CUSTOMERS' EXTRANET IN DEVELOPING CUSTOMER SERVICE IN THE CONSTRUCTION INDUSTRY
CASE: EVIANET SOLUTIONS OY

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ABSTRACT

The aim of this study was to find out if Evianet Solutions Oy's Customers' Extranet can be used to improve customer service in Skanska in Finland and Norway. The purpose was to collect information, which Evianet Solutions Oy could use when selling Customers' Extranet for Skanska. In order to prove the potential of Customers' Extranet in developing the customer service in Skanska, the current problems were searched for.

The sources used included literature of the studied field, articles and websites. The literature has been mainly based on the network services and construction industry. In addition, relevant and up to date information on the operating environment was found from websites published by reliable sources. Newspaper and electronic articles give a good and fresh theoretical background to the subject. For the empirical part of the thesis a survey was conducted to find out the methods used in customer service at the moment and Skanska's employees' and customers' preferences and opinions. Several professionals were interviewed to find out information on their field of expertise.

The most important outcome of the study is the realisation that information technology is not taken fully advantage of in the construction industry. The results also show that the customer service in the industry is in need of improvement. The construction companies are not able to meet the customers' needs with the current systems. Based on the result, Customers' Extranet could be used to solve many of the current problems and to improve the customer service in Skanska.

Keywords: customers' extranet, customer service, construction industry, network services

Lahden ammattikorkeakoulu
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Asukasportaali asiakaspalvelun kehittämisessä rakennusteollisuudessa
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TIIVISTELMÄ

Tutkimuksen tavoitteena oli selvittää voiko Evianet Solutions Oy:n Asukasportaalia käyttää asiakaspalvelun kehittämisessä Skanskan Suomen ja Norjan organisaatioissa. Tarkoituksena oli kerätä tietoa, jota Evianet Solutions Oy voi käyttää myydessään Asukasportaalia Skanskalle. Jotta voitaisiin todistaa, että Asukasportaalilla on potentiaalia parantaa Skanskan asiakaspalvelua, nykyiset ongelmakohdat kartoitettiin.

Käytetty lähdeaineisto sisälsi kirjallisuutta tutkimusalueelta, artikkeleita sekä internetsivustoja. Kirjallisuus koostui pääasiassa informaatioteknologiaa ja rakennusteollisuutta käsittelevistä teoksista. Lisäksi, tarpeellista ja ajankohtaista tietoa toimintaympäristöstä hankittiin luotettavilta internetsivustoilta. Sanomalehdet ja elektroniset artikkelit antoivat tuoreen näkökulman aiheeseen.

Opinnäytetyön empiiristä osuutta varten Skanskan työntekijöille sekä asiakkaille lähetettiin kyselylomake. Kyselyn avulla selvitettiin nykyiset asiakaspalvelun toimintatavat sekä työntekijöiden ja asiakkaiden toiveet ja mielipiteet. Lisäksi haastateltiin muutamia eri alojen ammattilaisia. Haastattelut tarjosivat arvokasta tietoa osaamisalueelta.

Opinnäytetyön tärkein tulos oli havainto siitä, että informaatioteknologiaa ei ole hyödynnetty tehokkaasti rakennusteollisuudessa. Tulokset osoittavat myös, että asiakaspalvelu alalla kaipaa kehitystä. Rakennusalan yritykset eivät pysty vastaamaan asiakkaiden tarpeisiin nykyisillä välineillä. Tutkimustulokset osoittavat, että monet nykyisistä ongelmista voidaan ratkaista ja asiakaspalvelua parantaa Asukasportaalin avulla.

Asiasanat: asiakasekstranet, asiakaspalvelu, rakennusteollisuus, verkkopalvelut

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1 INTRODUCTION

During the past ten years, companies have had the opportunity to develop their business operations with the help of Internet. The use of the Internet and computer applications has become more popular in different fields of business. Many of the office routines have been transferred to networks, which have made the business operations more cost-effective for the company. Besides effective administration of the business operations, the Internet has proved its potential in managing the business relationships with customers, suppliers and partners.

The companies have recognized the need for taking the communication with their customers and suppliers into the Internet. During the past few years, E-mail has become one of the most used channels in the communication between construction companies and their interest groups. Websites are used as marketing tools and their effect on the company's image is growing constantly. Expectations of the quality of a website are getting higher all the time and the companies have to be searching for new features and solutions to maintain customer satisfaction. The rapid development of technology offers the companies totally new possibilities.

The communication and information management in the construction industry are going through a change. The amount and variety of information to be managed is enormous. The buyers of apartments are more and more involved in the planning and designing of the apartments. They expect individual apartments and are willing to pay extra to reach the personal design. This means that the construction company needs advanced tools to manage all the information of each apartment. Besides the information management, the Internet solutions offer construction companies other benefits such as advanced communication with the different interest groups, new advertising methods and cost-effectiveness. All of these give a base for better customer service.

Extranet is a relatively new Internet solution used by a company and its interest groups. The construction companies have now recognized it as well. Evianet Solutions Oy has developed Customers' Extranet together with Skanska Oy for

Skanska's use as a response to problems in customer service. Skanska Oy in Finland is one of the first construction companies in the world that has taken extranet into use.

Skanska operates all over the world. Cooperation between the Nordic countries is increasing. When Evianet aims at implementing the extranet into Skanska's foreign operations, it is logical that Skanska's Nordic organisations will be approached first. This thesis concentrates on studying extranets' potential in developing the customer service in Skanska's operations in Finland and Norway.

