Strategic Deployment of Networks for Knowledge Management: When to choose the Network Option

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Competence Center Knowledge Networks

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1 KNOWLEDGESOURCE AND COMPETENCE CENTER KNOWLEDGE NETWORKS

1.1 Research project Knowledge Networks

The Competence Center Knowledge Networks is a research project within the Research Center **KnowledgeSource**, a cooperation of the Institute of Management (Chair of Prof. Dr. Georg von Krogh) and the Institute for Information Management (Chair of Prof. Dr. Andrea Back) at the University of St. Gallen (HSG). Within the framework of an international research co-operation with business and research partners, the objective of KnowledgeSource is to develop an integrated approach to Strategic and Information Management in order to achieve lasting competitive advantage through Knowledge Management.

The **Competence Center Knowledge Networks** (CC KNN) of KnowledgeSource was established 1998 in cooperation with our partner corporations Hewlett Packard, DaimlerChrysler, Lotus Professional Services, and Unilever. It focuses its research activities towards an integrated view of Knowledge Management and networking. The main objectives of the Competence Center Knowledge Networks are to establish a shared understanding, a reference model and a methodology for high performing Knowledge Networks. 'High performing' means to support specific business goals through Knowledge Networks effectively and efficiently. These results aim to support our partner corporations in the process of establishing, recognizing, and facilitating Knowledge Networks within their organizations. To achieve this goal the reference model and the methodology are mainly based on academic research work, bilateral projects with our partner corporations as well as case studies from reputable organizations.

This paper will elaborate our understanding of Knowledge Networks, the findings of our first bilateral project with Unilever and the contribution of the bilateral project to the overall research question on Knowledge Networks.

Before describing the bilateral project with Unilever, our initial framework of Knowledge Networks should be introduced.

1.2 Research Framework

1.2.1 Knowledge Networks Reference Model

The initial framework of Knowledge Networks comprises the following components:

- *Actors* – individuals, groups, organizations *relationships between actors*, which can be categorized by form, content and intensity,
- *resources* which may be used by actors to network with other individuals, groups or organizations, and
- *organizational properties*, including structural and cultural dimensions such as control mechanisms, standard operating-procedures, norms and values, communication patterns, etc.

These components can be perceived from either a static or a dynamic point of view. From a micro perspective, we conceptualize Knowledge Networks on the following three building-blocks (see *figure 1*):

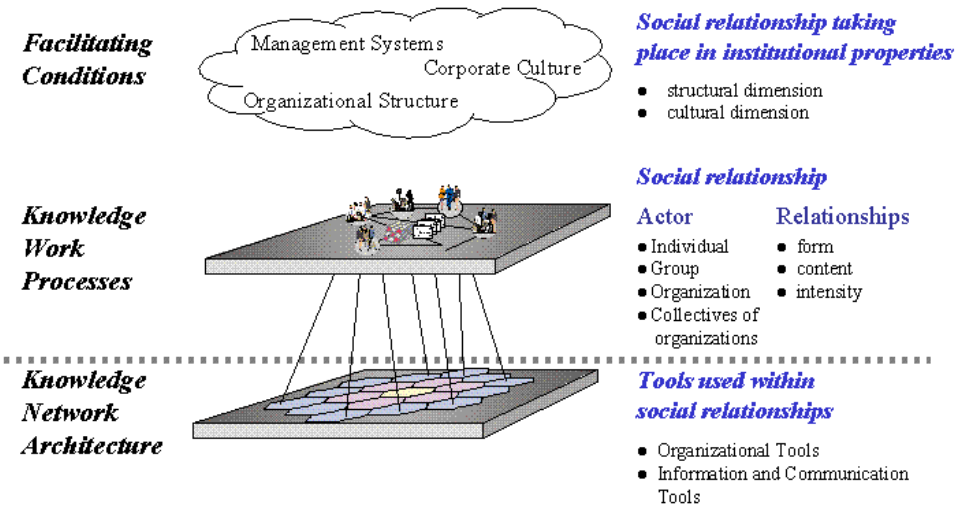

Figure 1: Framework Knowledge Networks - a micro perspective

a) Facilitating conditions

In our understanding Knowledge Networks are rather an additional, cross-divisional, dynamic layer than a new kind of organizational structure. In this regard, one needs to take into account the interdependence of Knowledge Networks as well as their role within their existing organizational units. In order to develop high-performing Knowledge Networks they have to be synchronized by facilitating conditions, which we divide into structural (e.g. organizational structure, management systems) and cultural (e.g. corporate culture, organizational behavior) dimensions.

From within Knowledge Networks (micro perspective) facilitating conditions comprise the network's internal structural and cultural dimensions in which knowledge work processes take place. Therefore, they define the enabling or inhibiting environment for knowledge creation and transfer.

b) Knowledge work processes

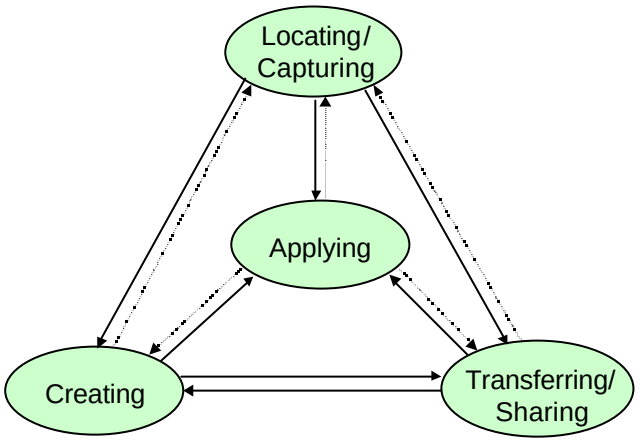

Figure 2: Knowledge process categories

In our reference model we define Knowledge Work Processes in terms of locating and capturing knowledge, transferring and sharing knowledge as well as knowledge creation (see *Figure 2)* as our main categories. The bottom line for all categories is the application of existing or new gained knowledge to create value for the customer and therefore for the organization itself. In our model of Knowledge Work Processes the application of knowledge takes the center role to indicate the knowledge should not be managed per se, but it needs to be tightly connected to business drivers.

c) Knowledge Network architecture

Knowledge Network Architecture, finally, comprises the tool-set used within social relationships. These tools include organizational tools, e.g., roles like the knowledge activists[1] as well as information and communication tools (ICT), e.g., the groupware-enabled data warehouse concept[2] used to enable and improve knowledge work processes[3].
This architecture is not only a collection of modular tools. In the form of "solution frameworks"

[1] See von Krogh/Nonaka/Ichijo, (1997)
[2] See Seufert, (1997)
[3] See Nonaka/Reinmoeller/Senoo, (1998)

we want to link architectural designs that are a combination of ICT and organizational tools and methods with the knowledge work processes level.

1.2.2 Knowledge Networks Methodology

Whereas the reference model performs the basic understanding, the methodology provides a blueprint for developing knowledge networks. In the following we describe the building blocks of this methodology.

Our model consists of the following three building blocks:

- **Business Strategy**
- **Knowledge Network Types**
- **Knowledge Network Scorecard**

Knowledge is a key resource in order to achieve competitive advantage. Therefore our model comprises the **business processes**, which are derived from the **business strategy**.

Strategy serves in this perspective as a starting point for defining the requirements that have to be fulfilled by a Knowledge Network. Additionally, especially in practice a concrete task or process might serve as a starting point, too. Within our research we identified the business goals **risk reduction**, **efficiency improvement** and **increasing innovation**.

Knowledge Networks are the organizational environment in which Knowledge Management activities take place. They consist of 3 layers, the knowledge work processes, the knowledge network architecture to support these processes and the facilitating conditions, that is the environment in which the knowledge processes - embedded in business processes - occur. Research has shown that there are different types of Knowledge Networks that can be identified and described by different characteristics. These Knowledge Network Types may serve as blueprints for building a Knowledge Network.

Since Knowledge Networks are the organizational environment where knowledge processes take place in order to achieve the business goals derived from strategy there has to be a intersection between Business Strategy and Knowledge Network Types. One should bear in mind that this interrelation is reciprocal.

On the one hand, starting with a market based perspective, business strategy defines the business goals that have to be addressed by Knowledge Networks, on the other hand these business goals have to be achieved with a certain set of resources represented by the Knowledge Network (Knowledge Networks Types hereby serve as a blueprint in order to get an impression of the resources required). According to the business goals and the derived tasks that have to be executed, a **different cluster of Knowledge Networks** becomes relevant. This cluster can be seen as a **portfolio of network possibilities**, which have different characteristics (e.g. size, roles etc.)

Coming from a resource based perspective, one could also start choosing a Knowledge Network Type based on the company's available resources and adjust the Knowledge Network characteristics in order to meet specific business goals.

This leads to a **matrix of business goals and network types**[4]. The following figure illustrates an example where Knowledge Network Type E1 would be the appropriate choice of a company.

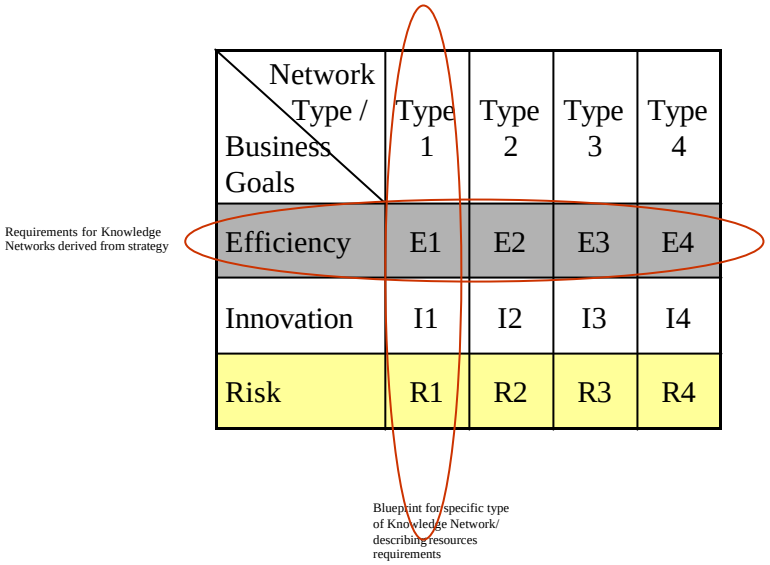

Figure 3: Interrelation between Knowledge Network Types and Business Goals

Based on this decision the company starts setting up the Knowledge Network and uses the Knowledge Network Type (in this example E1) as a blueprint.

The **Knowledge Network Scorecard** finally measures the impact of the implemented Knowledge Network. The Knowledge Network's performance is measured by the output of the business process, which in turn is determined by the degree of goal achievement. Hereby we suggest a system that measures the output of the Knowledge Network in respect to the initial business goal, integrating quantitative and qualitative factors.

The following figure gives an overview of the building blocks of the model and their interconnections.

[4] See Enkel et al., (2000)

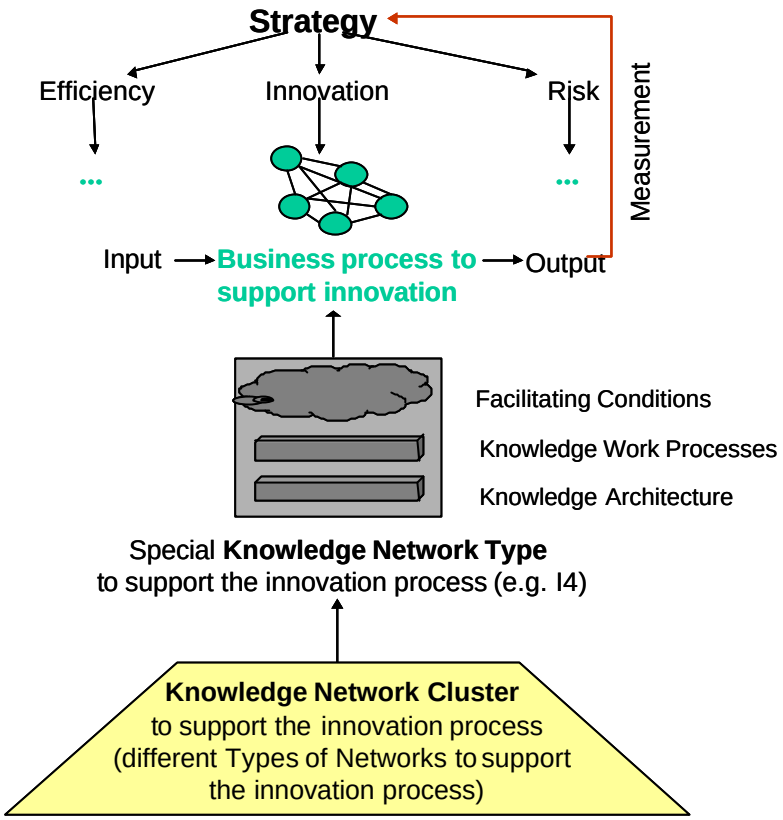

Figure 4: Building blocks of the procedural model

a) Business Strategy

Modern management doctrine has shown in theory as well as in practice, that it is especially middle- and long-term goals, like efficiency improvement, increased innovation and risk optimization[5], that lead to sustainable competitive advantage[6]. There are also many indications in the literature that the discipline of Knowledge Management is most successful, when it comes to middle- and long-term goals[7]. The aim of the strategic goals is to give an orientation when developing and choosing a strategy, especially a knowledge strategy. Through the alignment of the knowledge advancement activities with the overall, for all the business units coherent strategic goals, it can be made sure, that the local efforts help fulfill the strategy of the company. It is also our aim to classify Knowledge Networks according to these business

[5] See von Krogh et al., (1999)

[6] See Porter, 1985; Bleicher, (1991) and Prahalad; Hamel, (1990)

[7] See Nonaka; Takeuchi, (1997); von Krogh; Roos, (1996); Senge, 1996 and von Krogh; Venzin, (1995)

goals. In the following the three strategic goals: "*efficiency improvement*", "*increased innovation*" and "*risk optimization*" will be discussed.

