

**"THERE ARE A LOT OF ACTIVITIES GOING ON BUT  
HOW DO YOU MAKE THOSE KNOWN": THE  
CHALLENGE OF ORGANIZATIONAL ENVIRONMENTAL  
COMMUNICATION IN ICT-COMPANY**

Author: Lari-Pekka Martikainen

Supervisor: Tiina Onkila

University of Jyväskylä,

School of Business and Economics

Corporate Environmental Management

2012

## ABSTRACT

Author: Lari-Pekka Martikainen	
Title: "There's a lot of activities going on but how do you make those known": The Challenges of Organizational Environmental Communication in ICT-company	
Subject: Corporate Environmental Management	Type of work: Master's Thesis
Time (Month/Year): June/2012	Number of pages: 95
<p>The purpose of this study is to identify the obstacles that are hindering organizational environmental communication among the target group in the case company. After identifying obstacles, this thesis tries to find solutions to improve organizational environmental communication and knowledge sharing among the target group. Case company in this study is ICT-sector company and the target group consists of engineers that are working mainly with datacenters. This study uses qualitative methods. The research material was obtained by theme interviews. Research data was analysed by sorting data in to different themes that rose up during the analysing phase. Four main obstacles were found for organizational environmental communication: lack of verbal support from the management of the company towards environmental issues, energy efficiency is the driving force in the case company not environmental efficiency, communication forums for environmental communication are lacking and finding of environmental information is difficult in the case company and lack of environmental communication in the case company. Improving methods and ideas were also searched for research material, previous studies and benchmarking of other ICT-sector companies. Develop proposals were created for the case company that based on improving four main obstacles that were found on based on the results of this study. Four main areas that need to be develop are: more and clearer environmental communication from the management, change of the main driver from energy efficiency to sustainable development, more environmental communication forums and easier access to the information, better use of environmental information in communication.</p>	
Keywords: organizational communication, environmental communication, ICT-sector, knowledge sharing, information sharing, communication forum	
Location: Jyväskylä University School of Business and Economics	

# CONTENTS

<b>ABSTRACT .....</b>	<b>2</b>
<b>1 INTRODUCTION .....</b>	<b>4</b>
<b>2 ORGANIZATIONAL ENVIRONMENTAL COMMUNICATION .....</b>	<b>9</b>
2.1 ENVIRONMENTAL RESPONSIBILITY .....	10
2.2 COMMUNICATION .....	12
2.3 CHALLENGES OF ENVIRONMENTAL COMMUNICATION .....	13
2.4 ORGANIZATIONAL COMMUNICATION .....	19
2.5 ORGANIZATIONAL COMMUNICATION IN KNOWLEDGE-BASED COMPANIES .....	20
2.5.1 Knowledge work and organizational communication .....	20
2.5.2 Perspectives of organizational communication in knowledge-based companies .....	22
2.5.3 Communication rights and responsibilities in knowledge-based companies .....	27
2.6 COMMUNICATION FORUMS AND TECHNOLOGICAL TOOLS FOR COMMUNICATION .....	30
2.6.1 Communication forums .....	30
2.6.2 Technological tools for communication .....	32
2.7 SUMMARY .....	37
<b>3 THE METHODS OF THE STUDY .....</b>	<b>39</b>
3.1 RESEARCH METHODS .....	39
3.2 DATA COLLECTION .....	42
3.3 DATA ANALYSIS .....	45
<b>4 RESULTS OF THE RESEARCH .....</b>	<b>47</b>
4.1 LACK OF SUPPORT FROM THE MANAGEMENT .....	48
4.1.1 Support from the management towards environmental issues .....	48
4.1.2 More and clearer communication from the management .....	49
4.2 ENERGY EFFICIENCY AS THE DRIVING FORCE .....	51
4.2.1 The driver behind decision making process is energy efficiency .....	51
4.2.2 From energy efficiency to sustainable development .....	52
4.3 LACK OF ENVIRONMENTAL COMMUNICATION FORUMS .....	54
4.3.1 Environmental communication forums at present .....	54
4.3.2 More communication forums and easier access to information .....	59
4.4 LACK OF ENVIRONMENTAL COMMUNICATION .....	62
4.4.1 Environmental communication at present .....	62
4.4.2 Better use of environmental information in communication .....	63
4.5 OVERVIEW OF THE RESEARCH RESULTS .....	66
<b>5 CONCLUSIONS AND DISCUSSION .....</b>	<b>67</b>
5.1 SUMMARY OF THE RESEARCH RESULTS .....	67
5.2 IMPROVING OF THE ORGANIZATIONAL ENVIRONMENTAL COMMUNICATION OF THE CASE COMPANY .....	71
5.2.1 More and clearer communication from the management .....	72
5.2.2 From energy efficiency to sustainable development .....	73
5.2.3 More communication forums and easier access to information .....	75
5.2.4 Better use of environmental information in communication .....	81
5.2.5 Summary of the development proposals .....	81
5.3 EVALUATION OF THE STUDY .....	82
5.4 POTENTIAL FUTURE STUDIES .....	85
<b>REFERENCES .....</b>	<b>87</b>
<b>APPENDIX 1 .....</b>	<b>94</b>
<b>APPENDIX 2 .....</b>	<b>95</b>

# 1 INTRODUCTION

Communication in workplaces is perhaps more important today than it has ever been before. Many of today's companies are based on knowledge instead of machines. The main resource of those companies is not capital but knowledge of the employees (Drucker 1995). Communication is as important resource to companies than people, machines or money are (Åberg 2002). Juholin (2008b) states that we live in a communication society and that communication is a part of everyone's work. The purpose of this thesis is to identify the obstacles that are hindering organizational environmental communication among the target group in the case company. After identifying obstacles, this thesis tries to find solutions to improve organizational environmental communication and knowledge sharing among the target group.

The internal communication and flow of information are problems at work places in Finland. According to a study made by Microsoft (2010), the majority of Finnish workers think that the flow of information in work is not good enough. The poor flow of information leads to a reduced quality of work, lower job satisfaction and slower development of organization. Most satisfied for information flow are workers in information and communication technology (ICT) sector. In ICT-sector 52 percent of the workers are satisfied with the flow of information compared with national average of only 28 percent. Only 10-20 percent of companies in Finland have made reasonable efforts to improve the internal communications and flow of information. This thesis is an effort to improve the internal communication and flow of information in the case company. According to Clampitt and Downs (1993), the benefits of good internal communication are, improved productivity, reduced absenteeism, the higher quality of work, increased innovation, reduced costs and fewer strikes.

In the 21<sup>st</sup> century different stakeholder groups expect organizations to act in a more sustainable way. Shareholders, customers, employees and governments are putting more pressure for corporations to make their business more sustainable. Doing business in a more sustainable way does not

necessarily mean losing profits. Hence, sustainability cannot mean losing profits. Increasing expectations for sustainable development and tighter environmental regulations mean that companies need to find ways to answer the challenges of the 21<sup>st</sup> century and still make profit. According to Niskala, Pajunen and Tarna-Mani (2009) corporate social responsibility can be regarded as a long-term success factor of a company.

Stakeholders expect information from organizations about their environmental impacts. Customers need to know that they are doing business with a responsible company. If customers do not know that the company is acting in a responsible way, customers might start doing business with competitors. With good environmental communication, companies can gain competitive edge. This thesis concentrates on organizational environmental communication but good organizational communication means better external communication and a better image of the company as well.

In a modern day Finland, increasing number of work is done with brains instead of hands. It is not just saying that employees are the most important resource of the company; employees might be the only resource that company has. These knowledge workers need information in order to be productive. Employees need to be able to constantly communicate with their colleagues and managers, who might be in a different continent, in order to be productive and innovative. However, information overload is common in modern work places. A lot of information is needed but people are interested in relevant information only. All of this puts a lot of pressure in the internal communication of the company. Atmosphere in company must support open communication. The goals, vision and strategy of the company need to be clear so that everyone understands what is expected of his/her work. Every worker needs to be able to communicate efficiently and pass relevant information. Processes for handling the flows of information as well as technical tools for communication need to be in order and they require constant development and evaluation.

Organizations might do good environmental work but they do not communicate it. Lack of communication might result from the fact that the right people do not have the right knowledge at their disposal. It is hard to communicate something you do not know. Effective internal communication is the key for good environmental communication.

The case company of this study is an ICT-company and it publishes a corporate responsibility report regularly. The case company has realized that the organization could do a better job of communicating its environmental achievements to different stakeholders. Good environmental initiatives are done in the case company. The problem is that environmental information does not always reach people in the case company who could utilize environmental information and communicate it to stakeholders. The case company could use its environmental achievements better in marketing and in general building an image of responsible company.

The case company has realized that one main problem is that its internal communication processes for environmental information could work better. Information should move from those who know to those who can make things happen (Gray & Laidlaw 2004). For example, the case company has done a good job of making their datacenters more energy efficient and the company has had a program in place for years to give away used office materials to different organizations in need. However, the case company has not been able to communicate that information to stakeholders. This is a shame, since these examples are good environmental initiatives that benefit the environment, community and the company. Case company has missed good opportunities for positive, green publicity. These kinds of initiatives are good opportunities to build green, a more sustainable image and to have green marketing to help sell products and to make more profit.

ICT-sector is defined in this thesis as Malmödin, Moberg, Lunden, Finnveden and Lövehagen (2010) defined it: ICT-sector consists of fixed telecommunication networks (including broadband), mobile telecommunication networks, datacenters, enterprise networks, transport networks and end-user equipment such as mobile phones and PCs. In 2007, ICT-sector was responsible for 2 percent of global greenhouse gas emissions (Gartner 2007), which is as much as aviation (Motiva 2011), and 3.9 percent of global electricity use (Malmödin et. al 2010). The use of the ICT has grown rapidly. According to Internet world stats (2011) the use of Internet has grown since the year 2000 when there were 119 million Internet users for over two billion users as of March 2011. There are no reasons to believe that the growth of ICT will stop as only 30 percent of world's population currently is Internet users and mobile technologies are advancing worldwide.

The European Union (EU) has set targets for the year 2020 known as 3x20 targets. The goal of the EU is to cut greenhouse gas emissions by 20 percent, improve energy efficiency by 20 percent and produce 20 percent share of renewing energy. (European commission 2010.) Global e-Sustainability initiative (GeSI 2008) states that ICT-sector plays an important role in reducing those greenhouse gas emissions. Companies in ICT-sector can make their own operations more sustainable and ICT-sector can help other industries to reduce greenhouse gas emissions as well. ICT-sector can make networks and datacenters more energy efficient and so decrease the energy consumption of the ICT-sector. ICT-sector can help societies to use more green-IT solutions, like for example reducing business travel, optimizing logistic networks and using more cloud IT services. ICT solutions could deliver 15 percent savings in global greenhouse gas emissions in 2020.

In 2006, ETNO published its climate change road map, where it offers a relative simple example of how to reduce 50 million tonnes of greenhouse gas emissions per year with the increased use of ICT. Road map states that if 10 percent of the employees of the EU-25 countries became flexi-workers, if 50 percent of the EU-25 countries employees replace one meeting in a year with an audio conference, if 20 percent of the EU-25 business travels are replaced with a

non-travel solutions and if online phone bills, virtual answering machines and web-based tax returns would become more popular, then 50 million tonnes of greenhouse gas in a year would be saved. (ETNO 2006.) The case company can contribute to all these sectors.

ICT-sector can contribute to a global challenge of climate change by creating new solutions that help decreasing greenhouse gas emissions. However, according to Gartner (2007) as a whole, ICT-sector is still unsustainable. ICT-sector needs to gain a better understanding about the full life cycle of ICT products and services and produce new innovations to reduce its environmental impacts. Also, IT organizations should familiarize themselves better with existing corporate social responsibility policies. One aim of this thesis is to find out are environmental objectives and policies understood among the target group. According to Plepys (2002) ICT sector has profound effect on the economy and the environment.

Countries and industries around the globe are trying to reduce their greenhouse gas emissions and other environmental impacts. ICT companies need to be able to communicate how their products and services can decrease the environmental impacts of a given customer. Economic and environmental incentives are in place and increasing all the time for ICT companies and their products to become more sustainable. Also, the need to communicate the sustainability is becoming very important as corporate customers are selecting suppliers based on economical and increasingly on environmental costs too.

Companies will not gain a good environmental reputation if they do not want it. In order to achieve good environmental reputation companies need to communicate their environmental accomplishments (Halme & Markkanen 1998). Seeger (2004) states that ethical failures in internal communication may produce ethical failures in external communication. So the importance of the internal communications should not be underestimated. Effective internal communication forms a direct link to the external communications and the reputation and the image of the organization.

With good internal communication processes, a company could ensure that it takes maximum benefits out of the good environmental initiatives that are made. A better flow of information might also produce new environmental innovations. Use of company's resources would be more efficient if employees in different parts of the organization know if someone is doing the same thing or has useful information relating to his/her work. Good communication processes for environmental information would ensure that right information would reach right people inside of the company and as well outside. Added benefits for better communication processes for environmental information could result better, more open communication in general in the company. Tourish and Hargie (2004) wrote that communication is central to the effectiveness of organizations.

Communication, knowledge management and spreading the knowledge around the organization are huge challenges in today's work places. There is so much information available but you can still hear complaints that there is not

enough information available. One of the biggest challenges of internal communication is to process right information to the people who need it, regardless whether they know that they are going to need that information or not. As Barthes and Tacla (2002) state the purpose of the knowledge-related activities is to deliver the right information to the right people at the right time.

The research method in this thesis is qualitative. Data is gathered with theme interviews. In theme interview, the purpose is not to test hypothesis but instead unravel facts. In fact, hypothesis could be problematic, because when studying complex matters, like humans, hypothesis could be hard to define in the first place. (Hirsjärvi & Hurme 2009.) Interviewees were selected together with the case company to ensure that right informants are heard. All interviewees were working in the case company at the moment of the interview.

The purpose of this thesis is to identify the obstacles that are hindering organizational environmental communication among the target group in the case company. After identifying obstacles, this thesis tries to find solutions to improve organizational environmental communication and knowledge sharing among the target group. Studies about external environmental communication have been made relatively many (e.g. Morhardt 2010, Jose & Lee 2007, Ziek 2009, Aerts & Cormier 2009) but environmental communication inside the organization is less researched area. Although, some studies have been made (e.g. Erlandsson & Tillman 2009, Ramus 2002). Environmental communication is important to companies (e.g. Halme & Markkanen 1998, Swahn 1998, Montabon, Stroufe & Narasimhan 2007, Aerts & Cormier 2009) and base for good external communication is good internal communication. The case company has found out, and is backed up by the results of the Microsoft's (2010) study, that there is room for improvements in the organizational communication and flow of information in companies.

This thesis combines the results of previous research in the fields of environmental responsibility, environmental communication, communication and organizational communication and aims to find obstacles in organizational environmental communication. Chapter 2 is a literature review from previous literature and studies. Chapter 3 describes the research methods of this thesis and chapter 4 presents the results of this study. In chapter 5 conclusions of the study are further discussed.



## 2 ORGANIZATIONAL ENVIRONMENTAL COMMUNICATION

Chapter 2 is a review of the previous literature from the fields of corporate responsibility, environmental communication and organizational communication. The main topics of this chapter are environmental responsibility, communication, the challenges of environmental communication, organizational communication in knowledge-based companies, communication forums and technological tools for communication. A short summary of literature review is at the end of this chapter.

When reading this thesis, it is important to keep in mind that terms flow of information, knowledge sharing and knowledge management are closely related to organizational communication. When discussing organizational communication, it is almost impossible to do so without discussing flow of information and knowledge sharing and vice versa. The term flow of information can actually be used instead of term organizational communication (Yleinen suomalainen asiasanasto 2011) these two terms are so closely related. Although, knowledge and information have slightly different meanings. Information is the enabler to knowledge and knowledge is, as Platon defined it in almost 2500 years ago, justified true belief (Huotari, Hurme & Valkonen 2005). However, in this thesis the flow of information, knowledge sharing, knowledge management and organizational communication, are seen in a broad view meaning that they are so closely related to each other that they can have the same meaning and purpose: they are a part of organizational communication. Communication, information and knowledge intertwine to each other (Huotari et al. 2005, Jaatinen 2008).

## 2.1 Environmental responsibility

This chapter defines companies' environmental responsibility as a part of the corporate responsibility. Other aspects of corporate responsibility are social responsibility and financial responsibility. Chapter contains short discussion about the motives of companies to act in a sustainable way. Chapter opens up the concept of environmental responsibility because it is impossible to research and to improve environmental communication without basic understanding about the environmental responsibility. Communication, organizational communication and environmental communication are discussed in later chapters.

Globally growing sustainable development awareness has been driving corporations towards sustainable development. At first, corporations started their environmental work mainly because of the laws and regulations. Environmental work used to be reactive to external pressures and seen in companies only as a cost. Now corporations understand the benefits of superior environmental performance. Companies can achieve competitive edge by reducing waste and energy use and by managing environmental risks better. Companies can also find new business opportunities and turn environmental costs to profits. (Rosen 2001.) Environmental friendly products form a standard that other products are compared with. As it is not easy to market a good product that is harmful to environment, like for example highly leaded fuel. (Kivelä 1998.) Environmental management practices have significant and positive effect on firm performance (Montabon et al. 2007).

In the academic world and among businesses several different terms of doing business in a more sustainable way exist. Some terms that have been used include sustainable development, corporate citizenship, Triple Bottom Line, business ethics, corporate social responsibility, corporate responsibility (Marrewijk 2003) and corporate environmental management (Rosen 2001). The most common term in literature seems to be corporate social responsibility as several researchers are using that term with a wide variety of definitions (Giannarakis, Litinas & Theotokas 2011, Morhardt 2010, Panapanaan, Linnanen, Karvonen & Phan 2003, Giannarakis & Litinas 2011, Ziek 2009, Runhaar & Lafferty 2009).

Giannarakis and Litinas (2011) present one widely accepted definition to corporate social responsibility (CSR): "CSR is the satisfaction of the society's expectations beyond the obligations of the law". World business council for sustainable development (WBCSD) gives several definitions for corporate social responsibility, as there is not one universal definition. One definition of corporate social responsibility is: companies continuing commitment to behave ethically while contributing to economic development. Another WBCSD definition underlines the ability to communicate corporate social responsibility as it says that corporate social responsibility is what companies give back to societies or what they can show that they give back to societies for the resources

they get. Demonstrating their environmental responsibility is important to companies for all sectors (Thakadu, Irani & Teig 2011).

Marrewijk (2003) presents a model for sustainable development where the major term is corporate sustainability. Corporate sustainability is the goal that companies should pursue. Corporate sustainability is made out of corporate responsibility, which contains environmental, economic and social responsibilities of the company. WBCSD uses term corporate responsibility (figure 1) as a major topic that contains all the financial, environmental and social responsibilities of a company. According to Juholin, (2004) one aspect of financial responsibility is the protection of the investor's money and according to Niskala et al. (2009) other aspects are the payment of wages and taxes for example. Environmental responsibility is a responsibility for the ecological environment and essential for the company's perspective is the sustainable use of natural resources. Social responsibility is acting according to human rights and taking care of the employees.

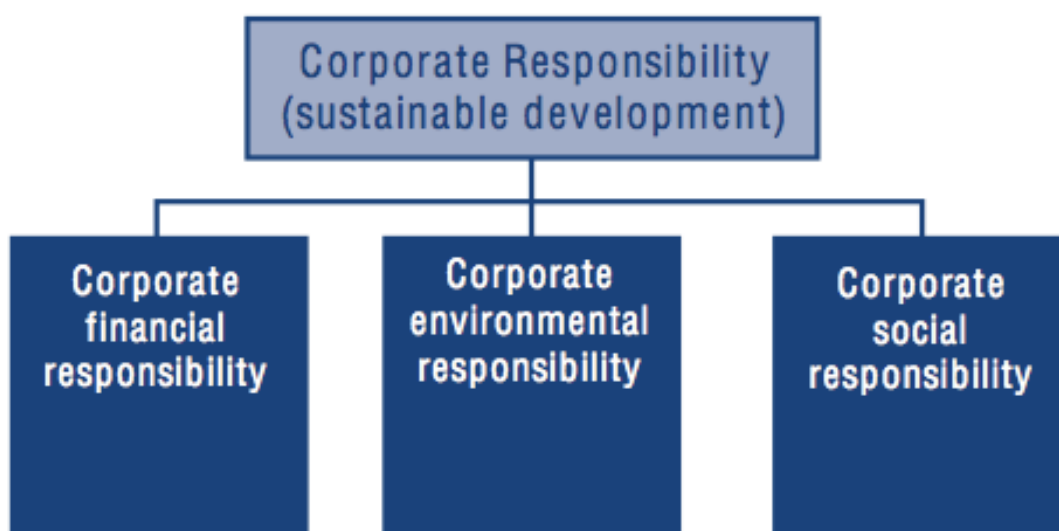


FIGURE 1 Corporate responsibility (World business council for sustainable development (WBCSD)).

In this thesis, corporation's environmental responsibility is understood as a part of corporate responsibility according to a WBCSD (Figure 1) definition. Environmental responsibility is one aspect of doing business in a more sustainable way, in a way that puts emphasis on environmental, economic and social responsibilities of the company but keeping in mind that private corporations must make profit in order to survive. Sustainable development is defined here by the United Nations (1987) report Our Common Future also known as the Brundtland report: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". In this thesis, drivers, motives and results

of environmental responsibility are seen the same as in corporate responsibility and in corporation's commitments toward sustainable development in general.

## 2.2 Communication

This chapter defines the terms of communication, organization and corporate communications. Corporate communication is further divided into external and internal communication in chapter 2.4. Seven basic functions for communication in organizations' are discussed in this chapter.

We all communicate each and every day but communication can mean different things to different people. Defining communication is not an easy task, because communication can occur between cells, humans, societies or machines. Communication research can occur in many different fields of science; semiotic, culture, organization, journalism, management, literature and the cinema are just a few examples that study communication from their own perspectives. Communication is also relevant in outside of the academic world as the businesses of marketing, media, commercial, consulting and education for example have their own meanings and perspectives for communication. (Aula 2008.)

Communication can be viewed as a process, where the content of the communication is irrelevant. This is how the process school of communication studies communication as a science. According to the process school, the only thing that matters in communication is the processes of how the messages have been send. On the other hand, the semiotic approach is interested in how the messages and recipients of the messages interact and create meanings to the messages. (Juholin, 2006.) Semiotic and process approaches for studying communication can also be seen as two aspects of the same thing. A message has to be sent and a message must be understood in order for communication to fulfill it purpose. (Aula 1999.)

Communication can be defined as exchanging messages between the receiver and a sender. However, communication is a complex process and communication can fail for several different reasons. Like for example, a message can be send by using the right process and communication channel so that it reaches the right recipient but message can be in wrong form and so it gets understood wrongly. The message could be in right form but it has been send by using a wrong communication channel and so the message does not reach the right recipient. Sometimes the channel is right and the message is in right form but the recipient just does not want to understand the message for one reason or other. Effectiveness of communication can be improved if messages are formed right and send by right communication channels. (Juholin 2006.)

