cross-functional employee groups, exchange of manuals, process descriptions and customer information.

Checklist for knowledge sellers and buyers

«Sellers» should ask themselves:

- To whom am I «selling» my knowledge, what are their needs, level of understanding, and their motivation to seek my knowledge?
- Is my knowledge well structured and presented in an attractive form, ready for use?
- What can I learn from the interaction with knowledge buyers?
- How can I create a demand for my knowledge and increase my «mindshare»

Buyers should ask themselves:

- Am I able to articulate well my demand?
- Where can my demand for knowledge be best satisfied? Inside or outside the firm?
- How can increase my attractiveness as knowledge buyer so that sellers are eager to transfer their knowledge

We shall now describe these elements with the help of corporate examples. The knowledge market concept is also a reference model using which companies can measure the development stage of its knowledge management. We will start with the question how corporations can create a demand for interaction.

5.4.2 Creating a Knowledge Market

Apart from organising the behaviour-oriented and motivational framework conditions, it is necessary to organise contextual framework conditions, i.e. formulate goals, which create a demand for knowledge flows. For example, demanding environmental standards formulated by public administration trigger innovations in this area. Alternatively, new solutions are developed because of ambitious corporate objectives («we want to be the leaders in a new technological field»). For example, 3 M's business objective is to achieve 25% of turnover from the products that have been around for less than 5 years. Another firm has started a company-wide increase in productivity and quality with its Six-Sigma program. The objectives of Six-Sigma are applicable to the entire company but they are formulated in such a way that every business unit can use them as per their requirement. This encourages exchange of knowledge, a common improvement culture and transfer of best practices. The resulting behaviour was called as *boundary-less behaviour* by General Electric. How demanding can the goals be? General Electric formulated «*stretched goals*» that were impossible to achieve. They could be achieved only by the utmost effort, mobilising all resources, avoiding double work, cooperation and by learning quickly from others.

Thompson et al. (1997) emphasise that setting ambitious goals makes sense only when supported by a corresponding organisation culture, as we have seen before. Setting ambitious goal does not make sense if management and organisational structure deter employees from fulfilling them. ◘ Figure 5.11 invites you assess the rules.

Company insensitive to knowledge	1	2	3	4	5	Knowledge-oriented company
Rules of game in a knowledge market						
Knowledge exchange is governed by administration						Knowledge exchange is encouraged in company by knowledge market
There is no transparency in knowledge						There is no transparency on who knows what within and outside the company
There are no clear criteria for creation and transfer of knowledge						Creation and transfer of knowledge is based on common interests
People are shy of emphasising best practices						Best practices are emphasised
Knowledge/Information is "forced" on employees based on its supply						Knowledge buyers can retrieve selective knowledge/information

◘ **Fig. 5.11** Extract from the short analysis of knowledge-oriented company

A knowledge market is formed by the interplay of knowledge buyers and knowledge sellers that should be brought in contact with each other. For this purpose, there are knowledge brokers that act as internal service providers. They create contacts systematically or randomly, transfer best practices, provide information, etc. (see ◘ Fig. 5.12).

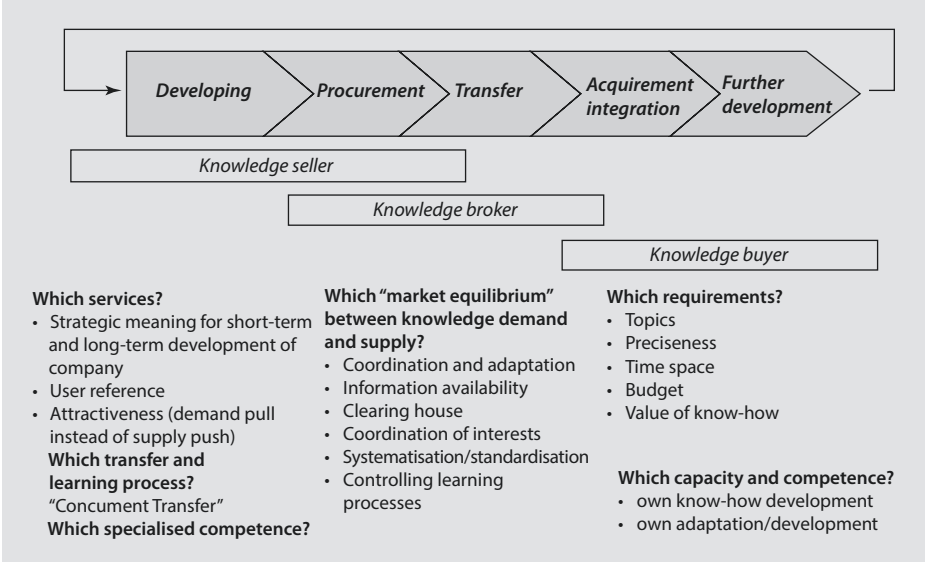
In knowledge management, successful companies have shown that structuring the processes of creating and transferring knowledge alone does not help accomplish goals. Knowledge sellers and knowledge buyers should be motivated to work together. They should live and observe the rules of knowledge market.

