Cultural Aspects in Knowledge Sharing Companies

These zur Erlangung der Würde eines

Master of Business Administration MBA

Eingereicht am

28. Februar 2001

an der

Graduate School of Business Administration Zürich, Schweiz

Thesenadvisor:

Prof. Dr. Salvatore Belardo

Vorgelegt von

André Zgraggen

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Genehmigt auf Antrag der Mitglieder des

Joint Committee on Management Education (JCME)

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1   MANAGEMENT SUMMARY

This MBA – Thesis discusses how *Cultural Aspects in Knowledge Sharing Companies* affect their ability to compete on the basis of differentiation and innovation. The key question is, how can companies respond innovatively to ever changing market demands while maintaining continuity in terms of presenting an identifiable selling proposition and establishing common and shared values, practices and behaviors.

The first part of this thesis discusses strategic positioning and being competitive through innovation. In order to be recognized by the market, today's companies need to represent unique values they are able and expected to deliver to their customers. These so-called value propositions require capabilities, which themselves are supported by the companies resources. Innovative companies are knowledge-based companies. Knowledge in this case is the most important resource for the innovation capability. Thus creating, sharing, and further developing knowledge are important parts of that capability. The resource knowledge therefore can be seen as the key asset in the innovation era. It is the only resource, which does not disappear through use. In reverse, it grows through use. It is important to understand what knowledge is, how it is different from data and information, and what forms of knowledge exist, like explicit, tacit, and embedded knowledge. With this understanding knowledge can be shared and reused and thus delivers competitive advantage and value to customers and shareholders. Identifying, what knowledge exists in an organization and enabling to share it, use it, and gain additional knowledge, implies certain activities, which can be summarized as knowledge management. Knowledge management is a multidisciplinary discipline. It affects information technology, organization and processes, management and leadership as well as people and culture. Denying to accept the company as a system with all its components and interdependencies which are integral parts of the knowledge management framework leads to wasted resources in any knowledge management initiative.

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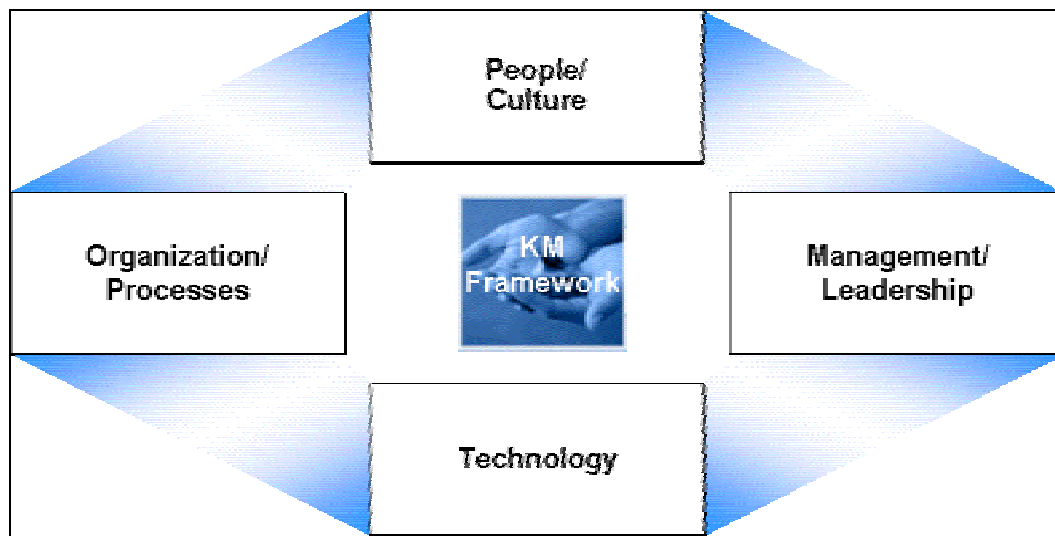*Professor Dr. Salvatore Belardo – State University of New York at Albany*   *February 28, 2001*

Figure 1.1

My experience as deployment leader for a knowledge management system in the company I work for shows that knowledge management approaches often are heavily focused on non-cultural aspects like information technology. The results are slow adapting knowledge management initiatives. Knowledge management of course could never be achieved, especially in large global companies, without the tools provided by information technology, but the values, norms, and behaviors, the ability to build and maintain learning, communicating, and collaborating environments that make up a company's culture, are the principal determinants of how successfully important knowledge is transferred.

The second part of the thesis discusses the questions how people learn, how people communicate, and what causes people to collaborate. Each of these questions investigates the key principles of learning, communicating, and collaborating. The applied model to describe individual learning is Bloom's taxonomy, which distinguishes between, cognitive, affective, and psychomotor learning. The conclusion drawn from this taxonomy is that people primarily learn through experimentation, speculation, and what others tell. As important as it is to understand how people learn, it is also important to understand, what a company can do in order to build a learning environment. It is a place with a learning climate that encourages learning, where people are not punished to explore and try out new ways, where

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people get rewarded for their curiosity and have the possibility to achieve personal mastery. It is essential to understand how and when people communicate before building a communicative environment. Communication in essence is the transmission of meaning to others. This can only be achieved when people speak the same language, in other words, that they have a common understanding of the definitions of the words and expressions exchanged. People cannot share expertise efficiently if they mean different things when they use familiar, essential terms. Building a communicative environment requires to accept, that communicating is probably the most important working activity. Bringing unique combinations of people together that communicate often results in creative solutions. One important aspect in a communicative environment is to acknowledge, accept, and support communicative communities, so-called communities of practice, which often are informal networks and are not present on the organizational chart. These are places, where people with similar interests come together and start to collaborate. A communicative environment is also a place where people have the ability to identify experts for knowledge exchange. Free and open communication should not only be achieved between employees, but through all levels of the organization. Open and honest communication from the top and vice versa limits disorientation and demoralization effects, especially by implementing new structures or other major projects. Innovation finally cannot be managed hierarchically because it depends on knowledge being offered voluntarily rather than on command. Offering voluntarily means collaborating. What causes people to collaborate underlies some conditions, which can be grouped into three broad, interrelated categories: time, trust, and territory. People start to collaborate when they establish individual relationships with others. These relationships require trust, which evolves over time. Territory is about making visible how people are part in the outcome of collaborative processes. This is a kind of reward like receiving awards, collegial recognition, stock ownership, and others. Building a collaborative environment requires the capacity to integrate the company's culture, competencies, and processes. Some design principles should be applied in creating collaborative environments. *Self-management* acknowledges that in modern organizations hierarchical management is minimized, while relationship management among partners is the focus. *Behavioral protocols* are a set of

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guidelines and principles, which the members of the organization follow to enhance the collaborative process, and foster trust-building. *Shared strategic intent* is a clear and widespread understanding among managers and employees of the company's direction and major objectives, which ideally leads to a relationship with the company where it is no longer "their company"; it becomes "our company". *Equitable sharing of returns* finally has the intention to equitable distribute returns. A company should never forget that collaborating employees voluntarily have supplied its key asset knowledge and who has the real ownership of this knowledge.

A key message of this thesis is to outline that knowledge and proper knowledge management are key for creative and innovative companies. Planning and implementing knowledge management initiatives require a multidisciplinary approach. It is quite good understood how to map knowledge and how to use information technology as an enabler. But the adoption rate of knowledge management initiatives shows that successful implementations depend on considering mentioned cultural aspects. Following them finally creates employees' *faith* in what they do, and thus helps companies and employees to grow likewise.

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2   INTRODUCTION

Today's' companies face the reality that their ability to act with the environment and market determines whether they succeed or not. This is not only true for privately run companies but also for formerly government owned or ran companies like energy companies or postal services. All companies face the reality that the environment and market dictates the rules of the game, as it is for example with the price liberation in mobile communication. It is therefore essential for companies that they respond to these conditions appropriately, not only how they react, but also within a timely manner. These ever changing conditions are continuously demanding the companies for change.

On the other side the companies have a need to respond with an ISP, identifiable selling proposition. This means that no matter how strong the demanded changes affect the companies they also have to maintain a recognizable identity, their image. The goal is, that the customers choose the company by purpose and not by chance. The market therefore expects an identifiable value, which simply can be determined by (Quality / Price) x Reliability.

The key question now is how can a company react to changing market conditions while maintaining this mentioned identity. The companies' capability to change and their capability for continuity determine this. Figure 1.1. illustrates this model and on what these capabilities are based.

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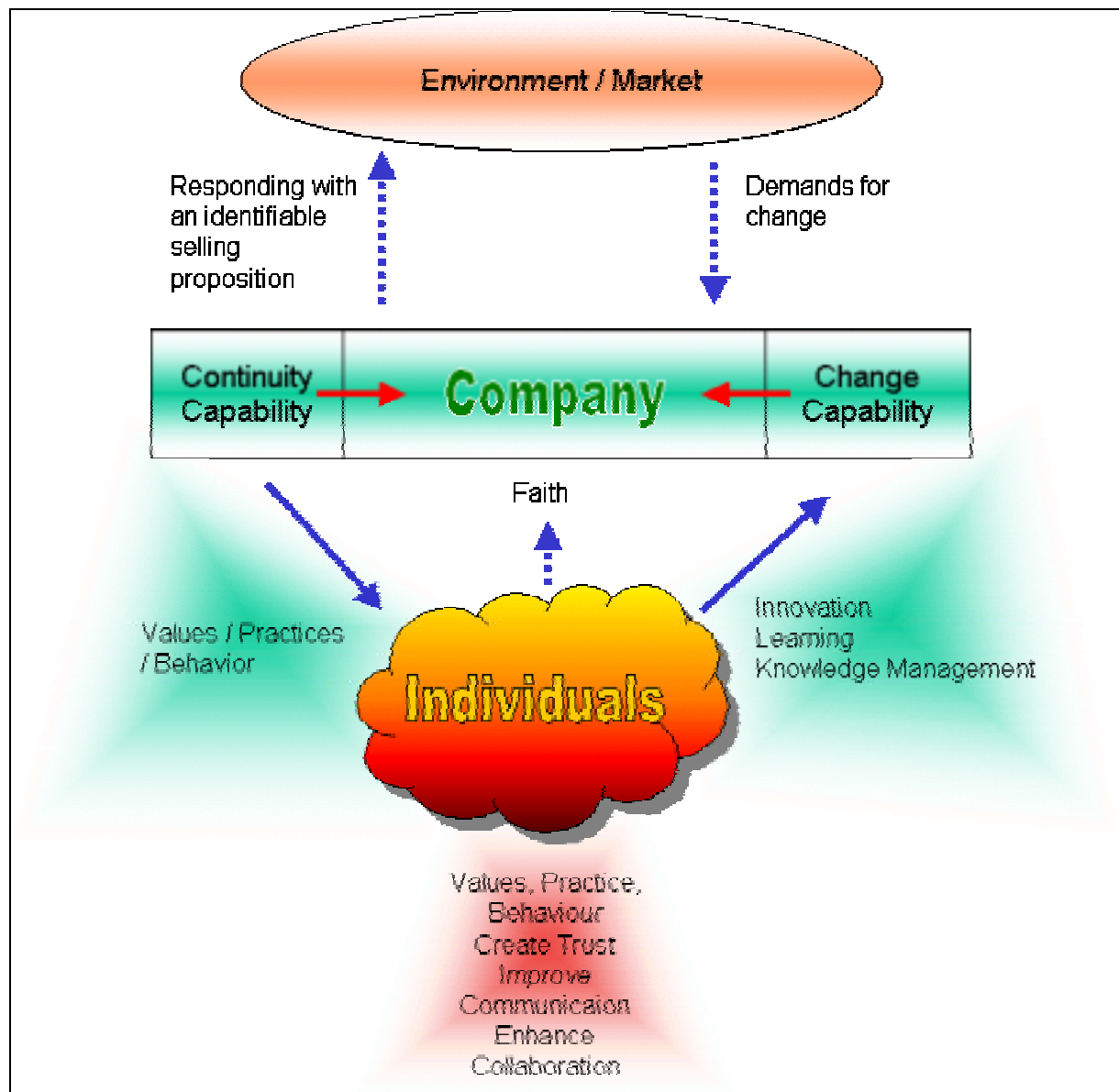
Figure 2.1

A company's capability for change is determined by its ability to innovate, to come up with new products and services or customizing their customer relationships based on specific needs. To be an innovator requires the ability to learn, to adapt knowledge from within and outside of the company, exchange it and further develop it. Knowledge management, identifying what a company knows and what it should know, making this knowledge as a key resource accessible and promoting its exchange, builds the prerequisite for a learning organization.

A key factor for the company's capability for continuity is based on a certain stability in terms of shared values, common practices and behavior like openness to new

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relationships, nurturing and supporting new ideas, rigorous thinking that includes questioning deep beliefs and assumptions, and operating with integrity.[1] These factors can be shared between the company and its employees as well as between the individuals.

These factors are essential for individuals to build trust within the company, to help them to improve the intra-organizational communication and to enhance collaboration between the individuals. If this is given, an individual can start to believe in what he is doing, or in other words, builds a faith towards the company.

In order to bring this model alive, the company needs to understand and answer

1. **How people learn**

2. **How they communicate**

3. **What causes them to collaborate**

The aim of this thesis is to give answers and examples to these three key questions, which allow companies to successfully handle the tension between continuity and change.

The answers also suggest design principles for building a learning, communicating and collaborating organization. Behind this is the finding that the quality and function of a company's organization expresses its ability to translate non-economic resources into economic recourses. To point this out, the ability to perform this transformation continually and within ever changing market and society conditions requires to view over the economic perspective and to include observations how

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[1] Robert Hargrove, Mastering the Art of Creative Collaboration, 92

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innovative and effective organizations work. Without this knowledge, no transformation and move will happen as desired.

But before addressing these questions directly, we need a common understanding about positioning in a competitive environment, knowledge, and knowledge management.