Cornelissen (2011) defines corporate communication as a management function that offers a framework for the coordination of all internal and external communication. The purpose of corporate communication is to establish and

maintain favorable relationships with different stakeholder groups. Wilcox, Ault and Agee (1998) define that corporate communication is a term for all kind of communication that company does for internal and for external audiences. Juholin (2006) writes that corporate communication includes all the communication of a given organization. Organizational communication is a widely used term for the internal communication of organization. Effective internal communication is a prerequisite for effective external communication (Mazzei 2010).

Organization is a functional organism that has certain goals and objectives and it has a need to communicate with its surroundings. Organization can be corporation, municipality, state, union or any kind of consortium. (Juholin 2006.) The most important thing to bear in mind is that organization is formed of human beings (Aula & Hakala 2000). For the purpose of this thesis, organization is viewed according to Juholin's (2006) definition because the case company meets the requirements of above definition.

Juholin (2006) gives seven basic functions for communication in organizations:

1. enable the flow of information around the organization so that information and knowledge can be easily accessed for all those who need it
2. improve commitment towards the organization
3. interaction and dialogue between personnel and different stakeholder groups
4. to build an image and a brand of the organization
5. to communicate with the society
6. to market services and products of the organization
7. internal and external research and assessment

Communication is a crucial part of effective organization; organization cannot operate without communication. Social connections, operation of teams and organizational learning are not possible without communication. (Huotari et al. 2005.) Karvonen (2000) highlights the importance of communication in image and reputation management.

## **2.3 Challenges of environmental communication**

This chapter defines environmental communication and discusses motives for companies to gain a good environmental reputation. External and internal communications are closely related to each other so this chapter covers some external environmental communication as a part of an image and reputation building of a company. The challenges and characteristics of environmental communication are discussed and some tools for good environmental

communication are given. Following chapters in this literature review will concentrate on organizational communication.

Meisner (2011) defines environmental communication as simply as communication about environmental issues. Rinne and Rissanen (1998) divide environmental communication into external communication and into internal communication. The purpose of external communication is to pass relevant environmental information to different stakeholders. Internal communication purposes are to inform employees about organization's environmental goals and plans and to collect environmental information throughout the organization. Prothero, Peattie and McDonagh (1997) write that with sustainable communication companies try to prove that they are socially and environmentally responsible corporate citizens. One goal of organization's communication is that organization is known for the right reasons (Juholin 2006). Aerts' and Cormier's (2009) study shows that companies use environmental communication successfully as a legitimacy tool. Sjöblom and Niskala (1999) state that environmental communication has two goals, to inform company's corporate responsibility and environmental competitiveness.

Juholin (2007) states that the rising importance of corporate responsibility in companies' agendas has increased the meaning and importance of communication in work communities. Organizational communication is the mean to implement and to inform employees and other stakeholders about company's corporate responsibility. Without functional organizational communication corporate vision and strategy won't reach employees. On the other hand corporate responsibility information does not reach upper levels of organization without organizational communication.

According to ProCom's (2011) survey, only 19 percent of the Finnish communication professionals are satisfied with their organization's corporate responsibility communication. Even though communication professionals think that corporate responsibility has an important role in their company. Majority of communication professionals think that corporate responsibility communication has increased in recent years and more expertise is needed in their organizations. Most improvements are needed in overall awareness of sustainability issues, strategic intent, systematization, the definitions of the sustainability policy, the resources of communication, the distribution of tasks and coordination of corporate responsibility communication. In short, pretty much every aspect of corporate responsibility communication needs to improve.

A good environmental reputation of corporation can lead to a better reputation among different stakeholder groups, such as employees, customers or the public in general. Staying ahead of the regulations can save resources and money of the company. (Dechant & Altman 1994.) Different stakeholder groups expect companies to act in a responsible way and there is a market premium for companies that are taking care of their environmental responsibility. Stakeholder groups expect companies to manage their environmental performance and in addition they hold companies responsibly for their actions

and are expecting information. (Jose & Lee 2007.) Today, corporate responsibility reports appear regularly on the web pages of the world's largest companies (Morhardt 2010), which was not the case at the end of last millennium (Elinkaari ry, Tuokko Deloitte & Touche oy 1998). Companies have realized that environmental communication can be developed into a competitive edge (Barwise 2005).

Corporate responsibility reports and annual reports are by far not the only ways that companies communicate their environmental responsibility. Corporations are interacting with different stakeholders many ways in every single moment; commercials, publications, meetings and the products of the company are just some examples. Hence, everything that organizations do have effect on its reputation and image. Every single thing that can be seen, heard or sense will affect organizations' image. (Juholin 2006.) As Heinonen (2008) states, every organization is going to have an image and it is up to a given organization of how much it wants to affect on that image or does the organization let others to dictate their image.

Corporate responsibility lays big challenges to companies communication departments since it is not always easy to communicate corporate responsibility to stakeholders (Juholin 2006). Communicating about environmental actions should not be thought as a boasting instead it should be seen as a duty towards stakeholders (Kivelä 1998). Company could do an excellent job in the field of corporate responsibility but stakeholders do not know it if no one tells it to them (Niskala et al. 2009). Because of challenges in communicating corporate responsibility, it should be integrated into every aspect of company's communication not just to corporate responsibility reports. (Juholin 2006.) Prothero et al. (1997) state that simply doing is not often enough, improvements need to be communicated and communicating is challenging because audience is cynical. In order to be successful, environmental messages need to reach right people by using right communication channels and by a proper, understandable message (Lehtinen 1998). Environmental communication is not just a communication process as Erlandsson and Tillman (2009) point out; corporate environmental information management includes the collection, management and communication of environmental information.

Already Roman Senator Tacitus (AD 56-AD 117) stated almost 2000 years ago that nothing is so weak and shaky as the reputation of the forceful, if not backed up by they own forces. What applies into force, applies also to the environmental reputation. (Herlin 1998.) So corporate responsibility cannot be just words without content, responsive actions are needed as well (Juholin 2004) and base for good environmental information is good environmental work (Ratinen & Markkanen 1998). Credibility and competitiveness won't form up without effective communication (Sjöblom & Niskala 1999).

According to Halme and Markkanen (1998), in Finland engineering expertise is widely used and appreciated in every aspect of business life, even in marketing and communication. Typical Finnish engineering thinking is that facts speak for themselves. Finnish environmental engineering, technology and

performance of the companies might be in the top of the world but companies have difficulties to communicate it. So, if no one knows about the good environmental performance, then does it really even matter. Juholin (2006) states that company may have the best products in the world but it does not matter if no one knows it.

Erlandsson and Tillman (2009) write that relevant and understandable environmental information is needed so customers can make informed decisions. Although harvesting environmental information can be a challenge to organizations. Environmental information won't just appear suddenly out of nowhere. Environmental information needs to be collected from various channels throughout the organization, then information must be modified for different users and finally communicate to all interested parties.

When communicating environmental information, the form of the message is as important as is the content. The message has to be understandable for the receiver (Juholin 2006). Also important is to use the right communication channel to each message in order to reach the right audience (Juholin 2004). Also Mantere (2008) highlights the importance of the right communication channels and he continues that messages are always understood in some way, right or wrong. According to Barwise (2005) there are constant tensions in environmental communication between those who want to communicate and those who want to be accurate. Tensions can occur especially with technical specialists who are the guardians of environmental data. The only way of addressing these tensions is with constant dialogue and communication of relevant parties.

Sobnosky (2001) found three key components for organizational environmental communication: communication pathways, communication content and communication tools. There are many different communication pathways for environmental communication and vertical and horizontal communication is needed. Vertical communication needs to flow from top to bottom and vice versa. Vertical communication stems from any level of the organizational chart. Environmental communication channels and participants may vary, for example environmental representatives or engineers can have environmental communication. Horizontal communication happens between different departments of the organization.

Some examples of environmental communication content are: environmental regulations, orders of how to comply with regulations, facility performance information, environmental data, potential environmental hazards and success stories (Sobnosky 2001). According to Erlandsson and Tillman (2009) corporate environmental information can be classified into four categories (table 1). Companies have internal and external information and company and product related information.



TABLE 1 Four classes of environmental information, with examples (Erlandsson & Tillman 2009, modified)

	<b>Internal use</b>	<b>External use</b>
<b>Company-related</b>	<ul style="list-style-type: none"> <li>• Company environmental policy</li> <li>• Documented targets and processes in environmental management systems</li> <li>• Environmental management reports</li> <li>• Permits</li> <li>• Documentation of chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• Company environmental policy</li> <li>• Permit applications</li> <li>• Mandatory reports to control bodies</li> <li>• Voluntary reports to market actors</li> <li>• Market communication</li> </ul>
<b>Product-related</b>	<ul style="list-style-type: none"> <li>• Tools for product development, including:</li> <li>• Life-cycle assessment (LCA)</li> <li>• Product-related environmental indicators</li> <li>• Checklists</li> <li>• Environmental product policies</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory product information</li> <li>• Marketing to individuals and households</li> <li>• Marketing in business-to-business relationships</li> <li>• Environmental product policies</li> </ul>

Of course, companies use all communication tools and forums that they have for environmental communication. Planning helps to ensure the use of right communication tools for the right situation. Face-to-face meetings are invaluable but not always possible, so technology helps to ensure effective communication. The use of Internet enables fast and easy access to information for all. Regular meetings between organization's key personnel can make sure that some face-to-face communication is occurring and these meetings offer good networking opportunities for employees for different parts of the organization. Communication tools evolve all the time, so constant evaluating is necessarily in order to achieve the best results in environmental communication. (Sobnosky 2001.)

Environmental communication pathways, content and tools are many and designing and implementing a communication system can be challenging (Sobnosky 2001). However Barwise (2005) presents five principles for environmental communication: transparency, appropriateness, credibility, responsiveness and clarity. Transparency means that all procedures, processes and data of environmental communication need to be made available to all participants. Appropriateness stands for relevant information that is in format understandable for all. Credibility means that environmental communication should be honest and the information correct and relevant to all participants. Responsiveness calls for open environmental communication where participants' comments, questions and concerns are addressed in timely manner. Clarity is understood as environmental communication that minimizes the possibilities of ambiguity and misunderstanding. (Barwise 2005.)

Environmental competitiveness cannot be created solely by the means of marketing communications, it has to be organization's strategic choice and it has to affect everything that organization does (Ilmola 1998). Erlandsson and

Tillman (2009) listed some barriers to the use and supply of environmental information for the production of products and products itself: the weak market drivers, insufficient stakeholder involvement, insufficient coordination of information, the availability of information can be low in organization and management of information can be too costly and time consuming.

Siebenhüner and Arnold (2007) researched how organizations can manage their sustainable development. The key to implement sustainable development is that organization learns. Sustainability-oriented learning highlights the organization's learning mechanisms, leadership styles, internal networks and change agents. Companies that are implementing sustainable development need to revise their conventional operations, including communication processes. In order to rework company's strategies to sustainable, new knowledge is needed inside and outside of the company. Juholin (2004) highlights the meaning of the organization's top management in the sustainable development of organization as, according to Ratinen and Markkanen (1998), sometimes companies forget about how important stakeholder group their own staff is.

Organization's commitment to environmental policies and the behavior of supervisors are key functions towards more proactive environmental company. Environmental policies and supervisors will encourage employees for environmental actions and innovations that will improve company's performance. In order to use time on environmental actions employees need a clear signal of organizational support. Backbones of organizational support are environmental policy and daily supervisory support. Even though organization has environmental policy, line managers' focus might not be in environmental management and the daily support of environmental actions is therefore missing. Environmental innovations and actions occur at every level of the companies; blue-collar workers as well as management can come up with new environmental actions. (Ramus 2002.) Sustainable innovations have become a pivotal point for companies to show their commitment towards sustainability (Bos-Brouwers 2010).

Ramus (2002) found out some typical characteristics of supervisor behavior that supports the environmental actions of the employees: encouraging to new ideas and innovations, supporting the competence building, encouraging to open communication, sharing information openly, rewards and recognition and sharing of goals and responsibilities with employees. Supervisors' need to create and use forums for information sharing and communication throughout the whole organization. According to Bos-Bouwers (2010) flexibility in organization structure, low bureaucracy and cooperation with different stakeholders stimulate sustainable innovations. Govindarajulu and Daily (2004) write that rewards, feedback and empowerment by top management and supervisors can lead to a more active participation of employees towards environmental actions. The result could be more environmental innovations that benefit the company.

Good environmental initiatives can be completely new innovations or best practices borrowed from other companies, even competitors. Environmental initiatives can be divided into three categories: ideas that improve environmental efficiency of products and services, ideas that decrease environmental impacts of the company and ideas that solve environmental problems of the company. (Ramus 2002.)

## **2.4 Organizational communication**

The rest of this literature review will concentrate on organizational communication especially in knowledge-based organizations. This chapter divides corporate communications into external and internal communication. Organizational communication is the term used for the internal communication of organization. Perspectives of a good and bad organizational communication are discussed as well as communication rights and responsibilities. Communication forums and technological tools for communication are discussed as well.

Corporate communications have traditionally been divided into external communication and into internal communication based on the boundaries of organization. Boundaries of organizations have blurred and that traditional distinction between external communication and internal communication might not be functional anymore. Employees of a corporation are also members of the external public. Employees receive messages about the corporation from many different channels through different networks they belong to. (Mazzei 2010.) Organizations have not been the only source for organization-related information for a long time. As there are always people who know something about the organization and can communicate information easily and quickly. Information can be communicated even anonymously and it does not matter if the information is true or false. Everything that the organization and its members do has an effect on the organization's brand and image. That image will reflect back at the employees as they identify themselves towards the organization. (Juholin 2008b.)

It is however appropriate for the purpose of this thesis to make some kind of distinction between internal and external communication. The scope of this thesis is organizational communication. Juholin (2007, 2008b) defines organizational communication in knowledge-based organizations by using a term of communication in work communities. Communication in work communities occurs where people are and work, where they produce and exchange information and their experiences. Communication in work communities is defined as follows: communication occurs in different forums, the most important forum is a real or a virtual work place itself, where the members of a work community communicate and work collegially and self-conductively. The purpose of the communication is to create and maintain conditions of working and to develop, to strengthen and to make possible the

learning of the work community. All the actions and communication by the members of the work community will influence the reputation of the organization.

The concept of the communication in work communities is how organizational communication is used and understood in this thesis. It means all the communication inside the organization. It covers formal and informal types of organizational communication and it reflects to the image of the organization.

## **2.5 Organizational communication in knowledge-based companies**

There is not much previous research done about organizational environmental communication. It might be explained by the fact that very much the same laws apply to organizational environmental communication than to organizational communication in general. Organizational environmental communication cannot be seen as some distinct, own function. Organizational environmental communication is an integral part of the normal organizational communication. Some special characteristics that environmental communication has are covered in previous chapter 2.3 and some similarities can be found between the chapters.

This chapter and its subchapters cover characteristics of organizational communication in knowledge-based companies. At first, in chapter 2.5.1 knowledge-based companies, knowledge work and basic requirements for organizational communication in knowledge-based companies are discussed. The case company of this thesis can be viewed as a knowledge-based company. Chapter 2.5.2 then looks into the perspectives of organizational communication in knowledge-based companies. Chapter 2.5.3 covers communication rights and responsibilities in knowledge-based companies. Communication forums and technological tools are discussed in chapter 2.6.

### **2.5.1 Knowledge work and organizational communication**

This chapter defines knowledge-based companies and knowledge workers. The role of intangible capital in achieving competitive edge is shortly discussed. Some special dimensions of communication in knowledge-based companies compared with traditional manufacturing companies are discussed.

The role and concept of organizational communication has changed and will continue to evolve, as change has become a constant state of today's corporations. Developments in information and communication technologies and the rise of knowledge-based organizations have shifted organizational communication to a more dialogic course. (Juholin 2006.) The old model of organizational communication based on two beliefs, first was that information is neutral and second, that communication is transferring absolute correct

information from management to workers, from top to bottom (Juholin 2008b). Mazzei (2010) writes that the old function of internal communication departments was to transfer messages. New function for internal communication is to promote active communication behavior among organization. Internal communication is a set of interactive processes that generate knowledge and allegiance by abandoning the old systematic approach with organizational boundaries.

For many companies, the basic economic resource is no longer capital. The basic resource of the company is knowledge of the employees (Drucker 1995). The knowledge sector has grown in recent years and decades and the value of knowledge will continue to rise. The increased importance of knowledge is fuelled by technology, science and rising level of education. (Zorn & Taylor 2004.) Knowledge is regarded as critical for companies and economies (Lam 2000). However, just knowledge and know-how are not enough for success, companies need to be able to use those knowledge resources for creating competitive advantages (Lehtonen 2000.) Information and its management are critical for efficient operating for knowledge-based companies (Hicks 2007).

Knowledge, defined here according to the European committee of standardization (CEN):

*“Knowledge is the combination of data and information, to which is added expert opinion, skills and experience, to result in a valuable asset which can be used to aid decision making. Knowledge may be explicit and/or tacit, individual and/or collective.”(CEN 2004a.)*

Knowledge-based companies are founded on knowledge, knowledge sharing and knowledge creation of the employees of the organization (Juholin 2010). In knowledge-based companies, information is raw material that is processed into knowledge and to know-how. Typical for knowledge-based organizations is intraorganizational and interorganizational networking for the purpose of gaining more resources and information. (Huotari et al. 2005.) Hicks, Culley’s and McMahan’s (2006) study argues that the use of information and the ability to transform information to a competitive advantage is particularly critical in an advanced engineer sector.

CEN (2004b) listed some typical differences between traditional and knowledge-aware organizations. Knowledge-aware organization has wide information sharing instead of limited, fewer management levels and more informal structure compared with traditional organization. Enablers for knowledge sharing culture are continuous learning policy, open organization, knowledge sharing and utilization of knowledge in organization.

Employees of knowledge-based companies are called knowledge workers in literature (Zorn & Taylor 2004, Juholin 2008b, Ojala & Ahonen 2003, Blom, Melin & Pyörälä 2001, Seeck & Parzefall 2008). Knowledge work or expert work can be defined as creating new, developing or solving problems (Juholin 2008b). Employees of knowledge-based companies are experts or specialists in their field of work (Juholin 2010). For example, scientists, consultants and physicists

are knowledge workers. Critical for the knowledge worker is the access to knowledge or expertise. Because the use of knowledge is so critical for the knowledge worker, that emphasizes the importance of processes and structures for gaining access to the knowledge. (Zorn & Taylor 2004.) Knowledge and communication processes need to work constantly together in knowledge-based organizations in order for the organization to operate and to create value (Huotari et. al 2005).

In addition to concrete capital, companies have intangible capital in forms of intellectual capital, social capital, reputation capital and communication capital. Intellectual capital or human capital is the knowledge of the employees. Social capital combines from factors that improve personnel commitment towards the company and common goals. Social capital also enables interaction between personnel. Reputation capital is the image or reputation that company has among its stakeholders. Communication capital composes from the communication know-how of the organization and enables continuing improvement of intangible capital. The Communication structures and processes and the communication skills of management and personnel form the basics of communication capital. Communication between employees is the catalyst that can turn company's knowledge capital into a competitive advantage. Knowledge and expertise are useless without social interaction and communication abilities. (Lehtonen 2000.) Huotari et al. (2005) highlight the importance of knowledge capital, intellectual capital and social capital as enablers of knowledge-based companies.

### **2.5.2 Perspectives of organizational communication in knowledge-based companies**

This chapter further looks into organizational communication in knowledge-based companies. Characteristics of good information sharing and communication are looked into and barriers to effective communication are discussed. Topics in this chapter include individual communication competencies, collaboration, networks and the role of interaction in organizational communication.

Important things when considering real time information sharing in knowledge-based organizations' are: what information is relevant and to whom, how often information needs to be updated and to whom, who are responsible for information sharing and communication, what tools and forums are in place for information sharing and communication, is there a need for new communication tools or forums. (Juholin 2008b.)

Knowledge work cannot be done without the ability to communicate. Knowledge workers need communication skills. Communication skills can be divided into four main categories: the expression, networks and connections, use of communication tools and communication strategies. Expression means abilities to express thoughts and have conversations and dialogues in different forms. Networks and connections with colleagues, different stakeholders and customers are part of knowledge workers' communication skills. Ability to use

different communication tools, like for example email, phone, Internet and other digital work platforms are vital part of communication skills. Communication strategies are individuals' skills and abilities to use all communication skills together in order to achieve the best results. (Juholin 2008b.)

Huotari et al. (2005) gives four dimensions to communication competence. Dimensions are affective, cognitive, behavioristic and ethical. Affective competencies are a positive attitude towards communication, courage, willingness and motivation to communicate. Cognitive competencies mean communication related knowledge and knowing of the processes that control communication competencies. Behavioristic competencies are the dimensions of communication skills and behave. Communication has to happen according to ethical standards. However, these four dimensions are closely related to each other and can only be separated at theoretical level.

Peoples and their capabilities are at the center of knowledge sharing. Personal knowledge capabilities are ambition, skills, behavior, methods and tools, time management and of course personal knowledge. Most of knowledge sharing happens in voluntarily, so ambition to reach personal and organization's goals are an important factor. Skills for knowledge sharing include effective and understandable communication and the ability to select and use internal and external knowledge. Personal time management is the ability to recognize what is important and should be allocated time. (CEN 2004a.) Every other Finnish worker thinks that rush at work is on the top of the list when considering issues that reduce job satisfaction. 68 percent of the ICT-sector employees feel need to hurry in their work in order to manage all their duties. (Seck & Parzefall 2008.)

Work community's trust is the base of effective organizational communication. Organizational structures need to support networking and efficient communication. (Lehtonen 2000.) People who are interested in the same things will create networks inside the work place. These networks are important communication channels and forums for experts. Experts can obtain information from different parts of organization and share their knowledge around the organization. (Juholin 2008b.) Information needs among knowledge workers are diverse, so collaboration networks between experts from different fields and from different parts of organization are needed (Huotari et al. 2005). According to Mazzei's (2010) study most companies aim to create an atmosphere that supports active communication behaviors, like knowledge sharing, collaboration and creativity.

CEN (2004a) has identified five core activities in the use of knowledge; to identify, create, store, share and use of the knowledge. Identifying knowledge can happen for example in brainstorming. Organizations' should think what is important knowledge for them. Creating knowledge is a social process where people are interacting with each other's. Knowledge is stored in people's brains, organizational routines or in different databases. Sharing knowledge means transferring knowledge into a right place, in a right time and in a right and

understandable form. Knowledge needs to be made available to all. Means of sharing knowledge are many; coaching, collaboration, workshops, intranet, databases and training are just some examples. Knowledge can only add value if it is used. Knowledge sharing activities need to be implemented into the daily operations of organization. In his study Heisig (2009) found five the most common knowledge management activities: share, create, apply, store and identify knowledge. According to Juholin (2007) communication is not a procedure but a process that is happening all the time.