1.1 Subject and structure of the thesis

This thesis was carried out at the request of Evianet Solutions Oy. Evianet will use the results, when they are marketing Customers' Extranet to Skanska's operations in Finland and Norway. Customers' Extranet is already used in a couple of Skanska's construction sites in the capital area in Finland but the service still must be sold to the rest of the organization in Finland and Norway.

The theory part of the thesis creates a basis for the empirical part. The empirical part consists of surveys conducted to Skanska's personnel in Norway and Finland and Skanska's customers in Finland. The theory and empirical parts are combined in the thesis. This study is qualitative, the results received are studied and analysed hermeneutically.

The thesis is divided into seven chapters. The introduction chapter gives the reader some relevant background information on the subject. After this, the subject, structure of the thesis, research problem and limitations are introduced. This chapter helps the reader to form an overall understanding of the study. The methodology is described in Chapter two

As mentioned before, the Internet has created new methods to manage the customer relationships. The opportunities the Internet brings to developing the customer service are presented in Chapter three.

The fourth chapter begins with the presentation of the case company Evianet Solutions Oy. In this chapter also Evianet's product, Customers' Extranet, and the user of the extranet, Skanska, are presented. This chapter introduces the companies and the product briefly to the readers who are not familiar with them.

Chapter five concentrates on studying Finland and Norway as operating environment. Skanska's readiness to start using the extranet in Finland and Norway is being studied by taking a closer look at the following: the countries' economic situations, local living preferences and conditions, construction industry and Skanska's biggest competitors.

The requirements of customer service in the construction industry are growing all the time. In Chapter six, the construction industry as an operating environment is presented. In this chapter the Internet solutions are applied to construction industry. In the last chapter, Chapter seven, the results from the study are presented and discussed. The main themes are collected from the study and concluded.

1.2 Research problem and limitations of the subject

The subject of the thesis can be defined with the help of the following questions: "Can the customer service be developed in the construction industry in Finland and Norway with the help of Customers' Extranet?" "What are the problems with current communication methods?" The hypothesis of this thesis is that Customers' Extranet can improve Skanska's customer service. This study aims at proving the hypothesis correct.

Customers' Extranet can be used in material management and communication between different user groups. The extranet has lots of different features for different user groups. It has been implemented one feature at a time into Skanska's operations. At the moment the extranet is used in some projects in Skanska's South-Finland's operations. It is used in the communication between the residential construction unit and their customers. It is also used as a

communication tool within the construction unit. This thesis concentrates on finding out if there is a need for Customers' Extranet elsewhere in Finland and Norway. The extranet is studied in this thesis only as a tool to support customer service in Skanska's construction unit. Other features are not included in the study. The user groups studied in this thesis include the customer service employees in the construction unit and the customers. Customers in the study mean anyone buying an apartment unit from Skanska.

The theory part about network services can be applied to other businesses. Other generalisations should be made with caution regarding that there are differences in attitudes and e-readiness between the different countries and industries. Finland and Norway are studied in this thesis. Technology is highly developed in both of these countries. However, network services have been adapted quite slowly in the construction industry compared to, for example, banking and insurance industries.

2 METHODOLOGY

This chapter gives an overall view on the research methods used in this thesis. Both primary and secondary sources are used. The primary research included surveys and expert interviews.

2.1 Secondary sources

The secondary research methods used were for example books, electronic sources, newspaper articles and a survey conducted by Skanska. Both published and unpublished sources were applied.

Hirvensalo, Vaarnas and Virtanen (2005, 87.) write that the common feature for the developed countries is that with the secondary research it is possible to reach relatively good results since there is lots of published literature available. Statistics and literature can generally be considered liable.

Most of the publications were published recently and therefore it is safe to say that they are valid and suitable. Some of the literature date back a few years but these contain information, which does not get out of date. The websites used in the thesis are administered by liable sources such as governments and commonly known databases such as the CIA World Factbook. Also Skanska's and its competitors' websites were used and other electronic sources were found through Skanska's own online newsletter The Hub. The information on these sites can be considered reliable and the sites have been frequently updated. The recently published newspaper articles give the latest information from the industry and also show that the issues dealt within this thesis are hot topics in the construction industry at the moment.

2.2 Gathering primary information: Survey

The primary research methods used in the thesis are the surveys to Skanska's employees in Finland and Norway (APPENDIX 2 & APPENDIX 3). A survey was made also for Skanska's customers who have already been using Customers' Extranet in Finland (APPENDIX 1). Skanska's biggest competitors in Finland and Norway were asked by e-mail what communication channels they use in customer service and if they had a service like Customers' Extranet in use (APPENDIX 7).

The customer survey had 32 questions and the surveys for Skanska had both 36 questions including also open questions. The lengths of the surveys were not considered to be a problem because the respondents were assumed to be interested in the subject and in answering to the questionnaire (Proctor 1997, 96.).

All of the surveys were programmed to Evianet's survey platform on the Internet. The surveys were filled in online and submitted simply by clicking a button. After submitting the survey it could not be modified or sent again from the same computer. The responses could be studied by signing in to the website.

Because the sizes of the samples are small, generalizations concerning the whole Skanska's organisations or all the customers cannot be made. However the results

indicate the level of Skanska's readiness to take advantage of the network services in customer service. This study is meant for Evianet's use when it is selling Customers' Extranet to Skanska. Before the possible implementation of the Customers' Extranet to Skanska's operations more detailed study must be conducted.