The main focus at **efficiency improvement** is to reduce the costs in the existing business processes quicker than the competitors. On company level, it is about achieving higher efficiency by increasing the value of the output compared to the costs of the input. For many companies one of the biggest challenges is to improve their business processes and then transfer them to other parts of the company[8]. *Texas Instruments* was in the beginning of the 90's confronted with the problem of regular delays at delivering its products. In order to solve this problem, a project was established to search for best practices inside the company. Through the transfer of these best practices between the various units of the company, it was possible not only to minimize delays, but also to reduce the delivery costs[9]. Increased efficiency in operation can also mean improving the speed of processes, getting the "right" types and amount of processes, having improved decision making and increased responsiveness to customers. It is also essential in this respect to learn from partners, competitors and oneself how to manage the business processes more efficiently.

The goal of **risk optimization** concerns mainly risk associated with investments and the running business. Many companies face at least two main risks: (1) political risk and (2) competitive risk[10]. The *political risk* is a result of uncertainty regarding political decisions. Especially for international companies, this can present a big challenge, since national governments can often take unexpected decisions, which cannot be influenced by the company. Competitive risks depend on the uncertainty surrounding the actions and reactions of existing competitors as well as the emergence of new competitors. Since many companies operate in more than one market and because of the erosion of the boundaries of these markets, it becomes increasingly difficult to anticipate such changes. In order to reduce its competitive risks, the German company *Aerospace* created a program for simulating possible scenarios for future environmental conditions in its core businesses. The managers in the company can learn this way to see and understand the complexity and interplay of environmental conditions that can have an effect on their business[11]. Thus, new knowledge about alternative future scenarios and the functions in the competitive environment is created, reducing the competitive risk of the company. Other risks a company might face are:
(1) Information risk, which is the risk of not having the correct information at the right place at the right time. (2) Knowledge risk, which is the risk of employees exhibiting knowledge defi-

[8] See von Krogh et al., (1999)
[9] See O'Dell; Grayson, (1998)
[10] See von Krogh et al., (1999)
[11] See Schüppel, (1996)

ciencies. (3) Financial risk, which is the risk of the business not managing its finances appropriately. (4) Human risk, which is the risk that the business does not employ the right people for the tasks and that the people with valuable knowledge leave. (5) Derived demand risk, which is the risk that the business either misunderstands or ignores potentially profitable new technologies, or does not engage in sufficient innovation to offset future competition. (6) Communications risk, which is the risk that the business does not communicate its accomplishments to the market and to the other stakeholders. (7) Customer risk, which is the risk that customers are not correctly managed, that customer satisfaction decreases thereby resulting in lower repeat business and referred business. (8) Structural risk, which is the risk that the business cannot support current management initiatives due to a deficient structure. (9) Resource risk, which is the risk of not having the resources to implement your strategy. Managing the companies risk exposure can also mean capturing the knowledge of experts before retirement, avoiding over-taxing local resources by transferring key personnel on demand and learning from your projects in order to avoid repeated mistakes.

Increased innovation is about improving ones competitive position, through the development of product-, service- and process-innovations[12]. Innovations are mostly based on procedural knowledge and cultural conditions, which cannot be imitated directly by the competitors. Procedural knowledge is knowledge that has something to do with the generic innovation processes. Such a process consists of different phases, like concept development, evaluation and selection of alternatives or developing prototypes[13]. Cultural conditions encompass shared values and modes of behavior within the company[14]. For bigger companies with many business units, there is the challenge of leveraging their procedural knowledge in developing different innovations throughout the company, thus achieving a sustainable competitive advantage. Ultimately innovation is about creating new sources of revenues through new products and services. In the long run companies ought to develop a culture that advances innovation. The innovation culture serves the development of many different products within a short period of time"[15]. Following the discussion of the strategic business goals, we will now turn our focus to the central knowledge processes and the evolution of Knowledge Management. For innovation it is essential to capture new business process and innovation ideas throughout the companies, to adapt a new product or marketing instrument to another part of the company and to create in depth knowledge to develop radical innovation and process improvements.

[12] See von Krogh et al., (1999)
[13] See Nonaka andTakeuchi, (1995)
[14] See von Krogh et al., (1998)
[15] See Widmer, (1999)

b) Knowledge Networks Types

Referring to Nonaka there are four Knowledge Network types that can be distinguished[16]. It should be noted here that we currently do not have decided yet how to name the network types and therefore use type 1-4 in the meantime. Starting from this framework it will be possible to provide a more detailed judgment regarding design potentials. For this purpose, the initial model of the knowledge spiral for networks has to be modified according to the needs of assigning a certain type of network to a specific task. Also the knowledge spiral becomes irrelevant, since we do not conceptualize the development of networks through the knowledge transformation phases. Building on the already introduced model of structuration theory, a differentiation can be made between the generic knowledge processes, meaning the interactive mutation of implicit and explicit knowledge (knowledge transformation), and the structuration of the institutional framework conditions, meaning the building and design of the network (network building).

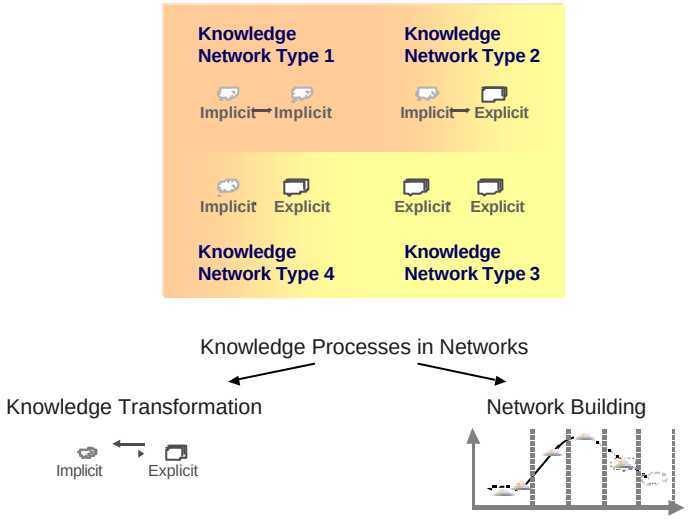

Figure 5: Knowledge Processes in Knowledge Networks

In the following we focus on the knowledge (transformation) processes since they can be used for identifying Knowledge Network Types. The four forms of knowledge exchange will subsequently be used to differentiate the Knowledge Network within the "business goal-clusters". In order for implicit knowledge to be exchanged, as in Knowledge Network Type 1, it first needs to be identified, so as to be internalized through adaptation and model-learning. Knowledge Network Type 2, in turn, deals with the process of identifying implicit knowledge, with its transformation into explicit knowledge being defined by concept- and model-learning

[16] See Nonaka and Konno, (1998)

and by the exchange of this explicit knowledge. Knowledge Network Type 3 focuses the identification of already explicitly available knowledge that is interconnected and prepared for decision making, hence, (re-) organized and then distributed. Finally, Knowledge Network Type 4 can be thought of as a Network dealing with the identification of explicit knowledge and the internalizing thereof, in order to apply it in concrete circumstances.

As research has shown, knowledge processes build the heart of the Knowledge Network. In order to meet the goals of the business processes by supporting specific knowledge processes efficiently, appropriate facilitating conditions and tools have to be in place. This means that knowledge work processes, knowledge network architecture and facilitating conditions have to match. Serving as a blueprint, Knowledge Network Types can be used to identify "ideal" forms and arrangements in order to contribute to specific business goals, i.e. supporting key business processes and accordingly having the appropriate facilitating conditions and knowledge network architecture.

c) Knowledge Network Scorecard

The purpose of the Knowledge Scorecard is to measure the impact of the Knowledge Network on the achievement of the business goals risk reduction, efficiency and innovation. Based on performance indicators we are developing a measurement model that brings theses measures into a coherent framework. The following figure gives some examples of possible measures according to the aimed business goal.

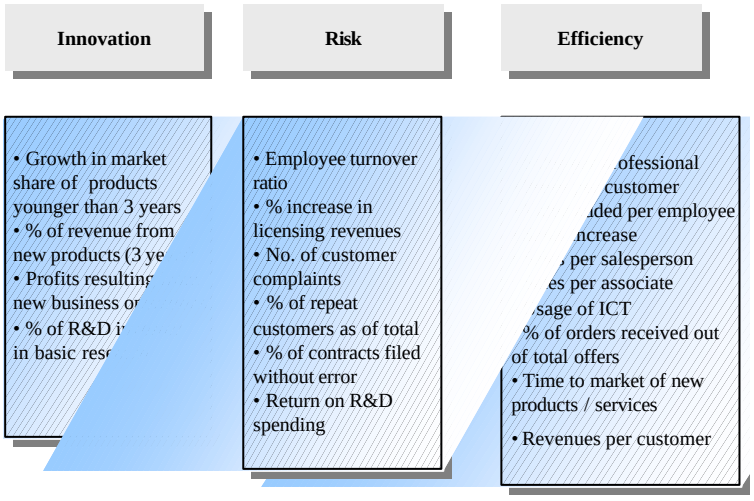

Figure 6: Examples of measurements

Performance measures should have a certain set of characteristics. It is very important to have *cause and effect relationships.* Every measure selected should be part of a chain of

cause and effect relationships that represent the strategy. It is also very important to identify the *performance drivers.* Measures common to most companies within an industry are known as “lag indicators”. Examples include market share or customer retention. The drivers of performance ("lead indicators") tend to be unique because they reflect what is different about the strategy. A good measurement system should have a mix of lead and lag indicators. Performance indicators help determine *how* something is achieved, and should be particular, context-dependent measurements, self defined by the networks. They should also be simple, understandable and use existing systems and processes rather than introducing artificiality or unnecessary complexity. They furthermore create a language for a shared understanding of local activities throughout the company, which is very important. A challenge, that has to be dealt with is that they also influence and shape behavior. Finally the measures should be *linked to financials*. With the proliferation of change programs underway in most organizations today, it is easy to become preoccupied with a goal such as quality, customer satisfaction or innovation. While these goals are frequently strategic, they also must translate into measures that are ultimately linked to financial indicators. Still, with performance indicators for intellectual capital, *direction* is more important than precision, since essentially *approximations* are valued.

In order to have a successful measurement system, one should follow certain steps. Firstly, it is important to develop a greater *awareness and understanding* of the role of knowledge and the nature of intellectual capital. Secondly, the creation of a *common language* that is more widely diffused within their company is necessary, e.g. using terms such as “human capital”. In addition to this, it is essential to identify *indicators* that are suitable and appropriate and to develop a *measurement model*, that brings these indicators into a coherent framework. Finally, one should introduce *measurement systems,* including the accompanying management processes that guide and reward managers and maybe use objective impartial consultants and surveys to carry out key aspects of the measurement process.

2 BILATERAL PROJECT WITH UNILEVER

2.1 Who is Unilever

Unilever was created in 1929 when Margarine Unie merged with Lever Brothers Limited. Both were in the business of supplying goods for households, but were also competing for supplies of oils and fats. By 1986 the company had sold most of its service and ancillary businesses. At the beginning of the 1990s Unilever started to concentrate more on its core businesses. The packaging companies and the major part of its agribusiness interests were sold, leaving four core product groups - home and personal care, foods, and specialty chemicals – which by 1991 accounted for 96 per cent of sales. The company also performed many acquisitions between 1984 and 1988, when around 80 companies were bought up. After these purchases, Unilever had a firm base in the prestige sectors where margins and growth rates were attractive. In 1996 Unilever changed the organization of its top management for the first time since it was formed. Under the new structure, the chairmen of Unilever PLC and Unilever NV, together with directors responsible for Foods, Home & Personal Care, Finance, Personnel and Strategy & Technology form an Executive Committee. On behalf of the Company's various boards, this Executive Committee is responsible for taking key decisions and planning long-term strategy. Twelve business group presidents have operational responsibility for implementing this strategy throughout the business. The two category directors for Foods and HPC provide central resources and strategic direction for the corporate categories. In 1997 these were: laundry, personal wash, prestige, mass skin, hair, oral, deodorants, ice cream, yellow fats, tea and culinary products. One lever moves countless products to innumerable countries. Unilever is now one of the world's largest manufacturers of packaged consumer goods. Its brand-name products include such familiar names as Lipton, Popsicle, Vaseline, Q-Tips, Helene Curtis, Lever 2000, Pepsodent, Wisk, and Country Crock. It also makes institutional cleaning products. The company offers 1,600 brands but plans to cut that number to 400, each of them #1 or #2 in its market. Unilever is operated by Unilever PLC (UK) and Unilever N.V., which trade separately but have a single board of directors. For Unilever as a whole, it is important to reduce costs and to boost growth through focusing on leading brands. This is aimed to be achieved with margin expansion, greater capital efficiency and stronger top-line growth[17]. In order to do this, the company has to leverage its power brands across geographies, categories and channels[18].