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3   Positioning in a Competitive Environment

3.1   Forces affecting companies

Changes in the competitive environment and the increased importance of services push the resource knowledge to the foreground. Knowledge allows a company to act dynamically in terms creating innovations and building competencies in the area of high valued knowledge-based products and services. These kind of products and services allow a company to pursue a differentiation strategy, a strategy, where a company is not chosen by chance by its customers, but on purpose, because the company delivers with an identifiable selling proposition, delivers an expected and *understandable* value. Following figure illustrates some forces companies face and have to respond to.
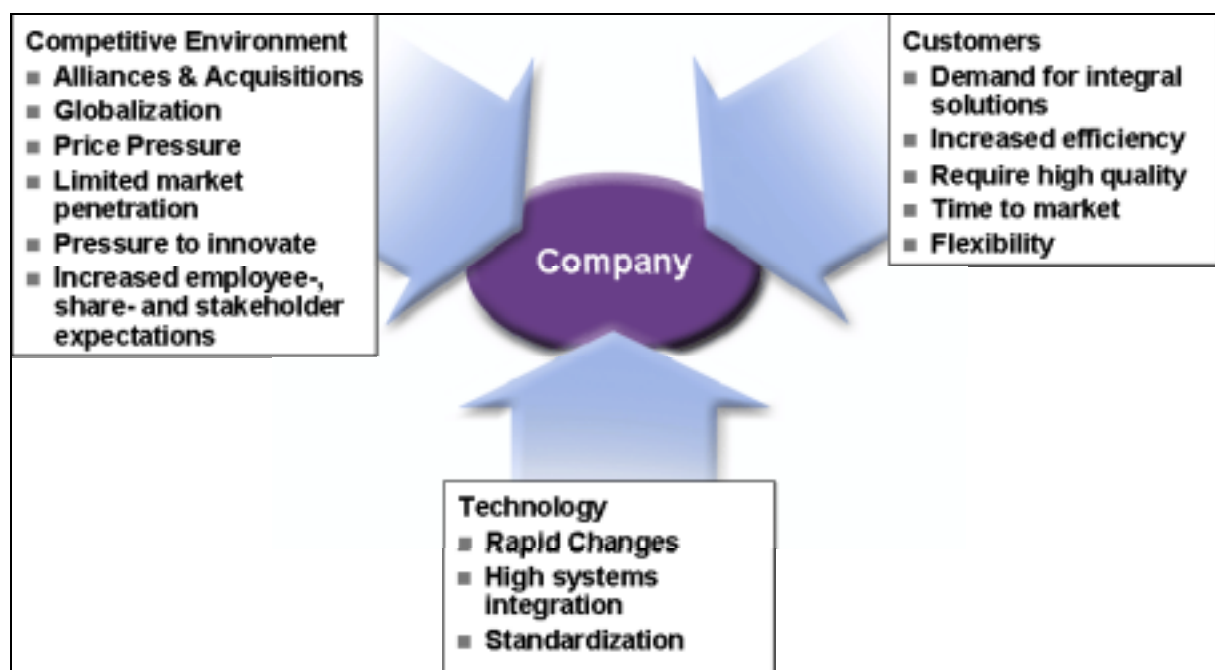

Figure 3.1

The resource knowledge is *the* critical success factor in business!

3.2   Strategic positioning

In order to stay competitive and to address mentioned forces companies have to raise the question, should they compete on the basis of low cost (which has its affect

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on price), or should they differentiate their products and services on other facts than cost, like quality, innovativeness or service? Michael Porter proposes two "generic" competitive strategies for outperforming other corporations in a particular industry: lower cost and differentiation. These strategies are called generic because they can be pursued by any type or size of business firm, even by not-for-profit organizations.

- Lower cost strategy is the ability of a company or a business unit to design, produce, and market a comparable product more efficiently than its competitors.
- Differentiation strategy is the ability to provide unique and superior value to the buyer in terms of product quality, special features, or after-sale service.[2]

Further Porter proposes another dimension, called the competitive scope, where he distinguishes between a narrow and a broad target market for the company. A narrow target market might be a market niche and a broad target market in the middle of the mass market. This model, represented in the following figure, results in four variations of generic strategies

1. **Cost leadership** is a low-cost competitive strategy that aims at the broad mass market and requires "aggressive construction of efficient-scale facilities, vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts, and cost minimization in areas like R&D, service, sales force, advertising, and so on" (Porter)
2. **Differentiation** is aimed at the broad mass market and involves the creation of a product or service that is perceived throughout its industry as unique. The company may then charge a premium for its products
3. **Cost focus** is a low-cost competitive strategy that focuses on a particular buyer group or geographic market and attempts to serve only this niche, to the exclusion of others

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[2] Hunger and Wheelen, Strategic Management, 113

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4. **Differentiation focus,** like cost focus, concentrates on a particular buyer group, product line segment, or geographic market, and seeks differentiation in this targeted market segment

Competitive Advantage

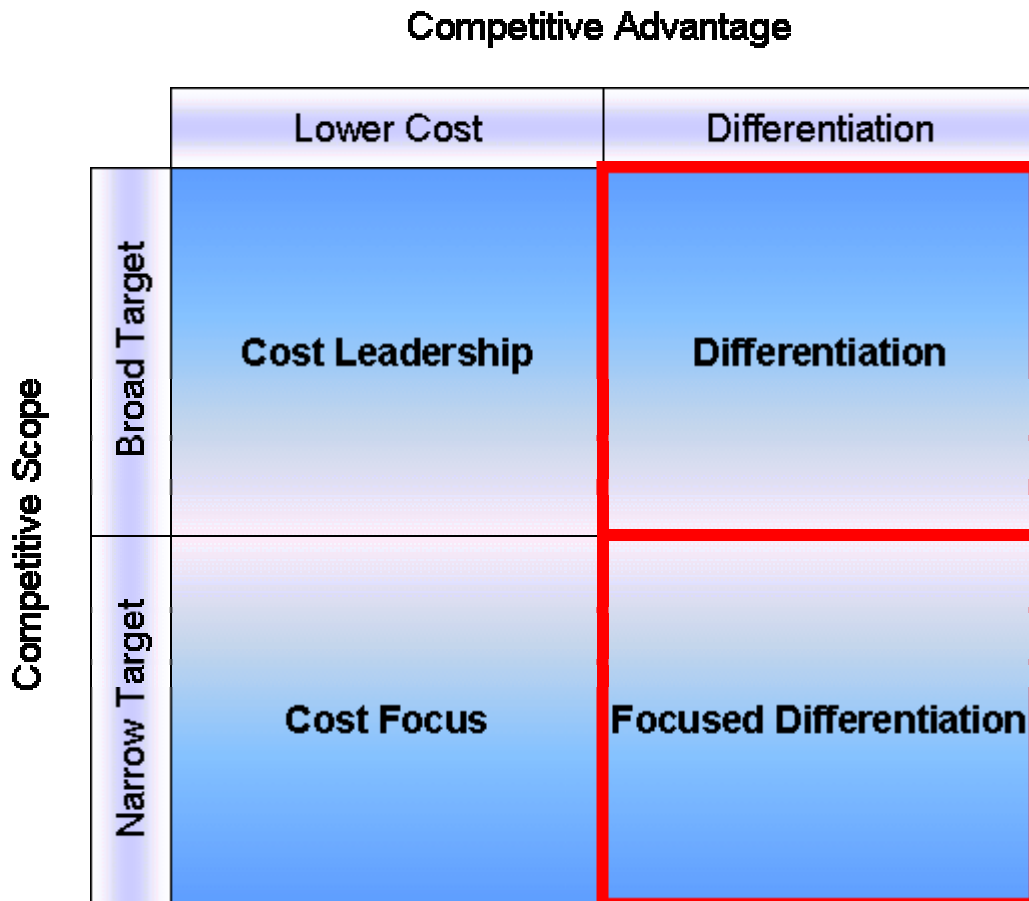Figure 3.2 Porter's Generic Competitive Strategies

I highlighted the Differentiation and Focused Differentiation strategies, because they represent certain perceived values by the market place, values, which are founded in the talents, skills, unique combinations of employees, and the company's ability to exploit these "assets". In short, these values base on knowledge. Following figure illustrates this model:

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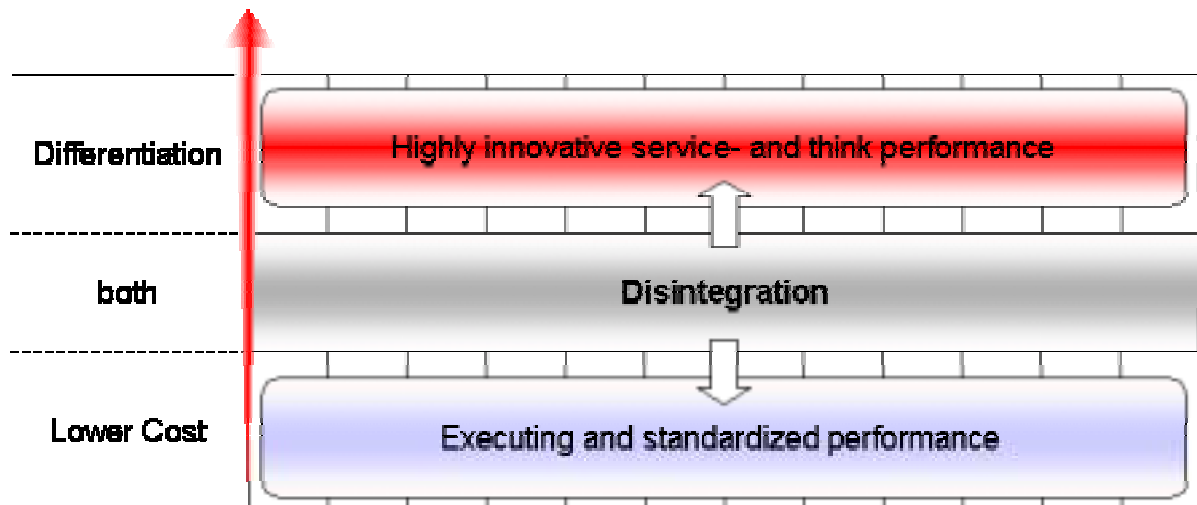**Recognized value of knowledge-based products by market**

Figure 3.3

As mentioned above, if not yet but in the future, companies will focus either on low cost or on differentiation. Companies, which do both, won't survive. Therefore, in the segment where companies focus on differentiation as well as lower cost, a disintegration process is taking place.

Success factors for companies focusing on lower cost are: the big eat the little. Growth is determined by fusions, acquisitions, overtaking, and displacement with immediate release of synergies in the sense of cost reductions. Mergers, like the one of Daimler and Chrysler, are just the beginning of this wave of concentration of big and small companies to mega-enterprises. This scenario requires rationalization, which leads to continually increased productivity and process optimizations, regardless of the consequences (layoff decision for 26'000 employees, Chrysler, January 2001). Automation and optimization in this case play supporting roles.[3]

On the differentiation side, beside solid core competencies, success factors are based on emotions, inspirations, creativity, and also the ability to cope with complexity. As mentioned in the introduction, these factors create some tension on the company, its continuity and change capability. It seems that a modern company

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[3] Kurtzke and Popp, Das wissensbasierte Unternehmen, p. 67

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moves all the time between two poles: on one side dynamic progression, the ability to change and adjust, on the other side the necessity of continuity, consciousness of core values also to continually signal differentiation to the competition and to guarantee a certain degree of internal stability. The question arises, what is the backbone that holds the company together?

3.3   Identity

When we are talking about a company's continuity capability, we're also talking about the values, practices, and behaviors of the organization and the individuals. Matching (not homogenizing but recognizing and respecting) them results in a *common* identity leading to a social integration process, where people become part of the organization without giving up their own identity. Identity can be defined as putting oneself emotionally equal with a group, an individual or a fictitious something/somebody and taking over their motives. Because identity arises in the process of identity recognition, one has, in order to form himself or his organization as a unique identity, to know the judgment criteria and recognition patterns of those from who one wants to be recognized. Acceptable is the identification offering of a company management for the employee of the company only, when elementary desires are respected, which are the desire for competence and effectiveness, the desire for autonomy and self-determination, and the desire for social integration and social belonging.[4] Thus, identity is not only satisfaction with the work. Identity is built, when the requirements of the individual work fits the competence and when this competence will be acknowledged – by the management as well as by the colleagues within the team or in other forms of cooperation.

3.4   Innovation

Finally, what creates the continuity that allows certain companies to thrive over time? It is how these companies generate and pass on knowledge through knowledge management that makes it an essential part of that continuity – and leads to innovation. Thus continuity and innovation are not contradictory. They are not

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[4] Hentschel, Müller and Sottong, Verborgene Potenziale, pp. 114

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opposite to each other. The more "fluid" everything becomes, the more a company needs to stand the pressure of innovation, the more important it is to continuously think over what should not be changed, e.g. how to pass on knowledge, remain common values, etc. These so-called social patterns are the quintessence of past learning processes. They have resulted out of investments and can be seen as social capital. Therefore continuity influences positively innovation and innovation is key to differentiation. Plainly put, innovation is the introduction of something new, or renew, or the realization of new ideas and processes. In the context of economics, innovation at its best requires a new product pipeline constantly filled with concepts that meet both expected and unexpected demands. The earmark of leading innovators is anticipating where the market is going to be and getting there first. To achieve breakthroughs in innovation, companies must address critical elements like the integration of technology and strategy, particularly as they relate to a strategic view of the market, a comprehensive view of the innovation process, and a culture of innovation based on learning, communication, and collaboration. Innovation enables companies to sustain profitability and trigger growth by creating breakthroughs with their products, performance, and customers. Growth and power through breakthrough product innovation requires solutions achieved in multidisciplinary ways. For example, Intel, which has become incredibly powerful through innovation, illustrates the necessity of multidisciplinary innovation to create new value at multiple points on the value chain. Intel's commitment to R&D is arguably one of the most potent forces moving economies and nations into the information age.

Consistent breakthrough product innovation rewards all of an organization's shareholders. As the Intel example testifies, owners get greater price-to-earnings multiples, value-to-book ratios, and total shareholder returns. As a result, the company is more valuable. Customers, employees, and business partners benefit, too. Customers are more excited and more satisfied. The innovative company's improved performance and value leadership strengthen customer relationships and open new ones. Market share and brand equity grow as customer loyalty builds. Employees are more loyal, so they stay on the job. Moreover, employees at innovative companies are more highly motivated; they may participate in the

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ownership of the company; and they presumably will share in its rising fortunes in the form of salary increases--all of which makes retaining them easier. Improved collaboration with preferred suppliers stimulates the transfer of innovative best practices to their other customers. Their success strengthens the business bond between supplier and innovator, resulting in a competitive advantage. The premium for innovation is sustained growth and control over the organization's destiny--the ability to change competitive rules and create entire new categories and markets.