Carlile (2004) studied knowledge sharing across the boundaries of organization. He found three complex processes that must occur in knowledge sharing between different sections of organization. First, transferring the knowledge is a central challenge between sections. One's transferred, knowledge needs to be translated so that common meaning can be created. Transforming knowledge is the final phase of knowledge sharing between the sections of organization. Challenges in transforming knowledge are to manage the dependencies between sections, which demands negotiation skills from participants. According to Jaatinen (2008) efficient information processing is the key to the success of organization. According to Huotari et al. (2005) interaction is the mean to combine information and knowledge. Communication is based on interactive processes among the organization. People communicate because they like each other's and achieving of goals, personal and organizational, need communication. (Aula 2008.)

The use of knowledge will lead to discovering new knowledge gaps (CEN 2004a). Information acquisition is a challenging process, because at the same time one should follow wide varieties of information sources and be able to recognize the important ones. Information competence is an important part of individuals and organizations communication competence. Good organizational processes and tools are crucial for the information acquisition process. (Huotari et al. 2005.)

Zorn and Taylor (2004) present a four-step model where data becomes information, information changes to knowledge and finally knowledge transforms into wisdom. Huotari et al. (2005) have named that same model as the value chain of information. For example, data can be in form of sound waves. Information transforms into knowledge when a receiver of information has interpreted and approved the information. According to Zorn and Taylor (2004) human interpretation and judgment is needed in every step, without constant, open communication and information sharing, data won't change to wisdom. Also Seeger (2004) underlines the meaning of open communication atmosphere in workplaces as an enabler for participation. Beylier, Pourroy, Villeneuve and Mille (2009) studied a collaboration centered approach to manage information in engineering company and argue that the formation of knowledge sharing culture is the key for good information management. According to Huotari et al. (2005) new knowledge must be connected to existing products and services.



Hierarchical and centralized organization makes communication passive. Communication becomes unisonous, authorities are the one's that speak. In hierarchical organization one speaks and the rest are listening. The hierarchical communication model won't work in knowledge-based organizations where new ideas are born with interaction, by communicating with colleagues. In contrast to hierarchical organization, energizing work community has common discussion culture, convenient and easy information sharing and individuals have the possibility to affect the work community. (Juholin 2008b.) According to Nonaka and Takeuchi (1995) trust and commitment create the base for knowledge creation and open communication. Also Jaatinen (2008) highlights the meaning of trust in work community when sharing information and knowledge.

Hierarchical and energizing work communities could collide, if management expects more conversation and independent initiatives but employees expect more directions and someone to tell them what to do. The base of human behavior is interaction and without conversation and exchange of thoughts, nothing new will arise. Interaction is an energizing process because people can ask, listen, elaborate and question each other's. (Juholin 2008b.) Interaction is always communication but not all communication is interaction. Interaction can happen face to face or with the help of technological tools. Interaction can occur between individuals or groups. Interaction and communication are means to capitalize individual's knowledge resources for the good of the organization. (Huotari et al. 2005.)

Organizational culture can be seen as the most important factor towards knowledge sharing. The culture of organization is the sum of the cumulative effects of individuals, past and present. (CEN 2004b.) Also Juholin (2008b) states that information sharing atmosphere in work communities is an important prerequisite for effective organizational communication and knowledge sharing. Everyone and everything that belongs to work community affect the atmosphere in work communities. Creating good atmosphere for work community is not just the responsibility of managers and management. Conversational atmosphere will support learning and sharing of information. Communication is a vital part of expert's work. Also Lemminkäinen (2008) highlights the role of conversation and interaction in work communities. She also states that communication won't take place in a vacuum but is integral part of everyone's work. Juholin (2007) states that communication is not someone's responsibility but instead it is everyone's responsibility.

Dialogue is conversation where participants are expressing opinions, commenting and listening to each other's opinions. All parties of conversation are entitled to their opinions and all are encouraged and demanded to tell their interests. Dialogue is related to organizational culture and it is not granted that everyone and every organization are able to have dialogue. Organizational culture needs support dialogue by being open for conversation. (Juholin 2010.)

The knowledge worker's relationship with knowledge is completely different than with traditional members of industrialized organization. Knowledge workers are not passive objects that wait correct information from management and managers. Instead knowledge workers produce and share information themselves. Work communities in expert organizations are equal and experts will question the decisions made by superiors but also managers can question experts' decisions. (Juholin 2008b.)

Knowledge is a requirement for the knowledge worker to be able to work. Without correct, real-time information, the quality of work will decrease. Information must flow effectively around the organization. Information won't flow by itself, it needs to be pushed around. When information reaches a person, the first order of business is to evaluate the information; is this information relevant to me, to my colleagues, to the company. If the information is regarded relevant to someone, then the information needs to be communicated to the people who need it. Correct tools, processes and forums are needed for that information to move effectively to the people who need it. Information must be modified so that it is understandable to colleagues who might have a different educational background or who work in completely different part of organization. Basic question that worker needs to ask is, which information is relevant and to whom. Not all information is relevant to all and too much information can be a problem that decreases the effectiveness of the work. (Juholin 2008b.) Also Huotari et al. (2005) state that information must be evaluated and decided if information is relevant to organization.

Knowledge worker needs to understand what kind of information is important for the company and to his/her work. It is important that people know what is expected of them and what kind of information they need to communicate. Knowing and understanding of company's strategy, goals and vision is therefore crucial for information sharing. (Juholin 2008b.) Organizational intentions must be clear to everyone (Huotari et al. 2005).

Reasons of why information might not be shared include competition, pressure or lack of time. Competition between employees or units might lead to a situation where all information and knowledge are not openly shared. If different units are competing for the same resources or experts are afraid of their position, information sharing might suffer. Lack of time might be a problem in knowledge-based organizations but there is always time to what is considered important. (Juholin 2008b.) Zorn and Taylor (2004) also state that inter-sector rivalries could form effective barriers for information sharing.

Knowledge-based organizations might be highly specialized and therefore different work communities might have a limited informational background. Different units might consist of only specialists of certain area. That is why information redundancy is important. Information redundancy means that information that is not needed in everyday work is pumped into work community and that way information base of a work community can be expanded. (Huotari et al. 2005.)

CEN (2004b) listed barriers for effective knowledge sharing. Barriers could be for example, time and priority between different tasks, differences between management statements and actions, the possession of knowledge is seen as a job security and power, apathy towards knowledge sharing, reward systems won't courage to knowledge sharing, lack of common organizational language and lack of communication and trust among different parts of organization are some barriers to knowledge sharing.

One key question in knowledge sharing is: where is the knowledge (Zorn & Taylor 2004). It is important to know where information can be found, who is the expert of this or that thing (Juholin 2008b). Knowledge is situated in individuals, groups, networks and in written texts. Constant and effective communication is needed in order to utilize that knowledge. (Zorn & Taylor 2004.) Skerlavaj and Dimovski (2006) conducted a study in a software company and state that if some individual has great expertise in some field then the others are seeking to learn from that person. Deetz and Brown (2004) suggest that we have entered into an age of participation, where managing and decisions are made increasingly together in workplaces. Success of participation relies on good and effective organizational communication, which requires forums for communication and a capacity for differences to be vividly present.

Mazzei (2010) suggests that every member of organization need to be activated to take a part into active communication and knowledge sharing. Reasons for inactivity are lack of awareness, lack of ability, sensitivity and a sense of constraint. Inactive members can be coached and motivated to be more active in communication. Individual communication competencies and organizational trust are key issues. Puro (2008) writes that humans are united by everyone's desire to be heard and that communication processes purpose is to open doors for listening and organizations need to take advantage for this opportunity.

In good collaborative communication, members solve problems together, speaking does not come from a position, discussion broadens options not narrow possibilities, winning arguments are not looked for but instead workable options are preferred and final responsibility rests with the group not the others (Deetz & Brown 2004).

### **2.5.3 Communication rights and responsibilities in knowledge-based companies**

This chapter discusses communication rights and responsibilities in knowledge-based companies. The roles of management, managers and employees are discussed. Ultimately top management bears the responsibility of communication in the company. Management can, and usually will, share the responsibilities of communication to different divisions, sections and people. (Åberg 2002.) External communication responsibilities are relatively easy to determine because external communication processes can be controlled to some extent. On the other hand, internal communication responsibilities are trickier to determine. More people are involved and it could be argued that

every employee should have communication responsibility and the right to communicate. Every employee can have knowledge that is meaningful. (Juholin 2006.)

Communication in organization should be organized so that everything points toward a common goal (Juholin 2006). When everyone is expected to communicate and share information around, then the ability of the management to communicate organization's strategy so that everyone understands becomes very important (Mantere 2008). Strategy can be understood as simply as a direction or the central storyline of an organization (Juholin 2008b). Porter (1996) explains strategy as follows: "Strategy is a creation of a unique and valuable position, involving a different set of activities".

Employees need to know the strategy of their organization, so they can communicate right information. Employees usually have genuine will to work as is the best interest of the organization they belong but employees need to have requisite information on what is expected of them. (Juholin 2008b.) Porter (1996) states that one of the most important functions of the strategy is to guide employees through their day-to-day decisions. Strategy becomes successful because humans execute it not because strategy has been written (Juholin 2008b).

It is important to realize the vision, the future intent of the organization, in order to understand what is to be achieved and by how. What kind of information is important to communicate in order to achieve that vision. Values of the organization dictate what is wrong and what is right. Value is a thing that is considered important and a priority. There is always time for important things. Internalizing why things are made makes work easier and right things are made and communicated. (Juholin 2008b.) Huotari et al. (2005) writes about justifying concepts' phase as integral part of the knowledge creating process. In justifying concepts' phase, the received information is analyzed by employee and then decided if information is aligned with the strategy of the organization. So the organizational intention must be clear to everyone. According to CEN (2004a) without understanding of why, what and how also known as mission, vision and strategy it is not possible to link knowledge to the business objectives of the organization.

Positive and open communication atmosphere increases the profitability of the organization. Organizational culture builds from top to bottom and the role of the management is to support and lead the way. (Juholin 2006.) Tourish and Hargie (2004) give an example of how not to create open and positive atmosphere as they tell about CEO who send edict to all his employees where he said that it is forbidden to send any direct emails to him, everything must go through the line management hierarchy.

Managers have a key role in organizational communication. Even though everyone has communication responsibilities, managers still have a very important role as they have information that employees do not have. Everyone has a superior and superior can have many different names, director, team

leader or manager for example. (Juholin 2006.) Superior and subordinate form the base of an organizational communication process (Åberg 2002). Superior is the key in work place communication who affects others commitment and well-being by his/her actions. Superiors are also subordinates and they form a link between the management and the employees of the organization. (Juholin 2006.) It is important that superior acts as a messenger for his/her subordinates. (Juholin 2008b).

Juholin (2008b) presents three cases where superiors have a key role in organizational communication:

- Superior has knowledge, information or experience that others do not have
- Superior has knowledge or information that others do not know even to ask or search
- Superior has knowledge or information that is impossible to obtain from anywhere else

According to Juholin's (2007) study, experts want to know what superior knows and thinks but then experts want to do their own conclusions. The survey also revealed that superiors think that they perform their communication duties accordingly but their subordinates think they do not. Superiors expect of their subordinate's greater self-directedness but on the other hand, superiors expect more and better information from their own superiors.

Mazzei (2010) states that effective communication is not just the responsibility of managers but instead every member of work community bears the responsibility of good and effective communication. Also Lemminkäinen (2010) states that communication competence is a skill that everyone in work community should master. Puro (2008) writes that listening organization has communication atmosphere where everyone tries to understand and share information. Huotari et al. (2005) state that organization needs to trust its employees and give enough autonomy for individuals to think new solutions. Autonomy and trust among organization lead to a better information sharing.

Heisig (2009) states that systematic handling of knowledge at the operational level is the key issue in managing knowledge effectively in organization. A Knowledge worker receives, produces, shares and analyses information. So the role of the knowledge worker is different than it is with the traditional industry worker. The knowledge worker needs to be able to communicate in work community (Juholin 2007). Typical of knowledge work is that it is performed together in teams and projects and conclusions are done together. New knowledge is created in interaction with others and sufficient information is a requisite for work. (Juholin 2008b.)

Niemelä (2008) states that collaboration is a part of expert's job and that everyone has responsibility to share the information that benefits others. According to Juholin (2008b) real time information sharing is a continuing process where everyone has responsibility to ask and carry information

forward. It is important for everyone to know where information is found in organization.

Juholin (2008b) lists different communication roles that expert have:

- the exchange of personal, work related information
- conversation with work and industry related topics
- conversation, commentary and asking of work community's issues
- conversation and exchange of thoughts with superiors
- common development
- the exchange of information and conversation with different stakeholders
- communication in different projects

An expert needs to understand with whom he/she is communicating with and a message and a language need to be right and understandable to different publics. With other experts' communication is different than with colleagues from other parts of the organization. (Juholin 2008b.) The expert needs the ability to express his/her subject so that others can understand it (Juholin 2006).

## **2.6 Communication forums and technological tools for communication**

Chapter 2.6 and its subchapters cover the important aspects of communication forums and tools in organizational communication. Forums and tools are essential parts of organizational communication because they offer surroundings for communication. Technology has changed and will continue to change the way we live and communicate and this chapter discusses the possibilities and challenges of communication technology. Chapter 2.6.1 concentrates on communication forums and chapter 2.6.2 on technological communication tools. Previous chapters have discussed organizational environmental communication, its demands, challenges and characteristics. This chapter discusses the actual forums and tools that can be used in communication.

### **2.6.1 Communication forums**

Chapter starts with the definition of communication forum and then proceeds into looking at different kinds of communication forums. Formal and informal communication forums are covered as well as organizations' communication channels. According to Juholin (2006) the term communication also contains communication tools and forums. Communication channels, forums, procedures and messages are communication resources and they form

settings for the formal and informal communication of the organization. A communication forum has a slightly different meaning than a communication channel. Forum indicates to a more interactive surrounding where information flows to different directions and communication is interactive instead of one-way informing.

Åberg (2000) divides communication channels into local channels and remote channels and further to direct and indirect communication. Direct local communication channels are superiors, team meetings and close colleagues. Direct remote communication channels are briefings from management, meetings and colleagues from other parts of the organization. Direct communication, local or remote, is face-to-face communication and includes interaction. Indirect local communication channels are emails and other electronic communication tools and indirect remote channels are annual reports and the mass media. Juholin (2006) divides communication channels for face-to-face, print, verbal and electronic communication channels.

According to Juholin (2008b) communication forums can be divided into workspace, hybrid, informal, half formal and formal forums. Communication forums are the core of all interaction and communication in the organization. Workspace forum is the central communication forum where the work is done, brakes are spend and communication with colleagues happens constantly. An open-plan office is a typical workspace in the 21<sup>st</sup> century knowledge-based companies'. An open-plan office creates positive communication atmosphere itself. Hybrid forums are communication processes that shape up in workspace, where people naturally communicate all the time using different communication tools and forums.

Informal communication forums are networks in organization that garner together people who have common interests. Informal forums can develop naturally or they can be created in purpose. Informal networks can also share information in free time. Networking is essential for knowledge workers and some ways for networking in the 21st century are social media, email and intranet. Formal communication forums are regular weekly or quarterly meetings and briefings for example, in these forums information is official and it is given to everyone. Topics can generally be divided into three categories: what has happened, what is happening now and what will happen in the future. Half formal communication forums are somewhat more casual than formal one's. A regular coffee brake is half formal communication forum for example. (Juholin 2008b.)

Taking advantage of communities inside the organization might be the most cost-effective way to harvest and use the knowledge of the employees. Communities can be formal, like functional groups or project teams, or informal, like smoking groups or coffee machine meetings, but common to these communities is that people share information openly with people they recognize their peers and speak the same language. These collaborative communities can be virtual or physical. (CEN 2004b.) Juholin (2008b) writes about technological coffee tables as a form of network. A technological coffee

table forms around the people who share common interests throughout the organization and use technology for communication.

Sun (2010) writes about the importance of social networking in knowledge management and information sharing and emphasizes the meaning of network density. Network density creates trust among the network. Typical for all networks is that some people have more centralized positions in the network than others. It is the responsibility of these more centralized people to act as brokers of new information from different parts of the organization and outside of the organization. Also, centralized people's responsibility is to build bridges between the network and the people who have information useful for the organization.

Some companies have created systems where one or more employees of a certain section or a team has more communication responsibilities and possibilities than others. This, a so-called network informant, is a link between his/her team and the rest of the organization. A network informant's assignment is to pass relevant information from his/her team to the rest of the organization and vice versa. (Juholin 2006.) Some organizations have knowledge officers, whose job is to control and coordinate the use and accumulation of knowledge and information in the organization (Lehtonen 2000).

## **2.6.2 Technological tools for communication**

This chapter concentrates on communication technologies. Email is currently the backbone of organizational communication in almost every organization and the benefits and shortcomings of email are discussed. Social media applications and the benefits and barriers for using social media in organizational communication are covered in this chapter as well.

Communication technology creates possibilities for effective communication and online communication has evolved to a more interactive direction (Juholin 2006). Interactive communication tools encourage people to active communication (Mazzei 2010). Ojala and Pöysti (2008) state that the Internet has changed, and will continue to change human information search and control for the most since the invention of the printing technology. The second phase of the Internet, or Web 2.0 or social media enables interaction, collaboration, decision-making, information sharing and knowledge creation in fast and convenient ways. In social media, every user can produce and shape contents. As Juholin (2008b) writes, global companies could have operations and projects that involve people from different continents. These virtual groups cannot have meetings and conversation in face-to-face. New communication procedures are needed in order to ensure the exchange of real-time information.

Information and knowledge emerge and travel at the speed of light and information combine people who have the same interests into social groups. In the cyberspace, the boundaries of states are disappearing so people from different countries can create networks easily (Lehtonen 2008). Matikainen



(2008) and Juholin (2008a) compare Internet with a society or a city; Internet is a place where people meet each other's, have conversations and shop.

Knowledge management is a term that can be used to describe programs and strategies managing knowledge of the organization with the help of technology (Zorn & Taylor 2004). Flanagin (2002) defines knowledge management as strategy to identify and develop technologies to manage explicit knowledge in a way that knowledge is in a place and a format accessible and understandable to others for use to achieve organizational goals. Hicks (2007) states that organizations can have more information in their disposal by expanding the amount of information they obtain or implementing new information management systems. New information management systems can better use the information that organization already has.

Social media is Internet service where users produce the content (Juholin 2008b). Social media tools are for example: chat forums, instant messengers, blogs, wikies, RSS-feeds and social communities. Wikies and group blogs are web pages where everyone can modify and produce information. RSS-feed can then give a notice to anyone who has sign up for updates whenever new information is available in a certain wiki or blog for example. Because anyone can write in social media it becomes very interactive surrounding. (Ojala & Pöysti 2008.) Social media tools are already widely used in Finnish organizations. According to ProCom's (2010) survey, 77 percent of the Finnish communication professionals use social media tools in their work and the use of social media is expected to grow.

Even though some writers (see Ojala & Pöysti 2008,) list email and intranet as social media and they definitely contain some elements of social media, email and intranet are not considered social media in this thesis. Email and traditional intranet are not interactive surroundings where anyone can produce and share information so that everyone can take advantage of information. As Matikainen (2008) states, traditional intranet is usually a one-way communication channel. However drawing the line what is social media and what is not, is difficult and maybe impossible and it certainly is not the purpose or scope of this thesis.

Email has been in use for decades as a communication tool in organizations and even though studies show that email has some disadvantages the prevailing thinking is that email is indispensable. Email is simple and easy to use and it can be used regardless of time and location. Email can be used for many different tasks. (Johri 2011.) Email is in use in almost every organization and it is the backbone of communication systems at the moment. Email is suitable tool for information sharing but it was not designed to be interactive or medium for group works. Still majority of group works in companies are done by email and high percentages of companies' records are situated in employee's emails. Of course consequence is that if employee leaves, records are lost. (Ojala & Pöysti 2008.) As Matikainen (2008) states it, email is a good tool for operative work related communication.

Email has its problems too. The biggest problem might be email overload, which is common in organizations. Also, email might not be the best tool for tasks it is used for but email is used because using email is common and might be the only option in an organization. In the long run, using email might prevail effective and transparent communication and information sharing. (Johri 2011.) Among others Juholin (2008b) writes that email overload is a problem, because of the junk mail and for the simple reason that people cannot read hundreds of emails on a daily basis. According to Ojala and Pöysti (2008) email is already a problem in many organizations because emails easily spread wrong or old information. Huge attachment files are sent using big distribution lists. Then different people make different corrections to attachment files and no one has the most recent version. Juholin (2008b) writes that expectations towards email might be unrealistic some times, because email is not always a handy tool, for example when communicating in big groups.

Johri (2011) studied communication in a software developing company and states that by reducing the number of emails, the effectiveness of the organization improves. Use of social media instead of email improved coordination and knowledge sharing in the company. Blog is a good medium for two-way communication, it is easy for the readers of the blog to participate and give their comments (Sublet, Spring & Howard 2011). Other alternative communication tools for email include instant messages and wikies. Usually, these alternatives are used to support email and the use of social media tools might be restricted in the organization. (Johri 2011.)

Knowledge-based organizations have incentives to use social media as a communication tool. Some benefits for social media are that it enables a better flow of information and increases the productivity of the work. ICT has changed work to a time and place independent and work can be performed from anywhere in the globe. Knowledge workers have an increased need to be in contact with other experts and existing knowledge need to be used more efficiently. Travel expenses and emissions are increasing in organizations because of meetings that could be avoided by the use of ICT. Innovation is the word of the day and ideas from all over the organization are needed, (Ojala & Pöysti 2008.) because everyone is the best expert of his/her work (Juuti & Vuorela 2002). Good ideas might come from every level of the organization and social media tools might be good for sharing and spreading information and ideas across the organization (Ojala & Pöysti 2008). The role of technology increases when geographical distance between employees grows (CEN 2004a).

According to Juholin (2010) implementing of social media in organizational communication improves work welfare, the use of expertise and business volumes in the organization. New talent is easier to obtain and it is easier to hold on existing expertise with the use of social media. Ojala and Pöysti (2008) state that social media brings people together as it forms groups of people who are interested in the same things, no matter where in the organizational chart they might be. Communication and refining information into concrete ideas might be easier with social media, because compared with

traditional intranet social media offers the possibility and the responsibility to update information for everyone. With power comes responsibility and social media needs open organizational atmosphere and good internalizing of the instructions and strategy in order to operate as desired. Juholin (2006) writes that adding information to technical environments must be easy for everyone; systems cannot be too hard and hierarchical to use. Instead of appointing more network administrations, organizations should concentrate on educating existing employees to use technical communication forums.

New information is arriving all the time and from many different places and platforms. So keeping a track of all possible new information is time consuming and even impossible. RSS-feed notifications can tell users which sites have been updated. Then RSS-feed can give a short summary of new information and user can evaluate if new information is worthwhile to read. Sharing information in wikies or blogs is time consuming and employees do not do it unless they feel they benefit from it. Employees need to be encouraged to share the information. Finnish company Trainers' House uses an incentive system based on productivity in social media platforms. On the other hand in Finnish telecommunication company Saunalahti, updating wiki is seen as a part of everyone's job. Employees are updating wiki because they feel it is part of their job and they can benefit from the active use of social media forums. (Ojala & Pöysti 2008.) Sharing is a key element of knowledge management and successful organizations create desire among their employees to share information and give rewards for knowledge creation and sharing (CEN 2004b).