2.2.1 Survey for Skanska's employees in Finland

The survey for Skanska's employees was created to find out the current communication methods used in customer service and identify possible problems with those methods. The survey was sent to 20 employees in Finland, nine employees began to fill it in and seven of them completed it. Contact person, Project Manager Jukka Hörkkö from Skanska Talonrakennus Oy, helped in forwarding the survey by sending a link to the survey by e-mail to the employees in the local residential construction unit. Jukka Hörkkö was asked to forward the survey to employees who were working closely with the customers. This sample was chosen because they are aware of the communication methods that are currently used in customer service. They are the ones who also face the possible problems with the current systems and therefore know what needs improvement. Two of the respondents have been using Customers' Extranet and have been involved in the product development from the very beginning.

Three of the respondents were female and four were male. All of the respondents were between the ages of 25 and 44 years. All of the respondents were employees. Only one of the respondents had less than a year of work experience in Skanska. Four respondents had been working from one to four years in Skanska and two for five to nine years.

2.2.2 Survey for Skanska's employees in Norway

Project Manager Helle Moe from Skanska Bolig AS acted as a contact person and helped in forwarding the survey to the right employees in Norway. The survey

was sent to 19 employees. Altogether 12 surveys were received of which 7 were completed. The sample in Norway was similar to the Finnish one except that none of the employees had any previous knowledge about Customers' Extranet.

Four of the respondents were female and three were male. Three of the employees were 25-34 years old and three were 35-44 years old. One respondent was over 55 years of age. One of the respondents was a director and the rest were employees. One of the respondents had more than ten years work experience in Skanska. Two had been working for Skanska from one to four years and the remaining four employees had worked for Skanska from five to nine years.

2.2.3 Customer survey

The survey was modified and sent also to Skanska's customers who were using the Customers' Extranet during the construction of their apartments. Customer Service Engineer Sari Outila from Skanska Talonrakennus Oy placed the survey to the one Customers' Extranet, which was in use at that moment.

The customers could enter the survey from extranet's bulletin board. Altogether 51 customers had access to the service. 21 users started to fill in the survey and 11 of them actually completed it. Only the completed ones were used in the analysis. The aim of the survey was to discover which of the methods used in customer service the customers prefer.

The customers' opinions were requested to get their view on the extranet and customer service in Skanska. The survey was distributed through the extranet so it can be assumed that the respondents are familiar with the Internet. This also means that the group of respondents is homogeneous in that way. Conclusions concerning other customer segments cannot be made according to these results but they give an idea how this particular segment sees the customer service in Skanska.

Eleven complete answers were received to the survey. So the final response rate was 22 percent. Six of the respondents were female and five were male. Six of the respondents were between the ages of 25 and 34 years old. The second largest age group was from 35 to 44 years olds - three of the respondents belonged to that age group. The youngest of the respondents was under the age of 24 and the eldest over 55 years old. Seven of the respondents were employees, two were entrepreneurs, one respondent was a student and one manager. Excluding one of the respondents the respondents were under 44 years old. It can be assumed that working people under 44 years are using computer and the Internet more actively than older people.

2.3 Gathering primary information: Interview

Erkki Ruuska, the CEO of Evianet Solutions Oy was interviewed for the Thesis as well as Project Manager Jukka Hörkkö and Customer Service Engineer Sari Outila from Skanska Talonrakennus Oy (APPENDIX 4, APPENDIX 5). The CEO of Evianet Solutions Oy Erkki Ruuska was interviewed to get information on the company itself, Customers' Extranet, the relationship between Evianet and Skanska and their future prospects. The project manager Jukka Hörkkö from Skanska Talonrakennus Oy was interviewed about construction industry and product model based design. Jukka Hörkkö is an expert in product model based design, which can be used in creating the visual side of Customers' Extranet. Sari Outila, the Customer Service Engineer from Skanska Talonrakennus Oy, was interviewed to get more detailed information on the customer service and especially customer choices and changes. She was also asked questions about the product development project. Sari Outila has several years experience in customer service in the construction industry and has been involved in developing the Customers' Extranet from the beginning.

Project Manager Helle Moe from Skanskan Bolig AS was interviewed by e-mail to get information about the construction industry in Norway (APPENDIX 6). Short e-mail interviews were sent to also two of Skanska's biggest competitors in both countries – NCC and YIT in Finland, NCC and Veidekke in Norway.

3 CUSTOMER SERVICE ON THE INTERNET

3.1 Network services

Internet offers multiple possibilities for companies to manage their communication and relationships. Network services have become more advanced following the steps of the development of technology, business communication and changing attitudes. (Jussila & Leino 1999, 44.)

In the beginning network services were mainly maintained by amateurs and the value of the network services for the most companies was insignificant. The services included mainly contact and basic information about a company. (Jussila & Leino 1999, 44.)

As the number of Internet users grew, the companies started to invest in network services. The network services started to have an effect on company's image and more attention were paid in creating up to date product presentations. There were only few interactive and operational features in the network services at this point. (Jussila & Leino 1999, 45.)

Today, network services have a significant effect on company's image and offer considerable competitive advantage for the company. Network services are more and more replacing traditional business communications and services. Besides computers, they can be used also by mobile telephones, TV and other equipment. This places new challenges for the network services. (Jussila & Leino 1999, 45-46.)