Knowledge markets function well in an «*Entrepreneurial Corporation*»[6] (see ► Sect. 3.4).

Upper level management formulate and control goals and provide enabling contexts for knowledge markets conditions.

The front line entrepreneurs are responsible for operative business. They motivate coaches for cooperation, harmonise interests, identify best practices and support future competence development of the company.

Coaches play a central role in the concept of knowledge market. They promote relationships that keep the knowledge spiral going. Coaching functions are not restricted to one person. They can be observed by organisational entities such as competence networks, lead factories or lead functions as well as by training and development.



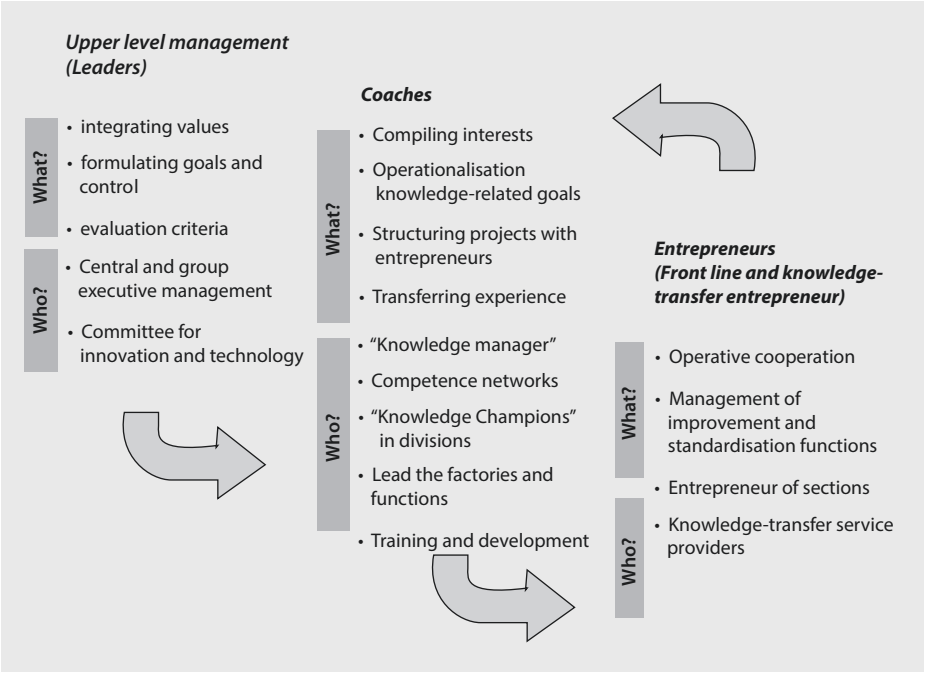
◘ **Fig. 5.12** Actors of knowledge market

6 See also v. Krogh et al. (1997).

5.4.3 Roles of Knowledge Managers and Coaches

A range of leading companies have entrusted top-ranking management with the task of leaders and coaches of knowledge markets. The more diverse the titles, the more diverse are the functions and settlement of this management. A part of the company sets up motivation for knowledge management in the personnel department. Knowledge management and organisational learning are widely considered as synonymous. Dow Chemical has appointed a Global Director to look after Intellectual Asset and Capital Management especially for better use and marketing of patents. At ABB, knowledge management is strongly linked with the «*Customer Focus*». At General Electric, the vice-president of Leadership and Development is responsible for tapping new best practices and for promoting them (◘ Fig. 5.13).

Special training units, strategic participation in projects as well as networking in a community of practice equips the designated knowledge brokers with competencies required to fulfil their functions. According to Earl and Scott (1999), the Chief Knowledge Officers (CKOs) should fulfil the following four roles: Start new and even venturous initiatives *as an entrepreneur*, harmonise new ideas with necessities of business *as a consultant*, be familiar with the latest facilities in information and communication technology *as an IT technologist* and establish knowledge-promoting framework conditions and processes *as an «environmentalist.»*



◘ **Fig. 5.13** Coaches = catalysts of knowledge management

Example

Job Description of a Knowledge Manager
The main function of a knowledge manager would be to help champion organisation-wide knowledge sharing, so that the organisation's know-how, information and experience is shared inside and (as appropriate) outside the organisation with clients, partners and stakeholders. Key responsibilities include:

- **Promote knowledge sharing** through the organisation's operational business processes and systems by, among others, strengthening links between knowledge sharing and the information systems, and improving integration among information systems in the organisation, to facilitate seamless exchange of information across systems;
- **Promote collaborative tools** such as activity rooms to facilitate sharing of ideas and work among internal teams and external partners;
- **Provide support** for the establishment and nurturing of communities of practice, including workshops, one-on-one guidance and troubleshooting;
- **Share experiences across communities** of practice, business units, and networks on innovative approaches in knowledge sharing, including preparation of case studies;
- **Help monitor and evaluate** the knowledge sharing program, including external benchmarking and evaluation programs/opportunities;
- **Help disseminate information** about the organisation's knowledge sharing program to internal and external audiences, including organising knowledge sharing events (such as knowledge fairs, site visits, interviews), maintaining communications on knowledge sharing across the organisation, participation in orientation and training sessions, and preparation of brochures/presentations.