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4   What is Knowledge

Knowledge is an essential resource for an organization to compete in the marketplace and is increasingly substituting material in products. In order to classify something as knowledge, it must be structured to enable sharing for reuse and to deliver value to customers and shareholders. What makes knowledge distinct from other resources is that it does not disappear through use. On the contrary, it is the only resource that grows and further develops through the use of it. The following table illustrates the economic and organizational evolution, and especially which were respectively are the key assets in which stage. It is obvious, that knowledge is the key asset in today's world, where innovation capability is the dominant factor in competing in the marketplace. Innovation does not occur in isolation; it is the result of collaboration by which knowledge will be exploited to drive innovation.

Economic Era	Standardization	Customization	*Innovation*
Meta-Capability	Coordination	Delegation	*Collaboration*
Business Model	Market Penetration	Market Segmentation	Market Exploration
Growth Driver	Learning-Curve Gains and Scale Economies	Know-how Transfer to New Markets	Entrepreneurial Empowerment
Organizational Model	Functional	Divisional, Matrix, and Network	Alliances, Spin-offs, and Federations
Key Asset	Tangible Assets	Information	*Knowledge*

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But what really is knowledge? If one speaks of somebody who has knowledge, one speaks of somebody who has the ability to handle different situations on a certain subject based on what he knows, what he learned in the past, how he judges the situations, how he can adapt new insights to this situations.

There is an increasing number of literature about knowledge, knowledge management and related topics, all providing their versions of definitions for knowledge. What is quite common to all these definitions, is that they distinct more or less clearly between data, information and knowledge, although there are some definitions, which also include for example wisdom as another category. Often it is not clear to people and organizations how data, information, and knowledge differ. Investments in "knowledge management systems" which don't differ between data, information and knowledge will not provide the benefit worth the spending. Therefore, let's consider these three categories and proceed with their definitions.

4.1   Data

Data are objective facts, that means without any interpretation or evaluation, about certain events, like 100° Celsius. Data tells nothing about the temperature of 100° Celsius nor why it is that temperature or what is the effect of it and therefore is not sufficient for taking action, because it is not put in context to anything. Nevertheless data is needed by any organization, some of them depend more and others less. Data is most usefully as structured records of transactions. Also Davenport and Prusak mention, data says nothing about its own importance or irrelevance, but it is important to organizations – largely because it is essential raw material for the creation of information.

4.2   Information

Information can be seen as data put into context. For example, 100° Celsius is the temperature where water starts to boil. This putting into context creates a message, which can be communicated and exchanged within organizations and therefore is a prerequisite for knowledge sharing organizations. Communication or exchange incorporates that information has a sender as well as a receiver. It is not necessarily true that what is considered as information by the sender is also information for the

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receiver. If information has an impact on the judgment and behavior of the receiver, it becomes information for him. As Davenport and Prusak formulate, information is data that makes a difference. In this way data becomes information when there is meaning added. There might be thousands of salary records stored in a database, which for themselves are data. If one adds value, like calculating what is the average salary of all the salary records, one adds meaning to this data, like the average salary is $ 34,000 on a year basis.

Information moves around in organizations through official as well as *informal* structures. The transmitters of information in official organizations are well defined, like newsletters, email, post letters and so on, while within informal structures these are less obvious, like coffee talks, groups of interest and FYI forwarding via email. When building a knowledge sharing company it is an advantage to be aware of the existence of these less formal ways information flow in order to use them beneficially.

4.3   Knowledge

Knowledge can be seen as a conclusion drawn from the data and information[5]. To complete the mentioned example, in order to destroy germs in water, one has to boil the water. This prevents illness when one is for example in the jungle and needs to drink water. Therefore, knowledge leads to decisions and taking action. This also distinguishes knowledge from data and information and makes it more valuable because it is closer to action. The figure below illustrates this pyramid to action.

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[5] Thomas A. Stewart, Intellectual Capital, p. 69

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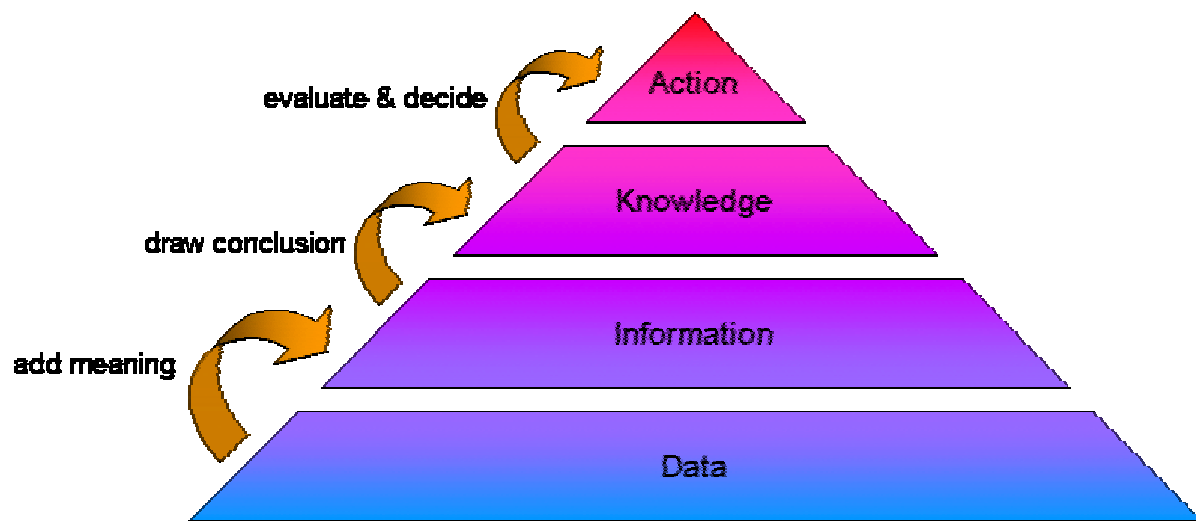
Figure 4.1

Knowledge makes sense, and it preserves plausibility and coherence. Knowledge is reasonable and memorable, it is something that embodies past experience and expectations, and that resonates with other people. Knowledge can be constructed retrospectively but also can be used prospectively, something that captures both feeling and thought. Knowledge is something that allows for embellishment to fit current oddities, something that is fun to construct.[6] Knowledge is not a rigid structure that excludes what doesn't fit. Instead it can deal with complexity in a complex way.

As mentioned above, there are numerous versions of definitions for knowledge. I would like to quote the version from Thomas H. Davenport and Laurence Prusak:

"Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents of repositories but also in organizational routines, processes, practices, and norms."[7]

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[6] Davenport and Prusak, Working Knowledge, p. 82

[7] Davenport and Prusak, Working Knowledge, p. 5

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Knowledge can, or better must, also be seen as an asset for a company, like money or equipment. Although it is difficult to measure its monetary value, one can view the difference between the stock market value and its equity as the knowledge value, which can be considerable, especially in high-tech or knowledge-intensive companies. The value of knowledge is also based on its purpose, in other words, knowledge which does not fit to the strategy is of less value for a company than knowledge which is cultivated in the context of strategy.[8] Without knowledge there is no innovation and it usually takes different people with different knowledge to create innovations.

4.4   Classification of Knowledge

Knowledge exists in different forms. It is important for a company to identify this different, because it determines the approaches how this knowledge should be exchanged and further developed. The following sections outline the characteristics of explicit, tacit and embedded knowledge.

4.4.1 Explicit Knowledge

Explicit Knowledge is expressed externally, often codified and already structured, and is fully revealed or expressed without vagueness, leaving no question about meaning or intent. Explicit knowledge is represented in artifacts such as books, patents, documents, and e-mail. In order to draw benefits form explicit knowledge, it has to be made accessible by employees who can evaluate and validate it in order to use it. According to Thomas A. Stewart: Explicit Knowledge is knowledge that you know you have.

4.4.2 Tacit Knowledge

Tacit knowledge is internal, it resides in the heads of the people, and may be difficult to explain or to represent directly or explicitly and may be even hard to see, and is therefore almost impossible to reproduce in a document or database. Tacit knowledge is normally acquired over a certain period of time, a kind of internalized

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[8] Thomas A. Stewart, Intellectual Capital, p. 70

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expertise the holders even don't fully realize they have it, because for them it is so obvious. These people - experts - with deep knowledge of a subject – have been tested and trained by experience. One of the prime benefits of experience is that it provides a historical perspective from which to view and understand new situations and events[9]. For me to ski is something simple, and I even can describe what I'm doing while skiing. But it is impossible for someone who cannot ski just to read my description in the hope to do it the same way immediately. Tacit knowledge incorporates so much accrued and embedded learning that its rules may be impossible to separate from how an individual acts.[10]

Losing (tacit-) knowledgeable people often results in losing also this tacit knowledge. It is therefore important for a company to spread this tacit knowledge to other employees. Because it is almost impossible to reproduce tacit knowledge in an external format, the most a company can do to have access to the highest valued tacit knowledge it make these people visible in the organization, e.g. with knowledge networks or yellow pages, and promote sharing and collaboration. Without any company initiative tacit knowledge is only created and shared around the water cooler. According to Thomas A. Stewart: Tacit Knowledge is knowledge you don't know you have.

4.4.3 Embedded Knowledge

Originally individual tacit knowledge can develop to knowledge which is organizational understanding, is tied closely to specific contexts, including work processes, products, and services, to a kind of the company's tacit knowledge. The company adopts values, principles, and "ways of doing things" which in turn determine how it makes decisions and its employees behave. Theoretically, this embedded knowledge is independent of those who developed it and therefore has some organizational stability – an individual expert can disappear without bringing the process to a halt or reducing the company's stock of embedded knowledge[11].

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[9] Davenport and Prusak, Working Knowledge, p. 8

[10] Davenport and Prusak, Working Knowledge, p. 70

[11] Davenport and Prusak, Working Knowledge, p. 83

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5   What is Knowledge Management

Knowledge management has been defined in many ways. One helpful definition from Lotus (1998) is that KM is the systematic leveraging of knowledge and expertise to improve organizational innovation, responsiveness, productivity, and competency. In other words, merely defining, categorizing, and even storing knowledge in a repository is not truly managing it. True knowledge management involves using the corporation's collective knowledge to provide a sustainable competitive advantage tied into one or more core competencies.

Knowledge management is a multi-discipline approach. Extensive knowledge transfer could not happen in large global companies without the tools provided by information technology. But information technology is just an enabler. Values, norms, and behaviors that make up a company's culture are the principal determinants of how successfully important knowledge is transferred.[12]

5.1   Knowledge Management Definition

Fundamentally, the focus of Knowledge Management is about "knowing" what an organization knows, sharing and utilizing this knowledge, and gaining new knowledge quickly. Knowledge needs to be available company-wide in a timely and efficient fashion. In addition, it must be easy for employees to search for specific knowledge, obtain the knowledge, understand it, use it, and hopefully create additional knowledge. This optimization of knowledge and the management of it improves organizational productivity, competency, responsiveness, and innovation, which improves the company's overall efficiency and effectiveness, which, at the end, improves the company's competitiveness.

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[12] Davenport and Prusak, Working Knowledge, p. 96

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> "Personally, I believe that future leadership companies and future leadership institutions of all kinds will be those that know how to compete and win on the basis of knowledge - learning, adapting, and improving this vital asset we know as information."
>
> Lou Gerstner, CEO, IBM Corporation

Knowledge management can be defined as "generating value for the company through harnessing and applying corporate knowledge". The concept of knowledge management is neither new nor overtly complicated. The challenge however, lies in establishing sustainability for any knowledge management initiative, such that the initiative grows with the organization, facilitating continuous improvement. While knowledge management can mean different things to different people, the definition and why it is applied should be consistent.

5.2   Compete with knowledge management

Knowledge management is one way to deal with several challenges facing companies in today's fast-paced environment. First, how do you share knowledge between mobile employees or geographically dispersed teams, departments, or plants? Knowledge sharing and generation occurs best face-to-face between multi-functional employees. This can be difficult or impossible in many dispersed corporations. As an example, a plant in Taiwan might have an optimised process for adjusting an assembly line, where at another plant in Pittsburgh this might take half an hour. Sharing the best practices of the Taiwan plant with the Pittsburgh plant could improve overall corporate flexibility and productivity. The challenge is how to get the key process knowledge necessary to achieve this goal transferred to the appropriate Pittsburgh employees. It often happens, that although these two plants use identical technologies and formal business processes, that process innovations at one plant are not visible, and are therefore not captured and transferred to the other plant. Second, how do you retain knowledge through downsizing, layoffs, retirements, and other employee departures? Considering the "knowledge-hoarding" (knowledge is power) culture at many companies, which can concentrate significant amounts of irreplaceable corporate knowledge in a small number of employees, how

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do we make sure that this knowledge is retained by the corporation? There are a many companies that have had to rehire key employees after downsizing them and then realizing that they are the sole sources of key corporate knowledge? Third, given the breakneck pace of change in the global marketplace, how can knowledge obtained fast enough and current enough to make a difference? A company needs to obtain relevant knowledge both externally (to avoid becoming too insular) and internally in a rapid and focused fashion to stay on top of the ongoing changes occurring in the marketplace, i.e. it needs to improve "knowledge workers" access to disparate sources of data and information both inside and outside of the company. The right knowledge on the customers, competitors, supplies and distributors at the right time can often make the difference between success and failure in the marketplace. Aeschylus, Athens' great tragic dramatists, centuries ago: "Who knows useful things, not many things, is wise".[13] Thus, knowledge management is an evolving practice. Even the most developed and mature knowledge management projects Davenport and Prusak studied were unfinished work in progress.

According to a survey by the Foundation for the Malcom Baldrige National Quality Award, July 1998, the top CEO's priorities were

- Increasing Globalization (94%)
- Improving Knowledge Management (88%)
- Reducing Cost and Cycle Time (79%)
- Improving Supply Chains Globally (78%)
- Manufacturing: Multiple Locations, Many Countries (76%)

This priority list clarifies the importance of knowledge management in today's economic world. The other priorities like increasing globalization or reducing cost and cycle time are strongly affected by efficient knowledge management and one could claim that without knowledge management these goals will not be achievable.