Network services include public Internet sites, intranet services and extranet services. Communication on the Internet can be aimed at both the customers and interest groups. Internet is also used in advertising, customer service and building the corporate image. Intranet is a private network for a company's internal use. Intranet's main purposes are to manage internal communications and also to offer support to the employees. The corresponding tasks of an Extranet are to offer services to the interest groups of a company and to manage the communications

between them. Extranet service is also a private network, which can be accessed only by chosen users. (Jussila & Leino 1999, 43.) Extranet can be its own separate network or it can be a part of a public website or intranet, in any case it cannot be accessed without a password. The extranets can be created for different user groups. The services and information on the extranets can be modified to each user groups needs. This thesis concentrates only to the extranet as a tool in customer service. (Alasilta 2000, 265-266.)

3.2 Extranet

Extranet services are based on the same technology than public network services. Extranet's target group is more limited than Internet service's target group. The target group of extranet is so marginal that the nature of communications and information available are different. Extranet contains information meant only for the specific target groups. The service is not accessible for people outside the target groups. (Jussila & Leino 1999, 36.)

Extranet service is often offered to company's interest groups such as suppliers, partners and customers. The main purpose of the extranet is often to support managing the relationships of the company's most important interest groups and key customers. (Jussila & Leino 1999, 37.)

Managing the relationships of the company and its interest groups involve lots of routine processes such as sending tenders and managing orders. Routine processes between the interest groups can be automated by the extranet. This makes the processes more efficient and decreases the costs. (Paavilainen 1999, 218.) Extranet can also be used to support marketing activities. Extranet offers faster customer service and personalized attention. As extranet often includes confidential information special attention must be paid to security issues. If extensive security measures are required the cost of taking the extranet into use can become high. Legal issues have to be taken into account as well. (Siegel 2004, 30.)

3.3 Transferring customer service to the Internet

Transferring the customer service to the Internet brings cost savings/benefit for the company and makes the customer service more efficient and fast. Orders made in the Internet can reduce costs even by 90 percent compared with orders made by telephone or fax. Customer service on the Internet will not be profitable if the customers are not willing or able to use the services. The company must study the situation carefully before transferring the services to the Internet. Internet as a customer service channel makes it possible to collect and save detailed information on customers' needs and future plans. When the customers' needs are known it is easier to offer personalized customer service. (Paavilainen 1999, 134-135.) Behind successful customer service is always different business processes. Different departments used to have their own systems and databanks, which overlapped each other. New technology allows all the different databanks to be integrated into one system. The company saves time, gains more efficient business processes and unifies the operations of different departments.

Internet-based customer service raises the quality of service to a new level. The most significant advantage for the customers is the accessibility of the service. The service is available around the clock and it can be accessed from any computer with an Internet connection. The number of Internet users is increasing all the time. In 2005 68.2 percent of the population in Norway and 62.6 percent in Finland had access to the Internet (Internet World Stats 2005a, 2005b). At this point a company can gain great competitive advantage especially in the field of construction industry where the use of Internet solutions has not broken through yet. Also cost-effectiveness is a big benefit.

Network services can offer the following features and benefits:

- Collect customer feedback
- Share applications with external partners/suppliers
- Offer customer support
- Maintain business relationships
- Remove distances
- Communication and information sharing

- Automate routine processes
- Bring special value for customer relationship by special features (games, 3d-models, calculators etc.)
- Offer training and support services
- Offers customer service 24/7
- Chat platforms
- Customised view for each user groups

(Ruuska, E. 2006.)

4 EVIANET SOLUTIONS OY

4.1 Company presentation

Evianet Solutions Oy is a small size Finnish company, which is specialized in planning and implementing Internet services for electronic business and digital communication. Evianet Solutions Oy was founded by Erkki Ruuska, Reijo Mönkkönen, Pekka Ratinen, Kati Tuovinen and Jari Kolehmainen on November 2003. The company's estimated turnover for the year 2006 is 650.000 euros. Evianet's home office is situated in Jyväskylä and its main office is located in Helsinki. When the company started its operations, the number of the personnel was six. Now, three years later, the number of personnel has doubled. (Ruuska, E. 2006.)

Evianet Solutions Oy's business idea is to create close partnerships with its customers and plan Internet service packages, which support their customers' business processes. Evianet produces software components and offers them as an ASP-service package to its customers. All the components are compatible and use the same server base (created by Evianet) as their base. Every customer gets its own, tailored, service package made out of the different software components. Evianet's target group includes enterprises and communities especially construction companies and the medical industry – Evianet's staff has previous experience from these industries and it has been proven that the extranet

technology can be used also for example in introducing medicines and sharing medical information. (Evianet Solutions Oy 2005a.)

Evianet's main emphasis is on interactive Internet services, which aim at increasing the customer loyalty between the different parties, making the company's own processes more efficient, making the network processes between the business partners more efficient and fastening up the implementation of new business practices. The services are built according to each customer's individual needs as extranet, Internet or/and intranet solutions. (Evianet Solutions Oy 2005a.)

Evianet's offers digital solutions for its customers in the field of marketing, communication, product training and different fields of logistics operations. Evianet emphasizes customer service, flexibility, liability and innovative solutions with the help of its professional personnel. Evianet develops services that support their customers business operations. (Evianet Solutions Oy 2005a.)

Evianet must understand its customers' business operations and they must have an expert knowledge on the services and the possibilities of the field of business to be able to come up with innovative solutions for the services that support the customer's business operations. Evianet must be able to offer wide scale know how on planning and production. The flexibility and fastness of the services, as well as comprehensive and precise management of the project, are Evianet's strong points. Evianet has to make sure that they are able to offer services in a cost effective manner. Evianet aims at creating functional partnerships with their customers in the levels of production, customer relationship and management. (Evianet Solutions Oy 2005a.)