Skills of a knowledge manager

- **Communications**: Ability to get consensus and collaboration across many business units; ability to explain complex concepts in layman's language; ability to generate enthusiasm; ability to communicate with all levels of management and staff. Establishing straightforward, productive relationships; treating all individuals with fairness and respect, demonstrating sensitivity for cultural and gender differences; showing great drive and commitment to the organisation's mission; inspires others: Maintaining high standards of personal integrity; coaching experience would be helpful.
- **Client Orientation**: Understands clients' needs and concerns; responds promptly and effectively to client needs; Customises services and products as appropriate.
- **Drive for Results**: Makes things happen; Is proactive; balances «analysis» with «doing»; sets high standards for self; Commits to organisational goals.
- **Teamwork**: Collaborates with others in own unit and across boundaries; acknowledges others' contributions; works effectively with individuals of different culture and gender; willing to seek help as needed. Influencing and resolving differences across organisational boundaries: Gaining support and commitment from others even without formal authority; resolving differences by determining needs and forging solutions that benefit all parties; promoting collaboration and facilitating teamwork across organisational boundaries.

- **Learning and knowledge sharing**: open to new ideas; shares own knowledge; applies knowledge in daily work; builds partnerships for learning and knowledge sharing.
- **Analytical Thinking and Decisive Judgment** – analysing issues and problems systematically, gathering broad and balanced input, drawing sound conclusions and translating conclusions into timely decisions and actions.

Source: Adapted from: ► http://www.stevedenning.com/Knowledge-Management/KM-job-description.aspx

Companies that practise knowledge management, however, often lack structured information about the effectiveness of such coaches. As mentioned earlier, coaches can be successful only if they operate under knowledge-promoting conditions. They do not have a fig-leaf function. They are not the only ones responsible for knowledge management. They are most successful when they become redundant.

We will come back to the role of knowledge mangers as coaches and brokers in ► Chap. 9, when we discuss the implementation of knowledge management initiatives.

5.4.4 Defining Principles of the Knowledge Market

With the principles of knowledge market we define how the actors, knowledge seller, knowledge buyers and knowledge brokers cooperate under the given conditions.

Our «knowledge game» has four principles:

- The common *interest principle* helps us find common interests.
- The *lighthouse principle* supports in achieving knowledge transparency and highlighting best practices and leading competence.
- The *push and pull principle* makes knowledge available according to use.
- The *give and take principle* ensures reciprocity of knowledge exchange.

Let us have a look at the three principles one by one.

The Common Interest Principle This principle states that collective creation and transfer of knowledge will be successful only if the participants have common interests. If the benefit is one-sided, the displayed cooperation will function as coming together of employees who have just a few common interests. Often employees, who do not have common interests otherwise, are brought together according to technological criteria. They meet for the sake of meeting without achieving anything concrete. However, if one uses the common interest principle, one succeeds in bringing together persons, units, and business areas etc. that have similar development or improvement interests. Target groups of similar characteristics can be grouped under multiple criteria. The common interest principle is used while structuring networks, introducing discussion forums on intranet of the company or conceptualising training and development courses. We suggest configuring «clusters» of common interest. The word cluster is taken from statistical analysis wherein objects are grouped as per multiple criteria. Clusters are groups of persons or objects that feature similar characteristics considering various criteria.

For instance, in order to encourage exchange of best practices in manufacturing, the experience exchange should not be selected simply from technological perspective. By grouping for example electronics manufacturing plants as per criteria of production volumes, complexity of integrated circuit, lifecycle of product, range of services and development of components, it was possible to bring together plants and production lines that have common interests pertaining to business divisions.

The interest-cluster principle helps to answer the main question «do the people working there together have common interests?»

Case Study

Transferring Knowledge Through a «Listeners Program» at TCL, India

Established in 1939, Tata Chemicals Limited (TCL) is the world's second largest producer of soda ash, with manufacturing facilities in India, the UK, Kenya and the US – but the company's products cover a huge range of chemicals, from fertilisers to branded, iodised salt.

At TCL, it was recognised that every employee has much more to contribute than simply their specialised knowledge in a particular domain. For example: An experienced soda ash kiln operator will notice the colour of the kiln stack when he enters the plant, and based on his observations, he's able to make predictions about the success of a particular job and the general health of the kiln. This shows that there are useful «knowledge nuggets» across the workforce, regardless of hierarchy. Such important observations, heuristics and learning must be captured and refined, systematically and continuously – but in addition, they should also be shared and disseminated across the organisation.

In order to do that, a KM initiative called «TITLI» was launched at TCL in 2005. The project name TITLI (the Hindi word for butterfly) was chosen because the diversity of colours of the butterfly and its role in cross-pollination was seen to embody TCL's KM ambitions. The TITLI program is intended to facilitate the cross-pollination of ideas, experiences and learning and to embrace the varied hues of each individual's perceptions in the form of «anubhav», or stories, as its core inputs. TCL's KM team launched a «Listeners Program» as part of TITLI.