Social media platforms may also provide useful in locating the person who knows, because after modifying information there will be a mark of the person who modified it. Because of the mark everyone can see who knows about this or that thing and contact with the right person. (Ojala & Pöysti 2008.) Knowing where the information can be found is essential (Juholin 2008b). There are good examples that social media can improve of knowing who knows. A US consulting firm MITRE uses a social community where all of its employees have their own page where is listed what they do and in which groups and projects they are part of. Social community has improved organizational communication and knowledge sharing in MITRE corporation. (Ojala & Pöysti 2008.) Finnish, globally operating, company Wärtsilä uses social media platforms effectively in their internal networking and knowledge sharing among the whole organization (Juholin 2010).

Obstacles exist for using social media in organizations. Some obstacles are traditional, like for example afraid of new things or change resistance. Social media is still relatively new to companies and management of the companies might not know what social media is and might be afraid of social media. Management might be afraid that they lose their control, if information sharing becomes easy for everyone in the organization. In order to be effective, management of the organization must support the use of social media. The security of the networks and afraid of information leaks might be issues that are mentioned when considering implementing social media. However, social

media's servers are behind organization's firewalls like any other part of the organization's network. Leaks of information might occur without social media as well; anyone can copy secret information to a zip drive or send emails to public or competitors. (Ojala & Pöysti 2008.)

Starting to use new technology overall and social media in particular should not be done just because it can be done (Juholin 2008b). There has to be a need for the new function (Ojala & Pöysti 2008). According to CEN (2004a) technology has to be viewed as an enabler and soft issues, like human and cultural aspects, will determine the success of new technologies. Information won't go online by itself; someone has to put the information online (Juholin 2008b). In order to bring any added value, people have to actually use social media forums (Ojala & Pöysti 2008). As Heisig (2009) states it, the critical success factors of knowledge management are the organization culture, people of the organization and the leadership.

According to O'Kane, Hargie and Tourish (2004) the technology itself does not solve any problems. New tools must work with the existing communication strategy. Technology offers just opportunities. According to Juholin (2006) communication technology offers the possibilities, but with every opportunity for a positive outcome there is also a chance for negative output as well. The output will be determined not by the technology, but how it is used (Gattiker 2001).

The decision to adopt is the prerequisite for the implementation of anything new (O'Kane et al. 2004). Flanagan (2000) found three elements that have positive influence on the adoption of new technologies in organizations': organizational features, perceived benefits and social pressure. Larger and younger firms with a higher level of technology already in use tend to adopt new things faster. The perceived benefits of increased and better communication need to be emphasized to employees. Social pressure that comes from the fear to be left behind from the development drives organizations towards new technologies.

Social media is not absolute value; social media forums are tools that can help people to work more efficiently. Because the motives to use the tools of social media are to make things faster, easier and to reduce a pointless job, then the use of social media tools has to be easy. Social media programs must be easy and fast to find and start. However, the most important challenge is to get people involved and to start producing information and communicating in social media. Management and superiors have to encourage people to use social media and at least at first it could be good to have some people whose responsibility is to produce contents. It is then easier for others to start produce contents in new forums when the beginning is already there. (Ojala & Pöysti 2008.) Reasons for the active use of social media in work are the possibility to learn, the obtaining of occupational advice, the increase of social capital and improved networking (Ojala & Pöysti 2008). Skerlavaj and Dimovski (2006) studied a software company and found out that a higher organizational

learning will produce a better performance of the company. Organizational learning needs participation and knowledge sharing among the organization.

“Information technology (IT) can draw people together or push people apart” (CEN 2004b). Matikainen (2008) states that the Internet can prevent the control of the management and employees’ identification towards the organization. Internet based work can reduce interaction between humans in organization if colleagues are sending emails instead of face-to-face meetings. Juholin (2008b) writes that communication with emails can lead to misunderstandings and mix-ups that could be avoided with face-to-face communication.

Huotari et al. (2005) write that computer supported collaborative work and distributed collaborative teamwork are very challenging work forms, because information sharing and creating new are very interactive processes. General understanding is that physical proximity improves interaction and the operation of the group and the use of communication technology is best among cohesive group (Kiesler & Cummings 2002). However, just the physical proximity does not make any group operate cohesive and collaborative way, interaction requires human actions and skills (Huotari et al. 2005). As stated by Heisig (2009), five critical factors for successful knowledge management are: human factors, organizational structures and processes, information technology and management processes. All of these five factors need to be in order to achieve adequate results for knowledge management.

## **2.7 Summary**

This chapter summarises the main findings of the previous chapters concerning of organizational environmental communication. The widely accepted fact among the researchers is that good environmental reputation of a company will benefit business and help make profit. It is also true that companies do not gain good environmental reputation, without effective external communication. Different stakeholders need to be informed what the company is doing. As several researchers (e.g. Mazzei 2010, Seeger 2004) point out effective organizational communication is the prerequisite for external communication, marketing and image building of the company. (see chapters 2.1 & 2.3.)

Information sharing, knowledge sharing and organizational communication are concepts that are closely related to each other’s, this is especially true in knowledge-based companies and among knowledge workers. Effective organizational communication is based on open information sharing and a low hierarchy in organization. Every employee has communication responsibility and everyone needs to understand it. Personal communication competence is crucial for the information flow of organization. Superiors have a special role in communication as they form a link between management and employees and have information that others do not. Management’s role in

communication is to lead a way and implement the strategy of the organization. (see chapter 2.5.)

Good communication requires constant dialogue and interaction (see chapter 2.5.2). Messages have to be understandable to everyone, which is especially true when the experts of different fields are communicating (see chapter 2.3.) Of course, information must be easily found so it can be communicated and utilized (see chapter 2.5.2).

Communication forums that bring people together and make communication easy and convenient are enablers for effective organizational communication. Technological tools, like social media, can make communication easier and more efficient. Communication forums and technological tools remove communication barriers and make information sharing possible for everyone. Forums that enable networking of different people inside the organization create effective communication channels. Communication technology can contribute for open communication as it enables the access for information to everyone at the same time and information is easy to share. (see chapter 2.6.)

Technology is important enabler for organizational communication but communication won't happen by itself. Communication might be open and hierarchy low in the organization but environmental communication might be lacking. This might be if employees do not know what is expected of them; what kind of information they are expected to produce and to communicate. The ability of company's management to communicate and implement strategy and vision so that everyone understands is crucial. Today information overload is common and people do not want to use time with information that is not relevant. If environmental information is considered relevant, then there is time to communicate it. (see chapters 2.5.2 & 2.6.2.)

### **3 THE METHODS OF THE STUDY**

In this chapter, the strategical choices of the research, the collection of the empirical data and the analyzing methods of the data are discussed. The purpose of this thesis is at first to identify the obstacles that are hindering organizational environmental communication in the case company. After identifying obstacles, this thesis tries to find solutions to improve environmental communication and knowledge sharing among the target group. This chapter describes how this study was conducted, what were the methods chosen for this research task.

#### **3.1 Research methods**

This chapter presents which are the research methods in this thesis and how the research data was obtained. Also, reasoning's behind methodological choices are discussed. The approach in this research is qualitative. In qualitative study, the starting point is to illustrate real-life phenomenon but also keep in mind that phenomenon can be viewed from different angles and perspectives. Qualitative study aims at comprehensive examination of the subject. Full objectivity is not possible in qualitative study. A researcher has some base assumptions and values that are impossible to put completely aside and they affect of how the researcher examines the subject. The aim of the qualitative study is to find or reveal facts instead of testing hypothesis. (Hirsjärvi, Remes & Rajavaara 2000.)

Absolute truth cannot be reached in human studies. Truths and believes compose in interactions between humans and truth is subject to change in time. (Hirsjärvi & Hurme 2009.) Juholin (2010) states that communication evaluation studies cannot find absolute truths. Results of the studies must be interpreted with the context of the given organization. In order to evaluate communication a research is needed. Communication research produces neutral and thorough information that is needed in the evaluation process.

According to Hargie and Tourish (2004) communication audit is an essential part of improving communication. A communication audit offers possibility for employees to express their opinions. Audit finds out what the real situation is, not what the situation is thought to be. According to Juholin (2008a) communication research can find out what is done wrong or what can be improved in organization. However, communication research can also find out what is done well and what best practises should be implemented in use throughout the organization.

Juholin (2010) states that the strategic targets for communication evaluation and improvements need to be set and they need to support the targets of the business operations. This thesis' strategic target is to improve organizational environmental communication by revealing its obstacles. Improved organizational environmental communication supports company's business operations in many ways as discussed in previous chapters.

When conducting a communication study, it is good to bear in mind that sometimes organizations might resist the study. Managers or employees might think that communication study is not needed. Managers might create difficulties regarding of the release of their staff into participation or think that study is just a waste of time and not show up to the meetings. One main reason for managerial resistance is that managers might be afraid of the results, that they are seen in a bad light. Resistance might carry on in to an implementing phase where research methodologies might be attacked, conclusions contested or implementing hampered. The researcher should recognise and prepare to address the possible problems. (Hargie & Tourish 2004.)

Hirsjärvi et al. (2000) list the typical features of qualitative research that can be applied in this study as well. The nature of the qualitative research is to comprehensively gather data from real-life situations. Qualitative study prefers humans as the tools of the data collection. The researcher trusts more to his/her own observations and conversations with the informants than to data obtained by measurement tools. Qualitative research uses inductive reasoning, which is based on research data instead of theories. The Researcher tries to discover unexpected issues and that is the reason why the starting point in qualitative research cannot be the testing of hypothesis or theory. What is going to be important cannot be dictated by the researcher. Qualitative study prefers methods where opinions of the informants can be heard, like theme interview for example. In qualitative study, target group or the interviewees are chosen with purpose, not by a random sample. Qualitative research treats every case as it is unique. Qualitative study is a good option if in-depth knowledge is preferred (Juholin 2010).

One of the basic methods in gathering research data is interview. When humans are targets of the research, interview is a viable option. Interview gives opportunity for the informants to actually tell their opinions. Interview is direct interaction between the informant and the interviewer. However, there are good and bad consequences that arise from direct interaction. The biggest benefit is the flexibility of the situation. Other benefits and reasons for choosing



interview as the research method are the opportunity for the informant to speak freely and perhaps even tell more than the researcher can anticipate. Interview gives opportunity for the researcher to ask clarifying questions or contact the informants afterwards if needed. (Hirsjärvi et al. 2000.)

It is natural for humans to have conversation with each other when the purpose is to ask opinions and collect information. Interview is a viable option to collect information because most people like that they are heard and that they can tell their opinions. (Hirsjärvi & Hurme 2009.) When researching organizational communication, interview enables more detailed exploring in humans' communication experience than a survey does (Hargie & Tourish 2004). Interview is a viable option in situations where previously unknown issues or new perspectives are looked for (Juholin 2010). This study aims to find new perspectives or new ways for organizational environmental communication. This is why it was important to let informants to actually tell their opinions about the subject matter.

Gathering data with interviews also contains some problems that are good to acknowledge. Interviews need to be planned carefully and a researcher must educate oneself for the role of the interviewer. In interview situation, language and terms contain a lot of possibilities for misunderstandings between participants. (Hirsjärvi & Hurme 2009.) According to Juholin (2006) it is important that questions of the study support the goals of the target group and organization. In this study, interview questions were formed in collaboration with the case company representatives in order to minimise misunderstandings and to make sure that the questions supported the goals of the case company. Preliminary interviews were used to test interview questions and themes. According to Hirsjärvi and Hurme (2009) interviewer should know the topic of the interview and guide the interview situation but not try to impress an informant with his/her knowledge. An interviewer should also memorise the interview format by heart.

Interviewees might feel interview situation threatening or even scary. That might affect how interviewees' answer or what kind of information they give. Sometimes interviewees might answer questions based on how they feel they should answer instead of how they actually want to answer. Interviewees might act differently in interview situation than they normally would. (Hirsjärvi et al. 2000.) Also Hargie and Tourish (2004,) underline the possibility of social acceptable answers in interview. In this thesis, interview situation was planned to be as relaxed and confidential as possible.

Conducting interviews requires a lot of time, from a researcher and as well from interviewees. Planning and arranging interviews could be time consuming as finding time for interview and arranging facilities might be difficult. Analysing the data from the interviews is time consuming and it is not possible to guarantee the same anonymous to informants', as is the case with quantitative questionnaires. (Hargie & Tourish 2004.) However, in quantitative questionnaires possible alternatives for answers are predetermined and rarely are the absolute correct ones (Hirsjärvi & Hurme 2009).

In this study, interviews lasted about one hour, so it required significantly more time from the interviewees. Because of many sources of errors, the results of qualitative research, and especially theme interview, should not be generalised too easily and too expansively (Hirsjärvi et al. 2000). After carefully considering the pros and cons of the interview as the data gathering method, theme interview was chosen for the research method in this thesis. Theme interview is best suited for this study, because it gives the opportunity to actually talk with the informants. Interview allows the possibility to find information that researcher cannot even imagine when he is planning the questions.

### **3.2 Data collection**

This chapter describes how research data was obtained and what was the timetable of the study. The forming of the themes and questions of the interviews are also discussed. This chapter also offers a short background of the informants. Too detailed background is unfortunately not possible due to confidentiality issues. The next chapter discusses about how the research data was analysed.

Theme interview or semi-structured interview is the data gathering method of this study. Typical for theme interview is that it has predetermined themes or subject matters but the exact questions might be modified or changed during the interview. Other type of interview is fully structured interview with predetermined questions, wording and order of the questions. Unstructured interview, with just a general topic that researcher is interested in, is the third kind of interview. (Robson 2002.) Interviews can be executed with individuals, pairs or groups (Hirsjärvi et al. 2000). The most common form of the interview is individual interview (Hirsjärvi & Hurme 2009). In this study, interviews were done with individuals in order to ensure confidential atmosphere during the interview and give room for informants to speak freely.

This thesis was started in November 2011 in meetings with the case company representatives where the scope of the thesis was decided. Literature review was conducted mainly in November and December of 2011 and in January 2012. Themes and questions for the interview were done based on the literature review and modified with the case company's representatives in late December and in January. Two test interviews were done in 3<sup>rd</sup> and in 17<sup>th</sup> February. Actual interviews were done between 14<sup>th</sup> and 29<sup>th</sup> March. Results of the study were presented to the case company in May 2012.

According to Hirsjärvi and Hurme (2009), even couple people can give valuable information for the study. In this thesis, twelve people were chosen to be interviewed in collaboration with the case company. Ten interviews were actually performed, including two test interviews. Interview was not possible with two of the chosen informants, because of time issues. From ten informants who were interviewed, two worked with the corporate responsibility issues, five were ICT engineers working mainly with the datacenters and three were

engineers from the facility management working also mainly with the datacenters. This thesis targeted engineers working with datacenters. Opinions of corporate responsibility personnel were regarded valuable and two people from corporate responsibility were invited to the interview. An invitation to participate in the interview was sent to informants by the contact people of the case company. This was done so that informants would know that this study has support from the case company. After the invitation was sent, the researcher contacted with the informants and made arrangements for the interviews.

Two preliminary interviews were performed in February 2012. The purpose of the preliminary interviews is to test the interview framework, the order of the questions and the design of the questions. Duration of the interviews comes also clear in preliminary interviews. After preliminary interviews, the interview framework can be modified. (Hirsjärvi & Hurme 2009.) Test interviews were performed with two contact people from the case company. After test interviews, some modifications to a theme interview framework were performed. Modifications were applied in the designing of the questions, in order to make questions more easily understandable. Also, some questions were removed from the interview and order of some questions was modified. Data of the test interviews was seen valuable for the research and was analysed and used in the same manner as actual interviews.

Some informants' spoke Finnish and some did not. If the informant spoke Finnish, then the interview was done in Finnish because that is the native language of the researcher. Interviews were done in native language of both participants if possible. In native language, conversation and interaction are easier, more genuine and can reach a deeper level. Interviews that could not be done in Finnish were done in English. English is not a native language for the informants, as it is not for the interviewer.

The language issue brought some extra work. Part of this research project was done simultaneously with two languages side-by-side. Interview questions and themes were done in Finnish and in English (see annex 1 & 2). Finnish interviews were analysed in Finnish and most important citations for this study were chosen. Finnish citations were then transcribed to English by certified translator and are used in chapter 4 results of the research. All of this can be seen as a source of possible errors in this thesis. Complications that arise from the fact that this thesis is written in English and part of the data was gathered in Finnish were given a big emphasis and precautions were performed. In the end, two different languages brought more work but it is not believed to have any substantial effects on the results and conclusions of this study.

According to Hirsjärvi and Hurme (2009) the phenomenon of the research and the terms that are used, shape up when exploring the previous literature of the subject matter. In this study themes of the interview were created based on the previous literature and the needs of the case company. As Juholin (2006) states, listening participants is essential when improving communication. In theme interview, questions should not be too detailed and there should be

room for all the different points of view that come up with each individual (Hirsjärvi & Hurme 2009).

In this thesis, the target of the interviews was to have informants to speak freely and tell more than what they were asked for. Interviews of this thesis build up around three themes: communications in general, the atmosphere towards environmental communication and environmental communication forums. First theme, communications in general, clarified an informant's current job, discussed about good communication tools, communication rights and responsibilities and information flow in the case company. Second theme, the atmosphere towards environmental communication, tackled management's, colleagues', supervisor's and personal attitudes toward environmental communication. An informant's image about the case company's environmental responsibility was discussed. An informant involvement with environmental matters in their work was also discussed. Third theme, environmental communication forums, clarified current forums for organizational environmental communication and possibility for new forums.

Themes contained total of 19 questions. Questions contained help questions that were asked if the interview needed guidance toward a right direction or more information was needed. Main question and possible help questions ensured that at first informant had possibility to tell what he/she had in mind and after that interviewer had the option to ask more detailed questions. In interviews, just stating the challenges and shortcomings of organizational environmental communication were not enough, because this study tries to find solutions to improve organizational environmental communication. How to develop organizational environmental communication was also discussed during the interviews.

With some informants, there was time to go through all of the questions and with some informants researcher had left some questions unasked. Unasked questions were chosen based on the interview situation and the assumption that the chosen question was the most irrelevant or it had been answered earlier in the interview. Before the interviews started, the researcher decided what were the most important questions that needed to be asked from everyone. With most of the informants, all of the questions were discussed and a maximum of one question was left out with the rest. Two of the informants asked to see the interview questions beforehand and questions were sent to them by email.

At the start of the interview, the researcher told about the research and the timetable, defined the concepts of organizational communication, environmental responsibility and environmental communication. Defining the concepts proved to be really important because everyone has different views of the concepts. The best location for the interview has minimal amount of distractions (Hirsjärvi & Hurme 2009). Six of the interviews were carried out in conference rooms in the case company's facilities with just the interviewer and the informant present. Three of the informants were not located in Finland at the time of the interview. One interview was done via videoconferencing and two with a phone conference. One of the two preliminary interviews was conducted using web meeting technology to ensure that technology was

suitable and performed as necessary. A recording of the interviews is seen essential (Hirsjärvi & Hurme 2009) and interviews of this thesis were recorded by using recording software of the computer and with a separate recorder to ensure that interviews were recorded.

### 3.3 Data analysis

This chapter explains how the data of the research was analysed and which analysing methods were used. According to Hirsjärvi and Hurme (2009) data from the interviews is best to transcribe and analyse as soon as possible after the interview is done, because the data is still fresh in researcher's mind. This was used as a guiding principle throughout the analysis period of this thesis. Interviews were transcribed and analysed as soon as it was possible. According to Hirsjärvi and Hurme (2009) there are many qualitative data analysing methods but there is not any correct one. It is important to realize that all qualitative analysing methods include some interpretation from the researcher. Reasoning can be abductive, which is based on testing theories. Inductive reasoning is based solely on research data. This thesis uses inductive reasoning without the purpose of testing any hypothesis or theories.

The analysing of the data usually begins already in the interview situation as researcher makes observations (Hirsjärvi & Hurme 2009). This was the case in this thesis as well. The researcher took notes and started to make observations during the interviews and so started the data analysing process. Interviews need to be transcribed and analysed after the interview. Data from the interviews can be transcribed and analysed straight from the recording device (Hirsjärvi & Hurme 2009), like it was done in this thesis. By analysing the data as soon as possible, it was ensured that all the communication, verbal and non-verbal, from the interview situation was fresh in researcher's mind. Interviews were listened again after some time to make sure that all the important matters were analysed.

When interviews are not transcribed word by word, the best analyser of the data is the interviewer, because he/she knows the data so good that he/she can recognise different themes and topics easily. The interviewer also knows when word by word transcribes are needed to write. (Hirsjärvi & Hurme 2009.) The sole analyser of the research data was the interviewer in this thesis. When word by word transcribes are not done, there is a risk that the wholeness of the interviews is at risk (Hirsjärvi & Hurme 2009). In this thesis, this risk was minimised by creating an analysing tool where informants were placed vertically and their answers horizontally. Horizontal line constructed from the answers of each informant. This way all the different interviews were in the same file and they were possible to further analyse by a whole interview at time or by each question at time. This method proved to be good because this way researcher could easily see what each individual had answered to the same question. Or, if necessary check easily what each interviewee had answered previous or following questions. Whole interviews were not transcribed word

by word in this thesis but all the citations that were considered relevant to this study were transcribed word by word. Some of the citations are used in the result part of this thesis, in chapter 4. Citations are in authentic form with the exception of some minor modifications to some citations that were done to protect interviewees' and case company's identity.

In qualitative data analysis, the goal is to condense the data so that interpretation can be done and a research task can be answered. A natural analysing method is to assort the research data according to themes or questions of the interview and look for answers to the research task. Assorting data by themes is a recommended analysing option when a research task is practical (Juholin 2010.), which is the case in this thesis. The aim of this thesis is to identify the obstacles that are hindering organizational environmental communication among the target group. After identifying obstacles, this thesis tries to present solutions for improving environmental communication and knowledge sharing among the target group.

From the research data, a researcher can look for repeated themes and phenomenon, subjects that occur together or a researcher can create different metaphors. (Hirsjärvi & Hurme 2009.) In this thesis, data from the interviews was first assorted into groups according to the themes and questions of the interviews. In the first phase of data assorting, there were 19 different groups that contained research data. According to Hirsjärvi and Hurme (2009) research data must be read many times in order to analyse it accordingly. When reading research data a researcher can take notice of different definitions, processes, regular behaviour, events, strategies and different networks that come up from the research data. In an analysing phase, a researcher tries to make synthesis, to create an overall picture and show researched phenomenon in a new perspective.

After the first assorting phase of the research data, repeated themes, phenomenon, subjects and improving ideas were searched and metaphors created. After the careful analysis of the data, four main themes rose up from the research data that are hindering organizational environmental communication among the target group. These four main obstacles are:

1. Lack of support from the management of the company
2. Energy efficiency is the driving force not environmental efficiency
3. Communication forums for environmental communication are lacking and finding of environmental information is difficult
4. Lack of environmental communication

These four themes are further discussed in next chapters. The researcher also looked for possible improving ideas that informants had and found several of them. Improving ideas are also discussed in following chapters 4 and 5.