Evianet's product strategy is mainly based on the services that are producterised by their own product development. The services are offered as ASP-service. ASP-service means that Evianet acts as Application Service Provider and hosts the software applications on its own servers within its own facilities. By networking with the other companies in the line of business, Evianet is able to speed up the product development and get wider range of products. Evianet's product and

service range includes EviaPortal, EviaMarket, EviaConsult, EviaOnline, EviaLearning, EviaMedia. Features like flash animations, 3-D illustrations, graphical planning and visual user interface bring additional value to the services. (Evianet Solutions Oy 2005a.)

4.2 Product presentation

Evianet Solutions Oy has developed Customers' Extranet together with Skanska Talonrakennus Oy. Customers' Extranet helps in communication between the different parties involved in the construction project. The different user groups of the extranet include suppliers, Skanska's personnel, customers and potential customers. Customers' Extranet enables efficient information management and communication. The service includes both a public website and an extranet for registered users. The user groups can access the extranet by logging in from the website. (Evianet Solutions Oy 2005b.)

The communication in construction business is heading towards Internet-based networks and Skanska is the forerunner in this field. As technology develops, Customers' Extranet's possibilities expand on the Internet and the extranet becomes also available in Digital TV and WAP-mobile phones. The digital TV's can be connected to the Internet and the extranet can be accessed that way. A person could also download a video of own apartment to a mobile phone with WAP and media player features. (Ruuska, E. 2006.)

Evianet's Customers' Extranet is a communication and interaction channel between the customers, suppliers and the builder. It can be used through the Internet, digital TV and mobile telephone. Customers' Extranet includes the customer choices, news services, feed back mechanism, chat forum and interface. It also includes basic information, pictures and documents and can be used as a marketing channel. (Evianet Solutions Oy 2005b.)

Customers' Extranet is used during the whole construction process, starting already from the presales and –marketing phase, when the decision to build the

site is not yet made. At this phase it works as a marketing tool. The potential buyers can view the public side of Customers' Extranet. From the website they can find for example the apartment types and decorating, furniture and equipment of the apartments. Also the different product alternatives for apartment's materials and equipment can be presented here. Skanska offers, depending on the site, different ready-made package choices for example for kitchens' or bathrooms' materials and equipment. Normally Skanska offers three different package alternatives, which are included in the price. In addition, Skanska offers alternative products with extra cost. (Evianet Solutions Oy 2005b.)

During the construction phase, Customers' Extranet is used as a tool to manage the information of each apartment. The extranet is accessible anytime. It offers the customers a personalised view to their apartment's information and project documents. Customers' Extranet helps both the customers and Skanska's employees to make and manage the customer choices. Skanska can use the bulletin board in the extranet to keep the customers informed about what is happening at the construction site. Customers can also ask questions in the extranet, the answers are posted to the extranet to help others with the same questions. (Evianet Solutions Oy 2005b.)

Customers' Extranet has different user groups: potential customers, customers, suppliers and Skanska's personnel. One of the goals is to increase the customer satisfaction level with accurate and sufficient information. Different user profiles are created to each user group. The user has certain services available for him/her in Customers' Extranet based on the user profile they have. (Evianet Solutions Oy 2005b.)

Customers' Extranet is also used after the construction process. It is used as a tool to manage the information regarding the reparations and maintenance. It includes a maintenance book, home handbook and information about the home electronics. Customers' Extranet is also used as a communication channel between the residents and Skanska. (Evianet Solutions Oy 2005b.)

Customer service engineer Sari Outila from Skanska Talonrakennus Oy has been the key person in developing the extranet together with Evianet Solutions Oy. According to Sari Outila, there is demand for a service like Customers' Extranet. The number of users has varied between the different construction sites and it is hard to forecast. In one site the usage percentage of the extranet was as high as 75 percent of the customers. It has been also noticed that the ones who use the extranet, use it actively. (Outila, S. 2006.)

Using of the extranet does not depend on age, gender or any other such a specific factor, it is more of a life style question, says Sari Outila. Many times, if the customers are not familiar with using the computer themselves, they often know someone, a relative or a friend, who uses the service for them, continues Sari Outila. Some people have been following the building process on the extranet from abroad. (Outila, S. 2006.)

4.3 Customer presentation: Skanska AB

Skanska is one of the leading construction companies in the world. Skanska's business operations are divided into four different business streams: Construction, Residential Project development, Commercial Project Development and BOT (Build Own/Operate Transfer). Nowadays Skanska's home and primary markets are Sweden, the US, UK, Denmark, Finland, Norway, Poland, the Czech Republic and Argentina.

Over the years Skanska has developed into one of the world's leading companies for construction-related services and project development. Skanska is the second largest construction company in the world and among the largest developers in Europe. (Skanska 2005a.)

Skanska has been listed on the Global 100 list both in 2004 and 2005. The list includes the world's 100 best companies in terms of sustainability. The list was presented at the World Economic Forum in Davos and a total of 1,800 companies were evaluated. (Skanska's newsletter the Hub 2006.)

The different units of Skanska have their own specialized roles as project developers, investors and builders. The construction stream carries out the construction business and handles the construction of non-residential and residential buildings, as well as civil construction projects. It is Skanska's largest business stream. It performs assignments both for external customers and for Skanska's other business streams. (Skanska 2005b.)