[17] See Harvilicz, (1999)

[18] See Fitzgerald, (1999)

2.2 Proceeding

Within our Competence Center, we are carrying out two bilateral projects with each partner company in the course of two years. These bilateral projects, which are designed to offer assistance to our partners will also provide a contribution to the overall framework of knowledge networks. This aspect will be further discussed in the next chapter. Following figure shows the chosen course of action:

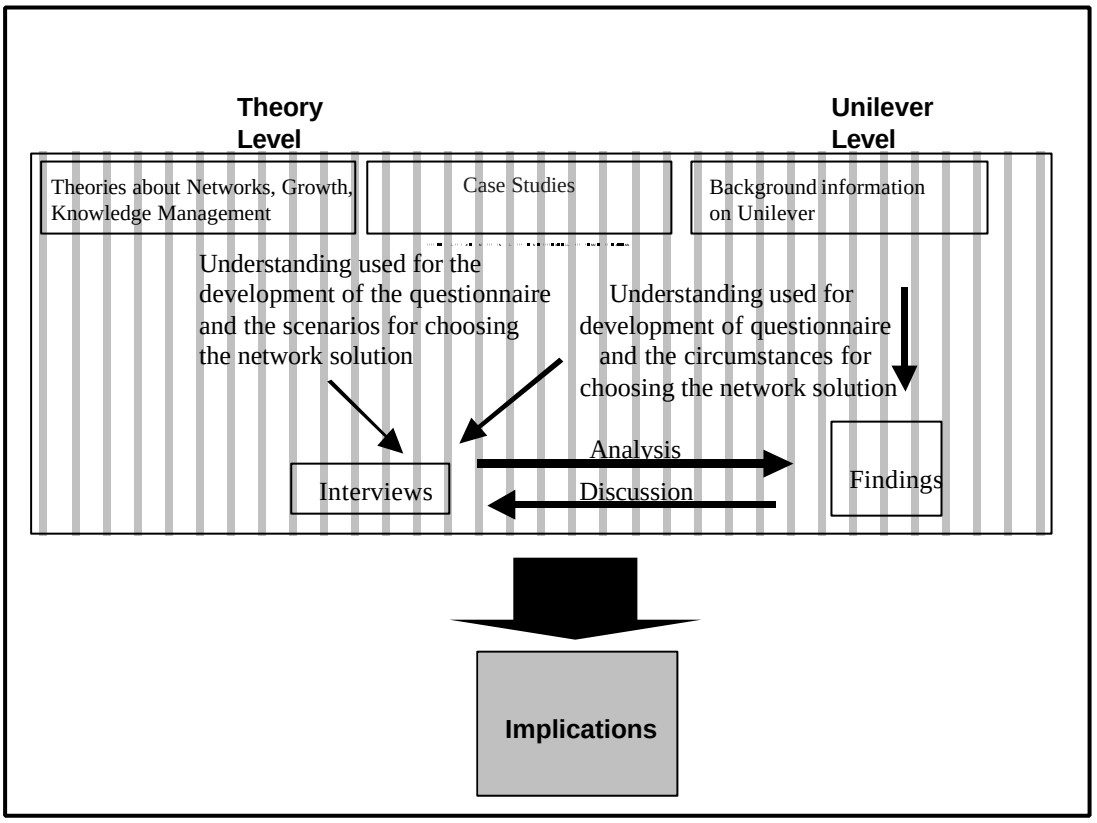

Figure 7: Course of action

On the one hand, we used theories regarding Networks, Growth and Knowledge Management and on the other hand, we looked at empirical evidence from inside Unilever as well as case studies from other companies. From these sources, we derived our understanding for the theme and also developed the questionnaire. This questionnaire was then used to perform some interviews with network members at Unilever, giving us not only some further insights in the topic but also validating our previous hypothesis concerning the subjects network choice and network failures. As a result, our implications were derived. By using case studies, limitations in the way new forms of organizing are operationalised can be obviated. This is done by using rich accounts of both the content and the process regarding the concept. Moreover, new theory can be developed from case study research. As Eisenhardt sug-

gests[19], for building theory form case studies "when little is known about a phenomenon, current perspectives seem inadequate because they have little empirical substantiation, or they conflict with each other or with common sense." As our literature review has suggested, we might be able to improve on existing theory and empirical results on the introduction, development and implications of networks through the analysis of the selected cases. At this point, it should be mentioned though, that this report is the result of very practically oriented project, so that we will not go into a further discussion of the theoretical consequences.

2.3 Organization of the bilateral project

2.3.1 Background

Unilever is a knowledge-based company by virtue of its brand diversity, brand equity, geographic spread, quality of management and the rate at which it must transfer technology from its research laboratories to its various markets around the world. Unilever therefore sees Knowledge Management as a high-priority strategic objective and monitors its activities in this field at main board level. There is a widespread internal appreciation that dealing with knowledge is a people-driven activity rather than a technology-driven activity, and the tools and techniques of Unilever's specialist groups reflect that bias. These tools form three clusters broadly defined by the functions of knowledge auditing, knowledge sharing and knowledge delivery. The main vehicle so far for encouraging knowledge sharing has been the knowledge workshop. However, the workshop is a discrete event which is attempting to bring about changes in behavior that ought to be embedded in everyday workflow. There is thus a real issue of how to follow-up workshops with tools or procedures that have continuous and enduring effects on knowledge sharing. For this reason the Knowledge Management practitioner groups within Unilever have become interested in knowledge networks.

Networks

Whereas Knowledge Management specialists are coming to view the network as part of the KM toolkit, the predominant view in the organization as a whole is that networks are simply informal add-ons to the current organizational structure[20]. In this view a community of people with a common purpose is leveraged by an expert, which is common in research, to ensure that discussion of issues and their solutions is conducted on a global basis. The role of the network is not only to provide an efficient exchange forum (such a forum could be a Community of Practice), but also to provide solution-providers with a convenient method of managing technology transfer issues with maximal business backing. In essence the network reduces the risk of technology push. Unilever's wish was to move to a position where networks are viewed more strategically, and where more thought is given to the various opportunities that

[19] See Eisenhardt, (1989a)

[20] This is also argued in Ferlie and Pettigrew, (1996)

networks can provide, the different ways of managing them, how they are monitored and what criteria are used for their reconfiguration, which includes the option of termination.

At present the Knowledge Mapping and Structuring Unit (KMSU) is attempting to provide coherent advice to Knowledge Management practitioners around Unilever about which-tool-to-use-when. The aim is to include knowledge networks within that advice, but as things stand this is not possible. This is because KMSU does not understand:

a) how to characterize networks appropriately,
b) how to care for networks during their life-cycle,
c) which are the technical, business and cultural circumstances under which networks (or type of network arising from the first point) can profitably be deployed, as opposed to alternative tools and techniques.

The Competence Center project as a whole is looked at to provide answers to (a) and (b). The Unilever bilateral project was used to investigate (c). The monitoring of a network is regarded as an issue closely allied to strategic deployment. If the network is becoming dysfunctional, it is important to watch for key signs and interpret them accordingly. This would give some idea of when an investment in a network should be reconfigured or redirected.

2.3.2 Project definition

The title of the project was chosen as: *"Strategic deployment of networks for knowledge management: When to choose the network option."*

2.3.3 Objective of the project

The aim of this report is to outline the conditions under which a knowledge network becomes the tool of choice to deliver a given benefit. Unilever (KMSU) will use the content of the report to add various types of knowledge networks to its catalogue of methods available for doing Knowledge Management. It was therefore desirable, that the report positions networks in relation to alternative approaches that a Knowledge Management practitioner might adopt in a given situation. It was not clear on what basis practitioners might choose a network solution, nor on what basis they might give it up. Part of the deliverable was also an indication of key symptoms of an ailing network, and what fallback positions might be available for an extant network that no longer delivers what is expected of it.

Exemplar networks

Unilever provided contacts for a variety of existing networks varying in age, size and purpose. The information acquired from interviewing key members of these networks will be supplemented by St Gallen's access to publicly-available case-studies, as well as expertise available within the Competence Center. To some extent the choice of the offered networks was constrained by the availability of such networks. Following networks were then examined:

- Network "X"
- Powders network
- Supply-chain Network
- Consumer Understanding Network

2.3.4 Timeframe

Activity began in October 1999 and the project was finished in February 2000. Following figure illustrates the project plan:

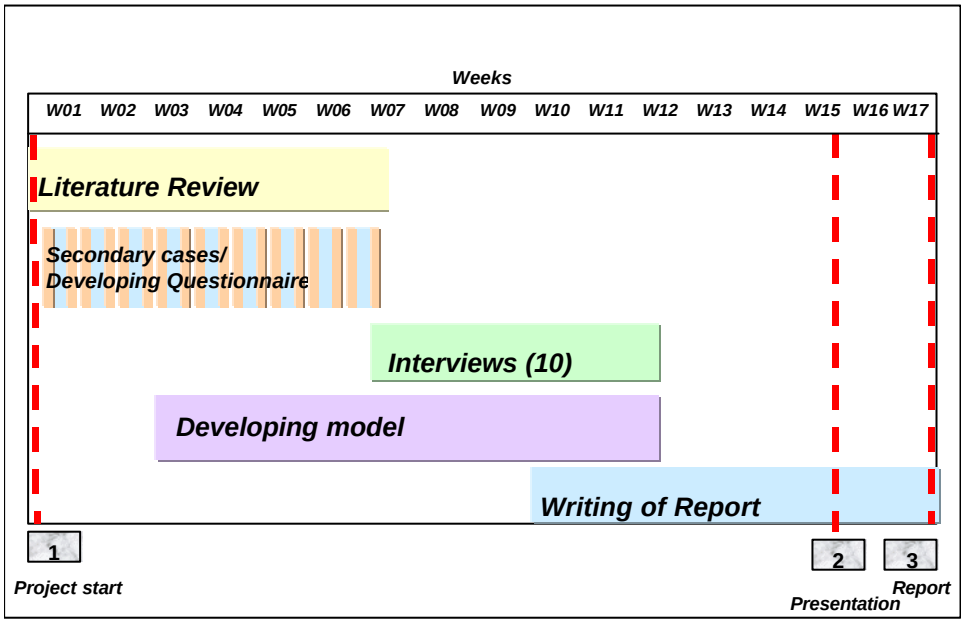

Figure 8: Project plan

- Kick off: 08.10.99 in St. Gallen.
- Literature Review on Networks.
- Developing Questionnaire and scenarios for the use of Networks.
- Further development of selected scenarios, Research concerning Best practices, Fine-tuning of Questionnaire.
- Interviews with selected networks, on the 22/11/99, 23/11/99, 30/11/99.
- Integrating findings from the interviews into the previous findings.
- Fine tuning of concepts.
- Writing of final report.
- End: 28.01.2000: Final Presentation.

2.3.5 Team members and responsibilities

The following figure demonstrates the structure of the project team:

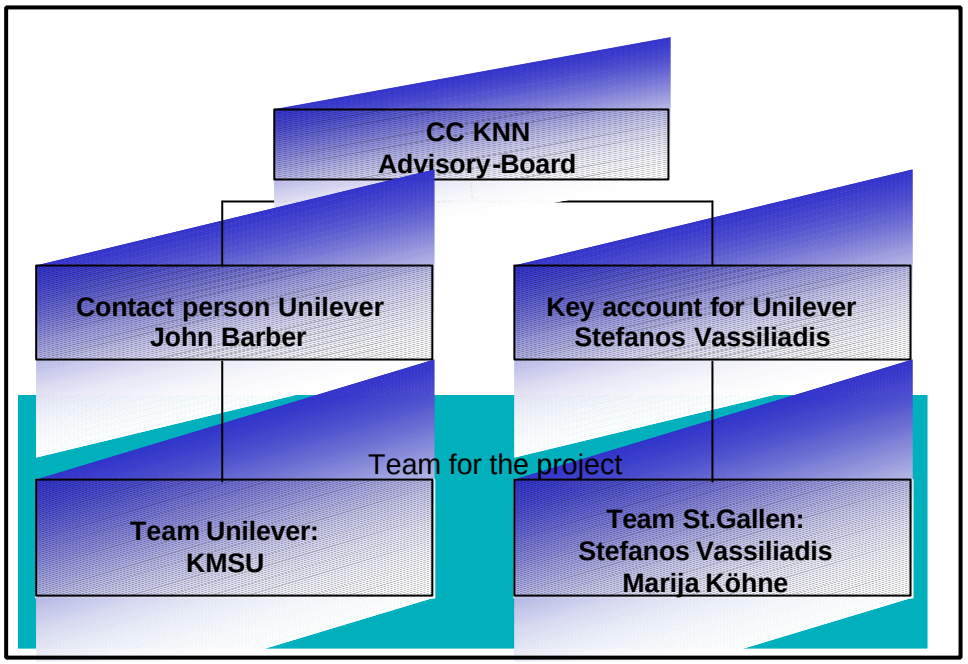

Figure 9: Project team

The first thing to clarify was the availability of the team members. Concerning the resource allocation following deployment was agreed upon:
Unilever had continuous access to Stefanos Vassiliadis for the 30-day duration of the project, and through him to other members of the Competence Center. Stefanos Vassiliadis and Marija Köhne had a combined budget of 30 days. The KMSU contact was John Barber.