## 4 RESULTS OF THE RESEARCH

This chapter presents the results of this thesis. The aim of this thesis is to identify the obstacles that are hindering organizational environmental communication among the target group. After identifying obstacles, this thesis tries to present solutions for improving environmental communication and knowledge sharing of the target group. Four main themes that are hindering organizational environmental communication were identified from the research data. These four main obstacles are:

1. Lack of support from the management of the company
2. Energy efficiency is the driving force not environmental efficiency
3. Communication forums for environmental communication are lacking and finding of environmental information is difficult
4. Lack of environmental communication

Of course, all these four obstacles are closely related to each other and improving one will improve others. If one of these aspects is insufficient, it has effects on others as well. Comprehensive improvements are needed. Four main obstacles to organizational environmental communication are discussed theme by theme in this chapter. According to Hirsjärvi et al. (2000) one of the main points in qualitative study is to let the interviewees tell their opinion and so interviewees' solutions for improvement are presented in this chapter as well. In chapter 4.5, the most important research results are presented in a form of a table. The conclusions of the thesis are discussed in conclusion part in chapter 5.

## 4.1 Lack of support from the management

### 4.1.1 Support from the management towards environmental issues

There seems to be very little or no verbal support from the case company's management towards environmental issues and matters in the company. If there is support, then the message is not heard of. Support from the management of the company is of course essential for organization's environmental work and communication. As Åberg (2002) states house cannot be build so that only the management has the drawings. Preceding applies to organization's strategy and communication as well. If employee does not know what is expected of her/him, then she/he will not be able to deliver it. Lack of environmental communication from the management is evident.

*Interviewee 2: "Well, I'm not even sure they (the company's management) have anything to communicate (about environmental issues)." ... "I guess they could say something."*

*Interviewee 5: "They don't often open their mouths about these (environmental) things." ... "In some blog postings they (environmental issues) may be briefly mentioned." ... "Has the (company's) management taken a stand on that (environmental issues)?" ... "I can't think of any message from the management that would have been focused on environmental issues."*

*Interviewee 8: "I don't think I get any direct message from them (the management) on environmental issues."*

Even though there is little or no direct message from the management interviewees think that in general management has a positive attitude towards environmental issues.

*Interviewee 4: "Overall I think it (environmental message from the management) is quite good."*

*Interviewee 9: "In general (management) do know about these (environmental) things." ... "(management) Be shown more often." ... "Get little more (support) from management (in environmental issues)."*

According to Åberg (2002) in the end top management bears the responsibility for the communication. Management needs to set the direction of the company (Juholin 2008b) and all the communication in the organization should point towards a common goal (Juholin 2006). According to Huotari (2005) organizational intention must be clear to all employees and management



has a key role in making that intention known. Management has to lead a way and show what kind of information is desired to communicate. Lack of environmental communication from the management has effect on interviewees work. It is difficult to act according to something that you do not know. Stronger commitment from the management is needed.

*Interviewee 4: "We (in case company) need to go top down (in environmental work)." ... "We need to have strong commitment from the management, this commitment needs to be communicated internally." ... "This (lack of environmental communication) cannot be solved with a communication tool as such, you need to have the commitment from management." ... "If no support from the management then it (improving environmental communication) is waste of time."*

*Interviewee 2: "The effect it has is that it's difficult to operate according to something that you're not aware of at all or, in practice, not possible... Impossible to operate."*

*Interviewee 7: "If the management expresses a very strong ambition regarding... say, energy efficiency, then we would strive towards it." ... "So it (the management's message) does count."*

Although there are different opinions too and not all of the interviews even expect environmental communication from the management. Some are fine with that there are environmental people in the company who make the noise about environmental issues.

*Interviewee 9: "Not too much (affect), where I sit... It's (environmental matters) one very vital part of my work." ... "Part of my daily work."*

*Interviewee 8: "Well, it (lack of management's communication about environmental issues) doesn't have any effect." ... "Would a statement from the management change anything?"*

#### **4.1.2 More and clearer communication from the management**

This chapter presents the improving ideas from the interviewees to the problem of management's lack of support towards environmental issues. Clear corporate environmental targets are lacking or at least they are not properly implemented in company. In a general level interviewees think that company is trying to reduce its energy and resource use. Communication happens in the language of money and energy efficiency. Communication from the management should be: "More clear." ... "More available (interviewee 9)."

Environmental targets would be welcomed among interviewees and targets would help environmental communication.

*Interviewee 4: "So corporate targets, settings." ... "Yes, I would love it."*

*Interviewee 9: "We can always do more (environmentally). We should not be happy with what we are doing... We should be proud of what we are doing but we should be leaning forward."*

*Interviewee 8: "Datacenters consume as much electricity as a number of towns. We can do some really big things there (in the datacenters)." ... "I'm kind of waiting for the next big thing (related to the environment) that you could, like, get again excited about – something not too obvious."*

Interviewees think that company needs to, and it has responsibility to act on its environmental impacts.

*Interviewee 9: "Environmentally we have a great responsibility (to act on environmental impacts). It is extremely important."*

*Interviewee 5: "(The case company) must have really huge interests in being one (a responsible company). It (responsibility) is a key question."*

*Interviewee 4: "There is a huge number of persons (in the case company) that feels that environmental issues are important and that (case company) should be a part of this work (environmental) but however it's not known what we are doing internally. This is a fact, sorry to say."*

Stakeholder groups are expecting companies to act on their environmental impacts (see e.g. Jose and Lee 2007). Juholin (2008b) writes that employees want to affect their work community's issues. Juholin (2006) states that doing is not enough. Results need to be communicated so that everyone knows what is done. As (Lehtinen 1998) points out environmental messages need to reach right people by using right communication channels and by a proper, understandable message.

*Interviewee 2: "I mean that it's possible that something (environmental communication) comes from there (the management), but it's not adopted." ... "I've sometimes heard some (environmental) targets, but nothing clear... no models, instructions or frameworks on what we are doing in that field."*

Interviewee 1 ponders that management does not have enough incentives to act in environmental matters because achieving environmental targets are not tied to their contracts: "Not enough, the management has no (financial) incentives."

An image about case company's environmental responsibility was constricted to its domestic operations. Interviewees do not know what is done environmentally in other parts of the company.

*Interviewee 9: "We (case company) should have global approach."*

## **4.2 Energy efficiency as the driving force**

### **4.2.1 The driver behind decision making process is energy efficiency**

This theme builds up on the fact that the main drivers in the case company are energy efficiency and money and so the communication happens in the language of cost efficiency. There is very little to not at all communication in the language of environment in the target group. Every one of the interviewees understands that he/she is dealing with environmental aspects in his/her work mainly through the enormous energy use of datacenters.

*Interviewee 9: "Environmental matters are very important in my work" ... "We are very interested in how we can be more green and use less energy."*

*Interviewee 6: "Of course, our biggest environmental impact by far is energy consumption."*

*Interviewee 3: "Datacenter planning in general; it involves a lot of talk about energy consumption."*

However environmental aspects come up almost entirely through energy efficiency and efficient use of resources. A determining driver is money and environmental aspects are a nice bonus that can be achieved through energy efficiency. Although, target group is aware that by being energy efficient company can save money and environment.

*Interviewee 3: "An extra benefit that we got (benefits to the environment)."*

*Interviewee 6: "It's a positive thing in the sense that when we protect the environment by reducing energy consumption, the company's costs are also reduced." ... "They (the environment and money) steer the operations in the same direction."*

*Interviewee 8: "Datacenters are big energy consumers." ... "One of our biggest goals is to make this much more cost-effective and, along with it, even more environmentally friendly."*

Even though, "Environmental communication is very important" (interviewee 9), work related environmental communication seems to be lacking or it is done in the language of energy efficiency, cost efficiency and money.

*Interviewee 6: "I haven't thought about it from that perspective; I mean that I have, of course, known that energy consumption means costs. So, of course, it's (energy consumption) always there."*

*Interviewee 7: "Well, it (environmental communication) isn't much. It's mainly a question about if it has an effect on the payback period of an investment (energy efficiency)."*

*Interviewee 8: "I'd say that it (environmental communication) is non-verbal. It has more to do with the agenda, the datacenters. Well, guests are offered china cups. That's it (environmental communication)."*

*Interviewee 2: "There's no such thing (environmental communication)." ... "I don't really communicate (about environmental issues). When we are buying equipment, we think about which devices are energy friendly, but that's all to do with the financial aspect. We can pay more for a server that consumes less energy, and it's naturally an environmental issue, but it's always about money. We don't think that this purchase allows us to save the environment but that it allows us to save this much money."*

*Interviewee 4: "We (case company) have a problem, because environmental issues are drowned in other flows of information."*

#### **4.2.2 From energy efficiency to sustainable development**

This chapter presents improving ideas from the interviewees. The main point is that the driving factor behind decisions has to be changed from energy efficiency to environmental friendliness. Money of course has to be one important driver but environmental issues could be taken into consideration as well. Changing employees' mindset would help in thinking more about environmental aspects.

*Interviewee 8: "Business operations are not only about being green."*

*Interviewee 2: "In our company, we haven't even stopped to think that, hey, wait a minute, we keep doing good (environmental) things, we just don't talk about it." ... "We (in the case company) just don't think about these (environmental) things."*

Some interviewees think that the case company will face major challenges in a near future and that it might have difficulties in answering those challenges unless it can adapt.

*Interviewee 2: "Greenness as such has become money." ... "It (environmental friendliness) will be a necessity, and it already is a competitive edge, which is something that this company doesn't necessarily understand yet." ... "We save in electricity but don't calculate what the environmental effects are and don't benefit from it within the company, let alone externally."*

*Interviewee 4: "(Case company) is an engineering company and engineer is normally a person that is very good at making things little bit more efficient every year, step by step but sometimes you need to make these... technology shifts... to think totally backwards and that is maybe not engineers best side... the problem is...we have number of internal systems... that we need to rethink the systems as such." ... "The customers, they are now increasing their demand regarding so called green-it solutions." ... "They (customers) want our help." ... "Our competitors, they will invest in new solutions and new technologies and they will act quicker."*

More training in environmental issues is needed. Environmental training should be integral part of normal, everyday training not some separate function. By being integral part of normal training programs employees would gain better understanding that environmental issues are not separate issues but part of day-to-day actions in their work.

*Interviewee 1: "They (the employees) should be trained more in this subject (environmental issues)."*

*Interviewee 2: "It (environmental issues) finds its way to people's awareness and then also to people's decisions." ... "It finds its way to big decisions surprisingly quickly, when people are made aware of it."*

The focus of company's environmental actions has been on everyone's personal everyday office actions, like the use of paper and recycling. By shifting the environmental actions towards core business operations, the company could save enormous amounts of energy and environment.

*Interviewee 3: "Like, how much we consume energy in reality, and how much we could save and by what kinds of measures." ... "So far the focus has been on our daily, kind of personal actions. Instead, we could think that, well, OK, how do I in my own job make choices that reduce the environmental load, and what other things we could focus on." ... "But if we in this way buy ourselves a good conscience, I think it's a bit like"*

*deceiving ourselves, when we've done all the easy things and then we neglect the most difficult things."*

There is not a common language that everybody understands at the moment. Some people are speaking kilowatts and some people use greenhouse gas emissions instead. Environmental issues should be talked as environmental issues, so that everyone could understand.

*Interviewee 2: "An understandable common language (must be created)." ... "Different departments don't always even talk about them (environmental issues) as environmental issues, although that's what they are, too. Or then they talk about them in a completely different language, and there's no one to interpret."*

### **4.3 Lack of environmental communication forums**

#### **4.3.1 Environmental communication forums at present**

There are not many organizational environmental communication forums in the case company for employees to share their knowledge. Lack of communication forums is a broader problem that concerns all of the organizational communication in the case company. Technological tools are not used as efficient as they could in organizational communication. One main problem in the case company is that if person wants' to find information, how he/she knows where to look for it.

*Interviewee 3: "The biggest issue is how the people know where to look for the information."*

*Interviewee 2: "Now we don't know what (information related to the environment) we are distributing, how we are distributing it, where we are distributing it and to whom we are distributing it."*

Everyone of the interviewees thinks that all bare the right and the responsibility for communication and information sharing in work place, as stated here by interviewee 4: "The responsibility for communication laid on us all" and interviewee 9: "I think everybody has information sharing responsibility." Interviewees think that everyone might have information that others do not and not all the people know what others are doing. Communication is a part of everyone's normal work, as said by interviewee 5: "It (communication) is part of the normal work."

Email and phone calls are the most common and mostly used communication tools for work related communication. Some good aspects of email are that it won't bind user to any timetables. Emails can be read when ever it is suitable for users and email works as an archive so that users can

arrange mails to different folders and then emails are easy to find. Also the traceability of emails is seen as a good thing. In his study Johri (2011) found out the same kind of pros in email and Matikainen (2008) states that email is a good tool for operative communication.

*Interviewee 2: "Well, email... and phone, of course (as tools for communication)."*

*Interviewee 3: "Well, email works of course in this kind of normal communication."*

*Interviewee 5: "Email is number one (communication tool)."*

Some problems with emails and phone calls came up in interviews. Sometimes there is no opportunity or time to call back on a missed phone call. Oversized distribution lists in emails can lead to the fact that no one pays any attention to that certain email.

*Interviewee 6: "Oversized distribution lists, which lead to it that when everybody sees that there are 15 names on the list, nobody pays any attention to it. It's a cultural question and has nothing to do with the tool (email) itself."*

Otala and Pöysti (2008) and Juholin (2008b) found problems of a same kind in using of email but they state that email as a tool bares some responsibility too. Email is not always the best forum, especially when communicating in groups and with attachments files. Network drives are seen as good communication forums for different projects because that is how old-fashioned, oversized email distribution lists and attachment files in emails can be avoided. Network drives are mean to keep back and forth email movements in check. Otala and Pöysti (2008) state that email was not designed to be a medium for group works.

Although phone calls and emails are the most commonly used communication forums, face-to-face meetings are seen as the best forum for communication and information sharing. Physical meetings are not always possible due to the facts that people work in different locations and because of time issues.

*Interviewee 4: "The physical meeting is always the best one (for communication)"*

*Interviewee 8: "Nothing has ever convinced me to stop thinking that it (physical meetings) is, however, the best way to communicate."*

*Interviewee 3: "Nowadays it's difficult to find room for events (meetings) in the calendar."*

Best practises from other parts of the company are confronted only in meetings or incidentally. Different kinds of intraorganizational forums are mentioned as good places to share and obtain knowledge.

*Interviewee 2: "I don't come across with good practices or what others do well or what I could apply myself except in meetings or in passing."*

*Interviewee 3: "I'm a member of many kinds of forums and get messages from them, so I know what people are doing elsewhere."*

Company's intranet is seen as one of the most important communication forums among interviewees. Some interviewees mentioned that there are useful procedures, standards and instructions in intranet that help in everyday work. In the target group, intranet is the place where information from other parts of the company can be found.

*Interviewee 9: "The intranet is the force for all of our information." ... "The intranet, that's the source to store almost anything."*

*Interviewee 3: "Intranet also seems to be working, so the message gets around through it, too."*

However in intranet, information overload and lack of time to read and search information are issues. Intranet is seen confusing and people do not have time to search and read information from the intranet.

*Interviewee 9: "Everybody knows you can find it (information) on the web, but you have to have easy way to find things."*

*Interviewee 6: "The intranet is a bit vague." ... "I myself don't read it (the intranet)."*

*Interviewee 2: "You must go and look (for information), and to be honest, people don't have time for this when working." ... "People don't start looking for information in the intranet archives, as there's a massive amount of information there."*

According to Seeck & Parzefall (2008) 68 percent of the ICT-sector employees think that they need to hurry in order to do their job and CEN (2004) lists personal time management as one of the key issues in knowledge sharing. Among many others Juholin (2008b) states that the lack of time is a huge problem in knowledge-based companies.

Intranet is more of a news channel or forum where general company related information can be found. More specific information that is related to everyone's work is not found on the intranet. Work related information is



gathered mainly from personal networks around the company. Right people just have to be known around the company.

*Interviewee 4: "95 percent of the most information collection I receive is mainly due to networking." ... "Quite good internal network of persons knowing me." ... "It (information) normally finds its way to me."*

The normal pattern of finding information is to find a person who knows, or might know the desired information. Searching of these people who might have the desired information usually happens via phone calls or emails. Sometimes finding a person who knows seems to be challenging and might require several phone calls to different people. It seems that when information is needed, interviewees start looking for a person who has the information instead of trying to find the actual information. Things also personify too much in the case company and information can be easily lost if person leaves the company.

*Interviewee 8: "Of course it's sometimes hard to find these people."*

*Interviewee 6: "Not many things require more than 4 calls." ... "You can find the (right) person in half an hour."*

*Interviewee 6: "Things shouldn't be personified in a company of this size." ... "Then it doesn't take more than a car crash (for the information to be lost)."*

Information seems to be poorly documented at the moment and finding of information is not easy. Lack of time is one big reason for the lack of documentation. Lack of possibility, or forums to document information also hinders the documentation of information.

*Interviewee 9: "You try to store things in a way that is achievable (for others)." ... "So people can reach it (information)." ... "Probably it doesn't reach out too far." ... "So more can be done. At least I could do a lot more in storing information and spreading information." ... "Is there any time left for documentation." ... "Lack of time and possibility." ... "Understanding what others may be interested in." ... "We (humans) give up if we don't find it (information) easily."*

If one does not know the person with the desired knowledge, then company's internal address book is used to locate people with information. Some aspects of the address book seem to be good, like organizational structure in the address book. The problem however is that to get started user must know a name of some person who might be able to guide forward. Collaborative, social media applications and systems are not widely used among the target group.

*Interviewee 3: "We don't use any social media, for example, within the company or for internal communications."*

*Interviewee 5: "It (the use of social media for solving problems) is pretty much in its infancy."*

However there are some discordances because some interviewees use internal wikipedia or blogs as communication forums. Some interviewees think that Wikipedia is good for knowledge and information sharing in home environment but not in work. Some think that social media is not suitable for work related communication at all.

*Interviewee 6: "All these social media and the like definitely don't work in business matters."*

*Interviewee 3: "I wonder if people have the time to read them (blogs)."..."I guess someone reads them (blogs), because when I had written one, many people came to comment on it."*

The internal information flow is not good enough and not all desired information finds its way into a right person at the moment. The availability of the information from other parts of the company is relatively poor and people do not know very well what others are doing.

*Interviewee 8: "Not even all the essential and important things get through."*

*Interviewee 2: "It's very difficult to get it (information from other parts of the company)."..."It's possible that people sit in adjacent rooms but know nothing about each other's work – let alone about what people are doing in other countries or other departments. So it (getting information) is really difficult."*

Juholin (2006) states that doing is not enough. Results need to be communicated so that everyone knows what is done. As (Lehtinen 1998) points out environmental messages need to reach right people by using right communication channels and by a proper, understandable message.

Collecting and reporting environmental information is time consuming and there are concerns that not all the information used that is collected. Erlandsson and Tillman (2009) write about collecting environmental information, its challenges and benefits. Collecting environmental information is time consuming and sometimes difficult but it has to be done. Words need to be backed up by actions and to prove those actions relevant information is needed. There are some concerns that not all the knowledge and information are shared because of the lack of communication competence among employees.

*Interviewee 4: "The fact is that (case company) is engineering company and has been for decades." ... "We have, I would say, the world leading experts in many fields in (case company) and I am sorry to say this information is not known within the organisation on a broader sense." ... "And the problem with experts, often also named as engineers is that they are not able to communicate."*

It is widely accepted among researchers (see e.g. Juholin 2008b, Huotari et al 2005) that the personal networking and communication competence of the employees are key factors in effective organizational communication. Halme and Markkanen (1998) express also concerns that typical Finnish engineering thinking is to let facts to speak from themselves and that the communication competencies might be one aspect that engineers in general could improve.

Environmental communication is not very well coordinated in the case company. Environmental solutions are not shared with different groups and units of the company. Ideas, even good ones, are not refined and processed with different layers of the company. Every unit addresses environmental targets by their selves, not in collaboration with others.

*Interviewee 2: "But we don't go from floor to floor. Our team keeps its own environmental solutions to itself, and great solutions are not refined or applied." ... "We don't look at the entire pipe." ... "We don't look at how it (the environmental solution) affects others and how it could be refined." ... "Different units deal with the environmental targets by themselves."*

*Interviewee 1: "(Environmental) things are not talked about in a sufficiently coordinated manner." ... "People don't really know how to tell about it or how to combine things at the Group level."*

Juholin (2008b) points out that new ideas are born in interaction and collaboration with colleagues. Ojala and Pöysti (2008) state that ideas from all over the organization are needed and new innovations might come from any level of the organization. Without the interaction, collaboration and exchange of thoughts, there will be no new innovations (Juholin 2008b).

#### **4.3.2 More communication forums and easier access to information**

This chapter presents the improving ideas of the interviewees. More opportunities for sharing the information are hoped for and better tools for finding the information are needed. Meetings were seen as the best communication forum so it is not a surprise that meetings got a lot of support as forums for share environmental information or information in general. Information sharing events for smaller groups in the forms of physical meetings, web-based seminars (webinar) or workshops are seen effective.

*Interviewee 3: "Info meetings for smaller groups, and so on, would also work quite well (for distributing information)."*

If physical meetings are not possible, then virtual tools such as videoconferences, phone conferences and webinars are seen as good ways to share information, as they do not require travelling or physical presence at a certain place at certain time. In his study Sobnosky (2001) found out that the use of technology could be effective when face-to-face meetings are not possible.

There have been R&D projects where environmental representatives of the case company have been a part since the beginning. This was regarded as a good way of making sure that environmental aspects are taken care of. According to interviewees, different units and groups could use their own environmental representatives to make sure that environmental aspects are considered. More opportunities to people from different sections of the company to come together and share the environmental information and best practises are seen as good opportunities for environmental communication. The environmental representative position should be official and have strong support from the management and supervisors in order to succeed. There have been intraorganizational forums or groups for sharing environmental information in the case company and those who have participated in these groups think that they are good forums. Environmental issues could be one topic in every project.

*Interviewee 2: "It (persons responsible for environmental issues) doesn't have to mean that the company thinks that it has to recruit 100 new employees... but as a single job."... "It's not necessary to take 400 people in a big auditorium to shout, but certain people from different departments could gather together to think about it. This would give ideas, as departments have no idea of what other departments do."*

*Interviewee 7: "I don't know at what stage environmental issues become so important that they are highlighted in the same way as, for instance, occupational safety and health."... "If it (the environment) is prioritized so high that it has to be discussed in each meeting, then it will at least have a certain weight."*

*Interviewee 2: "The environmental impact of the project should be automatically taken into account by the steering groups of building projects."... "And what the environmental perspective of these technical solutions is."*

Company wide, social media groups or networks that would allow conversation and information sharing about corporate responsibility were hoped for. Also, clear paths for different units environmental contributions are

lacking at the moment. Although some see that secret information is an obstacle to the use of social media as communication forum in the case company.