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[13] Davenport and Prusak, Working Knowledge, p. 6

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To be effective, knowledge management cannot be an end onto itself. Rather, it must be closely aligned to the company's mission and goals. Senior managers, who have an enterprise-wide view of the organization, need to be able to help others make the link between knowledge activities and the company's objectives. By tying the concepts of knowledge creation, sharing and use to achieving business results, executing strategic initiatives and serving customers, senior managers can help employees internalize the value of knowledge management and prevent individuals from perceiving knowledge management as "another corporate initiative." To outline additionally the importance of knowledge management, the senior management can implement the position for a Chief Knowledge Officer (CKO). Of all of this persons responsibilities, the most important and particularly critical are building a knowledge culture, creating a knowledge management infrastructure, and making it all pay off economically.[14]

5.3   How to deal with the different types of knowledge

Successful knowledge management needs to respect some principles[15], which emerge from a close look at human, structural, and customer capital.

Companies don't own human and customer capital, they share the ownership with employees and, it terms with customer capital, with their customers and suppliers. The companies have to acknowledge this fact of shared ownership in order to benefit fully form it. To create and share knowledge it can use, a company needs to foster teamwork, communities of practice, and other social forms of learning. This not only leads to an exchange of tacit knowledge, but also builds embedded knowledge – knowledge, which resides in the company and makes it more independent from key knowledge workers. However, Leveraging the rich, untapped potential of tacit knowledge in a company enhances organizational performance, and knowledge management helps a company use its internal implicit, tacit knowledge base. Therefore, tacit knowledge must be the focal point of any effective Knowledge

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[14] Davenport and Prusak, Working Knowledge, p. 115

[15] Thomas A. Stewart, Intellectual Capital, pp. 163

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Management strategy. The following figure, adapted from *The Knowledge Creating Company* by Ikujiro Nonaka and Hirotaka Takeuchi, illustrates four types of knowledge conversions.
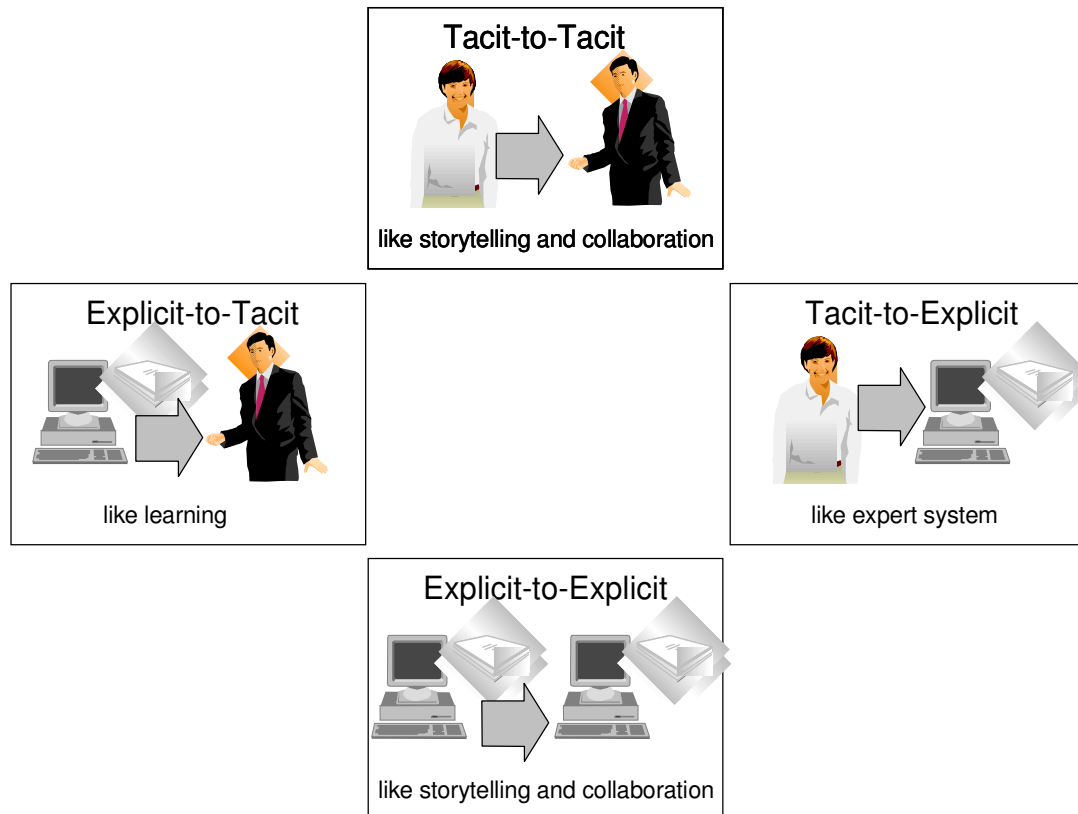

Figure 5.1

The first conversion from tacit-to-explicit is about taking the knowledge which is in somebody's mind it order to store it in an expert system as artificial intelligence. But one must be aware that just a small part of tacit knowledge usually can be stored as artificial intelligence. As already mentioned, the majority of tacit knowledge can not be converted to explicit knowledge. So the chances are high, that somebody trying to feed an expert system with tacit knowledge from a world leading specialist might become the second best specialist in that particular area instead of the system. The shortcomings of artificial intelligence should heighten our appreciation for human brainpower (cars, robots…).

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The next conversion from explicit-to-explicit is very common and a customary practice. Examples of explicit-to-explicit conversions are Web publishing, in which content is taken from a report or presentation, formatted in Hypertext Markup Language (HTML) and published on the Web or taking information from a database and formatting it as a management report. The third conversion, tacit-to-tacit, is about people talking to other people. An example of this conversion is storytelling, which is an effective way of sharing tacit knowledge because it provides context and content simultaneously. The remaining conversion, explicit-to-tacit, brings life to explicit knowledge through data visualization or simulations. The knowledge can then be internalized and applied to a decision to create what is known as an "Aha!" experience.

Explicit knowledge provides efficient access to information and data; it connects people with materials and equipment. Tacit knowledge connects people with people. When knowledge is exchanged in this manner, it becomes alive and interesting. Most companies have vast untapped gold mines of knowledge within their organizations. By setting up a knowledge management strategy and one begins to tap into tacit knowledge, it will be evident that most of it resides in informal groups of people who work together as a community.

5.4   Roles, Relationships and Responsibilities

With the understanding what types of knowledge exist, the company needs to understand as well the roles, relationships and responsibilities involved, and what they mean to the customer's business. Davenport and Prusak have recognized, that moving knowledge through organizations base on the same market forces similarly to markets for more tangible goods. These so-called knowledge markets have buyers and sellers who negotiate to reach a mutually satisfactory price[16] for knowledge exchanged. And as with traditional markets there are also intermediators - so called knowledge brokers. These are people who have specific knowledge about who knows what and who wants to know what and how these people can be brought

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[16] Davenport and Prusak, Working Knowledge, p. 25

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together. Recognizing the existence of these people and rewarding them for their facilitation as well as acknowledging that a company's knowledge market must be founded on mutual trust improves the exchange of knowledge in a company.

People, who are responsible for knowledge management projects, are so called knowledge managers. They should speak the language and understand the value systems of whatever types of knowledge workers are involved in a particular knowledge management initiative. In addition these knowledge management initiatives will not succeed if there are no workers and managers whose primary jobs involve extracting and editing knowledge from those who have it, facilitating knowledge networks, and setting up and managing knowledge technology infrastructures.[17] The most successful organizations are those in which knowledge management is part of everyone's job.

As already mentioned, senior management support plays a critical role in knowledge management projects. As it is with any other type of change program, knowledge management projects benefit from senior management support. Davenport and Prusak found that strong support from executives was critical for transformational knowledge projects but less necessary in efforts to use knowledge for improving individual functions or processes. The types of support that were helpful included the following:

- Sending out messages to the organization that knowledge management and organizational learning are critical to the organization's success
- Clearing the way and providing funding for infrastructure
- Clarifying what type of knowledge is most important to the company

5.5   *Knowledge Management Approaches*

Knowledge management approaches should start with a recognized business problem that relates to knowledge. Examples are customer defections, poorly

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[17] Davenport and Prusak, Working Knowledge, p. 175

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designed products, losses of key personnel, or a lower "win rate" for service engagements. These are all business problems that might be traced to poor or lack of knowledge management. Attacking these problems, identifying their knowledge component, and using the business value of solving them as justification for knowledge efforts are all good ways to get around in managing knowledge.[18]

In deciding how to approach a knowledge management initiative one has to consider that it depends of the types of knowledge involved as well as the stage of the interaction cycle. The following figure show a Knowledge Management Program Matrix[19], which can be used in order to identify the different types of approaches.

Knowledge Management Program Matrix

	Embodied (Tacit)	Represented (Explicit)	Embedded
Sense	Observe and Listen	Gather	Hypothesize
Organize	Build Context	Categorize	Map
Socialize	Communicate	Disseminate	Simulate
Internalize	Apply	Decide	Act

Figure 5.2

The different types of knowledge are shown on the top from left to right. The different stages of the interaction cycle are shown vertically down the left side. Finally on the lower edge of the matrix the skill mastery levels are indicated which can be achieved

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[18] Davenport and Prusak, Working Knowledge, p. 164

[19] Source: IBM Global Services

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depending on how the knowledge is exchanged. It is critical to recognize the types of knowledge and how to work with them in the understanding of creating an effective knowledge management program.

Although all these problems will be discussed in detail later, let's address them shortly. Knowledge transfer can be distorted by lack of trust between the employees as well as between the company and the employees. An approach to address this is through building relationships and trust through face-to-face meetings and honest communication. The management shouldn't talk up about knowledge management initiatives until they have something worth talking about. Knowledge managers often are confronted with the question of how to access knowledge, how to access the right people, how to have access to support, and why is this and that functionality not provided. This not only might be the result of poor communication and project implementation, it also is a hint of a bad knowledge sharing culture, where people don't pay attention what knowledge sharing implies, where it is uncertain if people have appetite for the company's knowledge, if they are sufficiently loyal and trustful to share their knowledge with the rest of their colleagues. These problems can arise through different cultures, different vocabularies, or different frames of reference. Possible solutions are creating common ground through education, discussion, publications, teaming, and job rotation. Lack of time and meeting places as well as a narrow idea of productive work limit learning, communication and collaboration possibilities. A company then should establish times and places for knowledge transfers like fairs, talk rooms, and conference reports. Often are knowledge owners rewarded and promoted, but not knowledge sharers. Performance should be evaluated and incentives provided based on knowledge sharing and the resulted evaluated performance. Employees might have limited absorptive capacity of received knowledge. They should be educated for flexibility, and the company must provide time for learning, and hire for openness to ideas. Quite common is the belief that knowledge is prerogative of particular groups, the not-invented-here syndrome. This can be addressed in encouraging a nonhierarchical approach to knowledge and promoting that the quality of ideas is more important than status of its source. Another reason for limiting knowledge transfer can be the intolerance for mistakes or

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need for help. A company then should accept and reward creative errors as well as collaboration, and loss of status should not result from not knowing everything.

A key finding drawn from all these mentioned problems is that a failing knowledge management project typically doesn't fit the company culture. So before launching a knowledge management initiative, a company needs to take a close look at its culture. What might seem like an ideal starting point for a knowledge management initiative, is not necessarily realizable within the given company culture. Therefore, a company should invest some time to assess its culture before to determine the foundation on which to base a knowledge management initiative. If a company wants knowledge management to thrive and become institutionalized, its organization must ultimately adopt multiple "anchors" for knowledge management.[20]

To summarize, knowledge management is about

- Making tacit information explicit, that is capturing information in people's heads and making it more widely available.
- Enabling collaboration, maximizing the potential for finding the right people to work with on a given project and an efficient way to help them work together.
- Creating a business culture and organization that promotes information and knowledge sharing and collaboration.

Good applied knowledge management can generate many benefits as already mentioned. In short, knowledge management can accelerate the cycle of interactions and enable a community to create business value in the form of:

- Responsiveness
- Innovation
- Competency
- Efficiency

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[20] Davenport and Prusak, Working Knowledge, p. 172

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And finally, of course, good applied knowledge management should result in positive financial effects. Davenport and Prusak suggest, even if no ones is interested today, knowledge managers should start to measure the worth of what they do. They should convert the knowledge they manage into cold, hard figures, cash that the company has made or saved because they were fortunate enough to have them as their knowledge managers.[21]

As we now have discussed "the fundamentals", let's proceed with the three key questions, how people learn, how they communicate, and what causes them to collaborate.

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[21] Davenport and Prusak, Working Knowledge, p. 176

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6   The Three Key Questions

In the past chapters we have discussed the challenges companies have to face today. We have seen that companies need to change in order to survive in this world, while maintaining continuity. These two forces create a certain tension companies have to deal with. If it is too loose, the company won't adapt fast enough to the changing environment. If it is too strong, the company will be torn up.

The hypothesis is, that focusing on a differentiation strategy, which puts a company rather in an acting than in reacting position, enhances the chance for sustainable success for a company. Differentiation implies creating recognizable higher values. These values come from the companies' ability to exploit the talents, skills, and unique combinations of people. All is based on people, knowledge workers, knowledge managers, knowledge brokers, and how people learn, communicate, and collaborate.

6.1   How people learn

In order to understand how people learn, and how it can be influenced positively, one must recognized the mechanism and levels of individual learning. A common model to describe this is Bloom's taxonomy, which will be described shortly.

But it is also important to understand how to build an environment (organization) which fosters learning. A company has to be aware, what factors enable the different levels of learning. This understanding allows the company to build an environment where higher levels of learning can be achieved. It is obvious, that higher levels of learning have a positive impact how companies deal with changing environments and thus allows them to respond faster and more innovatively.

A company must be a *playground* for people seeking personal mastery. The essence of personal mastery is learning how to generate and sustain creative tension in life. Learning in this context is not about acquiring more information, but expanding the ability to produce the results that are important in life. For example, if someone's vision calls him to a foreign country, he might find himself learning the new language

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far more rapidly than he ever could before. Or if someone feels in tune with a task and the working (or learning) environment, he makes the experience that working and learning flow fluidly.

People with a high level of personal mastery live in a continual learning mode. They never "arrive". Sometimes, language, such as the term "personal mastery", creates a misleading sense of definiteness, of black and white. But personal mastery is not something people possess. It is a process. It is a lifelong discipline. People with a high level of personal mastery are acutely aware of their ignorance, their incompetence, and their growth areas. They are deeply self-confident. Paradoxical? Only for those who do not see that "the journey is the reward".[22] Personal growth and company growth are interrelated. Growing the company means providing a climate where people can learn, develop and thus grow, and where they can realize their dreams and aspirations. A company should have tolerance for eccentric people who are creative. These people should be motivated and honored. This then is one of the reasons how a company can achieve innovative breakthroughs. A company should *use* these people as their leaders, as their drivers. They should be models for others. They should have the possibility to commit themselves to their own personal mastery. As Senge mentions, talking about personal mastery might open people's minds somewhat, but actions always speak louder and are more impressive than just words. He says that there's nothing more powerful a leader can do to encourage others in their aspiration and quest for personal mastery than to be serious about his own quest.