The aim of the listeners program is to create involvement, engagement and participation throughout TCL and make all aspects of capturing, sharing and seeking knowledge effective. As employees have come to realise that the tacit knowledge captured really makes a difference in terms of solving day-to-day problems and enhancing productivity, their engagement and participation has increased. Likewise, both contributors and listeners are recognised by TCL for their insights and inputs (Kruthiventi, Gajjar & Awasthi 2009).

Source: *Knowledge Management Review, June Edition, 2009.* ► http://www.melcrum.com/kmreview/kmreview_0609.shtml

The Lighthouse Principle Lighthouses stand high and emit light far and wide. They clearly indicate the source of knowledge and highlight leading competence or best practices of individual experts, units, competence centres, practice groups, lead factories or networks. They lead in specific processes or have role model or forerunner functions. For instance, we can identify lighthouses by benchmarking inside or outside the company. We can locate lighthouses in a sales organisation by measuring customer satisfaction. In short, lighthouses are competent and contribute to business success. Emphasising leading competence through friendly competition, letting factories compete against each other, assigning challenge cup to the best process, highest quality or best expertise in a field has become quite common. However, in companies, there is a frequent argument that the emphasis on competence and excellence devaluates the other business

units. Then, very soon, a defensive position is created which tries to explain benchmarking criteria as irrelevant or argues that, «*everything is entirely different in our unit*».

In contrast to this, a knowledge firm creates a culture of exchange. Lighthouses are tapped as knowledge sources. On behalf of the emphasised units, in the traditional companies it is argued that answering all the questions is an additional load. The mindset «*we are paid to do our work and not to help others*.» has to be overcome. Even here, there are many options to encourage this readiness to a certain extent in knowledge firms. Hence, teamwork and sharing knowledge is rewarded in appraisal and incentive system. Furthermore, the lighthouse function, for example of a plant, can be accompanied with employees being financed as «*knowledge brokers*» who then undertake the function of transferring knowledge.

A lighthouse function can also be converted into cash in the market as shown by many consulting units created out of internal department offering their Know-How to external clients. Leading competence can be emphasised, e.g. in company's yellow pages which lists information on «*who knows what*». Employees can present themselves in the Intranet of the company and offer their competence, showcase their knowledge maps that state which knowledge is available at which position.

The Push and Pull Principle Traditionally, following the push principle, information and knowledge was often circulated in the company in form of reports. However, knowledge firms are increasingly switching over to the pull principle by letting users retrieve information or knowledge required by them.

Push principle is supply-oriented. The know-how provider is dominant with his knowledge, often causes high transaction costs, has low accuracy (if feedback loops are not incorporated) and often encounters implementation resistances from users. The push principle was typically used by central departments that designed production processes and transferred them in standardised manner to the plants for implementation. This often resulted in resistance because the centrally designed production processes did not meet different requirements of the plants. The result was poor performance against very high expenditure.

According to the pull principle, units decide on their own with whom they develop new production processes/products/services and from where they pull relevant knowledge. The central control should maintain itself as a service provider and prove its competence. This process brings about an increase in accuracy. Generally, better performance can be achieved with lesser expenditure if the right information is given to the right users at the right time. However, this requires the knowledge user to have special competence to select suitable collaborators and pull the right actionable information.

In its benchmarking survey on knowledge management, the American Productivity and Quality Center discovered that it is necessary to combine the pull and push principle:

> Push approaches are characterized by a desire to capture knowledge in central repositories than «push» it out onto the organisation. «Pull» approaches, in contrast, expect people to seek the knowledge they need. Neither seems to work well by itself. (APQC 1996, p. 8)

An information push by management creates a pressure of change by publishing best practices and benchmarking results. The same applies to information on market tendencies, losing market shares, winning huge projects through competition and also

positive news about market development of one's own company. This information should motivate the employees to think about changes and improvements. This «*information push*» is supplemented by «*knowledge pull*», i.e. the users decide themselves which knowledge is transferred and who they want to work with etc.

The Give and Take Principle Knowledge will only flow in an organisation if people adopt a give and take philosophy. Davenport and Prusak (1998) call this reciprocity: «A knowledge seller will stand the time and effort needed to share knowledge effectively if he/she expects the buyers to be willing sellers when he/she is in the market for their knowledge.» Reciprocity may be achieved less directly than by getting knowledge back from others as payment for providing it to them. Knowledge sharing that improves profitability will return a benefit to the sharer now and in the future. Whether or not a knowledge seller expects to be paid with equally valuable knowledge from the buyer, he/she may believe that being known for sharing knowledge will make others in the company more willing to share with him/her. To promote the give and take principle, a number of companies have established «miles for knowledge» programs. In such programs professionals get a number of credit points which they can distribute to those colleagues which have helped them particularly in the solution of problems, have provided valuable knowledge for a project and so on. (see case «Sharing knowledge earns you miles» on p. 140).

The four principles of interest-cluster, lighthouse, pull and push and give and take are reflected in the processes and structures of knowledge management. Monitoring the adherence to these rules, implementation of these rules, and supporting employees and business units in implementing them are tasks of the knowledge managers.