*Interviewee 9: "You may also have to have some kind of communication forum for environmental responsibility."*

Intranet must be easy functioning, understandable, easy to manage and an easy place to find information. Constant development and updating of intranet are thought as essentials. Lack of time and information overload are issues with intranet. It would be better if the information would come to people instead of the need to search it. An environmental newsletter by email is seen as a good option. Too much and irrelevant information in intranet is a problem too. Communication needs to be short and compact.

*Interviewee 9: "You're never really finished with your intranet..." "Thing is not to do it too (difficult)... well (it has to be) easy to use (intranet)."*

*Interviewee 5: "If there's an environment tab on the intranet, it's not often you just happen to go there."..." "If it (the information) came as a newsletter."*

*Interviewee 8: "Short, apt, sharp and clearly formulated (communication)."*

More information on what people actually do is hoped on the internal address book, or internal facebook as some call it. The units and titles of the people in the address book do not necessarily tell much to others. More search terms and features from social media are missed among some interviewees.

*Interviewee 8: "The units and titles (in the address book) don't tell much any way."*

*Interviewee 6: "The unit is often a 28 characters long abbreviation, and the job title is another one (in the address book). They don't really tell anything."*

*Interviewee 8: "Could there be something in Facebook that could be utilized?"*

## 4.4 Lack of environmental communication

### 4.4.1 Environmental communication at present

Lack of environmental communication in the case company stems from the previous themes and naturally environmental communication increases when other areas of need are addressed. However, lack of environmental communication can be seen as a reason and a consequence. An increase number of environmental communication would make it clear that environmental matters and communication are valued in the company.

The general office related organizational environmental communication and campaigns have been noticed. Like for example campaigns to give up the paper cups, recycling wastes and switching lights off have been noticed and interviewees think these campaigns have been carried out good.

*Interviewee 3: "It (organizational environmental communication) can be seen to some degree." ... "You get a positive feeling from it (internal environmental communication)."*

*Interviewee 8: "In a certain way it (organizational environmental communication) even exceeds the threshold of interest."*

*Interviewee 6: "We hope that there should be more of it (internal environmental communication). It (environmental friendliness) is something that we want to be good at."*

However, the problem in organizational environmental communication is, that organizational environmental communication in the case company seems to be focused pretty solely on employees' personal everyday office behaviours. According to interviewees, these things of course need to be done but organizational environmental communication focusing more to a core business side, like the datacenters, of the case company is however missing.

*Interviewee 3: "They (environmental issues related to one's own work) must naturally also be done."*

Other problem is that external environmental communication is lacking according to interviewees consensus opinion. The case company has been environmentally friendly with its datacenters' cooling systems even before there was any talk about green-it but forget to communicate that to stakeholders. More external environmental communication and marketing is needed according to interviewees.

*Interviewee 2: "Well, it (external environmental communication) should be conducted." ... "There must be external (environmental) communication."*

*Interviewee 5: "I've seen terribly little of the external one (environmental communication). I haven't seen any articles about environmental issues. I haven't seen that we would advertise anywhere that (the case company) takes care of it (the environment)." ... "There should be much more external communication about these environmental impacts."*

*Interviewee 3: "We've been environmentally friendly in datacenters cooling a long time before anybody talked about any green IT. There could be even more communication." ... "Many others (competitors) have made a much bigger number of it (environmental friendliness) than we (the case company)." ... "In external communication, we (the case company) could emphasize more how environmentally friendly we are."*

As Seeger (2004) states failures in organizational communication can lead to failures in external communication and as Mazzei (2010) writes that without effective organizational communication there is no such a thing than effective external communication. External and internal communications are so closely bounded to each other that there cannot be one without the other. According to Juholin (2008b) all the communication that organization does should point in to one, desired direction and everyone should know that direction.

#### **4.4.2 Better use of environmental information in communication**

This chapter presents the ideas of the interviewees of what could be done better in environmental communication of the case company. Organizational environmental communication should be concrete and understandable. The environmental message could be better utilized in the external communications of the case company. Measuring and publishing results, for example individuals or teams paper usage is concrete. Some small rewards could activate people to act. Environmental information should be understandable and in plain language. Also, more communication from the core business side is wanted.

*Interviewee 5: "We should pay attention to these daily (environmental) issues, so that we could measure them and publish (the results)." ... "If I print 40,000 and you print 1,000, you start to wonder for what I waste the paper and if I need it." ... "It's possible to tackle the personal level (when there are measurements whose results are published)." ... "When you do this and that, we can save so much (the environment)."*

*"It (environmental communication) can be understood, when the message is concrete. Then there are all kinds of certificates and similar*

stories."..."When someone higher (executive) writes on the intranet that (the case company) has got a quality certificate...because it has followed some procedure, the staff don't understand anything."

*Interviewee 6: "They (environmental communication) include a bit too many individual actions. Maybe the starting point could be that using ICT saves the environment. That kind of message has not really been communicated."*

Interviewees would like to see more concrete examples of what has been done environmentally in the company. Without concrete examples, environmental values feel more or less rhetorical. Also, continuing environmental work is seen as an important thing in the company.

*Interviewee 6: "The environmental aspect is to a great extent such hype that it must be in a terribly good condition, but then it kind of remains like... empty words. The company could perhaps add something concrete to it (the environmental aspect)."*

*Interviewee 8: "Show case - what has been done and what more could be done (in environmental issues)."*

The environmental message is not carried out in external communication as it could be. An environmental message could be implemented in company's every product and service as they save time, money and the environment. According to interviewees, ICT-sector has a great opportunity to help other industries to save their emissions and that should be communicated better.

*Interviewee 6: "The company doesn't know how to give a positive (environmental) message."..."It (ICT) saves time, it saves money, and it also saves the environment."*

*Interviewee 5: "It (environmental friendliness) should be included in the products, so that when you use this (product), you save this (the environment)"..."There'd be a small environmental impact in each product, and we'd tell about it."..."The best thing would be if it (environmental friendliness) were mentioned in the products."*

*Interviewee 5: "Using (ICT) means saving nature. We (the case company) have the opportunity; we (ICT-sector) have, in a way, the best opportunity."..."I think (the case company) has a very good opportunity to include this environmental impact in all of its operations."*



One example for an advertising campaign is to give something back to the environment for all the natural resources that company uses. A small portion of company's sales could be contributed to some environmental organization:

*Interviewee 5: "Like giving some natural resources back. Since we use all of them (natural resources), we can also give them (back). That we really give something back (to the environment)."*

Environmental communication has to be based on facts according to interviewees. Juholin (2004) and Ratinen and Markkanen (1998) state that words need to be backed up by actions and to prove those actions facts based communication is essential.

## 4.5 Overview of the research results

In this chapter an overview of the research results is presented (table 2). From the table, a problem, a solution and a desired outcome resulting from the solution can be seen.

TABLE 2 Overview of the research results

<b>Problem</b>	<b>Development proposals</b>	<b>Outcome</b>
Lack of support from the management	More and clearer communication from the management <ul style="list-style-type: none"> <li>• Environmental targets and goals</li> <li>• Program to achieve goals</li> <li>• Incentives for management</li> <li>• Board for sustainable development (senior management)</li> <li>• External advisory board for sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>• Signal that environmental issues are a priority to the company</li> <li>• Prioritization of time: more time for environmental issues in work</li> <li>• Better coordination of environmental work in the company</li> </ul>
Energy efficiency is the driving force not environmental efficiency	From energy efficiency to sustainable development <ul style="list-style-type: none"> <li>• Campaigns for raising environmental awareness</li> <li>• Environmental issues into unit specific trainings</li> <li>• Incentives from innovations</li> <li>• Environmental issues into orientation of new employees</li> </ul>	<ul style="list-style-type: none"> <li>• Common language in the company</li> <li>• Communication understandable to everyone</li> <li>• Environment to integral part of the work</li> <li>• Right mindset</li> <li>• Environmental innovations</li> </ul>
Communication forums for environmental communication are lacking and finding of environmental information is difficult	More communication forums and easier access to information <ul style="list-style-type: none"> <li>• Environmental representatives into every unit and project</li> <li>• Regular meetings of environmental representatives</li> <li>• Information online and incentives to share information</li> <li>• Interactive online communication forum</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental issues to someone's responsibility</li> <li>• Improved information flow and reduced number of emails</li> <li>• Easier access to information</li> <li>• Improved networking</li> <li>• Finding of people and knowledge easier</li> <li>• More time to do actual work</li> </ul>
Lack of environmental communication	Better use of environmental information in communication <ul style="list-style-type: none"> <li>• Focus of organizational communication into core business</li> <li>• More external communication</li> <li>• Examples of what has been done and what is done next</li> <li>• Environmental message as part of the products and services, ICT-sector can help other industries</li> </ul>	<ul style="list-style-type: none"> <li>• Signal that environmental communication is valued</li> <li>• Opportunity to see the results of the work</li> <li>• Better image of the company</li> </ul>

## 5 CONCLUSIONS AND DISCUSSION

The aim of this thesis is to identify the obstacles that are hindering organizational environmental communication in the case company. After identifying obstacles, this thesis tries to present solutions for improving environmental communication and knowledge sharing among the target group. In this chapter, the most important findings of the research are discussed and compared with previous studies and literature. Development proposals that are based on previous literature, the benchmarking of other ICT-companies and results of this thesis are discussed. As Ramus (2002) states good environmental innovations can be borrowed from other companies. In the end, evaluation of the study and potential future research topics are discussed.

### 5.1 Summary of the research results

Four main themes that are hindering organizational environmental communication in the case company were identified from the research data. These four main obstacles are:

1. Lack of support from the management of the company
2. Energy efficiency is the driving force not environmental efficiency
3. Communication forums for environmental communication are lacking and finding of environmental information is difficult
4. Lack of environmental communication

In his study Sobnosky (2001) found that components for organizational environmental communication are: communication pathways, communication content and communication tools. All these components need to be improved in the case company. Communication pathways are not there for environmental communication. The content of the communication is solely about energy efficiency not environmental issues and communication tools are not used as

effectively as they could be in the case company.

Erlandsson and Tillman (2009) studied the use of environmental information in organizations. They found out several possible barriers for the use of environmental information: the weak market drivers, insufficient stakeholder involvement, insufficient coordination of information, the availability of the information and the management of information can be too costly and time consuming. This study found out similar barriers. Coordination of environmental information, the availability of information and lack of time are barriers underlined in the results of this thesis.

Lack of support from the management in environmental issues is evident. With better, clearer and more concrete support from the management environmental issues could have more centralized role in the company. This study found little or not at all environmental messages coming from the management. In general, management of the company are thought to have a positive attitude towards environmental issues but they do not communicate it at all. Stronger and more visible support from the management is needed.

Although some of the interviewees say that lack of a statement from the management does not affect of how they do their job, most think that it has effect. It is difficult to consider environmental issues in personal work, if there is no guidance from the management that environmental matters are worth doing. Some of the interviewees underline that if management gives a strong indication that something should be done in the company then it is done. The job of management is to lead the way (Juholin 2006). Juholin (2008b) states that employees need to know what is expected of them. He/she needs to know what kind of information is important for the organization and should be communicated. As Mantere (2008) points out the ability of the management to implement strategy so that everyone can understand what needs to be done is essential. Porter (1996) states that strategy's basic function is to guide employees in their day-to-day activities. This study supports these findings. Interviewees expect that environmental issues should be implemented so that environmental matters could be taken account in daily activities and decisions.

Results of this thesis show that the main driver in decision-making is energy efficiency. The consequence from that is that the spoken language is always energy efficiency and cost efficiency instead of environmental efficiency. In fact, it seems that environmental issues are not discussed or thought as environmental issues at all among the target group. Although everyone understands that energy efficiency issues are environmental issues. It is widely accepted fact among the interviewees that energy efficiency and environmental friendliness are pulling things in the same direction but everything is always thought and discussed as energy efficiency issues. Pure environmental communication seems to be non-existent. Juholin (2006) states that when communicating environmental issues the message needs to be understandable to everyone and currently in the case company it is not.

The best communication forum is a physical meeting and when physical meetings are not possible then video meetings are a good option according to interviewees. Mostly used communication tools for organizational communication are email and phone. Johri's (2011) study shows that despite its flaws email is the backbone of communication in most of the present-day organizations'. Although in general email was considered as very good communication forum some flaws were obvious. Oversized distribution lists and big attachment files are seen as a problem. Ojala and Pöysti (2008) and Juholin (2008b) found out problems of a same kind.

Social media tools are not widely used for organizational communication in the case company. The lack of communication forums that would enable interactive collaboration is a thing that hinders organizational communication in the case company. Information and knowledge are not shared as effectively as they could be. Mazzei (2010) writes that interactive communication tools encourage people to active communication. This fact has not been utilized in the case company, as very few interactive communication forums exist. Coordination of environmental information and refining ideas into innovations are problems at the moment in which collaborative communication tools could help.

According to Zorn and Taylor (2004) key question in knowledge sharing is: where is the knowledge. Results of this study show the same. People do not know where they can find the information they need. For example knowledge can be with individuals or in written texts (Zorn & Taylor 2004). A finding of individuals who know and finding of information in written texts are both problems in the case company. Information does not exist in written texts and a way to find a person who might know is to start calling around the organization. An internal address book is used to find people but it could be a lot better platform if it would be upgraded to meet the present-day possibilities.

The results of this study show that good forums for information sharing are meetings. A sharing of environmental information in groups that are concentrated on environmental issues and have participants all over the organization are seen as good. Projects in which environmental representatives have taken part since the beginning are seen successful. Environmental issues could be lifted in a more high-profile state in organization's projects.

The results of this study show that personal networking is the best way to obtain work related information. Personal networks are responsible for most of the work related information sharing in the case company. In general, internal flow of information could be better. Huotari et al. (2005) write that intraorganizational and interorganizational networking for the purpose of gaining more information is typical for the employees of knowledge-based companies. Networks of experts from different parts of the company are essential for the knowledge sharing. Also Juholin (2008b) and Lehtonen (2000) write about the importance of networking among knowledge workers.

Intranet is important communication forum where general information is shared in the case company. However, information overload hinders the use of the intranet. Employees have difficulties in keeping track of all the information that is out there. Information should be easy to find and easy to access. Intranet is seen too difficult place to look for information at its current form. Information should some way come to employees but at the same time there is not enough time to read or process the information that is already available. Lack of time to share environmental information is a problem. According to Ojala and Pöysti (2008) keeping track and sharing of all relevant information might be even impossible. According to CEN (2004a) person's ability to recognize what is important and should be allocated time is an important factor in knowledge sharing.

Knowledge work cannot be done without the ability to communicate (Juholin 2008b). Results of this study show that communication competencies of the employees could be improved. Expression of subjects, networks and connections, use of communication tools and communication strategies are four communication skills according to Juholin (2008b). This study shows that at least three of those skills could be upgraded. Expression of subjects is not done in environmental language. Use of communication tools is restricted to email and phone and communication strategies are not updated for the 21<sup>st</sup> century.

Use of social media as communication forum gets mixed reactions. Some think that it is good and should be used more in organization and some people do not see how social media could contribute at all. Social media is seen as too risky, because of all the secret information and in general just not suitable for work related communication. Ojala and Pöysti (2008) write that change resistance and afraid of new things is normal in the case of social media since it is relatively new communication forum. However, social media servers are behind organization's firewalls so secret information wont leak because of social media.

Environmental communication concentrating on the personal use of office supplies, like paper use and saving of energy is good and has been noticed. Organizational environmental communication focusing in the core business of the case company is missing. The concrete examples of what have been done environmentally in business wise are hoped. Also, external environmental communication seems to be non-existent according to target group. External environmental communication will of course increase when organizational environmental communication increases. If employees would recognize external environmental communication, it would make it known that environmental information is something that is desired in the company. Interviewees say that external environmental communication should be done better. ProCom's (2011) survey shows that only 19 percent of Finnish communication professionals are satisfied with their organization's corporate responsibility communication.

According to interviewees, case company has an opportunity to better utilize its environmental friendliness in external communications. Case company's ability to help other companies to reduce their impacts on the environment should be communicated better. Juholin (2006) writes that the goal of the environmental communication is that organization is known for the right reasons. Niskala et al. (2009) states that if company does not tell that they do a good job in their corporate responsibility no one will know it. According to Juholin (2006) companies should integrate corporate responsibility into all of their communication. The environmental competitiveness of the organization won't form without communication.

In short, organizational environmental communication does not exist among the target group because there is no opportunity for it to exist. There is neither a time nor a place for environmental communication. Employees know about environmental issues and attitudes are positive towards environmental matters. The problem is that no one knows what is done environmentally in the company and therefore no one knows that it should be communicated if something is done. Further, no one knows whether something should be done because no one knows what is being done in the company.

## **5.2 Improving of the organizational environmental communication of the case company**

The aim of this thesis is to identify the obstacles that are hindering organizational environmental communication in the case company. After identifying obstacles, this thesis tries to present solutions for improving environmental communication and knowledge sharing among the target group. This chapter offers solutions that could improve the organizational environmental communication among the target group. The target group of this thesis consists of ICT-engineers of the case company. Solutions are based on theory, the benchmarking of other ICT-companies and the results of this study.

Four main themes that are hindering organizational environmental communication in the case company were identified from the research data. These four main themes are:

1. Lack of support from the management of the company
2. Energy efficiency is the driving force not environmental efficiency
3. Communication forums for environmental communication are lacking and finding of environmental information is difficult
4. Lack of environmental communication

Improving ideas are presented in this chapter: more and clearer communication from the management, change of the main driver from energy efficiency to sustainable development, more environmental communication forums and easier access to the information and better use of environmental

information in communication would benefit the organizational environmental communication among the target group.

### **5.2.1 More and clearer communication from the management**

Lack of support from the management can be seen as the root cause for the lack of environmental communication among the target group. Other three main obstacles would benefit greatly if the management of the company would give clearer guidance or signal that environmental communication is a priority in the company. Although producing environmentally friendly services and products is stated in the case company's strategy, it seems that strategy has not been properly implemented. As Ilmola (1998) writes environmental competitiveness has to be a strategic choice and it has to affect everything that organization does.

If management would make it better known that environmental communication and information are valued in the company, then there would suddenly be more time for environmental communication. British Telecom's (BT) (2011) chairman has made a video message to every employee of the company explaining why he believes sustainability is key to the business growth and future success of the company. That kind of clear statement from the management could work in the case company as well. One lonely statement could be just a waste of time but systematic work and regular environmental communication from the management could make a difference. Juholin (2008b) states that there is always time to what is considered important. Environmental communication, like everything else in life, is a matter of priorities not lack of time. Interviewees said that they do not have time to do everything and the researcher does not argue with that but if environmental issues were given a higher priority, then there would be more time for them.

Clearly communicated corporate environmental targets and goals supported by well-implemented environmental strategy would be a clear signal that environmental issues are important priority to the company. Management should take a visible role in launching and implementing environmental targets and strategy. Implementing environmental targets should not be left just for the environmental managers. The message has to come from the top. The results of this study show that environmental targets and strategy for achieving the goals would be welcomed among the target group. Ramus (2002) states that environmental policies and supervisors have a key role in company's environmental actions and Juholin (2004) underlines the role of top management. So implementing environmental strategy from top to bottom is a must in the case company.

Incentives for environmental improvements in the contracts of the management would surely motivate directors to actions. If communicated openly to employees, an incentive system based on environmental actions would send a signal that environmental issues are a priority in the company.



Some of the ICT-sector companies (see e.g. Cisco 2011, BT 2011, Sprint 2010) have committees, groups and boards for sustainable development whose members consist of the senior management. These groups have regular meetings and they are responsible for the sustainable policies and actions of the company. Some companies (see e.g. Sprint 2010, BT 2011, Hewlett Packard (HP) 2010) also have external advisory boards and committees for sustainable development. These external boards consist of external experts from different stakeholder groups, like universities and non-governmental organizations for example. External committees give recommendations to the management of those respective companies.

One of the case company's problems is the lack of coordination in environmental issues at the group level. Top-level management committees for sustainable development would help in the coordination of environmental issues. External advisory committees would bring valuable new insight to the company. According to Siebenhüner and Arnold (2007) new knowledge outside of the organization is needed in a sustainability learning process. If communicated properly, the participation of the management in sustainable development committees would send a strong and visible signal to the rest of the organization. If management uses time for sustainable development and seeks external advice regularly that would be a strong indication about environmental priorities in the company. Good and open communication about the activities, decisions and operations by sustainable development committees would help to ensure that results are not just rhetorical. Ramus (2002) writes that employees need a clear signal of organizational support in order to use time and resources for environmental issues.

## **5.2.2 From energy efficiency to sustainable development**

Results of this study show that the target group understands that they are dealing with environmental issues in their work and think that it is important to work on environmental issues. Jose and Lee (2007) write that stakeholders expect companies to manage their environmental performance. However, in the target group thoughts and communication is through energy and cost efficiency not environmental issues. The target group's understanding that they are dealing with environmental issues is of course a good thing. It is good to build more environmental awareness and innovations through that understanding. However, the challenge is to get the target group to think and speak more about environmental issues. There is a fundamental difference in do we try to be as cost efficient as we can or do we try to push our business towards a sustainable path. It came up in the results of this study that the case company needs to rethink many of its current systems and operations in the future. There is a better chance for new environmental innovations if thoughts and communication are about sustainable development instead of cost efficiency.

Environmental issues should be communicated in environmental issues instead of kilowatts or savings in energy. The use of environmental information in organizational communication would be easier if the message is

understandable for everyone. If environmental issues are discussed as environmental issues, it could result in new environmental innovations. Ramus (2002) writes that encouraging to environmental innovations will result in new ideas and innovations. Shifting the thinking from the energy efficiency to a sustainable development can be done through training and campaigns to increase people's environmental awareness and through the guidance from the management. Siebenhüner and Arnold (2007) state that the key to implement sustainable development is that organization learns. This shift won't happen overnight, it needs time and patience but the case company has good foundation where to build. Since employees think that environmental work is something that company should do.

Campaigns for raising employees' environmental awareness have been done in the case company and the feedback is good according to the results of this study. Campaigns like reducing the use of paper and saving energy are good ways to raise the environmental awareness. Campaigns should continue as they change the mindset of the people and help the environment. Changing the mindset of the people helps in implementing of environmental values. Case company's campaigns have been good and employees have liked them but new campaigns are needed and hoped for. People need challenges and will get bored without new challenges.

Also, other ICT-sector companies have performed campaigns to raise their employees' environmental awareness. T-Mobile Netherlands (Telekom 2011) had competition where employees were asked to submit their ideas for making improvements in the areas of environmental and climate protection. The best ideas were announced and will be implemented in the company. This is also a way to activate more people to follow intranet, because employees can keep track of the implementing process in the intranet. Cisco (2011) and Sprint (2010) offer employees the opportunity to recycle electronic waste. Surveys and measurements could activate people in environmental issues. BT (2011) has a regular employee survey whether people have taken actions to reduce energy use. Cisco (2011) offers electric vehicle charging stations in some of its sites. Telekom (2011) and Sprint (2010) offer incentives to use public transport to their employees when commuting to work.