6.1.1 Bloom's Taxonomy[23]

In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. This became a taxonomy including three overlapping domains; the cognitive, psychomotor, and affective.

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[22] Senge, The Fifth Discipline, p. 142

[23] Distance Learning Resource Network: http://www.dlrn.org/library/dl/guide4.html

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Cognitive learning is demonstrated by knowledge recall and the intellectual skills: comprehending information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem-solving, and evaluating ideas or actions. This domain on the acquisition and use of knowledge is predominant in the majority of courses. Bloom identified six levels within the cognitive domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels, to the highest order, which is classified as evaluation.

1. **Knowledge** is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.

2. **Comprehension** is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.

3. **Application** refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.

4. **Analysis** refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.

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5. **Synthesis** refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.

6. **Evaluation** is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the learner may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgments based on clearly defined criteria.

Affective learning is demonstrated by behaviors indicating attitudes of awareness, interest, attention, concern, and responsibility, ability to listen and respond in interactions with others, and ability to demonstrate those attitudinal characteristics or values which are appropriate to the test situation and the field of study. This domain relates to emotions, attitudes, appreciations, and values, such as enjoying, conserving, respecting, and supporting. Verbs applicable to the affective domain include accepts, attempts, challenges, defends, disputes, joins, judges, praises, questions, shares, supports, and volunteers.

Psychomotor learning is demonstrated by physical skills; coordination, dexterity, manipulation, grace, strength, speed; actions which demonstrate the fine motor skills such as use of precision instruments or tools, or actions which evidence gross motor skills such as the use of the body in dance or athletic performance. Verbs applicable to the psychomotor domain include bend, grasp, handle, operate, reach, relax, shorten, stretch, write, differentiate (by touch), express (facially), perform (skillfully).

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Bloom's taxonomy, just as described, is one way to describe how people learn. It bases on the theory of critical thinking. As we will discuss later, critical thinking is key when people communicate in order to acquire and further develop knowledge.

After having identified how people learn (with the help of critical thinking), it is obvious that a positive environment, where learning is fostered, helps employees to achieve higher levels of learning and thus will enhance a company's competitiveness. It is therefore important to draw the key findings on how people learn from Bloom's taxonomy, which then can be addressed separately.

If you combine the three overlapping domains cognitive, affective, and psychomotor learning, you can draw a conclusion how people learn. Through experimentation, speculation, and what other *sources* communicate to them.
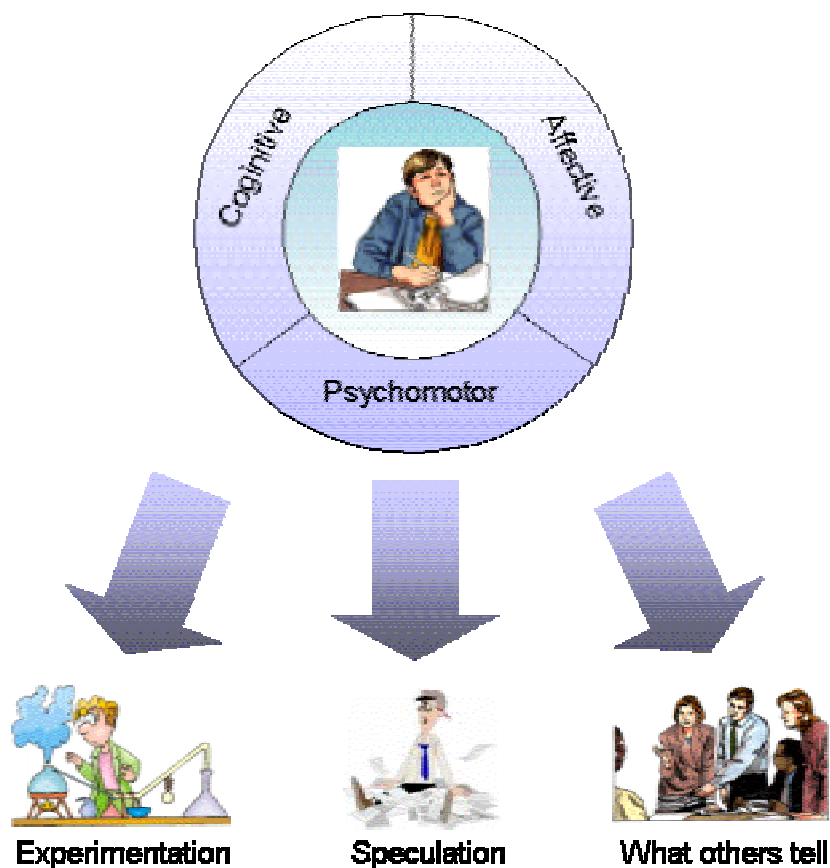

Figure 6.1

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6.1.1.1 Experimentation

An attribute of a healthy learning climate in a company is where people are promoted to do new things, to experiment. Experimentation is an attempt with the purpose to test a hypothesis under controlled influences in order to prove or disprove it. Employees should be fostered to do it by themselves. This means in this case to test the hypothesis. It shouldn't be seen as an obstacle to avoid or go around, but to face and try to find out how to deal with it. Possible negative consequences shouldn't matter too much. A negative experience is always also a learning experience from which one can profit. Employees should have the possibility to share and demonstrate what they learned, no matter what the outcome was. What was learned, should have the attention rather than how much it cost. Nevertheless sharing what was the effort to learn should also be fostered, but not sentenced.

There was a discussion of defects the day before the tragic launch of a Space Shuttle in 1988. The committee of about twelve people could not come to agreement about the question how dangerous was an impact of low temperature on seals of hard fuel tanks. Because voices divided in half, the head of the committee made decision. Yet if instead of democratically looking for an opinion of majority, the committee paid attention to two experts on seals that were present, the tragedy would not happen.

6.1.1.2 Speculation

A speculation can be seen as an assumption, a consideration or a statement without profound knowledge. Learning through speculation happens, when employees try to go beyond their experience by considering possible results. Employees who are willing and able to learn new things are vital to an adapting company.

6.1.1.3 What others tell

What other sources communicate to people is another way of individual learning. It allows gaining new knowledge by *loading* new information, which then can be reflected with what one already knows. This might create new linkages between what one already knows or gaps which then lead to new questions and discussions and

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therefore to additional knowledge. An important factor in acquiring new knowledge through communication is the ability to think critically. Talking with other people allows to exchange tacit knowledge, which otherwise would take more time and experience to acquire.

An example of such a conversation is storytelling, which is an effective way of sharing tacit knowledge because it provides context and content simultaneously. In fact, it is worthwhile to think about story telling in more detail, because this *learning-from-what-others-tell* can truly be a very effective way in the learning process. Story telling can be seen as one of the universal techniques how knowledge can be transferred. No matter which culture you're talking about, common to all is that they have used story telling to transfer their values, believes and knowledge. This is true for teaching the Bible as well as teaching the life in the jungle by amazons Indian tribes. And it is also true for any organization. Stories allow exposing knowledge in the context of its use, which gives it a noticeable advantage. People generally know more than they can explain (consciously) and they can explain more than they can write down. Story telling thus not only allows to transfer tacit knowledge as explained in the beginning of this paragraph, it allows also to transfer knowledge one is not purposely or consciously aware of.

6.1.2 Building a Learning Environment

One of the defining characteristics by setting up a learning environment is of being a place that encourages everyone who works in it or who has contact with it to learn. It has the *learning habit* so that actions taken for reasons of seeking solutions, customer service, production etc. also try to bring home insights, reflections and new ideas for action.

Chaparral, a steel company, for instance is encouraging taking risk. Employees are selected for their ability and their attitudes about learning. There are no time clocks, and there is a generous profit-sharing system. These cultural and organizational approaches clearly encourage Chaparral's workers to gain and share knowledge.

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In 3M, delegating responsibility, tolerating creative mistakes, and respecting individual talents at all levels of the firm have been a part of the company's culture almost from the beginning. Researchers at all levels are expected to spend 15 percent of their time on personal research interests.

Identity is also a tension, which makes the work attractive within the organization. Not employees who are left in their daily routine are the ones who feel best integrated in the organization, but whose routine jobs are interrupted by new requirements. It is the right mixture between routine and interruption of the routine which postulates the competence of the employee (and so the development). A learning organization has to transmute its identity with its learning steps. Its identity is therefore variable and therefore the change process of the learning organization always is also a stabilizing process for its identity. The learning process can become an attribute of identity, but remains ambivalent.[24]

A company with a good learning environment typically attracts people who have a knowledge seeking and applying mentality, who have a positive orientation to knowledge. Hiring these people is an important step toward a knowledge-oriented culture, where people are bright and intellectually curious, where they are willing and free to explore, and the management rewards their knowledge-creating activities. In these environments people learn most rapidly when they have a genuine sense of responsibility for their actions. Helplessness, the belief that they cannot influence the circumstances under which they live, undermines the incentive to learn, as does the belief that someone somewhere else dictates their actions. Conversely, if people know their fate is in their own hands, their learning matters. These environments create learning organizations which will, increasingly, be "localized" organizations, extending the maximum degree of authority and power as far from the "top" or corporate center as possible.[25]

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[24] Hentschel, Müller, and Sottong, Verborgene Potenziale - Was Unternehmen wirklich wert sind, p. 39

[25] Senge, The Fifth Discipline, p. 287

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Pedler, Burgoyne and Boydell have defined ten dimensions how a learning climate can be measured and influenced to encourage learning and building learning habits in a company:

1. **Physical environment:** The amount and quality of space and privacy afforded to people like temperature, noise, ventilation and other comfort levels, like

   - People have plenty of space, privacy and good surroundings

2. **Learning resources:** Numbers, quality and availability of training and development staff, books, films, training packages, IT facilities, etc, like

   - Many development people
   - Lots of resources
   - Very good facilities

3. **Encouragement to learn:** The extend to which people feel encouraged to have ideas, take risks, experiment, and learn new ways of doing old tasks, like

   - People are encouraged to learn at all times
   - People are encouraged to extend themselves and their knowledge

4. **Communications:** How open and free is the flow of information? Do people express ideas and opinions easily and openly?

   - People are usually ready to give their views and pass on information
   - Thinking about story telling mentioned above: people present project experiences of their engagements, for instance at an event of a community of practice

5. **Rewards:** How well rewarded are people for effort? Is recognition given for good work or are people punished and blamed?

   - People are recognized for good work and rewarded for effort and learning
   (Note: It seems, that most present reward systems focus on rewarding activities employees are told to do and disregard an effort to figure out what is to be done)

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6. **Conformity:** The extent to which people are expected to conform to rules, norms, regulations, policies rather than think for themselves, like

   - People manage themselves and do their work as they see it
   - Great emphasis on taking personal responsibility

7. **Value placed on ideas:** How much are ideas, opinions and suggestions sought out, encouraged and valued?

   - Efforts are made to get people to put ideas forward
   - There is a view that the future rests on people's ideas

8. **Practical help available:** The extent to which people help each other, lend a hand, offer skills, knowledge or support, like

   - People are willing and helpful
   - Pleasure is taken in the success of others

9. **Warmth and support:** How friendly are people in the company? Do people support, trust and like one another?

   - Warm and friendly place
   - People enjoy coming to work
   - Good relationships = good work

10. **Standards:** The emphasis placed upon quality in all things; people set challenging standards for themselves and each other, like

    - High standards
    - Everyone cares and people pick each other up on work quality

If a company is talking about supporting learning and creativity, they have truly to support learn-willing and creative people. The company has to respect that "the learner learns what the learner wants to learn" (Senge) in designing learning processes. Designing learning processes should base on studies how work is being done, and what motivates employees to do things better and become personal

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masters, so the company can find ways how to support them in that aspiration. Supporting learning also means not penalizing initiative. If they want a respectful relationship with their employees, all managers should be trained in that. Breaking the rules should follow to consequences. Some (managers and colleagues) fear that personal mastery will endanger the established order of a well-managed company. Although this is a valid fear, empowering people in an unaligned organization can be counterproductive. If people do not share a common vision, and do not share common "mental models" about the business reality within which they operate, empowering people will only increase organizational stress and the burden of management to maintain direction and sticking together. This is why the discipline of personal mastery would be naïve and foolish if leaders in the organization lacked the capabilities of building shared vision mental models to guide local decision-makers. But what can leaders intent on fostering personal mastery do? They can constantly foster a climate in which the principles of learning and thus achieving personal mastery are practiced in daily life. That means building an organization where it is safe for people to create visions, where inquiry and commitment to the truth are the norm, and where challenging the status quo is expected – especially when the status quo includes obscuring aspects of current reality that people seek to avoid.[26]

Thus understanding the concept of a shared visions and striving to establish them are important in building a learning environment. When organizations foster shared visions, they draw forth this broader commitment and concern. Building a shared vision results in people acknowledging their own vision on one side and on the other side to accept anybody else's vision. If cautiously and ongoing managed, a shared vision creates a sense of trust which allows people to be open and honestly share their highest aspirations – and what they want and need to learn. Companies often are not aware of the potential they hold in terms of intellectual power and curiosity with their employees. Identifying and acknowledging this allows companies to leverage their capability in creating innovative solutions as a respond to a complex environment.

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[26] Senge, The Fith Discipline, pp. 146

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Acknowledging and sharing the understanding that nobody has always all the answers for anything suddenly liberates companies remarkably in a way that with the understanding that there is no ultimate answer, this creates curiosity and becomes a creative process. People then start to think about innovative solutions not only with the *toolbox* they already have in their heads, but also start to be open to other and new ways how to approach challenges. Knowing and respecting that one never knows the final answer leads to continuous curiosity on one side but also to peace, or as Einstein said, "the most beautiful thing we can experience is the mysterious. It is the source of all true art and science".

Although a good learning environment fosters learning together with effective communication and trustfully collaboration, the *personal experience* of learning takes its time. A company therefore should rather concentrate on learning early than in a hurry. Learning in a hurry becomes sooner or later stuck. Thus it is evident that the environment shouldn't hinder early learning activities, which are key for being competitive.