3 RESULTS

3.1 Justification / Choosing the Network solution

New challenges seem to continuously haunt companies operating in what has been variously referred to as "hyper-competitive"[21], "hyper-turbulent"[22] and "high-velocity"[23] environments. Pioneering companies are beginning to tackle these new challenges by improving the hierarchical and bureaucratic organizational forms of the past, making them less formal[24]. While the need to revise the traditional structures, in order to help organizations adapt to their competitive challenges, it is still not clear, how to think about some of the new forms of organizing. This is also problematic, because of the still rather limited research into this area of organization studies[25].

Firstly, when conceptualizing new forms of organizing, the alternatives can be defined regarding the objectivity of the structural characteristics of network organizations. Regarding networks, there are two conflicting views. The first claims that networks are in the eye of the beholder[26]. The other says that network arrangements are fundamentally different from more traditional forms[27]. In this project we assumed knowledge networks to be a distinct form of an organizational solution, with some special characteristics.

In order to develop some criteria for choosing the network option under certain circumstances and taking into account the predetermined required benefits, we analyzed on the one hand some cases from the literature and did on the other hand some empirical research. The empirical research included a number of interviews with networks at Unilever. In order to demonstrate the reasons, why different companies chose networks as an organizational form to tackle their daily business, some cases will be analyzed. From these cases, but also from the empirical part of our research, the criteria for choosing the network solution will be illustrated. Some of these criteria were then set against one of the overriding goals at Unilever, namely achieving higher growth, thus creating a matrix. The different organizational solutions were then positioned in this matrix, according to the degree they fulfill the criteria on the one hand and on the degree to which they help achieve higher and sustainable growth.

The above mentioned cases are structured in the following way: After a very brief introduction to the company, the concrete organizational – or business - problem is presented, and after that, the reason why the company chose knowledge networks to tackle it, is analyzed.

[21] See D'Aveni, (1994)
[22] See Meyer, Goes and Brooks, (1993)
[23] See Eisenhardt, (1989b)
[24] See Miles and Snow, (1994)
[25] See also Kanter and Eccles, (1992)
[26] See Burt, (1997)
[27] See Miles & Snow, (1994) and Powell, (1990)

3.1.1 Cases for choosing Networks

Case 1: World Bank[28]

In the World Bank networks are actively funded and their contributions are recognized. Such networks, are the heart and soul of the World Bank's knowledge management strategy[29]. Since the bank has made knowledge management the key to its becoming the "Knowledge Bank", the networks are actively supported. Inside the bank, there are over 100 networks, which contribute to the strategic direction the bank as such is taking. They use common tools and technology and have a tight co-ordination with the help desks. Networks were chosen, because of their flexibility and also because it is possible to reach a large amount of people in a relatively short period of time.

Case 2: Viant[30]

Viant is an Internet solutions company that develops corporate inter- and intranets for clients such as Compaq, American Express, Kinko's, and Ralph Lauren, to name a few. As Viant went from a one-location organization to multiple sites in Los Angeles, Dallas, Boston and New York, they understood that effective communication, knowledge sharing, and cultural replication, diversity, and stability would be critical to their success. For Viant, cultural congruence between all locations is mission critical. One way they work to make that happen is by "seeding" new offices with people recruited from existing offices. For example, the model for each office is no more than 100 people per office, and that's based on anthropological studies that show that societies of more than 100 people tend to be more removed from each other, they break off into smaller clusters, whereas a society of 100 or less tend to remain more united, a whole functioning in an optimal manner. Viant employs the amoebae principal when a group exceeds the optimal size - it splits into two separate groups, while maintaining some cross-purposes until the two newly-formed groups begin to optimize their functionality. This approach helps assure that the culture remains viable for optimal knowledge sharing. Viant is looking for ways to build ownership - what people own, they care enough about to make the best efforts. The resulting dispersed ownership is kept together through networks. For every initiative, each phase is populated by team members from all the disciplines, though the mix may vary from phase to phase. This cross-discipline mix tends to consistently act to strengthen the collaborative culture being cultivated at Viant, and is often commented on by clients. However, Viant's impact on its clients depends heavily on its continuing ability to replicate its culture at all levels and across all physical and virtual boundaries This means that the flexibility of networks is needed.

[28] See Denning, (1998)

[29] See Wenger and Snyder, (2000)

[30] See Bumbo and Coleman, (1998)

Case 3: Arthur Andersen

Andersen Worldwide is the second-largest of the Big Five accounting firms. Its Arthur Andersen unit provides traditional outside audit services as well as outsourced internal audit and other accounting services. Arthur Andersen is harnessing the power of its core competencies through informal networks. These are primary structures for driving knowledge and learning directly back into performance. They create a highly effective means of knowledge transfer and problem solving. Also they enhance collaboration and become thus an engine for self-directed learning. Inside the company they are called wellsprings of innovation because of this. Furthermore they are a motivational force for leveraging the discretionary energy of employees and bind members to the organization. They create a more adaptive and flexible framework for organizational knowledge, providing signposts for those in search of particular types of knowledge[31].

Case 4: Rabobank Group[32]

Rabobank Group, founded as a cooperative of Dutch agricultural banks, has about 570 member banks and several subsidiaries now focusing on the food, agribusiness, and health care industries. The cooperative's global investment banking arm, Rabobank International, has 87 offices in 32 countries. The #3 Dutch bank Rabobank controls about 85% of domestic agribusiness loans and 25% of the country's residential mortgages.

In the case of Rabobank, networks are used, because of the relatedness and synergies in business. A totally networked organization would go too far, since some degree of autonomy and independence is needed in some cases. One example of an internal knowledge network is “Spectrum”. Spectrum was created in 1992 with the deliberate aim of being an internal network for the creation of knowledge valuable to the rest of the Rabobank. In 1998 this network had 550 employees. There were many changes associated with the introduction of networks. The organizational structure changed from Product Units towards areas of attention and Clusters to circumvent differences in culture. Also management processes changed. The result was an extra management layer - clustered co-ordinators as “functional leaders”. Knowledge processes also changed: Increased number of employees and increased size increased vertical knowledge flows; structural change increased horizontal knowledge flows. Still, the company was able to maintain a certain degree of informality.

Case 5: Swiss Re

Founded more than 130 years ago as the Swiss Reinsurance Company, Swiss Re has since been a powerful presence in the reinsurance industry. Today it has major offices located throughout the world. At the end of 1997 the Swiss Re Group started to partially restructure its divisional organization. The organizational changes in the divisional structure in 1997

[31] See http://www.arthurandersen.com

[32] See van den Bosch and van Wijk, (1998)

were motivated by the Group's desire to build on its philosophy of client focus and to respond to the world-wide client survey conducted in 1997. The aim of the reorganization was to enable Swiss Re to provide its services quickly and effectively while maintaining a clear separation between regional marketing and groupwide product functions. This is also the reason why Knowledge Networks are the best form for Swiss Re to do Knowledge Management. They were chosen as an "antidote" to the divisionalisation of the company, continuously helping to bring together people from different departments in the company. At Swiss Re it was realized, that it is not possible to identify a general „best solution" as an organizational form to deal with knowledge, but that the choice depends mainly on logical stringency, strategic goals, acceptability and realisability. In the concrete situation Swiss Re is in, Knowledge Networks were and still are the most promising organizational form to tackle business issues. Through knowledge networks, Swiss Re has developed a competitive advantage, minimizing knowledge loss, increasing innovation, minimizing duplication, taking into account the global perspective, increasing the speed of learning, reducing reaction times and improving risk management. Also through these networks, Swiss Re is connecting "islands of knowledge" into self-organizing, knowledge sharing networks of professionals[33].

The success factors for managing knowledge through knowledge networks at Swiss Re are an integrated approach, improving the current situation step by step, stressing leadership, having a clear definition of roles and responsibilities, easy to use technical tools, continuous interaction and last but not least networks should be fun.

Case 6: Chrysler[34]

Chrysler, was one of the world's biggest carmakers, even before its merger with Daimler in 1998. Chrysler's brands include Dodge, Eagle, Jeep, and Plymouth.

Through a restructuring many teams were separated and information and knowledge sharing was low. Thus, a sense of dispersion was widespread. In order to bridge the gap between the old structure and the newly formed platform teams, Tech Clubs were formed. In that sense these KNN emerged organically. Very soon it was realized at Chrysler, that networks have powerful learning (including knowledge sharing) capabilities. Also through these networks the long-term viability of knowledge representations was increased. They created a forum for people to come together to discuss similar problems and to arrive at a common solution. The importance of reusing knowledge was made clear and now networks are an integral part of peoples daily lives.

Case 7: XEROX

Xerox, the name synonymous with copiers, caters to the global document processing market. The company creates document systems by integrating fax machines, printers, scanners,

[33] See Frei, (1998)

[34] This case refers to the Tech Clubs of Chrysler, which were established before the merger with Daimler took place, thus the old name of the company is used.

and copiers, as well as PC and workstation software. Xerox also sells supplies (ink, paper, and toner) and provides document outsourcing services. The company's research and development program concentrates on digital, color, and network systems.

At some point and after many fruitless efforts people at XEROX realized, that technology alone will not solve their problem, of how to support technicians in the field. These people were sharing war stories and informal tips for doing ones job better and more efficiently. As a solution, the Eureka knowledge sharing process was developed, in which the network is the expert system. This works like this: Technology representatives around the world have insights, they are entering these insights into a database system, creating documents, a peer review validates and warrants the insights and then these insights can be used as new knowledge in the field. The result is a virtuous cycle of ever growing community knowledge. The tangible results were a 10% reduction in service time and parts used, fewer long or broken calls and increased customer satisfaction. This network can be described as an “Eureka Ba”, a space where knowledge is created, shared and exploited through documents but value is created through a distinct way of marrying the technical with the social. In order to achieve this, networks where chosen as the ideal solution[35].

Case 8: Dow Chemicals

The company Dow Chemicals was formed in 1897 and sells over 2,000 chemical-related products worldwide. It is organized into 15 major businesses and is engaged in more than 40 joint ventures. Dow, which considers itself “technology-driven,” employs about 4,000 R&D people and spends $30 million a year maintaining and supporting its patent portfolio.

As a result of his group’s strategic efforts to manage intellectual assets, the manufacturer of everything from adhesives to polymers has already heightened the value of its patents by more than 400% and will save in excess of $50 million in related tax obligations and other costs over 10 years. Dow’s vision, is to develop a management process that “maximizes the business value” of its existing intellectual assets and helps to create new ones.

Dow first began exploring new ways to manage intellectual assets five years ago. With the support of high-level executives, a small group of individuals, which included Gordon Petrash, the CEO, came together to examine how the company might reengineer its systems and processes to create more value. Out of this relatively unstructured and uncharted early effort arose an interest in rigorously managing the firm’s intellectual assets, especially its disorganized portfolio of 29,000 patents. Petrash allocated an annual budget of about $3 million from the corporate office to form a team that could put these ideas to work. It was a focused group that shared the same office space and put a great deal of time into creating the company’s new processes of Intellectual Asset Management. The introduction of such a rigorous model, the IAM, brought immediate benefits to the company when it was introduced.

[35] See Whalen, (1998)

It helped Dow cut patent tax maintenance obligations by $40 million and administrative costs by at least $10 million more over ten years[36].

In order to sustain these successes, Petrash has built a network of people, known as Intellectual Asset Managers, charged with integrating these ideas into the operations of the company's various businesses. At present, there are 30 such IAMs — 15 of which hold the position on a full-time basis. They are responsible for developing and maintaining an intellectual asset plan aligned with the business strategy, reviewing the IA portfolio at least once a year and identifying key intellectual assets. In addition, there are more than 75 multi-functional teams that are responsible for the intellectual asset process and portfolio. They are composed of front-line managers from the various functions within the businesses. While such teams have operated for many years as forums for R&D and patent experts, they are now helping the company to optimize the costs and maximize the value of intellectual assets — and thus have taken a much higher profile as Intellectual Asset Management Teams. Both knowledge managers and teams are supported by the centrally funded Tech Center. Its responsibilities include: maintaining the communications network (home page, staff meetings, workshops), sharing best practices, continuous improvement of processes, database support, administrative support, leadership, career development of IAMs, training and measurements[37].

The Tech Center, which now receives about $1 million from corporate, still covers 20% of the costs of the intellectual asset management process on the belief that it makes sense to handle some activities on a central basis — that even an effective network needs a hub to share expertise and best practices.

Knowledge Networks where chosen for making the best of the patent portfolio and controlling it, thus helping the company to optimize the costs and maximize the value of the intellectual assets. The Intellectual Asset Managers are charged with integrating ideas into the operations of the company's various business and this requires networked structures.