5.4.5 Knowledge Culture: An Enabling Framework

«Knowledge culture is a form of organizational culture that combines elements of individualistic, group and macro management of the entire knowledge management process» (Travica 2013, p. 95). Chang and Lin (2015) classify organizational cultures into results-oriented, tightly controlled, job-oriented, closed system and professional-oriented cultures. In their study they conclude that rResults- and job-oriented cultures have positive effects on employee intention in the KM process (creation, storage, transfer and application), whereas a tightly controlled culture has negative effects.

Corporate mission statements, management principles and incentive systems should reflect company's values. They must ensure that success of a segment (business unit) and contribution to the development of the entire company gets enough attention. Incentive systems should not just reward creation and transfer of knowledge but also conversion of this knowledge into success of the business (see ◘ Fig. 5.14).

This would help in evaluating the framework conditions in the company. Later on, using a range of examples, we shall show how the described criteria of a knowledge company can be put to practice. We shall describe the formulation and control of the framework conditions with a universal example of the company General Electric[7] and add further selective examples.

7 General Electric, Annual Reports 1994, 1995, 1996.

Company insensitive to knowledge	1	2	3	4	5	Knowledge-insensitive company
Organisational framework conditions						
The lived values of our organisation encourage mistrust, scepticism against innovations, conformity and formalism						The lived values of our organisation encourage trust. openness to innovations, authenticity and informal contacts
Company objectives are not connected to knowledge objectives						KM strategy is embedded in business strategy
Management priciples and incentive systems are directed towards performance of an individual or individual units. ☞ *Description of jobs and roles is not associated with competence development and knowledge transfer* ☞ *Knowledge transfer and competence development are not mentioned explicity in employee appraisals*						Management principles and incentive systems connect individual performance and contribution to overall success of the company ☞ *Description of jobs and roles is associated with competence development and knowledge transfer* ☞ *Knowledge transfer and competence development are mentioned explicitly in employee appraisals*
There are no key figures for creation and transfer of knowledge						Key figures are used to measure creation and transfer of knowledge with reference to business objectives
Reporting contains only financial indicators						Financial indicators (employees, processes etc.) have no importance in reports.
Management positions are enjoy higher status than expert positions						Management positions have the same status as expert positions

Fig. 5.14 Extract from the short analysis of knowledge-oriented company

As we have already seen in the earlier chapters, the main feature of a knowledge firm is that it creates strong shared values. Values are more important than structures. Structures can be defined but values enable teamwork of employees in different projects, represent tacit knowledge and ease the association with each other. From the knowledge perspectives, we had mentioned trust, openness to innovations and authenticity as particularly important. Take for example Koziol, a gift article manufacturer with 180 employees, the most innovative company in its industry. At Koziol, the corporate mission statement incorporates teamwork and autonomy according to the motto «*instruct yourself, organise yourself, motivate yourself and control yourself*». One also

experiences a regular exchange in product development teams across departments. For the management it is important that all the employees participate actively in the «*company project*».

However, having these values somewhere on the paper is not important. They should be lived. They should be lived at all the levels – including management. Formulating such values is less problematic than living them in day-to-day life. In this sense Michailova and Minbaeva (2013) argue that knowledge sharing behavior is not influenced by organizational values per se but by the degree of their internalization by organizational members.

In order to implement the values of a company in daily life, it is advisable to describe explicitly the behaviour expected from employees and management and compare their present behaviour with expected behaviour in e.g. periodic employee appraisals.

Case Study

Restructuring General Electric Towards a Boundary-Less Organisation[8]

During restructuring, General Electric experienced how difficult it was to change behaviour of management and employees. «During the workout sessions, it was clear that creating presentation techniques at management level including employees, enthusiasm and free space did not match with the reality of business units. The problem was that some of our members of management were unwilling or incapable of leaving the «autocracy of large-scale enterprise» and take in values that we wished to build. Therefore, we defined our management style or types and how they either blocked or encouraged our values. We then acted accordingly.»

General Electric defines four types of management behaviour:

- *Type 1* not only guarantees its performance but also believes and develops the enterprise values of General Electric. The way to this group is «*onward and upward*». Men and women who embody these values will take our company to the next millennium.
- *Type 2* neither guarantees its performance nor does it share our values and will not stay very long in General Electric.
- *Type 3* believes in values of the company but is not capable of fulfilling the received commitments. They are encouraged to change, resulting in type 3 typically getting an additional chance.
- *Type 4* is the most difficult. One is always tempted not to take action because the fourth management type has short-term success. This group takes actions without considering the values. Some of them learnt to change themselves while most of them did not. The decision of removing the fourth management type from the company was a «*turning point*» and proved that the company was serious about its values.

At General Electric, employees and management are constantly evaluated to find out whether they uphold the values of the company. Evaluation takes place as per the expected behaviour.