6.2 How People Communicate

There are of course different forms how communication takes place between people in terms of *transfer technologies* like talking directly from individual to individual or using information technology, which offers various tools supporting communication. Before going into more detail to discuss the core elements of communication and later on how companies can build communicating environments, lets list as a starting point some typical and common forms of communication or where communication takes place:

- *Meetings.* Meetings can be planned formally with a strict agenda as well as informally with some topics put on the discussion list, or in mixed form. They can be held in an open as well as closed environment, depending on the privacy required for the conversation.

- *Email communication.* Although email communication allows interacting with other people quite spontaneous, it is not *pure* conversation. Emotions and

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feelings typically come not clear out and the written content often is well thought through.

- *Events.* Events are typically platforms where officially announced communication takes place. But events are also mostly opportunities for informal networking and communication.

- *Electronic discussion groups or forums, tips & hints databases, and virtual communities.* An important characteristic of this form of communication beside others is that the participants primarily are identified by their interest and contribution to the related topics and not who they are in terms of professional and hierarchical position. These form of communication often is also used as a place to contact individuals, which then leads to access to non-explicit, tacit knowledge. These groups typically have common agreed rules, on which basis the communication takes place.

- *Electronic work and team rooms.* The main difference between these rooms and mentioned groups pointed out above is that they are limited to a certain group of people like project team members. They sometimes offers additional functionality like the ability to hold electronic meetings.

- *Coffee corner.* A typical place where informal communication takes place, where people can tighten their personal relationships, but also a place, where (even unconsciously) tacit knowledge can be exchanged.

- *Electronic journals, newsletters, newspapers, and magazines*, whereas these can be received through pull or push. Pull means, that the receiver has the ability to order these medias, and also can customize the included topic areas as well as the schedule for triggering the distribution. Push means, that the sender has specific knowledge about the potential receivers in terms of interests and other profiling data, and according to this knowledge sends, pushes, unasked these media.

- *Phone.* Phone calls often are the initiator of person to person relationships, which is required for transmitting tacit knowledge. It is therefore important, that for each explicit knowledge found in a company there is also a corresponding contact point.

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Communication can be seen as the vehicle how parties like individuals, groups or organizations interact with each other. Communication not only allows to exchange knowledge but also to transmit values, believes. This is essential in building a common identity and a shared vision.

Creating and further developing knowledge requires the ability to think critically, which itself requires common understanding on existing knowledge and facts. So let's discuss first what communication really means.

6.2.1 Communication

Fundamentally, communication is the transmission of meaning to others. What one wants, when he talks to somebody, is that the other person understands what he is meaning, or what he wants to say. The problem often is that his intended meaning is not always the meaning as received. To assure, that the received meaning is the same as the intended, the sender of the communication must have a clear understanding and knowledge of the meaning he wants to transmit. And of course, the receiver must interpret the message in such a way that he receives the intended meaning. An important assumption in interpreting the intended message correctly is that the sender and receiver speak the *same language* and have the same understanding of the purpose of the communication. This has been true all the time and now more than ever. We live in a time where people have many more ways available how to communicate, as mentioned in the beginning of this paragraph. These are new opportunities, but also risks. These new ways allow people to communicate more instantly, but they also transmit generally only fragments of the directly exchanged spoken communication. For instance, as a receiver of an email you can't see the facial expression of the sender while he was writing and so forth.

However, a common meaning of words and expressions, the semantics, are key for proper understood communication – and of course sharing and exchanging knowledge. In building a knowledge sharing company it is of good advice to create and maintain a so-called corporate glossary, which is not as easy as it sounds. Davenport and Prusak suggest harmonizing organizational knowledge, but do also

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warn not to homogenize it. They outline that common definitions are not only required to make a system like a knowledge management architecture work; they are the necessary common ground of communication across a company. Knowledgeable people cannot share expertise efficiently if they mean different things when they use familiar, essential terms.[27]

Words themselves without being put in context are just labels, and labels furthermore are more or less arbitrary. As an example of this conflict one can imagine a user's manual of an electronic gadget from an exotic producer, which has quite common ten different language sections or even more. Very often it is very amusing to read these manuals when they have just word-by-word translations. But definitely it is sometimes very hard to interpret the message the same way as intended. Another example with the same problem is an online translation service. So, building a corporate glossary or defining a common language is a matter or definition. Definition in this case means an agreement between the communicating parties what words mean. This brings us back to the definition of communication as found on www.britannica.com: "…the exchange of meanings between individuals through a common system of symbols" and the English literary critic and author I.A. Richards:

> Communication takes place when one mind so acts upon its environment that another mind is influenced, and in that other mind an experience occurs which is like the experience in the first mind, and is caused in part by that experience.

As already mentioned, once people understand each other, they can start to interact *productively*. Productive in this case means one can start talking or discussing without being trapped in wrong assumptions. This is essential in further developing what is already known or acquiring new knowledge – to learn. A *tool* how this can be achieved is through critical thinking. There are several approaches how critical thinking can be applied. One of the approaches is described above as the Bloom's taxonomy.

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[27] Davenport and Prusak, Working Knowledge, p. 86

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In general, critical thinking can be seen as existing of two components: [28]

1. A set of information and belief generating and processing skills
2. The habit, based on intellectual commitment, of using those skills to guide behavior.

These two components are in particular contrast that there is not just an acquisition (e.g. through talking to others) and retention of information alone, because the information is sought and treated in a certain way. It is also not just a pure possession of a set of skills, because it involves the continual use of them. And finally it is not just the mere use of those skills ("as an exercise") without acceptance of their results.

Applying critical thinking in communication means therefore that the people approach the topic of their discussion in a logical manner. There is also space in the communication to check how others have approached the same question or problem. People use creativity and alternative ways to generate hypothesizes, problem approaches and question answers. They can clarify assumptions, and recognize that they have causes and consequences. People can support their opinions with evidence, data, logical reasoning, and statistical measures and they can look at a problem from multiple angles. They even can not only fit the problem within a larger context, but also decide if and where it fits in the larger context and they can deal with ambiguity.

Companies should therefore seek people who are not afraid to disagree or to give their honest opinion when asked. A good quality of dialogue happens often with people who think differently and who are willing to openly disagree with anyone in the group. Hargrove mentions, that these disagreements often light the spark of creative collaboration.

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[28] Michael Scriven and Richard Paul, Defining Critical Thinking, www.criticalthinking.org

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6.2.2 Building a Communicative Environment

Now that we have discussed how people communicate and what important role in effective communication critical thinking plays, let us concentrate on the question how to build a communicative environment. Many companies are beginning to realize that they are not sufficiently sensitive to the needs of their customers or client groups. At the heart of this lack of sensitivity is an inadequate system for communication between the companies and their publics and within the companies. A company has to recognize that communication is probably the most important working activity. It brings different minds together and plays a critical part in the ability to innovate. Improvements in communication can lead to improved productivity and better quality relations within the company as well as between the company and its external environment.

Hargrove outlines this with an example story from Tom Rivellini, an engineer on the NASA Mars Pathfinder Project who worked on the air bags. He said, "We had as much engineering occur in front of the coffee machine as anywhere else. It was a hallway kind of work. People would walk down the hall and see a few people in someone's office working on a white board on a particular problem that may have nothing to do with their area, and they'd get involved. We spent little time documenting. We spend almost all our time running into our office, doing some work, running out to the hallway, talking to each other, running back into our offices, back and forth, back and forth".

We have learned earlier that sometimes unique combinations of people create innovative solutions. In recognizing that, it is obvious that without having a communicative environment people would not communicate, exchange and therefore leverage creativity in order to find new innovative solutions. A company must foster an environment where communication is seamless integrated in the daily work. A company attempting heavily to motivate their employees to communicate is obviously a company where communication is not a matter of course and might even be a sign that this company has wrong ideas about communication. Of course, communication should pursue a common goal, but strictly limiting it to the purpose and not allowing

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different and free forms lead to poor communication, which means wasted resources. Instead a company should emphasize on stressing richness of communication, which leads to duplicating as much as possible nuances, variety, and human dimension of face-to-face contact.[29]

Some of the most common communication problems leading to wasted resources are unnecessary expenditures on communication programs and market research as well as underused and undervalued internal information and research. Of course, too high volume of internal communication might lead to an 'information overload' on employees. Who doesn't know the problem when arriving back in office after couple days off and opening the mail file the first time? First one normally receives a high number of emails and second two third of received mail are bulk mail and often only after reading recognized as such, which is very time consuming and annoying. This is often a sign of lack of communication quality control and the lack of knowledge about who are the receivers of the communication and what their information/communication needs are. Other problems arise when companies have exaggerated expectations about the effectiveness of their communication processes, thus ignoring the power of informal communication. This often combines with technology driven communication and data processing systems which are insensitive to employees' competence and needs. This typically happens when companies fails to consider the human elements in the information/communication processes. Too often, knowledge transfer has been confined to such concepts as improved access, electronic communication, document repositories, and so forth. It is time for companies to shift their attention to the more human aspects – from access to attention, from velocity to viscosity, from documents to discussions. Obviously, companies need to exploit both the hard and the soft aspects of knowledge transfer, but in the Western business culture there are usually too few advocates of the soft stuff.[30] One shouldn't expect that software solve communication and finally a company's knowledge problem. Nevertheless, no guidance at all or poor procedures, forms and related documents also are typical communication problems.

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[29] Davenport and Prusak, Working Knowledge, p. 20

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Many of these problems can be resolved without recourse to expensive new initiatives. Some responses that are commonly proposed and carried out are not only expensive but also based on vague theory rather than identifiable improvements. An effective way to increase and make communication more transparent is realizing that there exist always informal structures and make them more visible.

6.2.2.1 Communicating communities

Building a communicative environment requires recognizing the different ways how people communicate and also considering under what circumstances they communicate. Focusing on a communicative environment means the employees' workplace must support, not inhibit communication. The workplace must be designed with a view toward helping people generate knowledge, not simply perform isolated functions. The NASA coffee talk example foreshadows that the best ideas often come from spontaneous conversations and casual, seemingly frivolous moments of face-to-face interaction. This implies that one recognizes the fact of informal structures beside the formal ones seen on an organizational chart or process map. It then is clear, that much of a company's knowledge resides in informal communities of people, places, and materials. Examples of communities are people interacting with people to share tacit knowledge, and people interacting with materials to share explicit knowledge, all of which occur within specific places. People interacting with materials include interactions with various forms of content, processes, or rules. Again, these knowledge communities may not be visible since they do not map to a specific organizational entity. However, detecting them is important because interactions between these communities can create substantial value for a company. This is the starting point where the company can start to formalize these kinds of communities, often then called communities of practice or knowledge networks. Installing communities of practice furthermore opens doors for additional interested people. Once they entered these doors they are also known to the existing community and thus increases the personal network of the participants, which in turn

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[30] Davenport and Prusak, Working Knowledge, p. 106

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creates other possibilities to create combinations of people who might develop innovative solutions to existing problems.

But what can a company do in order to identify such communities? An applicable tool to do that is by executing a so-called Organization Network Analysis. This Analysis is derived from collected survey data, and is a valuable tool for understanding the patterns of communications and working relationships within a company. With Organization Network Analysis (ONA) one can map and measure an organization's information flows, work relationships, and knowledge, decision and innovation networks. With it one can outline where the formal organization is and is not working as intended, where informal organizations are established, and points to specific action that can be taken to improve the effectiveness of the team, also by making informal organizations visible and for example establish them as communities of practice.

Building these communities, groups of people with a shared understood objective, presumes as already mentioned identifying the patterns how they work. The following figure describes the cycle of interactions and the types of learning that take place within such communities.

Figure 6.2

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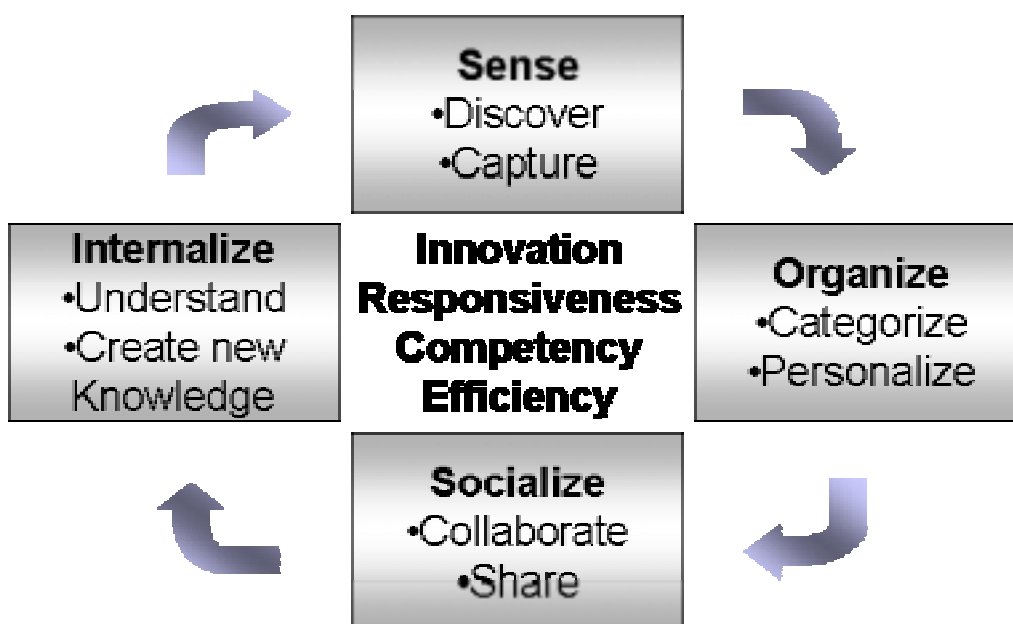
In community interactions, the first stage of the cycle is for a person to listen or to sense. This enables the discovery and capture of new knowledge. The next stage is to organize what was learned, or acquired through communication. This is accomplished by categorizing and personalizing the knowledge to make it useful. It is during this stage, that information overload is typically addressed. In the third stage of the cycle, a person shares what he or she knows. This is accomplished by collaborating with others and socializing ideas and concepts. Much of the interaction in this stage of the cycle is an exchange of knowledge on a tacit-to-tacit plane. In the last stage of the cycle, a person decides and acts by visualizing information or role playing, in order to better understand and internalize the new knowledge and to make better decisions.