The business stream of Residential Project Development is specialized in project development of homes. The business stream is responsible for the entire development chain from concept and design to sales. The project development units do not perform any construction work of their own, but purchases the construction services from the Construction business stream or from external suppliers in each market. Operations focus primarily on small and medium-sized residential units. (Skanska 2005c.)

Skanska's net sales in 2004 totaled 13,434 million euros. 23 percent of the net sales came from Sweden and 18 percent from the other Nordic countries. Skanska has altogether 54,000 employees. Of the employees 95 percent are engaged in construction. The net sales for the construction business stream in 2004 were 12,131 million euros. Four percent of these came from the residential operations. The net sales for the Residential Project Development business stream were 616 million euros in 2004. (Skanska 2005c.)

In Finland Skanska Oy is the leading constructor of housing, production- and office facilities and infrastructure. Skanska Oy's business streams are Residential Project Development, Building Construction, Civil and Environmental Construction plus Building Services and Facilities Management. Besides Finland, Skanska Oy's market area includes Estonia. (Skanska 2005d.)

Skanska's Residential Project Development business stream's Finnish unit, Skanska Kodit, is liable for construction of housing including purchase of land, project development, marketing, sales and the execution of the whole project in Finland and Estonia. The construction work itself is bought internally from

Skanska Talonrakennus, which is the Finnish unit of Skanska's Construction business stream. (Skanska 2005c.)

During the last 10 years Skanska Oy has constructed over 29,600 apartments – this makes Skanska Finland's leading constructor of residential buildings. Skanska has operated in Finland as Skanska Oy since 1994. In 2004, Skanska Oy's net sales in Finland were 935 million euros and in Estonia 73 million euros. (Skanska 2005c.)

In Norway, Skanska AS's net sales for the construction business stream amounted to 916 million euros in 2004. The net sales for the Residential Project Development business stream in Norway amounted to 131 million euros in 2004, which is 22 million more than the year before. Skanska had a stable level of about 90 percent pre-sold housing units during construction. (Skanska 2005c.)

5 OPERATING ENVIRONMENTS

At the moment Skanska uses Evianet Solutions Oy's Customers' Extranet on some of their sites in south of Finland. Skanska and Evianet are negotiating about implementing Customers' Extranet to all of the new construction sites in Finland and also about the possibilities of implementing the extranet to other Nordic Countries as well. This thesis concentrates on Finland and Norway. Employees from Skanska Talonrakennus Oy in south of Finland are actively in contact with Skanska Bolig AB, so Norway is a logical country for Evianet to start planning the implementation of Customers' Extranet. At the beginning of this research project, some employees were contacted from each of the Nordic organisations: Finland, Norway, Denmark and Sweden. In Norway the employees answered actively and were interested to hear more about Customers' Extranet. The emphasis of this thesis was decided to be placed on Finland and Norway. To find out if there is a need for Customers' Extranet in the country organisations, some information about the markets is required.

5.1 Finland

Construction industry has an important role in the Finnish economy. During the year 2004 there were a total of 30,000-35,000 housing starts in Finland (Skanska, 2005c). The improvement in the employment count, the good trend in incomes and the low interest rate level support household consumption and a need for housing (Statistics Finland 2005a, 15).

The economy of Finland has been steadily growing during the past years. The GDP-growth rate for the year 2004 was 3.6 percent in Finland. The Finnish economy was estimated to grow by 1.9 percent in 2005. Reasons for the slow down can be found from weaker-than-expected economic growth in the euro zone and the lengthy labour dispute in the Finnish paper industry. (Statistic Finland 2005b)

Households' consumption expenditure increased by 3.2 percent during the year 2004 (PTT 2005). At the same time the disposable income rate increased by 5.4 percent. Last year's national income per capita was 23,949 euros, which is over 1,000 euros higher than in the year before (Statistics Finland 2005c). In 2005 the inflation rate was 0.9 percent (Statistics Finland 2005d).

According to Skanska's Annual Report 2004, the need for housing has remained heavy but is expected to level off, due to the signs of increase in the interest rate level. The housing market in Finland has remained stable at a high level for a number of years. A total of 30,000-35,000 housing starts occurred in 2004. (Skanska 2005c.)

Although there has been signs of increase in the interest rate level, the construction industry kept growing in the beginning of year 2005. The second quarter of the year 2005 was good for the construction and building industry. The amount of housing investments grew and the number of houses built was bigger than the year before. The building expenses have grown due to the price increase in raw materials, steal and oil. The unemployment in the construction and building

industry has decreased. The wage level and turnover level grew at the same speed. (Oikarinen, J. 2005.)

Consumers' willingness to raise a loan was measured in July 2005. According the survey 76 percent of the consumers thought the time was favorable for raising a loan, and 13 percent of households were planning to do so in the next 12 months. 7 percent of the households were either fairly or very certain to buy a dwelling within the next 12 months. (Statistics Finland 2005a, 16.)

For years after the recession the mortgages were repaid in a faster pace than new mortgages were applied. The turning, when the loan base started to grow again, was year 1997. In the end of the year 2004, the mortgage base of households was 40 milliard euros. Within ten years the mortgage base of households had doubled. The amount of new mortgages reached new records over and over again during the period of low interest rates in 2000 – 2004. The interest rates on mortgages in Finland have been lowest in Europe for years due to the fact that they are tied to the short-term Euribor- interest rates and in the other parts of Europe to the long-term interest rates. (Laine, A. 2005, 13-17.)