Case 9: Ernst & Young

Ernst & Young International, the fourth-largest of the Big Five accounting firms, offers accounting and consulting services from its more than 660 offices in over 130 countries. Some of the knowledge process goals in the company's vision included capturing and leveraging knowledge from consulting engagements, having every consultant contribute to the firm's stock of knowledge, and becoming known by clients as a valued source of knowledge and thought leadership. Another key aspect of the strategy was to use knowledge to speed up the process of providing consulting solutions for clients. The strategy also led to the creation of several different knowledge-oriented networked organizations within the consulting prac-

[36] See Manasco, (1997)

[37] See Petrash, (1996)

tice, each of which had existed in some form before. In 1990 E&Y had created a center in Boston to perform early-stage research into issues of technology and management. Originally called the Center for Information Technology and Strategy, it became the Center for Business Innovation. The Ernst & Young Center for Business Innovation is a source of new knowledge, insights, and frameworks for management. Its work is performed in collaboration with leading thinkers in business, academia, and other research organizations. The key learning so far has been, that the most reliable source of new ideas is the recombination of existing thinking, through the interaction of people with diverse knowledge, disciplines, experiences, and values. In order to achieve this, networks seemed to be the most appropriate organizational form.

Networks at E&Y were encouraged and supported in order to encourage discussion, knowledge capture and transfer. Many, though not all, of the more than 22 networks that exist within E&Y were formed because of management mandate. Some of the communities were organic and self-emergent[38].

Case 10: HP

Hewlett-Packard is the #2 computer company worldwide (behind IBM) with over $42 billion in 1999 revenues. HP is a top provider of computers, peripherals, and computer-related services, which account for nearly 85% of sales. HP is known for its relaxed, open culture. All employees, including the CEO, work in open cubicles. Many employees are technically-oriented engineers who enjoy learning and sharing their knowledge. The company is also known for its decentralized organizational structure and mode of operations. HP managers feel that the strong business-specific focus brought by decentralization is a key factor in the firm's recent success. Although culturally open to sharing, few business units are willing to invest time or money in "leveraged" efforts that do not have an obvious and immediate payback for the unit.

One knowledge management initiative involves HP educators. There are more than 2,000 educators or trainers distributed around HP, most of whom work within small groups and find it difficult to share knowledge. About two years ago, in response to complaints by the education community that, "we don't know what's going on," work was started on approaches to knowledge sharing for HP educators, making the group more of a community. Very important was getting the workshop participants involved in an ongoing knowledge management network that promotes sharing best practices and transferring emerging knowledge. Networks were chosen, because people work in them, they learn from them and thus they are the “real” organization, people are spending most of their time in[39]. In this case, compatibility with the existing organizational structure was a big issue.

[38] See Meyer, (1997)

[39] See Davenport, (1996)

Case 11: American Management Systems

At American Management Systems (AMS)[40], a Virginia-based systems integrator and consultancy, networks are the cornerstone of its knowledge management program. AMS develops and customizes system-specific software for individual clients and also sells the software as an individual product.

Its AMS knowledge centers bring together leading practitioners with associates having common professional interests. This is closely linked to R&D, the need for which had grown as the company expanded. In 1993, AMS funded a central R&D center, whose mission would be to increase awareness, understanding and appropriate use of new and emerging technologies. Named the AMS Center for Advanced Technologies (AMSCAT), this facility provided a venue for researchers, consultants and clients to interact in applying emerging technology standards to business problems.

With its lofty goals, AMSCAT needed to find a way to increase its capacity but not its budget. It hit upon the idea of an associates program, in which expert consultants collaborated part-time on research projects. These networks became the link between the R&D center and the client. While providing a mechanism to expand their consultants' skill and knowledge, the community assured its clients that AMCAT's findings would make their way into solutions for them. These networks also became the model for the rest of the company. AMS rolled out the associates program to five other consulting practices in 1996. Not every AMS consultant can become a member of a knowledge center though. To become an associate, a consultant must submit a proposal for work. The benefits of this are twofold. By making contributions to knowledge bases a prerequisite of membership, the firm ensures a continuous stream of ideas and innovations. By requiring that the business unit fund the consultants time to work on the project, it ensures that knowledge management initiatives provide a clear business value.

Ultimately the goal was for the knowledge centres, to promote knowledge sharing among people who were connected by interest and expertise in a specific discipline. The adaptability and flexibility of network forms was very helpful in this respect.

Case 12: National Semiconductor

National Semiconductor makes analog, digital, and mixed-signal integrated circuits used in communications devices, networking equipment, and automobiles.

National Semiconductor has gone further than any other company in promoting and catalyzing networks. And it's done so for hard-headed business reasons. Over the past five years, National has experienced a dramatic - and at times wrenching - transformation. In the late 1980s, the company built an array of high-volume, low-margin, commodity chips - "jelly beans" in industry jargon. When its competitive environment changed, its business model

[40] See Hanley (1999)

collapsed. In 1991 a process of restructuring and rationalization began. Now the agenda has changed from cutting costs to growing - and from commodity manufacturing to product leadership. Part of National's strategy involves building its core competence in mixed-signal technology - computer chips that function as the electronic interface between the "real world" of voice and video and the "digital world" of computing and communications.

Networks are playing a central role in this redefinition. At one level, they energize and mobilize the company's engineers - the critical people for a company in transition from slashing headcount to pioneering markets. They also shape and enact strategy. A network focused on communication signal processing includes engineers from a variety of product lines. This community, built slowly over an 18-month period, has gained a powerful voice in the company's strategy. For more than 20 years, designers at National swapped ideas, shared insights, helped each other solve problems - even though they worked in stand-alone business units that seldom co-operated. They were a "loose" network with tremendous potential. In May 1994, after a first-ever gathering of key technologists across National's product lines, this loose group became a recognized network. Its objective was to make its know-how about circuit design accessible, to spread the word about notable product successes and failures and to continue building National's competence. It exists to perform real work and to provide a vehicle for collaboration and interaction among technical people[41].

3.1.2 Developing criteria for the Network option

Companies such as XEROX, IBM, 3M and DaimlerChrysler have been working to establish networks to foster learning and knowledge sharing in their organizations. Their stated purposes were strikingly similar. Primary missions include sharing knowledge, promoting efficiency by avoiding duplicate work and reinvention, and building skills. Also, networks help to keeping up-to-date on new ideas, leading-edge thinking and best practices. Many companies found out, that in order to share learning's across teams, it is necessary to extend natural networking. Moreover the networks create the trust and understanding that allows people to share mistakes, accomplishments and half-baked ideas, as well as brilliant insights. Indeed, it is precisely in these overlaps that networks create, where core competencies live. A sustained capacity to outperform the competition - is built as much on implicit know-how and relationships, as on tangible products and tools.

Resulting from the insight from he cases, and the interviews inside Unilever some criteria were developed for choosing the organizational form to tackle the actual business issues.

1. The organizational structure and the strategic objectives/intentions add a certain complexity to the decision, which organizational form to choose.

[41] See Brown and Gray (1995)

2. The current skill base and the skill base necessary for achieving strategic goals has to be evaluated. The question is, how to deal with the resulting gap.
3. Next, the question has to be answered, what the benefit is for the company, for the department and for the individual. How can each benefit be maximized?
4. Further, it has to be examined, whether a global level approach – especially for multinational companies like Unilever - is being facilitated.
5. Also the question arises, whether this is an efficient and effective way of doing things.
6. A further question is, whether the organizational form is providing flexibility and adaptability to a changed environment: Is there a high enough speed of response?
7. The degree of forcing commitment and the intuitiveness of setting up is a further criterion.
8. Additionally, one has to determine the availability of information which is widely dispersed in the organization.
9. The next question is, what kind of resource commitment is realizable: Are all relevant people integrated?
10. Finally, and associated with the last question, how do you deal with resource restrictions? (the optimal size of a network being 7 (+/-) 2 people).

Concerning the involved resources, one would also have to analyze the particularities of the resource flows among actors as well as their state of information. Thus another cluster of criteria can be derived, according to which one can decide, which organizational form to take:

- Resource characteristics,
- Degree of asset – knowledge - specificity,
- Frequency of transactions,
- Resource interdependence,
- Complementarity of resources,
- Ease of protecting own rights over resources,
- Minimum efficient scale of production,
- Dealing with heterogeneous demand

Complexity, uncertainty and risk, as well as expectations of opportunism, trust and norms are also important in this context.

The following figure shows, how Knowledge networks can be positioned compared to other options for organizing. This figure results from a matrix, with organizational solutions on the one axis and criteria for choosing them on the other. The different organizational forms were then ranked, regarding the degree to which they fulfill the above mentioned criteria. The criterion *Investment* in figure 10, is an aggregation of the criteria *acceptability, strategic fit, doability (mainly regarding resources)* and *monetary investment*. Since there is no theoretical model available for this question, as well as little empirical material for answering it, only a proposition can be made, attempting an answer. What results is the “Growth – Investment” Matrix.

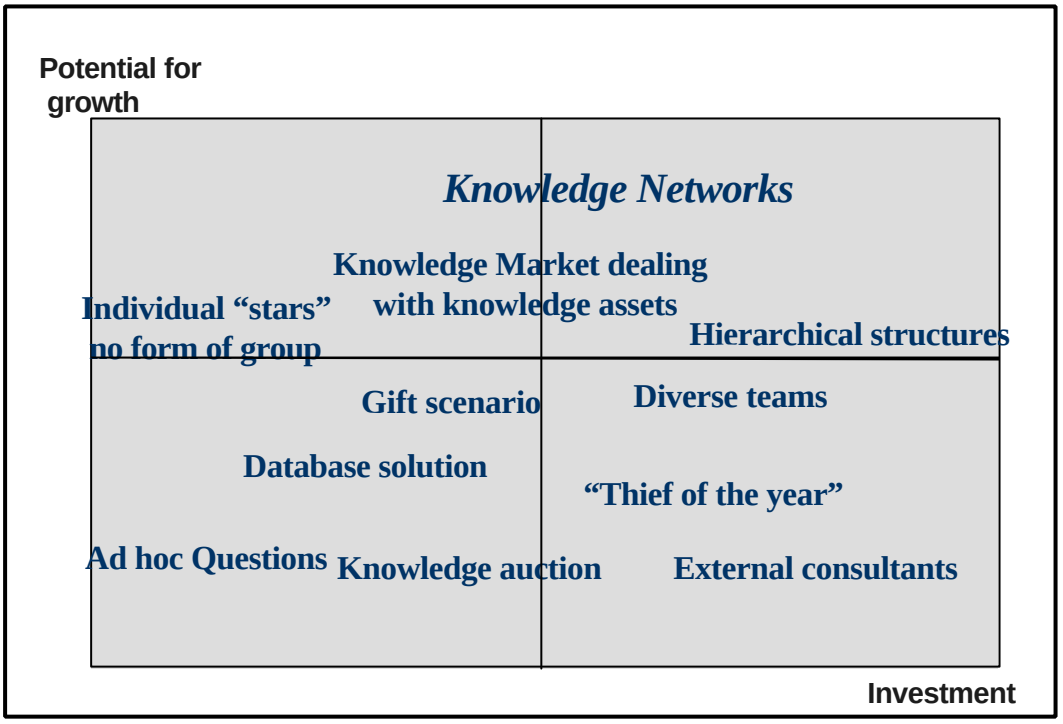

Figure 10: The Growth – Investment Matrix

As a result from the above cases, there are a number of reasons to choose the network option. This is also illustrated by the positioning of knowledge networks in figure 10.

3.1.3 Advantages of Networks

In the first place, networks have no boundaries. They cut across the organization, across levels, giving decision making further down the line. This results in creating flexibility for fast responses. Knowledge networks arose, because of the dispersed nature of the Unilever organization, with its multi-locality and also because within Unilever it is required to transfer best practices and develop professional skills in order to maximize growth.

Networks can also help drive strategy. A further advantage is that with a networked organization, one knows who to go to and who knows what. This results in quicker problem solving. Moreover it is easier to connect with other colleagues in a big organization, learning what is going on. One has access to a large mass of people. Under the assumption that at Unilever people are willing to share knowledge, this results in many sources of available knowledge. In addition to this, networks have an organic nature and can thus be flexible and adaptive, when environmental conditions require change. This could even lead to starting new lines of business. Also, networks are particularly effective in handling and transforming implicit (or tacit) knowledge. This does not only constitute a competitive advantage for the company, since implicit knowledge is difficult to imitate, but also leads to increased learning. Networks further help to avoid the so-called "Brain-drain", better than other forms of organization

through the more structured retention of the knowledge of people inside the company, even after they have left. Finally they can be an advantage in recruiting and retaining people, since the social web, that develops around them, makes people feel more comfortable in the company.

Overall one can say, that networks are interactive, mobilizing, participative, spirited and fun. They are co-ordinating individual knowledge, accelerating its aggregation and increase the effectiveness of its management. Also networks can be regarded as superior, in certain situations, because they:

- Draw on specialized, yet complementary partner contribution, which extend the resource base and capabilities, entail production cost advantages,
- lead to improved co-ordination and control, through recurring exchange relations, high degree and scope of information exchange, reciprocal obligations and periodic joint decision making and
- create stronger performance incentives (economizing on co-ordination costs) through the matching of distribution of influence on the one hand and of risks and rewards on the other.