Usually people who participate in such communities are people who also share the same work culture and thus can communicate better and transfer knowledge more effectively than people who don't. To quote Davenport and Prusak: The closer people are to the culture of the knowledge being transferred, the easier it is to share and exchange. Communities are also places where people speak more open because they are some kind of fellows. Companies shouldn't see this kind of subcultures as a threat. They usually have strong common identities, values and beliefs, which are not primarily contrarily to the identities, values and beliefs of the companies. Companies should limit their intervention in making them more formal and give them some directions in terms of aligning the goals of the communities with the goals of the companies. Bad organized communities (and of course also companies) increase the need for decisions (and therefore possibilities of conflicts). Culture can be developed positively and negatively. Negative culture can form new subcultures in the company, which supports other employee attitudes than the one expected from the known communities, the formal organization and the hierarchy. A positive subculture can intensify the performance of the formal high performance organization. Needless to say, hierarchy is necessary in companies, but one should also acknowledge that hierarchy cannot solve problems.

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It takes a long time to discover that hierarchical guidance of the management is more effective the more hierarchical steering elements are waived and self-control and cooperation are allowed. Management should intercede by problems and not by success.[31]

6.2.2.2 Knowledge maps

It is obvious, that any community, formal or informal, has a certain critical size in order that people know each other and feel home, which should not be exceeded. Studies have shown that the maximum size of an organization in which people know each other well enough to have a reliable grasp of collective organizational knowledge is two hundred to three hundred people. However it is important that people have access to all knowledge holders or at least must have the possibility to identify them. Such tools, which support this, are knowledge maps. A good knowledge map goes beyond conventional departmental boundaries. The principal purpose and clearest benefit of a knowledge map is to show people in the organization where to go when they need expertise. It can be seen as an extended directory, often called Yellow Pages. Extended in this case means that beside people can be searched by their name or organization they belong to, they can be identified by their skills. Because for each entry there exist also a map of skills, at best grouped in categories, for each entry. Knowledge maps make individual knowledge more visible, and thus allows finding experts faster. They target to

- increase the visibility of experts,
- create communities based on knowledge exchange,
- enlarge the visibility of tacit knowledge of experts
- increase the transparency of responsibilities, and
- allow direct and fast access on needed people and their expertise as well as their qualification

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[31] Hentschel, Müller, and Sottong, Verborgene Potentiale, pp. 23

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A critical success factor in establishing knowledge maps is the possibility that people create and maintain their own entries. Since successful knowledge transactions depend so heavily on trust and compatibility, allowing to personalize the entries to a certain degree can make the map much more effective. This is an important step toward a knowledge sharing culture, because people actively promote officially their skills and their will to be contacted in order to share their expertise. Key knowledge personnel don't simply have knowledge; they are willing and able to share it. The mapped skills of their entries should mainly be given. This assures that knowledge map entries reflect the knowledge necessary to achieve the company's goals. Knowledge maps are political documents too. If knowledge is genuinely important to an organization and those who have it are recognized and rewarded, then the knowledge map will be a picture of status and success as well as a knowledge locator.[32]

6.2.2.3 Communication plan

Sometimes it is necessary to restructure an organization in order to reflect customer requirements better, which also includes normally designing new communication processes. Many large organizations are insensitive to their communicative environment, irrespective of their structure, and they will remain so until they understand the problematic nature of communication processes. One must recognize that big changes often have massive disorientation and demoralization effects on the workforce which then usually results in short loss of product and service quality, because nobody really knows who is responsible for what under the new structure. These initiatives require a pragmatic approach and it is essential to accompany them with well thought out communication plans. A communication plan in essence is a tool that helps the project management to outline how and when to communicate about current projects or approaching changes. It differs between the various stakeholders directly or indirectly involved in the change process and through which media these groups will be informed. It is an important tool to weave in any

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[32] Davenport and Prusak, Working Knowledge, p. 79

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stakeholder in the process of change and prevents fear, unresponsiveness and mistrust.

6.3   What causes People to collaborate

As we have outlined in the chapter "Positioning in a Competitive Environment", innovation is key to differentiation, which itself creates a company's ability to provide unique and superior value to the buyer in terms of product quality, special features, or after-sale service (Porter). Innovation requires a culture of innovation, which is based on learning, communication, and collaboration. Innovation can not be managed hierarchically because it depends on knowledge being offered voluntarily rather than on command. Offering voluntarily means collaborating. Thus collaboration affects heavily effective knowledge management. Collaboration brings extraordinary and unique combinations of people together who can make the impossible a reality. It is often unlikely combinations of people that lead to the most innovative ideas. The heart of the innovation process is knowledge generation and transfer between people - a result of social exchange. Innovation does not occur in isolation, it is the outcome of collaboration. Knowledge as a company's key asset in today's innovation era and the company's capability in collaboration to exploit the knowledge will lead to substantial competitiveness and economic benefits. Who hasn't heard the term: together, we are strong! A collaborative organization leverages the capability of any single person. Additionally, in the past, people were primarily rated based on their position on the hierarchical ladder. But in the future, people will primarily rated based on the outcome of their last (and next) project, with their reputation depending on their ability to bring a diverse team together to create something of real value. As Hargrove outlines, people should strive to become extraordinary experts in distinct areas that create solid value. People should see themselves as the CEO of their own company or creator of their own brand. If they want to be invited into a collaborative project, it is important that everybody knows who they are and what knowledge and skills they have to contribute. People should forget about their status and rank, and

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ask themselves, "What do I know how to do that is distinctly different?" or "What real distinctive value can I bring to the table in this project?"[33].

It is a proven fact that a flock of birds flying together in a V formation has the lifting power to carry twice the distance of a single bird flying alone. This presumes that the goal must be big and compelling enough for people to be able to subordinate their egos, as well as do something they feel they cannot achieve on their own.[34] Therefore discovering the power of bringing collaborative people together presents a new opening for possibility and action. This power gives a company the ability to achieve heights where employees expand their ability to think and work together they could never without collaboration. The beauty of collaborative power is that it is accessible to everyone, no matter of rank, and area of expertise, gender, race, nationality, or age.

I read an article lately in the "Neue Zürcher Zeitung" newspaper about how to build energy saving buildings and the topic was about insulation – and how unique combinations of people can create innovative solutions. The discussion was about that today's insulation material uses enormous space, which at the end limits the usable space of the building significantly. Researches now came up with an alternative insulation material, consisting of foam plastic. This material is not only about 10 times thinner but also has less heat conductivity. On the other side it is more fragile, has a sensitive shell. This could become an expensive experience if someone was hammering a nail to deep into the wall for hanging up a picture. The researches than contacted experts from the food industry because the have specific knowledge about thin strong and sealing material, so they can use this specific knowledge to build robust shells for the insulation material.

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[33] Hargrove, Mastering The Art of Creative Collaboration, p. 58

[34] Hargrove, Mastering The Art of Creative Collaboration, p. 101

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6.3.1 Collaboration

Collaboration plain put means cooperation with the occupying power or with the enemy. Although this is a very negative definition, understanding the mechanism of collaboration and under what circumstances it happens, how to apply it in the view of a company, is key in creating knowledge sharing communities. *Collaboration in its final state* can be described as to achieve a collaboration of separate departments and individuals similar to the collaboration between the left and right hand of a craftsman.

Collaboration as a key to the generation and transfer of knowledge and therefore to innovation, is fundamentally a voluntary process. However, it is quite common for people to understand and absorb new knowledge but not to share it and thus collaborate. There are a variety of reasons like not respecting or trusting the source of the knowledge or pride, stubbornness, lack of time, lack of opportunity, a fear of taking risks (in a company that punishes mistakes). These reasons are knowledge inhibitors in the culture, where people are resentful of the company and fear that sharing knowledge will cost them their jobs.

Hargrove refers to Robert Bush and Joe Folger, the authors of The Promise of Mediation, that most people have sincere and honest intentions, but when they get caught in conflict they often get stuck in the role of either "victim" or "oppressor", which is not the way they want to see themselves. "Return people back to their true selves", say Bush and Folger, "by encouraging moments of empowerment and recognition". Rather than finding a better way to divide up the pie, this helps people to transform their relationship to themselves and each other. It strengthens individuals by helping them see that they have choices, and that they can learn compassion for others. Once this transition occurs, and honest collaboration is taking place, people feel better about themselves and each other, and it's more likely to find creative solutions.[35]

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[35] Hargrove, Mastering the Art of Creative Collaboration, p. 26

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Therefore there are some conditions under which people share knowledge und collaborate voluntarily. These conditions can be grouped into three broad, interrelated categories: time, trust, and territory.[36]

It is obvious, that employees need time in order to communicate with each other. But time must also be granted for searching and identifying people who one needs to contact in order to exchange knowledge collaboratively, where employees can experiment with alternative views on their problems, gain new insights from different views from experts or any other people, who can contribute to new ideas or solutions. Thus time, and of course a shared language, is essential to productive knowledge transfer. Without it, people will neither understand nor trust each other. Time needs to be spent in building trustworthy relationships. People, who don't know each other, but should cooperate, pay initially a certain amount of healthy caution in order not to be too trustfully and not to take to much risk. They are not yet too trustfully to the counterparts and do not take too much risk. Where should they know, if the unknown others are worthy the credit? They do not want to be the *dummies* at the end, the ones who gave a lot but didn't receive anything. Consequently they will initially exchange socially, collaborate, only on a base level and invest trust only in small steps, which takes time. If the experience turns out to be positively, and knowing that the other parties have ones interests at heart, as well as their own, the social credit exchange can flourish and communication and collaboration will intensify, including the development of strong bonds of trust.

Trust can trump the other factors that positively affect the efficiency of knowledge markets.[37] Knowledge management projects will fail without trust, no matter how well technology is implemented to support them or people are informed. They will fail even if the survival of the company or organization depends on effective knowledge transfer. Davenport and Prusak outline three ways, how trust must be established in an organization in order to bring collaboration, or in their case knowledge markets, operative:

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[36] R. Miles, Snow, and G. Miles, "TheFuture.org"

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1. *Trust must be visible*, so people can see that others get credit for collaboration and knowledge sharing

2. *Trust must be ubiquitous.* If only a part of the internal knowledge market is untrustworthy, collaboration will be irritated and the whole knowledge market becomes asymmetric and less efficient.

3. *Trustworthiness must start at the top*, because top management act as a raw model for the others in the organization. If the management is not trustworthy so will be the organization.

Davenport and Prusak mention Senco Products, an innovative Cincinnati-based metal fastener manufacturer, where there is a corporate initiative to try to diagram the "logic trail" leading to major decisions. The goal is to understand what failures of knowledge or reason occurred when a decision turns out poorly and share this knowledge with the colleagues. Of course, firms can only undertake this kind of analysis if they have a high-trust culture, or the politics around it could be devastating![38] Another example are Japanese managers, who spend many after-work hours together. They often go out for dinner or visit other places for nightlife. This is an important part of Japan's corporate culture. This functions as an important knowledge-sharing mechanism, as well as mechanisms for establishing trust and opportunities for criticism.

Territory is about making visible how one is part in the outcome of a collaborative process. It is more than the satisfied requirement for territory in the psychological space, a sense of belonging, which is created when one voluntarily shares knowledge, new and interesting ideas, with other people. It is a visible, for oneself and others, proof, a fingerprint that one was, is and will be contributing to the outcomes of collaborative processes. This visibility can have different forms like awards, collegial recognition, stock ownership, and others.

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[37] Davenport and Prusak, Working Knowledge, pp. 34

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To facilitate collaboration and thus innovation, a company must recognize and invest in the three categories of conditions – time, trust, and territory. The company must also design and establish an organizational setting where collaboration-driven innovation can be sustained and its outputs recognized and exploited.

Collaborating people create social - or cultural knowledge. Cultural knowledge is powerful: Professional knowledge can be acquired through education, cultural knowledge through being participant; professional knowledge is topic oriented, cultural knowledge person- and context oriented; professional knowledge is explicit, cultural knowledge is implicit, unwritten, and often unconscious. Cultural knowledge develops within a mutually history of a number of persons and through their shared experiences it creates identifiable patterns of behavior.[39]

6.3.2 Building a Collaborative Environment

For years, the strategic success of companies was seen as to be based on identifying and building core competencies. But today, having strong competencies in a few areas alone is not sufficient anymore. Modern companies are increasingly discovering that they must also develop a "collaborative advantage" that involves the capacity to integrate the company's culture, competencies, and processes, even with those of other enterprises, to create superior products or services for their customers. These companies seek new patterns of relationship and interaction, which allow them to create innovative solutions for complex customer problems. Hargrove says that a new era of collaborative organizations is emerging, which are characterized by lateral leadership and virtual teams. These companies will be more concerned with nurturing creative people with a view toward creating resources that never existed before than they will be with reducing their number of employees or invest in major process reengineering projects in order to cut costs. The focus of these companies will be on engaging customers in a dialogue about their goals and problems. The main question will be "What's missing in the way of innovative products and

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[38] Davenport and Prusak, Working Knowledge, p. 69

[39] Hentschel, Müller, and Sottong, Verborgene Potenziale, p. 59

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services?" and not "How do we improve what we are already offering you through existing products and services?"[40] These companies build collaborative environments.

As mentioned in the chapter above that collaboration is based on voluntary, so too must be the design of innovative organizational units and their management processes.

This design should finally reflect the key characteristics – and differences – of and between the innovative and therefore collaborative organizational model and the traditional hierarchical organizational model as described in the following table.[41]

Collaborative Model	Hierarchical Model
• Designates new possibilities; shared understood goals; seeks creative, entrepreneurial results	• Presides over status quo; pursues own agenda; seeks predictable results
• Builds collaborative networks and new patterns of relationships and interactions; shows authenticity and vulnerability	• Relies on traditional structures of organization; view emotions as sign of weakness
• Attitude of learning; is a specialist and generalist; equates success with questions	• Acts like a "know-it-all"; is a specialist; equates success with knowing
• Balances advocacy of vies with inquiry into own and other's thinking; listens to deeply understand others	• Passionately advocates views in order to win and discourages inquiry; listens as if "out to lunch" or reactively

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[40] Hargrove, Mastering the Art of Creative Collaboration, pp. 22

[41] Hargrove, Mastering the Art of Creative Collaboration, p. 67

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• Empowers others on job by acknowledging talents and gifts; provides an enabling environment	• Controls others on job by diminishing their talents; takes care of others so they will submit

The authors of "TheFuture.org", R. Miles, Snow, and G. Miles, propose four design principles in creating innovative organizations. The first design principle is that of *self-management*. It acknowledges that in modern organizations hierarchical management is minimized, while relationship management among partners is the focus. These organizations require individuals or groups, which perform most of the managerial tasks by themselves. It is obvious that developing self-managing capabilities requires time management and trust building.