8 General Electric, Annual Reports 1994, 1995, 1996.

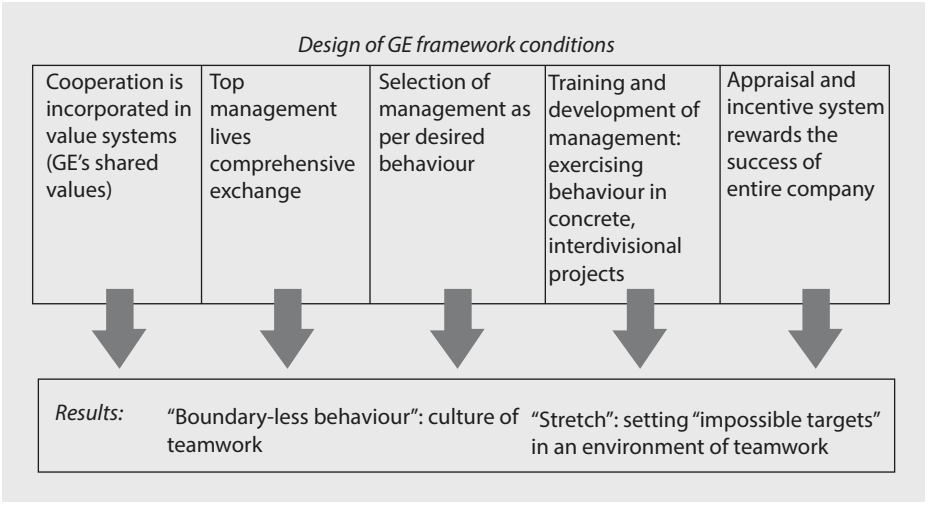


Fig. 5.15 The framework conditions at General Electric encourage creation and transfer of knowledge

Values are reinforced or destructed by leadership practices and incentive systems.

In the following we have summarized **Leadership practices** conducive to knowledge sharing:[9]

- Leaders highlight to their team (s) the links between knowledge to develop and the objectives of the organization.
- Knowledge sharing and mutual learning are explicit values that are practiced regularly.
- Leaders behave as role models to promote the values of knowledge sharing and mutual learning.
- Senior executives are actively involved in projects to improve knowledge management.
- Superiors value the contribution of individuals and teams to develop relevant knowledge.
- Organizational structures, functions and responsibilities to manage knowledge are set and practiced.

Reward and incentive systems directed towards the performance of an individual or individual units are considered as significant barriers to the creation and transfer of knowledge. However, as we have seen in ► Chap. 4, there are a number of options for encouraging teamwork oriented towards overall interest of a company. However, incentive systems cannot be ignored as they play an important role in getting started.

All the described framework conditions should together form an optimal «*organisational mix*» that encourages creation and transfer of knowledge. Individual elements of these conditions alone cannot guarantee success. Interaction of all these conditions is yet again clear from the example of General Electric. The value system, behaviour of the top level management, promotion and selection of managers according to their behav-

9 Source: Adapted from the Knowledge Management Self-Assessment guide of the Federal Personnel Service of Belgium ► http://www.fedweb.belgium.be/fr/binaries/broch_km_managers_fr_tcm119-3359.pdf

iour, practising teamwork by training and development and evaluating in the incentive system that rewards the overall success of the company lead to a culture of openness (boundary-less behaviour) which allows setting of «*stretched goals*» in an environment of trust (see ◘ Fig. 5.15).

5.5 Spaces for Interaction: The Physical Layout

With virtual interaction one might think that office architecture and design of social zones is of less importance. Employees increasingly use the option of working from home or work at the customers' premises and rarely meet their colleagues. On the other hand, researches show[10] that innovative thoughts arise through personal communication and often through unplanned meetings in the case of informal information exchange. Designing Space to Support Knowledge Work remains an import task (cf. Peponis et al. 2007; Waber et al. 2014).

If you view for example about Google's office in Zurich you will be puzzled about such an innovative office design to foster innovation. The Swiss hearing aid manufacturer, Phonak, allows for this fact by turning the staff canteen into a common meeting place. In some major enterprises, the management board does not have independent offices. Instead, they have a vast open board room which facilitates inevitable interaction among them. Some companies go to such lengths that the members of the management board have only one working and meeting room wherein they are meant to work and take decisions together. In new plants, such as those in the automobile industry, it has already become standard for operations engineers and production engineers sit close to each other, often in offices that are separated from the production division simply with a glass window. This encourages the ability to solve problems quickly and the feeling togetherness through the architecture. The same applies in designing the office premises.

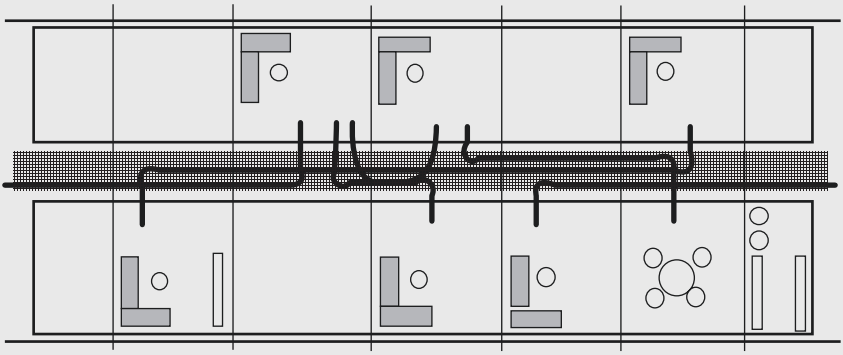
Knowledge-oriented companies should therefore design offices, break rooms and circulation areas in such a way that they support function-based cooperation, employees meet each other randomly and can communicate with each other. The Munich based architecture firm, Henn, has developed a concept for the offices called as knowledge stock exchange.[11]