Networks thus, combine specialized efficiency, autonomous operating effectiveness and asset-transferring capabilities.

3.1.4 Disadvantages of Networks

But Networks also have some disadvantages, such as the fact that they don't have status inside the company. They are also not so easy to "defend" towards senior management, because of the inherent difficulty of judging their performance accurately. Furthermore they are harder to keep alive and retain than other forms of organizing people, since they need continuous attention. A danger is also that networks could become exclusive, not letting the relevant people take part, thus becoming "cliquey" and self-serving. This can result in a limited scope of thinking, a certain path dependency, thus inhibiting innovative ideas. This is a big danger, especially if a network is very powerful inside the company. Moreover the collective knowledge of networks might be difficult to capture in some cases.

Finally, one has to state, that there is no best solution, in choosing an organizational form in order to achieve a certain benefit, but that this choice is mainly a function of strategic needs, possibilities, acceptability and doability. This was summarized in figure 10 on the horizontal axis *Investment*.

3.1.5 Further discussion: The strategic decision for Networks

When contemplating the network choice, there are still several questions to be answered, in order to strategically decide on the contents.

1. How is the environment going to change? (Know how, Competition, Customer expectations)
2. Which know-how is needed (in order to complement core competencies)?
3. What kind of expert know-how do potential partners possess?
4. How is the reputation of a potential partner like: How trustworthy has he been so far in his interactions?
5. What is the structure of his values like?
6. What kind of benefits, resp. what kind of threats can be expected from this co-operation?
7. How high is the willingness to share know-how?
8. How high is the overall risk in this co-operation (regarding the individual, the department and the company as a whole)?
9. Is higher growth attainable with this form of organizing, compared to other forms?

Next, we will look at the business, cultural and technical circumstances while deploying Knowledge Networks.

3.2 Circumstances for deploying Knowledge Networks

3.2.1 Business Circumstances

Some cases will illustrate the business circumstances for choosing networks.

a) Cases

Case 1: Chrysler

In this case, networks were chosen because of a reorganization: a growing number of engineers were simply unaware of who was doing what, and who to contact within Chrysler with technical questions or issues. The chosen solution was to form networks, linking different parts of the organization.

Case 2: E&Y

As part of the larger knowledge initiative, networks of people were formed around industries or around consulting approaches, while others focussed on technology. Many of them were formed because of management mandate.

Case 3: XEROX Eureka

XEROX understood the potential value of capturing and distributing knowledge beyond a single workgroup and thus worked with the field service community to create a process for this (Eureka). That was the reason for building up networks.

Case 4: HP

In this case networks were also build for “bridging” the organization. Approximately 2000 HP-Educators distributed around the company, most of whom work within small groups found it

difficult to share knowledge, That is why there were complaints by the education people of the form “We don’t know what is going on”. The solution was to build networks.

Case 5: Dow

A small group of individuals, which included Petrash, the CEO, came together to examine how the company might reengineer its systems and processes to create more value. In order to sustain the successes (cost reduction in the portfolio of patents), Petrash has built a network of people, known as Intellectual Asset Managers. In this sense, networks are a vehicle for implementing the company’s strategy.

Case 6: AMS

At AMS there was a need for better knowledge sharing. So the existing informal communities have been formalized. AMSCAT’s needed to find a way to increase its capacity but not its budget, the result being the associates program. The business thought and idea behind this, was the ensuring of a continuous stream of ideas and innovations through networks.

b) Business circumstances: Results

Knowledge Management activities at Unilever have to be aligned with the strategic thrust of the company, which is derived from the strategy statement, which could be for example “Get closer to the customer”. On the business side, this would mean increasing profits and on the category side, creating synergies, developing brands and working on future development.

Certain barriers have to be overcome in this respect. For one, Unilever is a hybrid between a functional and a process organization. This creates tensions from the functional and process needs. In order to overcome this, flexibility is needed. Networks are an ideal organizational form for increasing flexibility.

Also, some enablers can be used in this respect. One example for this could be AIDA: This stands for Awareness, Interest, Desire, and Action. Regarding awareness and interest, there is the need to talk about reasons to build networks and to raise interest. Then, desire has to be built. Also, it is important to show the benefits and get sponsors. Regarding the action part, meetings should be held, putting people together in a room, building trust and triggering dialogue. What is essential is to make the people want to come back. One very important aspect in this is aligning the benefits for Unilever, for the department and for the individual.

3.2.2 Cultural Circumstances

Some cases will illustrate the cultural circumstances for choosing networks.

a) Cases

Case 1: Chrysler

Because of the reorganization, the platform teams took people away from the environment that nurtured their specific expertise. The result was a sense of dispersion. Additionally, the

use and re-use of best practice engineering projects or developments have added visibility and provided a sense of community for those who apply it.

Case 2: E&Y

While the formation of many communities was management's idea, participation in these communities was often left up to the individual. It became apparent, that networks offered a compatibility with the company culture.

Case 3: XEROX

Through the networks, the jobs of the specialists became more fulfilling.

Case 4: Dow

In the case of Dow Chemicals the support of high-level executives for networks was a key success factor.

Case 5: Viant

The lesson learned at Viant, was that you have to expend as much, or more effort on supporting the people who act to build the culture of your organization as you do for technology. The result of this was the creation of networks.

b) Cultural circumstances: Results

Regarding the cultural circumstances, some potential barriers could be identified:

- Lack of clarity concerning the role of the corporate centre.
- Organizational barriers: Not enough added value.
- Heterogeneous mix of people: Different languages, different education, different backgrounds and a different awareness level.
- No immediate feedback.

Also some potential enablers were identified through the cases and the interviews at Unilever:

- Trying to share and to keep personal contact as much as one can.
- Brightening the awareness level through concrete practical projects.
- Learning about different cultures: Getting openness and trust.
- Avoiding sensitive topics in the open.
- Advancing teambuilding activities.
- Strong as well as the weak points of people have to be recognized and complemented: Blending of characters is very important.
- Additional respect can be gained through the participation in a network.

3.2.3 Technical circumstances

Some cases will illustrate the technical circumstances for choosing networks.

a) Cases

Case 1: Chrysler

In the case of Chrysler, EBOK (knowledge database) was created, which is combined with the engineer's desktop workstation. Thus the Tech Clubs' knowledge base can be leveraged.

Case 2: E&Y

E&Y knowledge managers believed that knowledge primarily resided in people, not technology. However, the scope and geographical distribution of the E&Y knowledge base and its users meant that technology had to be used as an enabler wherever possible. Lotus Notes had been selected as the primary technological platform for capturing and disseminating internal knowledge. By early 1996 there were already 2000 different Notes databases, most of which were discussions in networks and focus groups. As with the knowledge architecture, E&Y had allowed multiple technologies to proliferate in the early days of knowledge management. There were between 200 and 300 local applications and databases. Now, however, the firm wanted consultants to focus on content rather than applications. Approximately 12 to 15 applications would eventually support knowledge management, including Notes, the Web, the skill database, and a few others. The networks were given a set of Lotus Notes databases to encourage discussion, knowledge capture and transfer.

Case 3: XEROX

In this case the aim was to make the documentation form computer-based and give laptops to the engineers. This involved many processes of which Eureka is one. The Eureka process is in essence a distributed tips-sharing and validation process. In this sense it is a distributed publishing of community know-how, since communities helped to design the process so that it fits in with the way they work.

Case 4: HP

Using Lotus Notes as the technology, different knowledge bases were used.

b) Technical circumstances: Results

In many companies people are using what is already there in respect to the technical infrastructure. Also in some cases it helps, if an Intranet is in place at the beginning of setting up a knowledge network. Again some barriers were identified:

- Not everybody has access to the Intranet.
- More reluctance to use the Intranet rather than Email.
- The system aimed to help the network has to be a system everybody knows and everybody uses.
- People cannot see what they have done.

Regarding the building up and maintaining of networks, the next thing that becomes relevant is how do deal with ailing networks, respectively how to deal with signals of failure. This will be examined in the following chapter.

3.3 Ailing networks: Insights

This part of the report will look closer at the second goal of the bilateral project, namely to observe and to describe things which can go wrong in a network after having decided to have a network solution. We will also look at symptoms of failure, which can lead to an ailing network. In the first part, possible failures will be described more closely. Also, these failures will be linked to the characteristics of a network in order to understand which elements/characteristics of a network itself are critical in an ailing network. Furthermore, key symptoms for failures and an ailing network are proposed. Also, some propositions regarding the handling of these problems in the form of measures will be made at the end of this chapter.

3.3.1 Failures in a network

There are several authors who think about success factors for networks or forms which – according to the CC understanding - belong to the network form. These authors therefore write directly or indirectly of failures *of* and *in* networks. Some interesting sources and their insights will be quoted in the following.

According to Gierkink and Ruggles[42], there are several variables having impact on the success of a network. However, if these variables are missing or go in the wrong direction, these could be seen as failures. Derived from Gierkink and Ruggles failures in a network could be:

- No leadership (or executive sponsorship):
  If there is no leadership or sponsorship, a lack of participation and a lack of understanding of the value that a network could offer may result.
- No identity:
  Missing identity might be a failure since the experiences made by several networks show that the networks found that they had to hold monthly or bimonthly meetings for the people to really get a sense of who is in their community and to recognize the value of it.
- No learning in the network.
- No activities of the network co-ordinator in order to be a broker of knowledge.
- Information overload.
- No shared goal.

Hanley[43], who describes communities of practice of the AMS company and their practices regarding their goal and activities of knowledge sharing – which is in fact estimated to be quite successful - emphasizes some factors which promote the primary goal and activities of these networks. These supporting factors strongly emphasize the importance of participation,

[42] Gierkink; Ruggles, (1997)

[43] Hanley, (1999)

recognition and value delivering and can give important insights for failures of network activities. Derived from the insights of Hanley, failures and mistakes in a network could be the following ones:

- No recognition of individual achievement.
- No group identity.
- No motivation activities and rewards for participation.
- No celebration of successes.
- No delivering of value for individuals, for the company and for the clients/environment.
- No technology infrastructure.

In his article *"How to make communities work for you"* Foster[44] looks at a few important aspects as organization and roles, communication and technology of communities, but also at the questions why communities fail and what the critical success factors are for them. According to Foster communities fail because of the following reasons:

- The fact that the competency leader did almost all of the work himself resulted in a lack of buy-in and feelings of alienation among the core team.
- Core team members were uncertain about their roles and responsibilities.
- Not enough communication within the network contributed to the feeling of "disconnectedness".
- The executives didn't treat the community work and knowledge sharing in general as important. There were no incentives to do work for the community. The culture encouraged billable client work, not time spent on knowledge sharing.
- Not all people had "hassle-free" access to software or hardware required for the GroupWare system, which resulted in frustration and avoidance of the system.

In addition, Foster[45] also mentioned other failures of and in networks which are not included in the list of failures above, but are nevertheless important. These additional aspects are:

- No right communication vehicles to match the needs of the networks members, e.g. not having face-to-face meetings, at least in the early stage of a network in order to be able to build trust and camaraderie among the network members.
- No endorsement and continually support from the senior executives.
- No readily available and user friendly technology for communication.
- No clear focus and no shared purpose and therefore no internal reason for being.
- Too many objectives and not focussing on some of them.
- No culture supporting learning and experimentation.

[44] Foster, (1999)

[45] Foster, (1999)

In the article *"Learning Across Teams"*, McDermott[46] expressed his insights regarding factors which support communities-of-practice. He defined some guidelines for the starting and supporting of communities-of-practice as "Focus on a few important topics", "Build on natural networks", "Develop community co-ordinators and core groups", "Support communities", and "Be patient". From these insights, also learning's for the topic of failures can be derived. The following factors are therefore the ones, which are interpreted as failures of and in networks:

- No focus on important topics or focus on too many topics/objectives.
- Too much pressure on networks.
- No network co-ordinators and no network core.
- No support of the networks regarding time.
- No patience of network members and organization.
- Not the right forums for the network.
- Not the right network members .

However, not only existing literature gives interesting insights into the question of failures in networks. Also from the interviews held in the Unilever organization as well as from the work on and the interpretation of the documents provided by Unilever[47], interesting results and insights were found. Derived and interpreted from these sources, the following issues are important for the failure of networks:

- No clarity of the role networks and the organization play and of the responsibilities they have.
- No definition of roles/responsibilities within the network (regarding work).
- No, a lack or different purposes and understanding for the network.
- No definition of intended results/deliverables/targets.
- No willingness to do real work in the network.
- No definition of principles, procedures, structure and regulation mechanism within the network (regarding functioning).
- No formalization, but on the other hand also too many formal rules regarding structure (reporting etc.).
- Lack of time of network members to participate.
- Not enough financial support of the network.
- No or not sufficient management support/sponsorship.
- No engagement of the network leader, no leadership.
- A too dominant network leader.
- No fully dedicated (persistent and considered) core co-ordinating person/group.
- Lack of commitment to each other/to the network.