According to the results of this study employees of the case company could use more training in environmental issues. More training will help in changing people's mindset from energy efficiency towards sustainable development. ICT-company Bell (2010) offers training in managing the company's impact on the environment. More than 9,100 employees received such training in 2010. In HP (2010) environment, health and safety fundamentals are part of employees' orientation training. Results of this study show that there are aspirations for new employees to get orientation about case company's environmental work. Environmental issues as part of the orientation would be excellent opportunity to start implementing sustainable values right from the start. BT (2011) has training programs for employees to understand sustainable development and adopt right behaviour. Senior management of BT

participates in a training program at Henley business school. BT also has general online training to all employees and tailored modules for sales and product teams.

General sustainability training to all employees is needed but also specific training that will consider every group's special needs would be good in the case company. Environmental training should be implemented to be a part of normal trainings. That way people would realize that environmental issues are not separate issues but integral part of every day work. Cisco (2011) has incorporated environmental design features into product requirement documents. In HP (2010) environmental product stewards work globally with design teams and BT (2011) has sustainability training materials for product development teams.

Huotari et al. (2005) write about information redundancy. Different parts of organizations' might be so specialized that they know a lot about their own specialty but not much of what others do. Different sections need to be bumped information that might not be essential for their task but will help in understanding what others do. Lack of knowledge what others do is a problem in the case company. Not all engineers necessarily know about environmental issues and their importance. Vice versa environmental and communication departments might not have enough understanding of what engineers do. Information redundancy might help to find the common language that is missing at the moment. Juholin (2006) states that experts need to express their subjects so that others can understand it. Training of what others do and what kind of information they need should be organized in the case company.

Money, compensation and rewards are of course powerful drivers. Cisco (2011) for example has environmental sustainability goals as part of employees' compensation and bonus decisions. Money is of course powerful motivator but also other kinds of rewards can be used. If environmental performance and information are valued in the company, then communicating this information becomes part of normal judgment criteria of how good employee performs his/her job. Reward can also be just simple saying that you did a good job. People want to be appreciated and they want to do something useful not waste their time. The results of this study show some concern that is all the environmental information that is collected used. No one wants to use time for delivering information just for the sake of delivering it. Case company could demonstrate with concrete examples of what is done with all the environmental information that employees are required to collect and deliver.

### **5.2.3 More communication forums and easier access to information**

More communication forums and possibilities to share environmental information are needed among the target group. Every team, group or unit could have someone whose responsibility is to make sure that environmental issues are considered. A hiring of new employees is not necessarily needed. Some of the existing employees could be appointed as environmental

representatives and then make sure that they have support from their superiors and sufficient training. These environmental representatives could form networks around the company and have regular meetings. Regular meetings could contain people across the organization, like development, sustainability, marketing and communication departments for example. Meetings of people all over the organization would ensure that all the different angles, needs and ideas are considered. These meetings would share environmental information and best practices throughout the company. By appointing environmental representatives, environmental issues would be someone's responsibility and that someone would meet regularly with other someone's in the organization and share information.

Projects need their own environmental representatives. Results of this study show that when people from the environmental department have been a part of the project since the beginning results have been good. Company's environmental people might not have time or opportunity to be a part of every project that is carried out in the company. Neither there is a need for that. In every project, environmental issues could be made someone's responsibility, like any other important issue in the project. That someone's responsibility would be that environmental aspects are considered. Of course this does not mean that every future decision in the company will be made based solely on environmental impacts but at least impacts would be considered.

Environmental representatives could have regular meetings and trainings to expand their knowhow and share their knowledge. Environmental representatives would naturally act as change agents in the organization. They would share environmental best practices and knowledge to others since it would be a part of their normal job. Siebenhüner and Arnold (2007) write about the importance of change agents in companies' sustainable development. Change agents are used in some companies to promote environmental actions. BT (2011) has a program where volunteers promote energy savings and report energy faults in buildings. HP (2010) has a program, which educates and empowers employees to become ambassadors of the company's environmental initiatives. HP Canada's aim is to train at least one environmental representative per sales team.

Case company is knowledge-based company and as Juholin (2010) states knowledge-based companies are founded on knowledge, knowledge sharing and knowledge creation of the employees. Knowledge sharing in the case company could be better if collaborative communication forums would be utilized better. It also seems pointless that when employees of the case company are trying to find information they start looking for people instead of the information. Case company is ICT-company after all, so it would be natural to have information online. Hicks et al. (2006) study argues that the ability to transfer information in to a competitive advantage is critical in an advanced engineering sector. Carlile's (2004) study shows that transferring the knowledge between different sections of the organization is a key challenge in information sharing. This thesis found out challenges of a same kind in the case company.

At least three matters relating to organizational communication can be done better in the case company. First, information has to be documented better and information has to be made more available to those who need it. Second, the finding of people who knows has to be easier. In the year 2012, calling around the organization in order to find information or right person does not seem reasonable in a modern ICT-company. Third thing is that there are better forums for organizational communication than email. Improving these three issues will of course benefit organizational environmental communication.

Hicks (2007) states that by implementing new information management system organization can expand its amount of information. This study shows that wikies and network drives are used at some level as communication forums in the case company. According to Johri (2011) using social media tools instead of email improves coordination of information and knowledge sharing. According to Ojala and Pöysti (2008) ICT-companies have incentives to use social media in organizational communication as it improves the productivity and flow of information. Social media enables expert's growing need to keep in contact with other experts.

Documentation of information and making it available to all has to be a priority in the case company. If information would be online and available to those who need, it would save everyone's time. The results of this study show that emails and phone calls are pretty much the only ways to find information. However, at home information is searched from the Internet. How come that is not the case in the work environment. Time is a resource that is a problem in the case company. There is no need to waste time by calling others, or answering calls, because information could be available online. One aspect that came up in this research was that instant messengers and text messages are used when information is needed fast and a person who holds the information is in a meeting or cannot answer the phone. Information could be online so there would not be a need to interrupt someone's meeting or work.

A tool is needed where information can be documented online and people need actually put the information online. Information can be documented in intranet or wikies or even blogs. The most important things are clear structure and easy accessibility to information. A good search engine is essential. One good option is internal wikipedia. Almost all know and use Wikipedia at home so it is a familiar tool. There are huge amounts of information in Wikipedia but information is still easy to access, find and update. This could work in the case company as well.

One reason that hinders the documentation of information is lack of time. If there is time to call around the organization for 30 minutes to find a person who might know, why not there would be time to search or document information online. If employees constantly use significant amount of their time, like 30 minutes, to find some person and in the process call to two or three who cannot help them but have to stop their work and answer the phone, then there is a problem. Case company has significant amount of employees and so these 30 minutes and interruptions start multiplying and a lot of time is lost in a

yearly basis. Employees could use this time by doing something useful for the company or by relaxing at home. Saved time would show eventually in company's profit and in increased job well-being. Other aspect with time is that if incentives and rewards are high enough then suddenly all have time to write blog posts or read them.

Someone has to put the information online otherwise the communication forum is useless. Organization has to create a culture where information sharing is seen as part of the job and information sharing is rewarded some way (Ojala & Pöysti 2008). According to CEN (2004b) good organizations create an atmosphere where sharing information is valued. There seems to be a lot of information that is secret for one reason or another in the case company. It should be thought long and hard if everything that has been declared to secret really should be secret or could parts of it be published. Of course there is some information that cannot be shared to every employee but open information sharing is a key component in the creation of open communication atmosphere. Too much secret information hinders open communication culture.

Creation of information sharing and documentation culture is not an easy task but it can be done. Employees need incentives to share their knowledge online. The best incentive is that eventually documentation will help their everyday job and save time. Also rewards can be considered. Trainers' House has an incentive system based on employees' productivity in social media platforms. Respect and thanksgiving are also powerful tools. Puro (2008) states that humans want to be heard of and organizations' should take advantage of that.

Finding of a person who knows has to be easier in the case company. The easiest improvement would be to make every employee write online what she/he is actually doing in the company. The finding of people and starting to use new communication forums can be combined with social media tools. An existing address book can be replaced or improved to take advantage of the best sides of the social media. Every employee could have his/her profile online like they have today but these profiles could consist a lot more information and communication capabilities. For example, there could be information in which projects employee has been a part and in what projects he/she is working at the moment.

Employees could turn their existing networks of people online where they could communicate by using instant messages. Communication could be easily done with individuals or in groups. Of course these instant messages would go to phones and the new online forum would work in mobile platforms. Interaction and communication would be easier than with email. Others could see everyone else's networks and take advantage of those networks. According to Ojala and Pöysti (2008) social media is a good enabler for networking because it can easily bring together people from different teams across the organization.

New online communication forum could have the ability to form groups or networks of people. These groups could be formal or informal, voluntary or mandatory. There could be a group or home page for every business unit where everyone has to belong. Groups would be excellent communication forums for the management to share information, as the posts would be easily available to everyone. Information about new posts could come to everyone's profile or home page. There could be groups for people who work with datacenters or with environmental issues to share their knowledge. Then there could be groups in which belonging is totally volunteer. Like a group for the sustainability issues. Informal groups could be formed as well. A new online tool could be a communication forum for friends within the organization, a place where lunches or coffee breaks can be arranged. By making the new online tool a forum for informal communications as well the step to start actively use it might be smaller.

A new online communication tool as described above would make finding of information and the people easier. It would save enormous amounts of people's time. Everyone's individual networks are really important and a valuable channel to obtain information. A new online communication tool would make networking and sharing of information easier. When information is just in people's head, it can disappear really fast. With proper documentation information wont be lost in case of a car crash for example. Also relying just for the important information randomly to reach someone is pretty unreliable. Systematic communication forums where information can be shared are needed.

It came up in this research that network drives contain folders to some of the projects in the case company. There is no need to use folders and network drives. Network drives are difficult and slow to use compared with Internet. Things can be made a lot more efficient and easier. A new online tool could have a group or home page for every project where most of the project-specific communication and information sharing happens. These groups could be open so that everyone can take a look or if needed secret when only those who need access would have it. The form of a project page could be standard in the company with some project-based modifications. So finding of information would go through similar patterns every time and be easy. A common standard for network folders was hoped among the interviewees.

Interactive communication forums are common these days, they are called social media and many companies are starting to use social media in organizational communication. As discussed in chapter 2.6.2, Wärtsilä and MITRE corporations use social communities in their organizational communication. T-Mobile USA (Telekom 2011) set up an intranet site to report on the company's environmental activities where employees can submit questions, ideas and best practices. BT (2011) has My profile online tool to help networking, collaboration, the sharing of knowledge, interests, experiences and skills. BT has employee networks for assistants or Christians among others and carbon clubs for employees to come together and share ideas to reduce CO<sub>2</sub>

emissions worldwide. Telenor (2012) uses internal “facebook” and other collaborative platforms to help organizational communication. HP (2010) has HP sustainability network with more than 10,000 members. The network helps employees to learn and share environmental practices that can benefit the company and the planet.

The results of this study show that information has come to people. People are not going to search information unless they really need it. Interviewees considered some kind of environmental newsletter by email as a good way to share environmental information. Some companies like Cisco (2011), BT (2011) and Telekom (2011) have internal environmental newsletters. With the help of the new online communication tool and its groups, networks and home pages environmental news would be better shared than with email and there would be a possibility to interact and refine the ideas. According to Ojala and Pöysti (2008) communication and refining of ideas is easier with the help of social media tools because more people can contribute compared to email.

Lampinen (2002) studied technological communication tools decade ago in two Finnish government agencies. Communication tools that were used and problems were pretty much the same then than ten years later in a modern ICT-company. Government agencies are not necessarily known for being frontrunners in development so it seems that something could be done in the case company. Lampinen (2002) found out that there was no time to search information from the intranet, which is the same conclusion as in this study. Email was pretty much the only used technological communication tool ten years ago and it still is today. Oversized distribution lists in emails were a problem already a decade ago. According to Lampinen’s (2002) study there was no time to follow all technological communication forums, which is confirmed in this study as well. First reaction to new communication tools (email and intranet) was resistance according to Lampinen’s study. Resistance can be seen in this study with the use of social media in organizational communication. An efficient search engine was seen as the best way to improve intranet ten years ago. Today efficient search engines exist but a search engine is still a problem in the case company because a finding of information and people is so difficult. Lampinen’s (2002) conclusion is that employees need to be better trained to use technological communication tools. The results of this study agree.

When it comes to communication forums, the results of this study and Lampinen’s (2002) study show significant similarities. Some of the reasons are probably never going away, like for example lack of time is always an issue and face-to-face communication enables the best interaction between participants. However, communication tools that are used in the case company today are pretty much the same that were used a decade ago in government agencies, email and the intranet. Although now intranet contains some interactive characteristics the basic function of the intranet still is to be a one-way news channel instead of a collaborative communication platform. The use of social media in the case company would bring added benefits, as employees would keep up with the development of ICT and better understand how their services



and products are used, like the capacity of datacenters for example. No one buys the capacity from the datacenters just because it can be done. Companies need that capacity to support their business and operations. Understanding how customers use services might produce more customer-oriented services in the future.

#### **5.2.4 Better use of environmental information in communication**

With the exception of environmental campaigns, like switching lights off and using less office paper, environmental communication seems to be non-existent in the case company, both internally and externally. If there would be more environmental communication, it would send a signal to the organization that environmental communication is something that is desired. External environmental communication would show stakeholders, including employees, that environmental issues are important and that company wants to use environmental information in its communication. Without environmental communication it is not known in the organization that environmental communication is wanted. Communication of environmental campaigns should continue but at the same time organizational environmental communication should focus more on the core business of the company. The concrete examples of what has been done environmentally and what is going to be done next would be good.

Case company should use its environmental information in external communication. Case company's environmental actions could be shared with public and with employees. According to the results of this study environmental friendliness of the company's products and services can be better communicated. ICT-sector can help other industries to save emissions and the case company should communicate that better. An environmental message could be implemented as part of the products and services of the case company. Huotari et al. (2005) state that new knowledge must be connected into existing products and services. Environmental friendly products form a standard that other products are compared with (Kivelä 1998).

#### **5.2.5 Summary of the development proposals**

Development proposals were created based on improving the four main obstacles to organizational environmental communication that are discussed in previous chapters. Four main areas of development are: more and clearer environmental communication from the management, change of the main driver from energy efficiency to sustainable development, more environmental communication forums and easier access to information and the better use of environmental information in corporate communications. These proposals were presented to the case company in June 2012.

A stronger statement from the management of the company by regular and visible address of environmental issues is needed. Management needs to communicate and implement environmental targets and strategy for the

organization. Creation of a sustainable development committee, chaired by company's top executives, would help in coordinating and leading organization's sustainable actions. Creation of a sustainability advisory committee consisting of external experts from stakeholder groups, like universities and environmental organizations, could give valuable insights to the company. This external advisory committee would give guidance and recommendations to the management of the case company.

Environmental aspects need to become one of the main drivers instead of energy efficiency and money. Environmental issues should be discussed as environmental issues instead of kilowatts. This change could be made by raising the overall awareness of the organization by campaigns and by implementing environmental aspects into every unit's training. Organization needs to learn to think and act in a sustainable way.

Environmental issues need to be made someone's responsibility in every unit and taken into consideration in every project. Appointing environmental representatives could do the trick. Representatives can be current employees who would have strong support from their superiors and appropriate training. Representatives could form networks throughout the whole organization and share knowledge and best practices.

A complete overhaul is needed in company's organizational communication tools and forums. Case company's internal address book could be improved to act as online communication forum for employees. Information has to be documented better and utilizing social media tools as communication forums instead of email and phone would help in that. Creation of sustainability groups into social media would help to share knowledge and information. Finally, using environmental information in the external communications of the company would show that environmental communication is valued and give opportunity for employees to see the results of their environmental work. Implementing the environmental message to products and services of the case company would upgrade external communication. In a conclusion, organizational environmental communication needs will and tools. Will can be created by statements from the management to allocate resources for environmental work. Then tools can be created if there is a will.

### **5.3 Evaluation of the study**

Critical examination of the research methods and conduct of the study, the competence of the researcher and interpretation of the results are always necessary. Nevertheless, the results of the study and conclusions should be taken with open mind even if the results are not what the client was expecting. Facts must be recognized accordingly even if it is not always easy. (Juholin 2010.)

According to Tuomi and Sarajärvi (2006) there are no unambiguous guidelines to evaluate qualitative study. The traditional concepts of validity and reliability and their applicability in the evaluation of qualitative studies have been questioned. Validity and reliability might not be able to evaluate the needs and execution of qualitative study. The most essential thing when evaluating qualitative study is to give enough information to a reader about the whole research process. Enough information about the background of the study, execution of the study, data gathering methods and information about the informants has to be given so that the reader can evaluate the study. Eskola and Suoranta (1999) state that the most important criteria when evaluating qualitative study is the researcher himself. The evaluating process in qualitative study concerns the whole research project. In this thesis, the researcher has tried to systematically describe the whole research project so that reader can evaluate the study by himself.

Total of ten people were interviewed for this study. Case company has significant amount of employees so ten people are of course a small sample. However, the purpose of this study was not to study the whole organization but to ICT-engineers and interviewees were chosen in collaboration with the case company based on the scope of the study. According to Hirsjärvi and Hurme (2009) even couple interviews can give valuable information and usually around fifteen interviews are conducted in a research. The ten interviews conducted for this thesis can be considered sufficient. Although every interview brought valuable and new information for this thesis, a saturation point was reached. A saturation point is a point where research data starts to repeat itself (Eskola & Suoranta 1999). Answers to research questions started to show similarities among the interviewees in this study.

A researcher always has some base assumptions from the topic and those assumptions cannot be completely put aside. A researcher's assumptions always affect the research at some level. In this study, the researcher tried to recognize these assumptions and minimize their effect on the study. According to Hirsjärvi and Hurme (2009) a researcher must educate him for the role of the interviewer in order to achieve the best results. This was a challenge in this thesis, as the interviewer had limited previous experience about being an interviewer in a scientific study. The interviewer became familiar with the literature of the scientific interview and sought guidance from people who had experience from interview studies. Two test interviews were also conducted to ensure the best possible result. However, being an interviewer is a skill that cannot be mastered without actual practice. The interviewer noticed that he developed as the interview process went on. The interviewer learned to ask clarifying questions better and as overall managed the interview situation better and got more out of the interviewees. The meaning of a good interview themes and questions cannot be underestimated in the case of an inexperienced interviewer, as they are something that interviewer can rely in interview situation. Of course, everything can always be done better but as overall interview themes and questions were good and they formed an excellent

backbone for the interviews.

The possibility of social acceptable answers has to be considered as a possibility in this thesis. Interviewees knew that the interviewer studied corporate environmental management and that the topic of the interviews related to the environment. Interviewees also knew that one of the contact people worked in the environmental department of the case company. These are reasons that might have an affect to the interviewees in a way that they gave more environmental positive answers than they normally would. Even though the interview situations did not show any signs of socially acceptable answers they cannot be completely ruled out. When researching humans by asking their opinions, there is always a possibility that they are not honest and answer differently than how they actually feel. Interviewees' fear of being recognized is always a concern in interviewee studies and has to be considered as one source of error in this thesis as well. However, interview situations did not show any signs of that fear and interviewees gave critical answers as well so this is not considered a notable problem in this study. The results of this study show similarities with other studies from the same field of study. So it is relatively safe to conclude with the assumption that in this case humans were mostly honest and socially acceptable answers did not have a notable effect on the results of this thesis.

Some of the interviews in this thesis were conducted in Finnish and some in English. This is somewhat problematic; the native language of the interviewer is Finnish. So there is a possibility that those interviews that were done in Finnish contain more detailed information than those conducted in English. English is not a native language of anyone who participated in the interviews. So there is a possibility that something was not said or something was not asked in interviews because of the language issue. However, everyone who participated in interviews had no problems with the English language. If there are some shortcomings in the interviews, it is more likely due to the fact that the interviewer was not an experienced interviewer at the beginning of the process and not because of the language issue.

According to Eskola and Suoranta (1999) the credibility of qualitative study can be evaluated through the dependability of the research. Dependability means that researcher must review that his conceptions and interpretations relate to what the conceptions of his informants are. In this study, dependability was an important factor. Obstacles of organizational environmental communication and development suggestions are based on what the informants had to say, what did they consider important.

Transferability of the qualitative research results is possible under certain conditions (Eskola & Suoranta 1999). Results of this study cannot be directly transferred to other organizations and other organizational communication studies. However, the results of this study confirmed several theories and previous findings about organizational environmental communication. The results of this study can offer valuable information to other organizational communication and environmental communication studies. The results of this

this thesis should not be used directly with other organizations but obstacles in organizational environmental communication that came up in this study might offer a good starting point to other organizational communication studies. The development suggestions of this thesis could help other organizations that want to develop their organizational environmental communication.

One criterion for evaluating qualitative study is that do other studies from the same field of study give similar results (Eskola & Suoranta 1999). In this thesis, the results are compared with previous studies and literature. Many of the results and conclusions of this study are similar than can be found in previous studies. In the end, the evaluation of the study is based on the fact that are claims and conclusions of the study justified and truthful (Eskola & Suoranta 1999). This is for the reader to judge.

#### **5.4 Potential future studies**

The scope of this study did not allow monitoring of how the development proposals will affect case company's organizational environmental communication. It would be beneficial to gain knowledge of how each proposal improves, if at all, the organizational environmental communication of the case company. Further, if improvements are detected, it would be worth studying how the improved organizational environmental communication affects organization's external environmental communication. Even further, if improvements are detected in external environmental communication, it would be interesting to study how the environmental image of different stakeholder groups, including employees, changes and how this image reflects in the case company's success in business or recruiting of new employees. The results of this study show that environmental issues are not discussed or thought as environmental issues in the case company. The main driver is energy efficiency or cost efficiency. So an interesting future study could be that how the shift in people's minds from energy efficiency to sustainable development affects organizational environmental communication.

As discussed in chapters four and five, this study found out four main barriers for organizational environmental communication. Future researchers could study are these same barriers found in other organizations as well. Since there are not much previous studies in this field and this study focused on engineers more knowledge is needed. For the purpose of the case company it would be extremely valuable to know how well these four obstacles describe the situation in other employee groups in the company. The results of this study show, that even though in general people have a positive attitude towards environment they still do not communicate about environmental matters. Future researchers could deepen our understanding how does a personal attitude towards environment affect person's environmental communication.

In the field of organizational communication, future studies could even further study the amount of saved time and improved information flow due to

the new communication forums also known as social media. Several studies, including this one, show that people think that they need to rush or hurry up in order to do their job. Future research could study how does saved time due to new communication forums translate in people's feel of urgency or do it have any affect at all.