Low interest rates and long term loans encourage people to invest in real estate. The amount of social building production has decreased clearly even though the total volume of housing construction is record high. (Manninen, H. 2005, 9-10.)

The volatility of the prices of real estate has been traditionally high in Finland. During the years 1985-2004 the prices have varied a lot. After the year 1995 the prices in the capital region have increased 200 percent. In the other parts of Finland the prices have increased by 80 percent. The increase in the prices just accelerated due to the decrease in the interest rates. The increase in the prices of real estate is not only a Finnish phenomenon. It could even be seen as a global boom. (Laine, A. 2005 13-17.)

At the end of year 2004, 63 percent of the households owned their dwellings. The number of households all together was 2,402,000. 33.40 percent rented their dwellings. The larger the household the higher possibility was that the household

owned their dwelling. One-person households almost 50 percent lived in a rented dwelling. Also the age of the oldest person in the household had an effect on the form of living. In the households where the oldest person was under 30-years-old, 74 percent lived in a rented dwelling. (Statistics Finland 2005e.) So it can be seen that under 30 years old people and people living alone were more likely to rent their dwelling. Older people with family are typical customers of the construction companies.

The number of Internet and mobile phone users in Finland were found out to see if the Customers' Extranet would have potential in the market due to those factors. In Finland the number of mobile telephones in the year 2003 was 4.7 million. (CIA Factbook 2005.) The installed base of color display handsets with GPRS, WAP, MMS and Java features grew up to 1.8 units by the end of 2004, representing around one third of the total mobile telephone subscriptions in Finland. eBird estimates that 75 percent of these handsets were equipped with the required settings for using new mobile services, such as WAP or MMS services. Thus the potential user base for WAP, MMS and other similar services has increased substantially during 2004. (Liikenne- ja viestintäministeriö, 2005)

In year 2005, the number of Internet users amounted up to 3.286 million in Finland. That is 62.6 percent of the total population. The user growth between year 2000 and 2005 has been 70.5 percent. (Internet World Stats, 2005b.) According to the Economist Intelligence Units (EIU) global e-readiness ranking for 2005, Finland was in the sixth place. An annual e-readiness ranking has been published by EIU since 2000. 65 of the world's largest economies were assessed in 2005 on their ability to promote and support digital business and information and communications technology services. (Economist Intelligence Unit, 2006)

5.2 Norway

Economic growth and increase in the households' income level are favorable to the construction industry in Norway. People are ready to make bigger investments and are more likely to buy their own dwelling rather than renting it. They

construction industry has a strong position in the market. The building and construction industry employed 141,704 people, included 37,011 companies and made a turnover of 20,279 million euros in 2003. (Statistics Norway 2005a.)

The economic growth in Norway has been remaining strong during the past few years. The Gross Domestic Product (GDP) real growth rate for the year 2004 was 2.8 percent and the growth in the Norwegian economy has still continued in 2005. The households' consumption increased by 4.7 percent during the year 2004. At the same time the households' real income increased by 5.1 percent. The Norwegian krone (NOK) has appreciated due to the high price of oil and relatively low inflation in Norway. A continued strong krone, low rate of inflation and low interest rates are expected in several years ahead. (Statistics Norway 2005b.)

The low interest rates and the increase in households' consumption have been favorable to the construction industry. The housing investments grew by 12.3 percent from the year 2003 to the year 2004. (Statistics Norway 2005b.)

From the year 2004 to the year 2005, house prices increased by 8.3 percent (Statistics Norway 2005c). Residential building project start-ups numbered 30,000 in 2004, which was 30 percent more than in the previous year (Statistics Norway 2005d.) The housing production in Norway increased by 7.8 percent from 2004 to 2005. The production of new buildings increased when the number of renovations decreased. (Statistics Norway 2005e.)

In June, Euroconstruct estimated that the construction of new buildings would see growth of 6.1 percent this year and a drop of 2.9 percent in 2006. Renovation would grow by 3.3, 1.3 and 2.7 percent in 2005, 2006 and 2007, respectively. (YIT 2005.)

77.60 percent of Norway's 4,593,041 (July 2005 est.) inhabitants live in the urban settlements. In the time period from the year 2000 to 2005 the population density in urban settlements increased from 1 588 to 1 604 residents per km2. (Statistics Norway 2005f.)

Statistics Norway has carried out a survey about the living conditions in Norway 2004. Percentages of dwelling owners in different age groups are presented in the table below.

TABLE 1. Percentages of dwelling owners in different age groups in Norway (Statistics Norway 2005g).

Age	% dwelling owners
25 - 44	79
45 - 66	92
> 67	84

The housing expenditure defined as the sum of rent, mortgage and instalment increased by 13 percent from the year 1997 to 2004. The average rate of interest was a little higher in 2001 than in 1997, but decreased sharply in 2004. (Statistics Norway 2005g.)

The number of Internet users in Norway amounted up to 3.140 million year 2005, which is about 68.2 percent of the population. During the time period from the year 2000 to the year 2005 the Internet usage growth has been 42.7percent. (Internet World Stats 2005a.). According to the Economist Intelligence Units (EIU) global e-readiness ranking for 2005, Norway was in the ninth place. An annual e-readiness ranking has been published by EIU since 2000. 65 of the world's largest economies were assessed in 2005 on their ability to promote and support digital business and information and communications technology services. Norway gained its high position at the ranking list because it is one of the broadband leaders in Europe. The percentage of people who use mobile phones was as high as 80 percent. Even though the e-readiness in Norway has increased from the year before, Norway dropped four positions. One of the reasons for the decline is the lack of technological innovation and production. (Economist Intelligence Unit 2006.)