[46] McDermott, (1999)

[47] See Internal Papers and Presentations of Unilever

- No openness of the members.
- Lack of perceived value for each network member and for the network.
- No or a lack of recognition/appraisal for the contribution of network members.
- Lack of interest into the network of the network members.
- Results/findings of networks are not used/no tangible outputs.
- Not sufficient communication between network members.
- No effective, user-friendly and accessible communication tools/means.
- No learning within the network.
- Not the right people in the network regarding skills, experiences, interests.

So, derived from all these sources mentioned, quite a large list of failures/mistakes in and of networks resulted, which can lead to an ailing network. However, some more possible failures could be thought of, like overspecialization – narrowing expertise[48], no social component in the network, no real work intended/done in the network, no support of each other within the network, or no trust into the network members.

3.3.2 Association: Failures/mistakes in and of networks and characteristics of networks

In the following, the failures/mistakes mentioned above will be linked to the characteristics of networks. This is done to understand which elements/characteristics of a network itself play a critical role in an ailing network and which failures/mistakes are not directly influenced by the network.

According to the accumulated knowledge of the Competence Center Knowledge Networks and the definition of knowledge networks (see above), networks have different characteristics and dimensions. These characteristics and dimensions can be clustered in the following way (see *figure 11*):

[48] According to Miles and Snow, (1992)

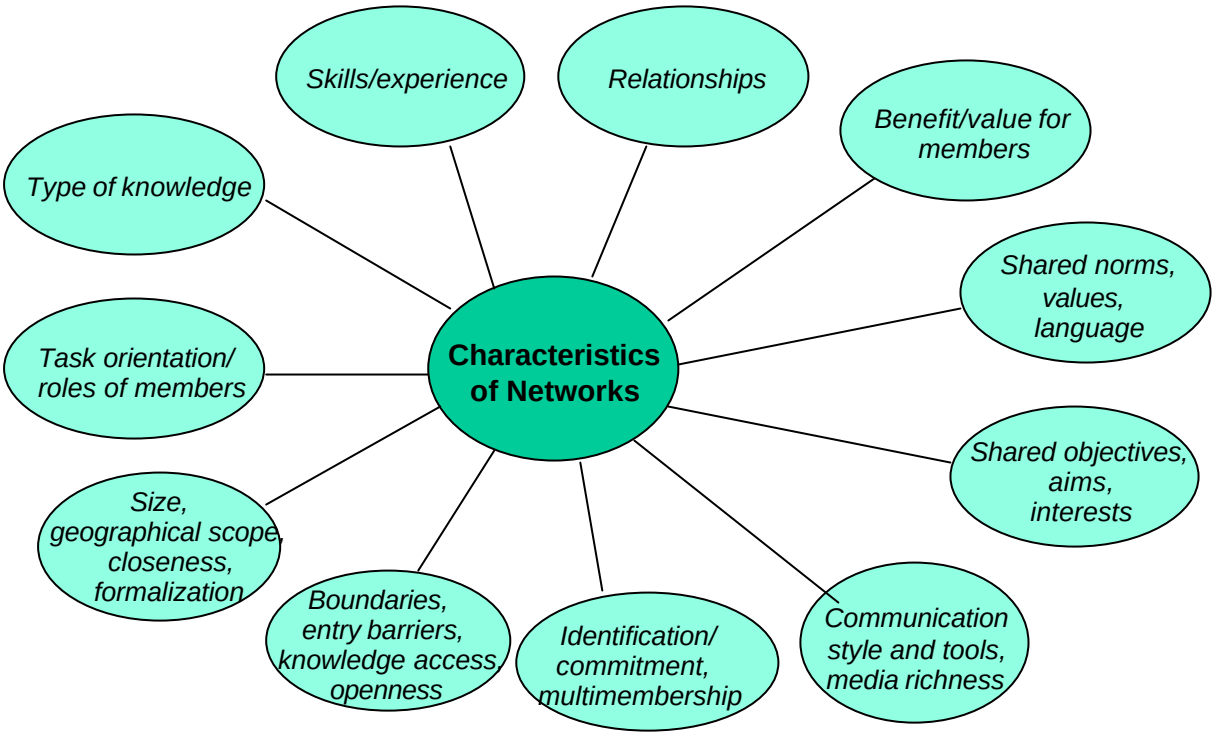

Figure 11: Characteristics and dimensions of networks

Regarding these characteristics/dimensions of networks and the mentioned failures/mistakes, the association looks the following way: Regarding the characteristic, following failures/mistakes occur (see *table 1*):

Characteristic/dimension type of knowledge : **--**
Task orientation/roles of members: ➢ No clarity of the role networks and the organization play and of the responsibilities they have ➢ No engagement/activities of the network leader, no leadership ➢ No definition/uncertainty of roles/responsibilities within the network (regarding work) ➢ No fully dedicated (persistent and considered) core co-ordinating person/group ➢ A too dominant network leader
Skills/experience: ➢ Not the right people in the network regarding skills, experiences, interests ➢ No learning in the network ➢ Overspecialization – narrowing expertise

Relationship: ➢ Disconnectedness ➢ No openness of the members ➢ No trust into the network ➢ No social component in the network ➢ No support of each other within the network
Benefit/value for members: ➢ No delivering of value for individuals, for the network and for the company ➢ No or a lack of recognition/appraisal/motivation activities for the contribution of network members ➢ Lack of interest into the network of the network members
Shared norms, values, language: ➢ No culture supporting learning and experimentation
Shared objectives, aims, interests: ➢ No, a lack or different purposes/goals and understanding for the network ➢ Too many objectives and not focussing on some of them ➢ No definition of intended results/deliverables/targets
Communication style and tools, media richness: ➢ Not sufficient communication between network members ➢ Information overload ➢ No effective, user-friendly and accessible communication vehicles/means
Identification, commitment, multi-membership: ➢ No willingness to do real work in the network ➢ No celebration of successes ➢ No identity of the network ➢ Lack of commitment to each other/to the network
Boundaries, entry barriers, knowledge access, openness: ➢ No changes for new ideas, new thinking
Size, geographical closeness, formalization: ➢ No definition of principles, procedures, structure and regulation mechanism within the network (regarding functioning) ➢ No formalization, but on the other hand also too many formal rules regarding structure (reporting etc.)

Table 1: Failures and mistakes in networks associated with the characteristics/dimensions of networks

However, there are also failures/mistakes, which are out of the direct influence of the network itself. These failures are strongly related to variables like the environment of the networks,

the embededness of networks in the organization as well as like the support level of networks (see *table 2*). These failures/mistakes are:

- No internal reason for being:
  - Too much pressure on networks; no patience of network members and organization
  - Lack of time of network members to participate
- Not enough financial support of the network:
  - No endorsement and continually support from the senior executives; no sponsorship
  - Results/findings of networks are not used in networks and in the organization/no tangible outputs

Table 2: Failures and mistakes in networks which are out of a direct influence of the network

Especially the failure “no internal reason for being” listed in *table 2* is interesting since it is here where the correlation to the justification for a network solution comes in. That means that if there is no evidence, why the network solution is chosen and what the network contributes to the organization, it could lead to problems in running and sustaining the network. Also, the network will be questioned permanently in such a case.

It is rarely the case that all the mentioned failures/mistakes occur in a network at a particular time. Moreover, some of them might emerge on special occasions, and other failures might never appear. Some of them will appear strongly, others only weakly. Besides the question how intensively a failure emerges, there is certainly another issue which has to be thought of, if failures and their influence on networks is to be estimated: this issue is the question of the relevance of the failures/mistakes for the network and for its survival. While failures/mistakes may occur, some of them might never be relevant for the network since probably there are other related factors which help to overcome some failure/mistakes. Therefore, in order to estimate which failures/mistakes are a real and important concern for networks, the intensity of the emergence as well as the relevance of failures should be taken into account. The following matrix (see *figure 8*) could help to see the importance of failures/mistakes for the network:

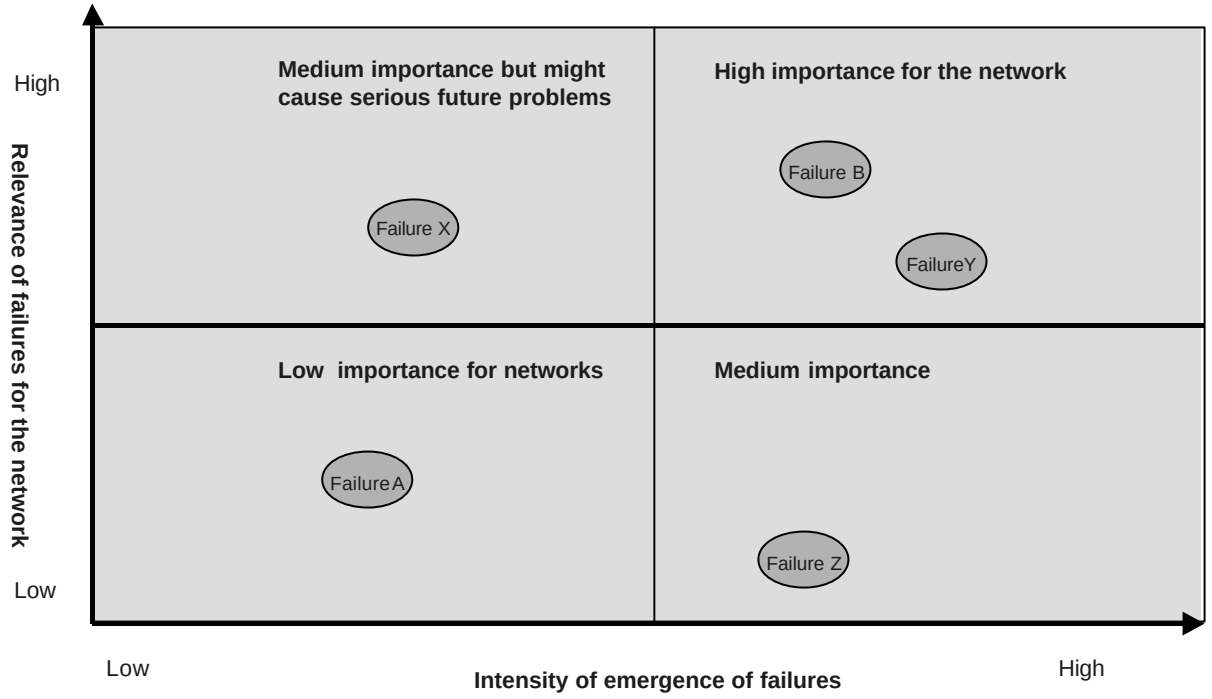

Figure 12: Intensity-Relevance-Matrix

A network solution is not an easy alternative tool/technique/form even if it provides many advantages (see chapter 2.1). However, there are also many possible pitfalls mentioned above and the adequate circumstances have to be in place. Therefore, it is an interesting question at this time which failures/mistakes are of special concern in connection with alternative tools/techniques/forms (see chapter 2.1 and 3.1). Since there is no theoretical model available for this question as well as little empirical material for answering it, only a proposition can be made, attempting an answer. Therefore, it is proposed that regarding alternative tools/techniques/forms and the decision for the network solution, factors in relation to the role of networks in the organization as well as to the social character of networks seem to be of special concern. In more detail, the following failures/mistakes which should get special attention when choosing the network alternative are(see *table 3):*

➢ No clarity of the role networks and the organization play and of the responsibilities they have ➢ No, a lack or different purposes/goals and understanding for the network ➢ No willingness to do real work in the network ➢ No fully dedicated (persistent and considered) core co-ordinating person/group ➢ Not the right people in the network regarding skills, experiences, interest ➢ Disconnectedness ➢ No openness of the members ➢ No trust into the network ➢ No social component in the network ➢ No identity of the network ➢ Lack of commitment to each other/to the network

Table 3: Failures which are of special concern regarding the network solution - Proposition

3.3.3 Symptoms of an ailing network

After having identified failures/mistakes, which can occur in networks as well as disadvantageous variables which are out of the direct influence of the networks, the attention will now be turned towards the signals and symptoms of failure. Here, the literature does not give many indications. Therefore, the following part is strongly based on the insights gained in the interviews with Unilever as well as on the findings from the work and interpretation of the Unilever documents. Also, some additional signals and symptoms not derived from these sources will be included in order to have a more elaborated view on the issue.

Signals/symptoms of failures in and of networks can be:

- Network is not dynamic (1).
- Network is not fast (2).
- No links (of the network) to other parts of the organization (3).
- Feeling of disconnectedness (4).
- Lack of communication on network (5).
- Vision and purpose of the network are being questioned permanently (6).
- No/few deliveries or low quality of delivery (7).
- No evaluation of results/deliveries (8).
- Meetings turning into conflicts (9).
- No/few communication (10).
- Unfocused communication (11).

- Lack of discipline in communication (12).
- No regular meetings (13).
- Few/less people are coming to network meetings (14).
- Few/less input of information/knowledge/work (15).
- Network center is ignored (16).
- Unclear leadership (17).
- No care of the leader for the network and network members (18).
- Mistrust (19).
- Loosing the people involved (20).
- Unequal contribution of network members to network activities (21).
- Frustration of network members (22).
- No thought process going on (23).
- Acting like a “sect” (24).
- Different unintended subgroups in the network (25).
- No enthusiasm, initiative (26).
- Successes are not celebrated (27).
- No common language (28).
- No common rituals (29)
- No common values (30).
- No resources given to the network (31).
- Too less time spent on participation/network activities (32).
- No executive time to nurture (33).