## REFERENCES

- Aerts, W. & Cormier, D. 2009. Media legitimacy and corporate environmental communication. *Accounting, organizations and society* 34, 1-27.
- Aula, P. 1999. Organisaation kaaos vai kaaoksen organisaatio? Dynaamisen organisaatioviestinnän teoria. Helsinki: Loki-kirjat.
- Aula, P. & Hakala, S. 2000. Kulttuuri. In Aula, P. & Hakala, S. (eds.) *Kolmet kasvot, näkökulmia organisaatioviestintään*. Loki-Kirjat, 16.
- Aula, P. 2008. Organisaatioviestinnän merkitys: tuleeko hyvä käytäntö aina hyvästä teoriasta? In Aula, P. (editor) *Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön*. Porvoo: Infor, 11-25.
- Barthes, J-P., A. & Tacla, C., A. 2002. Agent-supported portals and knowledge management in complex R&D projects. *Computers in industry* 48, 3-16.
- Barwise, J. (editor.) 2005. ISO 14063: the new international standard on environmental communications. *Environmental policy and procedures special report* 108, 1-8.
- Bell. 2010. Let's talk about sustainability. Bell Canada 2010 corporate responsibility report.
- Beylier, C., Pourroy, F., Villeneuve F. & Mille, A. 2009. A collaboration-centered approach to manage engineering knowledge: a case study of an engineering SME. *Journal of engineering design* 20 (6), 523-542.
- Blom, R., Melin, H. & Pyöriä, P. 2001. *Tietotyö ja työelämän muutos*. Tampere: Gaudeamus Kirja.
- Bos-Brouwers, H. E. J. 2010. Corporate sustainability and innovation in SMEs: evidence of themes and activities in practice. *Business strategy and the environment* 19, 417-435.
- British Telecom. 2011. Our 2011 sustainability review.
- Dechant, K. & Altman, B. 1994. Environmental leadership: from compliance to competitive advantage. *Academy of management executive* 8 (3), 7-20.
- Deetz, S. & Brown, D. 2004. Conceptualizing involvement, participation and workplace decision processes. A communication theory perspective. In Tourish, D. & Hargie, O. (eds.) *Key issues in organizational communication*. New York: Routledge, 172-187.
- Carlile, P. R. 2004. Transferring, translating, and transforming: an integrative framework for managing knowledge across boundaries. *Organization science* 15 (5), 555-568.
- CEN. 2004a. European committee of standardization. European guide to good knowledge management - Part 1: Knowledge management framework. English version. CEN workshop agreement.
- CEN. 2004b. European committee of standardization. European guide to good knowledge management - Part 2: Organizational culture. English version. CEN workshop agreement.
- Cisco. 2011. Corporate sustainability report.

- Clampitt, P. G. & Downs, C. W. 1993. Employee perceptions of the relationship between communications and productivity: a field study. *The Journal of business communication*, 30 (1), 7-30.
- Drucker, P. F. 1995. The information executives truly need. *Harvard business review* january-february, 54-62.
- Cornelissen, J. 2011. *Corporate communication. A guide to theory and practise.* (3<sup>rd</sup> edition) London: Sage publications.
- Elinkaari ry., Tuokko Deloitte. & Touche oy. 1998. Ympäristöraporttiversailun 1998 tulokset ja kriteeristö. In Rinne, P. & Linnanen, L. (eds.) *Ympäristöviestintä ja -raportointi.* Elinkaari Ry, 125-128.
- Erlandsson, J. & Tillman, A-M. 2009. Analysing influencing factors of corporate environmental information collection, management and communication. *Journal of cleaner production* 17, 800-810.
- Eskola, J. & Suoranta, J. 1999. *Johdatus laadulliseen tutkimukseen.* 3. edition. Jyväskylä: Vastapaino.
- European commission. 2010. The EU climate and energy package. <[http://ec.europa.eu/clima/policies/package/index\\_en.htm](http://ec.europa.eu/clima/policies/package/index_en.htm)>. Visited 16.5.2012.
- ETNO. 2006. European telecommunications network operators' association. *Saving the climate @ the speed of life. First roadmap for reduced CO2 emissions in the EU and beyond.* ETNO publications.
- Flanagin, A.J. 2000. Social pressures on organizational website adoption. *Human communication research* 26 (4), 618-646.
- Flanagin, A. J. 2002. The elusive benefits of the technological support of knowledge management. *Management communication quarterly* 16 (2), 242-248.
- Gartner. 2007. Gartner estimates ICT industry accounts 2 percent of global CO2 emissions. <<http://www.gartner.com/it/page.jsp?id=503867>>. Visited 21.12.2011.
- Gattiker, U.E. 2001. *The Internet as diverse community. Cultural, organizational and political issues.* Mahwah: Lawrence Erlbaum associates.
- GeSI. 2008. *Global e-Sustainability initiative. Smart 2020: enabling the low carbon economy in the information age.* GeSI reports & publications.
- Giannarakis, G., Litinas, N. & Theotokas, I. 2011. A delphi study to identify corporate social responsibility indicators: the case of greek telecommunication sector. *Journal of sustainable development* 4 (2), 16-32.
- Giannarakis, G. & Litinas, N. 2011. Corporate social responsibility performance in the Greek telecommunication sector. *Strategic change* 20, 73-84.
- Govindarajulu, N. & Daily, B. F. 2004. Motivating employees for environmental improvement. *Industrial management & data systems* 104 (4), 364-372.
- Gray, J. & Laidlaw, H. 2004. Improving the measurement of communication satisfaction. *Management communication quarterly* 17, 425-448.
- Halme, M. & Markkanen, E. 1998. Suomalaisetko maailman parhaita ympäristönsuojelijoita? In Rinne, P. & Linnanen, L. (eds.) *Ympäristöviestintä ja -raportointi.* Elinkaari Ry, 27-34.



- Hargie, O. & Tourish, D. 2004. How are we doing? Measuring and monitoring organizational communication. In Tourish, D. & Hargie, O. (eds.) Key issues in organizational communication. New York: Routledge, 234-251.
- Heinonen, J. 2008. Maineenhallinta: organisaatioviestinnän strateginen mahdollisuus. In Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 61-78.
- Heisig, P. 2009. Harmonisation of knowledge management - comparing 160 KM frameworks around the globe. Journal of knowledge management 13 (4), 4-31.
- Herlin, I. 1998. Sanat, teot ja ympäristö. In Rinne, P. & Linnanen, L. (eds.) Ympäristöviestintä ja -raportointi. Elinkaari Ry, 21-27.
- Hewlett Packard. 2010. A Connected world. The impact of HP global citizenship in 2010 -and beyond.
- Hicks, B.J, Culley, S. J. & McMahan, C. A. 2006. A study of issues relating to information management across engineering SMEs. International journal of information management 26, 267-289.
- Hicks, B. J. 2007. Lean information management: understanding and eliminating waste. International journal of information management 27, 233-249.
- Hirsjärvi, S. Remes, P. & Sajavaara, P. 2000. Tutki ja kirjoita. (6. edition) Vantaa: Kirjayhtymä.
- Hirsjärvi, S. & Hurme, H. 2009. Tutkimushaastattelu. Teemahaastattelun teoria ja käytäntö. Helsinki: Gaudeamus.
- Huotari, M-L., Hurme, P. & Valkonen, T. 2005. Viestinnästä tietoon. Tiedon luominen työyhteisössä. (1<sup>st</sup> edition) WSOY.
- Ilmola, L. 1998. Vihreän viestintästrategian suunnittelu. In Rinne, P. & Linnanen, L. (eds.) Ympäristöviestintä ja -raportointi. Elinkaari Ry, 55-62.
- Internet world stats. 2011. Internet usage statistics. World Internet users and population stats. <<http://www.internetworldstats.com/stats.htm>>. Visited 21.12.2011.
- Jaatinen, M. 2008. Tiedonrakentelu ja viestintä innovoinnin tukena verkottuneessa liiketoiminnassa. In Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 212- 223.
- Johri, A. 2011. Look ma, no email! Blogs and IRC as primary and preferred communication tools in distributed firm. Proceedings of the ACM 2011 conference on computer supported cooperative work.
- Jose, A. & Lee, S-L. 2007. Environmental reporting of global corporations: a content analysis based on website disclosures. Journal of business ethics 72, 307-321.
- Juholin, E. 2004. Cosmopolis: yhteiskuntavastuusta yrityskansalaisuuteen. Helsinki: Inforviestintä.
- Juholin, E. 2006. Communicare! Viestintä strategiasta käytäntöön. (4. edition) Porvoo: Inforviestintä.

- Juholin, E. 2007. Työyhteisöviestinnän uusi agenda. Työyhteisöviestintä TYVI 2010. Report 2. HAAGA-HELIA university of applied sciences. Publications of HAAGA-HELIA. Kehittämöraportteja 1/2007.
- Juholin, E. 2008a. Mittaamisen sietämätön välttämättömyys: työyhteisömittarit uuden edessä. In Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 237-254.
- Juholin, E. 2008b. Viestinnän vallankumous, löydä uusi työyhteisöviestintä. Juva: WSOY.
- Juholin, E. 2010. Arvioi ja paranna! Viestinnän mittaamisen opas. Vantaa: Infor.
- Juuti, P. & Vuorela, A. 2002. Johtaminen ja työyhteisön hyvinvointi. Jyväskylä: PS-kustannus.
- Karvonen, E. Imagon rakennusta vai maineenhallintaa? In Aula, P. & Hakala, S. (eds.) Kolmet kasvot, näkökulmia organisaatioviestintään. Loki-Kirjat, 51-76.
- Kiesler, S. & Cummings, J.N. 2002. What do we know about proximity and distance in group works? A legacy of research. In Hinds, P.J. & Kiesler, S. (eds.) Distributed work. Cambridge: the MIT press, 57-80.
- Kivelä, P. Ympäristöviestintä on luottamuspääoman hankintaa. In Rinne, P. & Linnanen, L. (eds.) Ympäristöviestintä ja -raportointi. Elinkaari Ry, 35-39.
- Lam, A. 2000. Tacit knowledge, organizational learning and societal institutions: an integrated framework. Organization studies 21, 487-513.
- Lampinen, M.K. 2002. Sähköiset kanavat sisäisessä viestinnässä. Tutkimus Keski-Suomen ja Pohjois-Savon ympäristökeskusten sisäisestä viestinnästä. Jyväskylän yliopisto. Yhteisöviestinnän pro gradu -työ.
- Lehtinen, R. 1998. Media ja ympäristöviestintä: netti, printti vai TV? In Rinne, P. & Linnanen, L. (eds.) Ympäristöviestintä ja -raportointi. Elinkaari Ry, 97-101.
- Lehtonen, J. 2000. Toimiva viestintä. Yrityksen aineetonta pääomaa. In Aula, P. & Hakala, S. (eds.) Kolmet kasvot, näkökulmia organisaatioviestintään. Loki-Kirjat, 187-211.
- Lehtonen, J. 2008. Kyberavaruus ja organisaatiotiedottamisen haasteet. In Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 138-150.
- Lemminkäinen, H. 2008. Osaavaksi viestijäksi ja viestinnän kehittäjäksi. In Juholin, E. Viestinnän vallankumous. Löydä uusi työyhteisöviestintä. Juva: WSOY, 287-303.
- Lemminkäinen, H. 2010. Viestintäosaaminen ja viestintäkoulutus. In Juholin, E. Arvioi ja paranna! Viestinnän mittaamisen opas. Vantaa: Infor, 146-161.
- Malmodin, J., Moberg, Å., Lunden, D., Finnveden, G. & Lövehagen, N. 2010. Greenhouse gas emissions and operational electricity use in the ICT and entertainment & media sectors. Journal of industrial economy 14 (5), 770-790.
- Mantere, S. 2008. Strategian viestintä, strategiaviestintä, viestintästrategia, strateginen viestintä? Kun organisaatioviestintä jäi strategian jalkoihin. In

- Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 39-49.
- Marrewijk, van M. 2003. Concepts and definitions of CSR and corporate sustainability: between agency and communion. *Journal of business ethics* 44, 99-105.
- Matikainen, J. 2008. Organisaatio- ja johtamisviestintä verkossa. In Aula, P. (editor) Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön. Porvoo: Infor, 151-170.
- Mazzei, A. 2010. Promoting active communication behaviours through internal communication. *Corporate communications: an international journal* 15 (3), 221-234.
- Meisner, M. 2011. What is environmental communication? (version 2.6). The international environmental communication association. <<http://environmentalcomm.org/?q=what-environmental-communication>>. Visited 15.12.2011.
- Microsoft. 2010. Työpaikkojen tiedonkulku hiertää. <[http://www.microsoft.com/finland/pr/tiedotearkisto/tiedonkulku\\_0310.html](http://www.microsoft.com/finland/pr/tiedotearkisto/tiedonkulku_0310.html)>. Visited 20.12.2011.
- Montabon, F., Sroufe, R. & Narasimhan, R. 2007. An examination of corporate reporting, environmental management practices and firm performance. *Journal of operations management* 25, 998-1014.
- Morhardt, J. E. 2010. Corporate social responsibility and sustainability reporting on the Internet. *Business strategy and the environment* 19, 436-452.
- Motiva. 2011. Energiategokas konesali. Publications of Motiva.
- Niemelä, J. 2008. Tiedonvaihdanta vaatii yhteistyötä. In Juholin, E. Viestinnän vallankumous. Löydä uusi työyhteisöviestintä. Juva: WSOY, 98-99.
- Niskala, M., Pajunen, T. & Tarna-Mani, K. 2009. Yhteiskuntavastuun raportointi. Raportointi ja laskentaperiaatteet. Keuruu: KHT-media.
- Nonaka, I. & Takeuchi, H. 1995. The knowledge creating company. How Japanese companies create the dynamics of innovation. New York: Oxford university press.
- O'Kane, P., Hargie, O. & Tourish, D. 2004. Communication without frontiers. In Tourish, D. & Hargie, O. (eds.) Key issues in organizational communication. New York:Routledge, 74-95.
- Otala, L. & Ahonen, G. 2003. Työhyvinvointi tuloksen tekijänä. Porvoo: WSOY.
- Otala, L. & Pöysti, K. 2008. Wikimaniaa yrityksiin. Yritys 2.0 tuottamaan. Porvoo: WSOY.
- Panapanaan, V. M., Linnanen, L., Karvonen, M-M. & Phan, V. T. 2003. Roadmapping corporate social responsibility in Finnish companies. *Journal of business ethics* 44, 133-148.
- Plepys, A. 2002. The grey side of ICT. *Environmental impact assessment review* 22, 509-523.
- Porter, M. E. 1996. What is strategy? *Harvard business review* November-December 1996, 61-78.

- Procom - the Finnish association of communications professionals. 2010. Sosiaalisen median pulssi 2010. ProCom tutkimustoiminta.
- Procom - the Finnish association of communications professionals. 2011. Vastuullisuusviestintä 2011-tutkimus. ProCom tutkimustoiminta.
- Prothero, A., Peattie, K. & McDonagh, P. 1997. Communicating greener strategies: a study of on-pack communication. *Business strategy and the environment* 6, 74-82.
- Puro, J-P. 2008. Kohti kuuntelevaa organisaatiota. In Aula, P. (editor) *Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön*. Porvoo: Infor, 224-236.
- Ramus, C. A. 2002. Encouraging innovative environmental actions: what companies and managers must do. *Journal of world business* 37, 151-164.
- Ratinen, M. & Markkanen, E. 1998. Mistä on hyvät ympäristöraportit tehty. In Rinne, P. & Linnanen, L. (eds.) *Ympäristöviestintä ja -raportointi*. Elinkaari Ry, 97-101.
- Rinne, P. & Linnanen, L. 1998. Ympäristöviestinnän kymmenen käskyä. In Rinne, P. & Linnanen, L. (eds.) *Ympäristöviestintä ja -raportointi*. Elinkaari Ry, 9-17.
- Robson, C. 2002. *Real world research*. (2.edition) Blackwell publishing.
- Rosen, C. M. 2001. Environmental strategy and competitive advantage: an introduction. *California management review* 43 (3), 8-15.
- Runhaar, H. & Lafferty, H. 2009. Governing corporate social responsibility: an assessment of the contribution of the UN global compact to CSR strategies in the telecommunications industry. *Journal of business ethics* 84, 479-495.
- Seeck, H. & Parzefall, M-R. 2008. Johtaja innovatiivisuuden tukijana: työyhteisöviestinnän rooli. In Aula, P. (editor) *Kivi vai katedraali. Organisaatioviestintä teoriasta käytäntöön*. Porvoo: Infor, 191-212.
- Seeger, M. W. 2004. Organizational communication ethics: Directions for critical inquiry and application. In Tourish, D. & Hargie, O. (eds.) *Key issues in organizational communication*. New York:Routledge, 220- 233.
- Siebenhüner, B. & Arnold, M. 2007. Organizational learning to manage sustainable development. *Business strategy and the environment* 16, 339-353.
- Sjöblom, H. & Niskala, M. 1999. *Ympäristöraportointi. Luotettavan ympäristöinformaation tuottaminen ja hyödyntäminen*. Jyväskylä: KHT-yhdistyksen palvelu oy.
- Skerlavaj, M. & Dimovski, V. 2006. Social network approach to organizational learning. *Journal of applied business research* 22 (2), 89-97.
- Sobnosky, K. J. 2001. Effective communication in environmental management. *Environmental quality management Autumn 2001*, 47-56.
- Sprint. 2010. Corporate responsibility performance summary.
- Sublet, V., Spring, C. & Howard, J. 2011. Does social media improve communication? Evaluating NIOSH science blog. *American journal of industrial medicine* 54, 384-394.

- Sun, P. 2010. Five critical knowledge management organizational themes. *Journal of knowledge management* 14, 507-523.
- Swahn, M. 1998. Ympäristömaineen arvo. In Rinne, P. & Linnanen, L. (eds.) *Ympäristöviestintä ja -raportointi*. Elinkaari Ry, 47-51.
- Telekom. 2011. Corporate responsibility 2010/2011. We take responsibility.
- Telenor. 2012. Operational efficiency. Travel and transportation. Telenor's collaboration platforms. <<http://telenor.com/corporate-responsibility/environment-and-climate/operational-efficiency/>>. Visited 27.4.2012.
- Thakadu, O. T., Irani, T. A. & Teig, R. 2011. Communicating in the public sphere: Attitudes toward different public instructional communication methods. *Environmental communication* 5 (1), 83-103.
- Tourish, D. & Hargie, O. 2004. The crisis of management and the role of organizational communication. In Tourish, D. & Hargie, O. (eds.) *Key issues in organizational communication*. New York:Routledge, 1-17.
- Tuomi, J. & Sarajärvi, A. 2006. *Laadullinen tutkimus ja sisällön analyysi*. 1.-4. edition. Helsinki: Tammi.
- United Nations. Our common future, chapter 2: towards sustainable development. 1987. <<http://www.un-documents.net/ocf-02.htm>>. visited 23.11.2011.
- Wilcox, D. L., Ault, P. H. & Agee, W. K. 1998. *Public relations: strategic and tactics*. New York: Longman.
- World business council for sustainable development (WBCSD). Meeting changing expectations. WBCSD publications.
- Yleinen suomalainen asiasanasto. 2011. Helsinki university library. <<http://vesa.lib.helsinki.fi/ysa/>>. Visited 22.12.2011.
- Ziek, P. 2009. Making sense of CSR communication. *Corporate social responsibility environmental management* 16, 137-145.
- Zorn, T. E. & Taylor J. R. 2004. Knowledge management and/as organizational communication. In Tourish, D. & Hargie, O. (eds.) *Key issues in organizational communication*. New York: Routledge, 96-113.
- Åberg, L. 2000. *Viestinnän johtaminen*. Helsinki: Inforviestintä.
- Åberg, L. 2002. *Viestinnän strategiat*. (3.edition) Juva: Inforviestintä.

## **APPENDIX 1**

### **Communications in general**

- 1 Could you shortly describe your current work
- 2 What do you think are good communication tools in work environment
- 3 Who do you think has the right and the responsibility for communication and sharing of information in your unit
- 4 How do you gather interesting information of what other's do in other parts of the company

### **The atmosphere towards environmental communication**

- 5 Are you dealing with environmental matters in your own work
- 6 What kind of image you have about case company's environmental responsibility
- 7 What do you think about the environmental communication at the moment in case company
- 8 How do you feel about the atmosphere towards environmental communication in your unit
- 9 What do you think are case company's environmental targets and what do you think is case company's impact on the environment
- 10 What kind of challenges do you think stakeholders put on case company in environmental matters (for example, customers and society)
- 11 What do you feel about case company's management's message on environmental issues
- 12 What is your supervisor's attitude towards environmental issues
- 13 What do you think is the attitude of your colleagues towards environmental aspects
- 14 Do you think the environmental communication is understandable

### **Environmental communication forums**

- 15 With whom and in which situations do you discuss about environmental matters that you confront in your work
- 16 What tools you use for environmental communication and obtaining of environmental information
- 17 How do you think the environmental information is best shared within the company
- 18 Could you tell some good and bad examples relating to environmental communication
- 19 What you expect from good environmental communication

## APPENDIX 2

### **Viestintä yleisesti**

- 1 Kuvailisitko lyhyesti nykyistä työtäsi
- 2 Mitkä ovat mielestäsi hyviä viestintävälineitä työasioiden viestimiseen
- 3 Kenellä on mielestäsi oikeus ja velvollisuus viestinnästä ja tiedonkulkemisesta omassa yksikössäsi
- 4 Miten saat itseäsi kiinnostavaa tietoa mitä muualla yrityksessä tehdään

### **Ilmapiiri ympäristöviestinnälle**

- 5 Oletko omassa työssäsi tekemisissä ympäristöön vaikuttavien asioiden kanssa
- 6 Minkälainen mielikuva sinulla on kohdeyrityksen ympäristövastuullisuudesta
- 7 Minkälaista ympäristöviestintä mielestäsi tällä hetkellä on kohdeyrityksessä
- 8 Millainen on mielestäsi oman yksikkösi ilmapiiri ympäristöviestintää kohtaan
- 9 Mitkä ovat mielestäsi kohdeyrityksen ympäristötavoitteet ja millaisiksi koet kohdeyrityksen ympäristövaikutukset
- 10 Minkälaisia haasteita mielestäsi eri sidosryhmät asettavat kohdeyritykselle ympäristöasioissa (esim. asiakkaat ja yhteiskunta)
- 11 Millaiseksi koet yrityksen johdolta tulevan viestin ympäristöasioissa
- 12 Miten esimiehesi mielestäsi suhtautuu ympäristönäkökohtiin
- 13 Minkälainen on mielestäsi kollegojesi suhtautuminen ympäristönäkökohtiin
- 14 Onko ympäristöviestintä mielestäsi ymmärrettävää

### **Ympäristöviestinnän foorumit**

- 15 Millaisissa tilanteissa ja keiden kanssa keskustelet työssäsi vastaantulevista ympäristöasioista
- 16 Mitä viestintävälineitä käytät ympäristöviestintään ja tiedonhankkimiseen
- 17 Miten ympäristöön liittyvää tietoa olisi mielestäsi hyvä jakaa yrityksen sisällä
- 18 Kerro jokin hyvä tai huono esimerkki ympäristöviestintään liittyen
- 19 Mitä odotat hyvältä ympäristöviestinnältä