Pure forms of self-managed organizations are networks. The Structures of networks are not given and they do not follow a given rationality. Their structure is developed as part of their dynamic. These structures may also not be constant, because as dynamic systems they adjust their structure to the given requirements. Hargrove further describes that structure influences behavior whether that is a formal structure like an organizational chart or an informal structure like the network, structure will automatically shape, limit, and define behavior. Networks can adapt to changing environments extremely well. They survive in turbulent environments without changing their organizational principle – their self-management. It is obvious, that the introduction of networks results in reduction of hierarchy, because collaboration is not only expanding over departments, but also diverse management levels are integrated. Leading is always a part of the network, but it is not based on a contract but is gained through participation and work.

The effectiveness of self-management or ineffectiveness of centralized management can be described in a simple illustration, which Senge has learned sometime ago form managers at Kollmorgen. One should imagine that one has two roller skates, which are attached with each other by a spring. Then one uses the first roller skate to control the motion of the second. Although it's a bit tricky, it is doable. Now, one should add a third roller skate, attached with another spring – and, moreover, give

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that new spring a different "spring constant", for example make it either easier or more difficult to extend than the first spring. Now one should try to control the third roller skate by moving only the first. Not surprisingly this will be much trickier. One can go on and keep adding roller skates; each attached by springs with different spring constants. It doesn't take too many rollers skates and this chain will be uncontrollable from one central point. Organizations of course are infinitely more complex than this simple line of roller skates and springs. This example clearly shows why one person dictating orders from "one end of the line" cannot possibly control what happens in a complex organization.[42]

A second design principle in creating innovative organizations is the use of *behavioral protocols*. Being innovative also means approaching solutions in unpredictable approaches. Preset goals and methods limit the ability of being innovative. But having a set of guidelines and principles, which the members of the organization follow, enhances the collaborative process. Well-conceived protocols foster trust-building behaviors and the acceptance of mutual responsibility for inputs and outcomes. An example of such a protocol is mutual non-competition, where members of the organization don't compete head-to-head with each other and where self-restraint helps to establish trust among the members.

Having a self-managed organization where the members are willing to work according to agreed behavioral protocols does not mean that it is integrated in the entire organization. A third design principle, which is the *shared strategic intent*, is a clear and widespread understanding among managers and employees of the innovative company's direction and major objectives. After having created a convincing concept of product innovation and distribution, the company refines this strategy through effective and ongoing communication through all levels. Communication within a collaborating environment creates responsibility for reasoned inputs. Therefore, fully developed collaboration skills allow a company to

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[42] Senge, The Fifth Discipline, p. 290

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broaden its capacity for setting the right direction for innovation and examining strategic implications become an integral part of the knowledge and transfer process.

In a company, a shared strategic intent changes people's relationship with the company. It is no longer "their company"; it becomes "our company". However, such a company with a shared strategic intent must continually encourage its employees to develop their own personal visions. If people don't have their own vision, all they can do is "sign up" for someone else's. The result is compliance, never commitment. People with their own vision think differently. When people think differently, they automatically act differently. And when they act differently, they can bring in new ideas to create innovative solutions. As Hargrove encourages the reader of his book: "Envision yourself as working for a small skunkworks on something you are really passionate about instead of thinking of yourself as working for a big corporation like AT&T, or a large nonprofit agency, or a government bureaucrat in a job where you may spend the rest of your life as a kind of indentured servant with little opportunity.

Companies can also create negative visions, which target more the question "What to we want to prevent?" than "What do we want?" These negative visions are a company's reaction to fundamental threats, like the question of survival. But according to Senge, negative visions are limiting for three reasons. First, energy that could build something new is diverted to "avoiding" something a company doesn't want to happen. Second, negative visions carry a subtle yet unmistakable message of powerlessness: the company's people really don't care. They can pull together only when there is sufficient threat. Lastly, negative visions are inevitably short term. The company is motivated so long as the threat persists. Once the threat is gone, so does the company's vision and energy. There are two fundamental sources of energy that can motivate companies: fear and aspiration. The power of fear underlies negative visions. The power of aspiration drives positive visions. Fear can produce extraordinary changes in short periods, but aspiration endures as a continuing source of learning and growth.[43]

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[43] Senge, The Fifth Discipline, p. 225

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Back to personal vision, people with a strong sense of personal direction can join together to create a powerful synergy toward what they truly want. Such an environment allows people who mistrusted each other to begin to work together. It creates a common identity. In fact, an organization's shared sense of purpose, vision, and operating values establish the most basic level of commonality. Late in his career, the psychologist Abraham Maslow studied high performing teams. One of their most striking characteristics was shared vision and purpose. Maslow observed that in exceptional teams "the task was no longer separate from the self . . . but rather he identified with this task so strongly that you couldn't define his real self without including that task". [44]

Not collaborating organizations without a shared strategic intent are weak and are characterized by non-initiatives employees. Not having a shared strategic intent may even become a weapon. "Duty by direction" jeopardizes the functionality of an organization and is therefore an act of pressure to enforce the interests of employees. Collaboration by direction only does not function obviously. Succeeding and efficient collaboration starts beyond formal rules. The reason is: Who is excluded from the planning can't understand the rationality of the plan and therefore not accept. The identification with the task melts and the interest in reducing the planning risks is low. This "lacking cooperation with the planners" is reasoned because the planners' decisions are seen as threat, which one can not intervene.

So the collaborative company of the future will be made up of lateral leaders from different disciplines or fields who possess a particular core knowledge or technology skill, yet who also have the capacity to think and work together with others to create new opportunities or to solve customer problems. The company will employ people who have somewhat different visions of success, but who remain grounded in their shared values. Examples of shared values may be openness to new relationships, nurturing and supporting new ideas, rigorous thinking that includes questioning deep beliefs and assumptions, and operating with integrity. Cultivating these values will

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[44] Senge, The Fifth Discipline, pp. 208

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expand an individual's capacity to identify opportunities, solve problems, and generate real value for customers.[45]

Shared values means being open about the need for compliance, which removes hypocrisy. This also allows people more easily to come to their choices, which at the end, includes enrollment. A company really has to accept, which is quite a hard lesson to learn, that enrollment and commitment can not be achieved through command. Enrollment and commitment require the freedom of choice. Positive influencing factors like shared values do not cause enrollment or commitment, but they establish conditions, which favor to achieve this. Without the freedom of choice but using the pressure from management power, the best, what can be achieved, is only compliance.

In his book "The Fifth Discipline", Peter M. Senge describes how individual visions join to create shared visions? He uses the hologram as a metaphor, the tree-dimensional image created by interacting light sources. If one cuts a photograph in half, each part shows only part of the whole image. But if one divides a hologram, each part shows the whole image intact. Similarly, as one continues to divide up the hologram, no matter how small the divisions, each piece still shows the whole image. Likewise, when a group of people comes to share a vision for an organization, each person sees his own picture of the organization at its best. Each shares responsibility for the whole, not just for his piece. But the component "pieces" of the hologram are not identical. Each represents the whole image from a different point of view. It's as if one was to look through holes poked in a window shade; each hole would offer a unique angle for viewing the whole image. So, too, is each individual's vision of the whole unique. Everybody has his own way of seeing the larger vision. When one adds up the pieces of a hologram, the image of the whole does not change fundamentally. After all, it was there in each piece. Rather the image becomes more intense, more lifelike. When more people come to share a common vision, the vision may not change fundamentally. But it becomes more alive, more real in the sense of

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[45] Hargrove, Mastering The Art of Creative Collaboration, p. 92

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a mental reality that people can truly imagine achieving. They now have partners, "co creators"; the vision no longer rests on their shoulders alone. Early on, when they are nurturing an individual vision, people may shy it is "my vision". But as the shared vision develops, it becomes both "my vision" and "our vision".

The fourth design principle of innovative organizations is the *equitable sharing of returns*. As it is with shared responsibility, an organization based on collaboration has the intention to equitable distribute returns, although the design and the implementation of such a distribution mechanism are not simple tasks. And as it is with the shared strategic intent, sustaining the distribution mechanism is an ongoing process, which must be constantly discussed and refined. An organization based on collaboration has high levels of trust and therefore people typically don't ask for immediate return based on inputs and outputs, but agree on the longer-run distribution of returns. Of course, a company should never forget that collaborating employees voluntarily have supplied its key asset knowledge and who has the real ownership of this knowledge.

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7   Conclusion

As we have discussed in the former chapters, the most promising competitive strategy results from differentiation, which is based on innovation. Innovation requires extensive knowledge transfer. And of course this could never be achieved in large global companies without the tools provided by information technology, but the values, norms, and behaviors, their ability to build and maintain learning, communicating, and collaborating environments that make up a company's culture, are the principal determinants of how successfully important knowledge is transferred.

This culture and the ways in which knowledge is transferred are part of that continuity, a company must provide in order to stand the pressure of innovation. This is competitive advantage through continuity management. The bigger the challenge to change technologically economically, i.e. in the "material" sphere of the company, the bigger is the need for continuity in the cultural sphere.

When is a working environment activating? What kind of social patterns are suitable to mobilize the capabilities of a human? What triggers people to learn and to achieve personal mastery? It depends on the experience of sense. One is rather ready to engage his power and competence the clearer the purpose of the actions are and the more one can make this purpose his. Also real satisfying experiences of success can only be achieved when the work is compelling and the success is not a child game. In order to take the work seriously, one must also have the feeling to be taken serious by the work itself. A company must therefore transform a climate of inactivity and resignation into a climate of possibility and opportunity. As we have seen, touching soft factors do not necessarily mean major organization and process reengineering efforts. In fact, relatively small changes at the *right place* can actually do a lot. And each transformation process must involve all parts of the organization. For instance, as Hargrove outlines, middle management involvement plays a critical role. They should see themselves not as controllers but as coaches, who can identify opportunities, and act as knowledge brokers in bringing the right people together,

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and coach the process of helping people solve problems. One can often observe that people's attention in organizations rather lies on power games than on focusing on the customer needs. A company should create a culture, where interacting with the marketplace is fun, which in turn is motivating and energizing. But this requires that the employees are able to think and work together, that they learn, communicate and collaborate. And to do that, they must know how to come together.[46]

People who communicate honestly and share their knowledge, who participate in the organizational living, must feel comfortable and *home* within the company. They must be integrated. A solution to achieve this is the transformation from formal side-by-side organizational living to a network-based-together. This does not mean to deny formal organizations but to accept and even support informal organizations. A clear focus on the development of the employee's communication abilities is an essential lever to form learning, communicating and collaborating organizations. Communication processes for exchange and adjustment have to be started or triggered. Once they are started, they have to continue in their own responsibility. Employees form the different hierarchical levels must participate in this process. As it is within a network, the employees must cooperate on free will, equally and permanently.

If the mental and social attributes and competencies of people like learning readiness, creativity, communication ability, engagement, and loyalty play a central role, then does this also mean, that resources play a role, which each single human, each single employee possesses to its highest extend. The cognitive, mental, ethic and social human resources are much more the property of every single person than the time, power and defined professional qualification. In the tailoristic work organization a company was able to integrate the employee in its physical conditions, even aligning the employees to the rhythm of the manufacturing machines. But no working contract in this world can engage an employee to give his creativity, his inner compliance, his enthusiasm, his collegiality – just for this simple reason: how can one

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[46] Hargrove, Mastering the Art of Creative Collaboration, pp. 119

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verify how much somebody really has shown from him and how much he brought in? Therefore companies and the managers depend on building conditions which allow the employee to bring in their potential on free will. To build these conditions, they have to know what motivates humans, what kind of acknowledgment they desire, what kinds of „this-makes-sense"-models exist to suit the culture.

"I do what gets measured, because this is the base for my evaluation!" This age-old saying often reflects the environment that many employees operate within every day. It is unlikely that any change effort can be successful, unless the employees know how they are measured and according to that how they are rewarded and recognized. The link between what they do and their personal success must be visible. Good implemented knowledge sharing makes no difference in this. There needs to be a set of understandable formal and informal mechanism in which they are measured and evaluated for their work. Missing that, a company cannot expect its employees to create, share and reuse knowledge. These motivational approaches for knowledge behaviors should be long-term incentives tied in with the rest of the evaluation and compensation structure. Thus rewarding and recognition do not necessarily have to be financial, but they do need to be closely linked with the measurement systems used to evaluate overall job performance. These measurements even do not necessarily have to be limited on an individual base; especially in a collaborative environment where collective knowledge leverages the ability to be innovative and thus competitiveness, team-based evaluation may be appropriate. The will to collaborate decides whether employees share knowledge with others or not. This depends on various reasons, like whether the knowledge is of value, how the knowledge will be used, whether they will receive credit for the knowledge, and whether the recipients as well as the organization are honest and will be willing to reciprocate in the future. As we have discussed, the model of collaboration bases on time, trust, and territory. And trust is primarily built through a series of interactions between individuals over time. It is unlikely that the necessary trust can be developed, if the people don't have the possibility to make personal connections and relationships. But there are a number of mechanisms, which allow companies to foster social capital (the building of valuable relationships). These

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mechanisms include helping individuals make connections, like establishing communities of practice, providing rules, guidelines, and a common language that facilitate exchange between individuals, and promoting a culture of shared values that values integrity.

Managing knowledge should not be seen as a separate discipline. It should be part of the daily work. Knowledge creation, sharing and use as value-added activities should be associated as normal parts of everybody's jobs. Therefore, innovative and competitive companies, which are successful in leveraging knowledge, are incorporating seamlessly knowledge management activities directly into the day-to-day tasks performed. This perspective needs to be reinforced not only through standard measurement techniques, but also through the culture held at the organizational and work unit levels.   At the same time, employees need to see the value of managing knowledge within the framework of their own activities--it can not be an abstraction that impacts only the organizational level.

As we have discussed, leading innovative companies establish learning, communicating, and collaborating. Considering these success factors to start and run knowledge management are so-called soft factors. Companies recognizing that, think about their organizations as systems with all their interdependencies. They build and facilitate communities of learning and practice, they support their employees to develop to achieve personal mastery, and they support self-management throughout their formal and informal organizational structures, limiting hierarchy and centralized management.

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