While the physical material flow is visible inside a building and inadequacies are noticed, the flow of intellectual material is not visible in an organisation. Incomplete thoughts and solutions are often concealed because they do not pile up in boxes. Though they also block the ways to solutions, they do not stand out directly. Based on this thought, Henn developed or adapted a process to capture the communication in the building. The result was visualised in a «*netgraph*». Office concepts that encouraged communication were developed based on this. ◘ Figure 5.16 shows three different types of offices – traditional office cubicles, group space and combi-office with communication zone – under the criteria of concentration and communication.

A suitable interior decoration encourages teamwork and symbolises, through the type of design, trust and openness to innovation. Some companies have created employee lounges, based on the concept of airport waiting rooms, for employees who

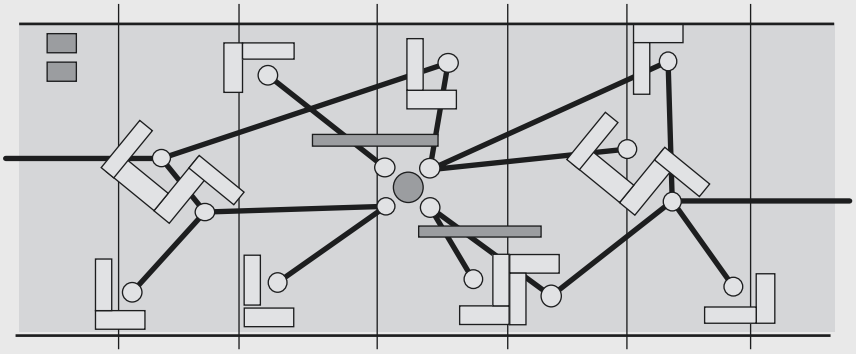
10 Allen (no year).
11 The text widely follows Henn (1995).

Office cubicles – Work spaces connected by a common route



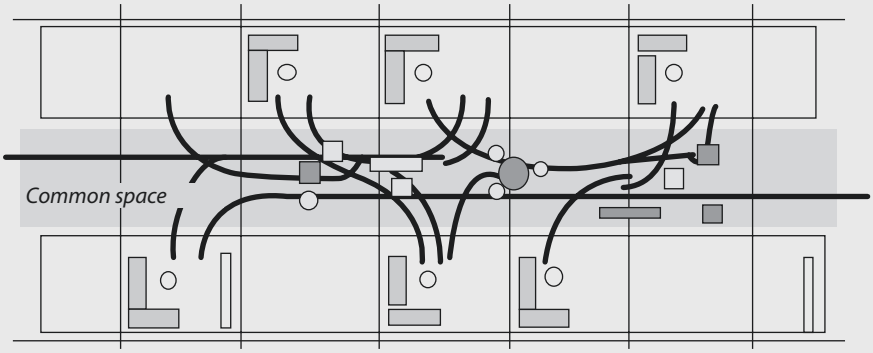
Concentration: good
Communication: less

Group space – Working desks are placed together and connected



Concentration: poor
Communication: good

Combi office – Work cockpits connected by common space



Concentration: good
Communication: good

Fig. 5.16 Types of offices (Source: Henn Architects)

come to the office randomly. The employees can work, meet or relax in these employee lounges. One requires variable work places like a room in a hotel.

If knowledge is not visible directly, it is possible to present process intelligence and product intelligence symbolically through a suitable architectural design.

5.6 Key Insights of Chapter 5

- The business environment is rampant with situations that require information about products, about activities done in the past and their result, about effective ways of executing a process and interpretations of various outcomes. The question therefore is: how can organisations leverage experiences to be able to cope with today's and tomorrow's dynamic business environment?
- The approaches of company practice can be described with a basic concept of a knowledge ecology, which creates enabling conditions for creativity, innovation and knowledge flows.
- Normative, strategic and operational knowledge objectives are starting points for interventions in organisational knowledge base in order to convert knowledge into competitive advantages.
- Organisations can be regarded as knowledge markets. The following are the three elements of the knowledge market concept
  1. Framework conditions,
  2. Players and rules of game
  3. Processes/Structures,
- According to Traecy and Wiersema, there are three higher-level strategic company objectives. The fulfilment of these objectives is supported by respective creation and transfer of knowledge. The three areas are:
  1. Product Leadership
  2. Customer Intimacy
  3. Operational Excellence
- The model defined by Bukowitz and Williams (1999) rests on the premise that KM initiatives are the result of the response to tactical and strategic changes and needs. The strength of this model is the strategic focus based on the tactical processes, which essentially puts knowledge management action into context.
- The main feature of a knowledge firm is that it creates common moral concepts of employees. Values are more important than structures. Structures can be defined but values enable teamwork of employees in different projects, represent tacit knowledge and ease the association with each other.
- The successful implementation of knowledge management often rests on two aspects: firstly, on the ability and readiness of employees to share knowledge with other employees and secondly, on the focus on technology as an enabler.