These symptoms/signals can indicate problems, which already exist or could appear soon in networks or in the environment of networks. However, signals/symptoms can be associated with more than one failure/mistake in the network. An attempt to build correlations between failures and symptoms is shown in *tables 4* and *5*. For the reason of readability of these tables, numbers which were given to the symbols/signals above are assigned to the corresponding failure.

Characteristics/dimensions of networks and associated failures/mistakes	**No. of symptoms/signals associated with the failures/ mistakes**
Type of knowledge	
Task orientation/roles of members • No clarity of the role networks and the organization play and of the responsibilities they have	3, 5, 6, 31

• No definition/uncertainty of roles/responsibilities within the network (regarding work)	7, 15, 21
• No engagement/activities of the network leader; no leadership • No fully dedicated (persistent and considered) core coordinating person/group • A too dominant network leader	1, 5, 8, 10, 13, 15, 16, 17, 18, 19, 20, 21, 26, 27, 32
Skills/experience	
• Not the right people in the network regarding skills, experiences, interests	1, 2, 7, 15, 21, 26
• No learning in the network	1, 2, 15, 23
• Overspecialization – narrowing expertise	1, 2, 24,
Relationship	
• Disconnectedness	3, 4, 10, 13, 15, 25
• No openness of the members	7, 10, 15, 19, 23
• No trust into the network members	10, 15, 19, 25
• No social component in the network	4, 27
• No support of each other within the network	4, 7, 10, 15, 19, 22, 26
Benefit/value for members	
• No delivering of value for individuals, for the network and for the company • No or a lack of recognition/appraisal/ motivation activities for the contribution of network members • Lack of interest into the network of the network members	1, 2, 6, 7, 8, 10, 13, 15, 20, 21, 22, 26, 32
Shared norms, values, language	
• No culture supporting learning and experimentation	10, 15, 23, 26, 28, 29, 30, 32
Shared objectives, aims, interests	
• No, a lack or different purposes/goals and understanding for the network	1, 2, 6, 7, 11, 21, 22
• Too many objectives and not focussing on some of them	6, 7, 22
• No definition of intended results/deliverables/targets	1, 2, 3, 6, 7, 8, 11, 15, 21
Communication style and tools, media richness	
• Not sufficient communication between network members	10, 11, 12, 13, 14, 15, 21, 22, 28
• Information overload	2, 7, 11, 12, 22
• No effective, user-friendly and accessible communication vehicles/means	4, 10, 11, 12, 22, 28

Identification, commitment, multi-membership • No willingness to do real work in the network • No celebration of successes • No identity of the network • Lack of commitment to each other/to the network	1, 2, 6, 7, 10, 12, 15, 14, 21, 23, 26, 27, 32 10, 27, 29 3, 5, 10, 18, 27, 28, 29, 30 10, 14, 15, 21, 22, 25, 29, 32
Boundaries, entry barriers, knowledge access, openness	3, 5, 24, 25
Size, geographical closeness, formalization • No definition of principles, procedures, structure and regulation mechanism within the network (regarding functioning) • No formalization, but on the other hand also too many formal rules regarding structure (reporting etc.)	1, 2, 3, 7, 8, 10, 11, 12, 13, 15, 17, 21, 22, 28, 29, 32

Table 4: Symptoms/signals of failures/mistakes in networks - Proposition

Regarding the failures/mistakes which are out of the direct influence of the network, the following correlation to symptoms/signals is made:

Failures/mistakes in networks which are out of a direct influence of the network	**No. of symptoms/signals associated with the failures/mistakes**

• No internal reason for being
  • Too much pressure on networks; no patience of network members and organization
  • Lack of time of network members to participate
• Not enough financial support of the network
  • No endorsement and continually support from the senior executives; no sponsorship
  • Results/findings of networks are not used/no tangible outputs
	3, 5, 6, 7, 10, 31, 33
	7, 22
	1, 2, 6, 7, 10, 12, 14, 15, 20, 21, 22, 31, 32
	1, 2, 6, 7, 22, 31
	1, 2, 5, 6, 7, 8, 10, 14, 15, 22, 26, 27, 31, 33
	3, 6, 7, 8, 10, 14, 15, 21, 22, 26, 27, 32

Table 5: Symptoms/signals of failures which are out of a direct influence of networks - Proposition

3.3.4 Failures of and in networks: possible measures

In the following, measures for handling or avoiding failures in and of networks will be described. Similar to the symptoms/signals for failure in networks, this part is strongly built on insights gained in the interviews with Unilever as well as on the findings from the work and interpretation of the Unilever documents. These insights will be complemented by some further developed propositions. The proposed measures will be associated again with the dimensions/characteristics as well as to the environment, the organizational embededness and the support level (see *tables 6* and *7*) to indicate how to react in the case of special problems/ failures:

Failures related to	Possible measures
Task orientation/ roles of members	➢ Linking networks to organizational goals and projects and making this link evident ➢ Giving network a clearly described and formal status ➢ Making the network visible for the organization ➢ Communicating deliverables, activities and impact of networks on the business areas ➢ Defining network tasks as an official part of the job tasks and defining clear performance aspirations ➢ Defining the priority of the network tasks regarding the other job tasks ➢ Defining clear responsibilities/role activities ➢ Bringing in a new leader if needed ➢ Making clear that the network leader will ensure progress, openness and learning
Skills/experience	➢ Identifying and selecting the people carefully ➢ Bringing in new people every time it is needed ➢ Clarifying people's personal goal/interest for participation ➢ Providing training/development
Relationships	➢ Defining a social contract describing the way of working, mutually, trust etc. ➢ Organizing social activities ➢ Making sure that leader emphasizes networking building activities
Benefit/value of members	➢ Introducing a system for recognition and incentives ➢ Making clear what value is expected and can be provided for oneself, for the network and for the organization

Shared objectives, aims, interests	➢ Not having too many sensitive topics at the same time ➢ Defining specific objectives/targets/deliverables for the network ➢ Giving clear priorities which objectives to persecute ➢ Setting clear performance aspirations
Communication style, media richness	➢ Having (more) physical/face-to-face meetings ➢ Introducing an information scout ➢ Defining the way and frequency for a “minimum” communication ➢ Using well-known and well-used communication means if possible
Identification, commitment, multi-membership	➢ Reviews of the network leader to ensure progress, commitment and initiative ➢ Celebrating successes and important results ➢ Providing the network with a space to find its own identity
Boundaries, knowledge access, openness	➢ Making sure that new people, who have their own opinions, are brought in
Size, geographical closeness, formalization	➢ Defining the way of working ➢ Defining procedures and regulation mechanism of the network ➢ Finalizing terms of reference ➢ Introducing/defining instruments to judge over the progress of the network activities

Table 6: Possible measures

Whereas the measures above can be used by the network itself or network members, this is normally not the case for the measures, which are intended overcome failures/mistakes associated with the environment, the organizational embededness and the support level of the network:

Failures/mistakes in networks which are out of a direct influence of the network	**Possible measures**
• No internal reason for being • Too much pressure on networks; no patience of network members and organization	• Linking networks to organizational goals and projects and providing the network with the adequate status • Communicating the logic as well deliverables, activities and impact of networks on the business areas

• Lack of time of network members to participate • Not enough financial support of the network • No endorsement and continually support from the senior executives; no sponsorship • Results/findings of networks are not used/no tangible outputs	• Giving the network enough time to build it up and to work in it • Providing the network with a space to find its identity and its working • Providing networks with experiences made in other networks • Providing the network with financial resources as well as with time which can be used for network activities • Defining network tasks as an official part of the job tasks • Being supporters/facilitators both in the network and in management to get needed resources • Introducing a system for recognition and incentives • Making sure that results and experiences of the network will be used in other areas too • Introducing/defining instruments to judge over the progress of the network activities

Table 7: Possible measures regarding failures/mistakes which are out of a direct influence of the network

4 IMPLICATIONS FOR THE WORK OF UNILEVER AND THE CC KNN

4.1 Implications for Unilever

From this project, there are two major implications for further knowledge management work resulting in Unilever. The first implication is that Unilever should be able to estimate better, when a network solution should be the tool of choice. Also it should be easier for Unilever to place the network solution in relation to alternative approaches since the understanding was deepened, what advantages and disadvantages networks have and under what circumstances the network solution can be chosen, especially regarding the business, cultural and technical circumstances. Besides this deeper understanding of when to choose the network solution, the internal argumentation and recommendation for network solutions against alternatives on a reasoned basis was improved. What was also shown in this project, is that you have to deal with the choice of an organizational form in a strategic way, taking into consideration all the relevant parameters. The "Growth/Investment Matrix" can further be developed, taking all the possible criteria for choosing an organizational form and placing them against the declared target of achieving higher growth. This should result in a series of matrixes, which show, which organizational form is most suited to tackle a specific problem.
The second implication is derived from the work on the second goal of this bilateral project, namely to better understand, what can lead to an ailing network once the network solution has been chosen. Firstly, the insights regarding failures in networks and in their environment and support level, the symptoms and signals of ailing networks as well as the corresponding actions to avoid or better handle failures in networks, help networks and the organization to recognize possible failures better and faster. Also, as demonstrated in the "Intensity-Relevance-Matrix" of failures, networks can learn to understand the importance of failures for them and their survival and – after they set priorities - can act by using the proposed measures. Building on the insights gained in this bilateral project, Unilever can then go a step further and develop a model correlating failures and respective measures, taking into account the interrelations between the proposed measures.

4.2 Implications for the Competence Center Knowledge Networks

According to the task description of the bilateral project with Unilever, the goal was to develop a model, that includes criteria of when to use the network option and how to deal with networks once they were set up and especially how to deal with ailing ones.
The developed decision model is grounded on a wide sample of cases and some interviews and is thus generally applicable, which makes it useful for integrating in the existing material of the Competence Center Knowledge Networks. This is especially true for the initial decision

whether to choose the network option and also for the decision, what to do with networks that demonstrate symptoms of failure. Also, the learnings regarding the recommendations for action can be used for further insights.

For the overall framework of the Competence Center, the bilateral project also generated a number of findings, since these correspond strongly with the tiers “Initial decision for building a network” as well as “Maintaining/Running Networks” in the methodology.

The state of research in the field of organizational studies was deepened through the bilateral project. This refers especially to the choice of the network form as an organizational solution in order to achieve certain benefits, according to a list of pre-determined criteria. The project results supply theoretical and practical insights not only concerning the network choice, but also in building and maintaining networks.

5 FURTHER DISCUSSION

Some additional lessons were learned concerning the building up of networks. This chapter can be seen as an outlook on the implementation of the network choice.

First of all, networks must have a context. This means having specific targets, objectives and deliverables. Also incentives and a social contract - roles and responsibilities - are important. Secondly, networks have to have a senior champion, who acts as a supporter and sponsor. Thirdly they have to be linked to the organizational goals and their performance has to be monitored. This also implies that communication has to be done by results. Moreover, a clear set of guiding principles is needed, since networks are a collective, representing the interests of all constituents. Furthermore they have to capitalize on opportunities for leveraging. This goes in hand with the imperative to continuously seek understanding beyond traditional, functional boundaries. One must not forget, that their main asset is people, so it is essential to find the areas where people have problems, which they have to tackle anyway in their daily work and also promote the sharing of mutual tasks. In addition to this, facilitating networking between individuals is as important as establishing e.g. methodology guidelines or reports libraries. A further very important point is to find issues that add value globally and at the same time avoiding functional positioning labels and hype. Also giving recognition is very important. This can come in the form of visible, professional respect, personal recognition and development as well as rewards. One should avoid treating a network as a project or as an initiative, since there are too many of these as it is. Critical is also to have strong category support and involvement. An explicit role for the network in the category's business strategy is therefore essential. A fully dedicated central co-ordination team will greatly enhance the chances for success, although is does take much effort to nurture and create a thriving community. Face-to-face meetings are critical for building strong rapport and relationships, especially in the early stages. These can be supplemented (but not substituted) by email, Intranets, etc. Meetings should be well structured and co-ordinated. There should be a good balance between formal presentations, syndicate working and informal networking. It is better to go for a detailed coverage of a limited number of priority topics, allowing ample time for discussion. Lessons learned at the starting and operating of networks at Swiss Re for example, were that you have to choose the right people for the positions of the leader and the Knowledge Manager. Also one has to build trust and foster communication inside the network. Moreover the subject must be well structured inside the network and the right goals have to be clearly defined. Especially in geographically and divisionally dispersed organizations the global structuring of subjects is very important. The goals are derived from the overall business strategy and tradeoffs have to be dealt with. Furthermore the will to participate has to be clear and a common language has to be used. Time management is also crucial and the benefits from managing knowledge have to be made clear.

A sustainable network nurtures and supports its governance process through the development of its people toward a capability to:

- interact thoughtfully and compassionately toward value-adding agreements and order,
- see the potential in diversity and develop to harmonize oneself in the aim of becoming something new and valuable,
- create and maintain reciprocal relationships, and
- sustain commitment to freedom to create higher forms of service for the common purpose.

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