5.7 Questions

1. How can an organisation align its knowledge management strategy to the business strategy? How can effective knowledge management provide the competitive edge?

2. How do you identify the strategic positions of the company in terms of the knowledge assets so as to determine the areas where the knowledge management efforts need to be enhanced?
3. How can knowledge management enhance operational effectiveness?
4. How can a knowledge management strategy contribute to improved innovativeness? What would be concrete measures to be implemented?
5. In an organisation following the knowledge market metaphor, how can you create demand for knowledge (and the consequent sharing of it)?

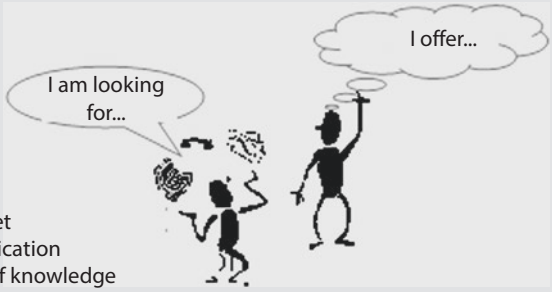
5.8 Assignments

1. **Improve customer response** Atul Corporation is a large corporate, manufacturing and supplying engineering goods to the industry. It has four divisional offices. A customer survey showed that clients of two divisions were not happy with its ability to deliver orders on time, in proper condition and at the proper location.

   How can a knowledge management solution help the company address this problem? Identify the knowledge assets and the implementation challenges?
2. **Star bakery** You're a new manager of a chain of 10 bakeries located in a region of 50 miles. Sales performance, customer satisfaction and profitability of the bakeries vary substantially.

   Apply the four principles of a knowledge market (common-interest, lighthouse, push-pull, give and take) to improve performance. Which concrete measures would you take?

5.9 KM-Tool: Knowledge Market



The knowledge market is a basis for communication and documentation of knowledge

What is a knowledge market?

A knowledge market relates offer and demand of information and knowledge and enables contacts and transfer between buyers and sellers. Knowledge markets operate over the internet or an intranet or on a physical knowledge marketplace (buyers and sellers are in a room). A knowledge market can be organised within units, across units

and also open up a firm to the outside (e.g. knowledge market with customers or suppliers). It provides a different way of experience exchange than the traditional slide presentation and discussions.

? Why use a knowledge market

- The knowledge market helps resolve problems using the «wisdom of the crowd»
- Good practices are made public
- Colleagues find that they are working on similar problems and have similar interests. A knowledge market can be a start of a community, a form to organise experience exchange-group form
- Market participants learn to present their knowledge and to ask precisely.

In the following we will present ways of organising a knowledge market:

The prearranged market stand version

This version is similar to an «open space» meeting.

1. In participatory process (usually some weeks or days before the market session) decide on priority topics of interest or define a problem to be solved/questions to be discussed
2. Set up a number of market stands/tables in a large foyer. Each stand presents a topic, a solution, a good practice related to the market topic. Each table/theme is «hosted» by two resource persons who moderate the discussions.
3. Participants go from stand to stand according to their interests and interact.
4. The contents of the market and discussions might be summed up by a short video, which might be made available
5. Market discussions might be continued in an intranet discussion form or in community meetings.

The spontaneous market

1. The «market master» (facilitator) prepares presentation two boards or wall paper on two sides of a room. Write on one the title «***I offer***,» the other «***I'm looking for.***»
2. Participants write their offers and requests on paper cards or «post-it», and add their name/nickname. The number of cards may be limited, for example, three offer and three demand cards per participant.
3. Participant put their cards on demand or offer side.
4. If no categories were predetermined, the market master may arrange the cards thematically.
5. Participants have time to become familiar with supply and demand (about 15 min).
6. Market Master asks buyers to contact vendors: Those participants who have found an answer (offer) to their query take their question cards from the «search» wall and attach it to the appropriate offer (15–20 min).
7. Buyers and suppliers get into contact personally and discuss/resolve the issue. If necessary, the market master calls out the names of seller and buyer. The issues might be deepened in small groups or appointments for follow-up can be made (20–30 min).

8. If there are still unanswered questions on the «I'm looking for» board: The market masters may read them out individually or bundled together thematically and asks who can contribute to the solution, if necessary, who could answer the question outside the present group. If the question is not answered, or it includes a more complex problem, the market master decides with the participants, whether the question is so important that it should be pursued. The market master takes the unanswered questions and contacts relevant experts to provide the answers. For example, answers to questions will be posted under the heading «knowledge market» on the intranet.
9. If there are offers which did not find a «buyer» the market-master asks briefly the «seller» provider to explain and clarify their respective offer and ask participants if they are interested in the offer.
10. The market concludes with a summary of the transactions and asks participants to evaluate the quality of the exchange.

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