5.3 Skanska's competitors in Finland and Norway

In the following chapter, Skanska's two biggest competitors in residential construction in Finland and Norway are presented. In this thesis, the concentration is especially laid on how the competitors and their customers are communicating and how actively extranets, website and the Internet is used in the communication. Short e-mails with couple of questions about the extranet were sent to the competitors, which were answered by YIT Finland and NCC Norway. The following information is from the competitor's responses and their websites, and from the surveys, which were sent to Skanska's personnel.

In Skanska's annual report 2005 two biggest competitors were mentioned to be YIT and Lemminkäinen, but Lemminkäinen is concentrated more in commercial construction (Skanska 2006). The biggest competitors in the residential construction are YIT and NCC. Skanska's employees were also asked to name the biggest competitors in residential construction in the market and name their strengths. In Finland all the respondents named YIT and NCC. According to the survey NCC's strengths were product standardization and developed Internet service. They were mentioned to be technically one step ahead. YIT was described as the biggest in the field of business.

Skanska is in Norway the biggest construction company. Its biggest competitors in residential construction in the market are NCC and Veidekke (Skanska 2006). NCC is Skanska's biggest competitor in the residential construction both in Finland and in Norway. It is one of the biggest construction and property development companies in the Nordic region.

NCC's net sales for the year 2004 were SEK 45,437 million. Of the net sales 37 percent came from NCC Construction Sweden, 11percent from NCC Construction Finland, 11 percent from NCC Construction Denmark, 8percent from NCC Construction Norway and 7percent from NCC Property development. (Skanska 2005c.) Skanska's employees mentioned developed Internet services as NCC's strength and it the claim can be proved by studying their website. The site is clear, nice and stylish. There is a clear link to NCC's websites for different market

areas. All NCC's websites follow the same outline and the contents of them is quite the same. (NCC AB 2006.)

On the first page of the site is a link to an interactive company presentation of NCC. It is also possible to leave feedback about the site through the website. Presales and sales phases are presented the same way in every country. On the sites future building projects are introduced and the potential dwelling buyers can show their interest by contacting NCC through telephone or e-mail. Basic information of the buildings and apartments on sale is presented. Presentations include also pictures and floor plans. It is also possible to order a brochure of the building through the site. (NCC AB 2006.)

NCC's websites in Finland and Norway did not differ that much. Still NCC's Finnish site includes some specialties that are worth mentioning. NCC's Finnish site is really nice. It has the some qualities that Evianet has been developing, like 3d presentations of the apartments. (NCC Oy 2006.)

NCC has launched an Ideakoti or Idea Home, which is an interactive introduction of a house in their website. There it is possible to choose from three different styles, modern, Scandinavian and classic, and see interactively how they look. Idea Home offers an opportunity to buy a house that looks like the buyer. It is possible to choose from three different ready-made styles or plan the interior by oneself. (NCC Oy 2006.)

It is clear that NCC wants to communicate and cooperate with the potential buyers and the buyers of the apartments. They are asking feedback of the website on the first page of the website and there are couple of questionnaires (concerning for example Idea Home) on the website. The website also includes games, living expense calculator, Christmas calendar and links to a map server. The website includes lots of features that bring special value for the customer. (NCC Oy 2006.)

Short e-mail with couple of questions about the extranet was sent to NCC. According to the response from NCC Bolig AS they are not using extranet service

for the buyers of the apartments. NCC is currently using their website for ongoing information of the projects, showing progress, prices, material and equipment alternatives and so on. The communication methods used between the customers and the company include e-mail, traditional mail and phone. It was mentioned that most of the communication between the customers and NCC happens during the process of making the material and equipment choices for the apartment. NCC also sends information for their customers by traditional mail and e-mail. (NCC Bolig AS 2006.)

YIT's main market areas include the Nordic countries, the Baltic states and Russia. It's business operations are divided into three business streams: Building systems, Construction Services and Industrial and Network Services. YIT's net sales amounted to 3.0 billion euros in 2004. The company employs altogether 22,000 employees. (YIT 2006.)

The overall expression of YIT's website is informative and clear. No special features are included in the website. The future construction sites are presented on the website including pictures of the building, general information about the apartment and estimated timetable of the construction project. For more detailed information the site includes telephone number and the address of nearest the YIT office. (YIT 2006.)

There is a search engine for the apartments that are planned to be constructed, are under construction or ready and on sale. The apartments for sale are presented on the website by pictures of the building, site layout, floor plans, number of rooms and size. It's possible to send a contact request by e-mail to YIT (link at the bottom of each separate apartment). There is also a telephone number in which you can call and check the latest situation of free apartments. (YIT 2006)

YIT offers their customers the possibility to choose their own materials and equipment for their apartments. Also the floor plan can be modified according to the customers' wishes. On the public site it is not possible to follow the construction process except for the web cam recording the building process of the tallest apartment building in Finland. (YIT 2006.)

YIT Rakentamispalvelut in Finland replied to the questions send concerning extranet and communication with the customers. YIT has taken an extranet service in to use on couple of their construction sites in south of Finland. The extranet includes basic information about the building, floor plans and contact information. At the moment, it is not possible to make material and equipment choices on the extranet. Informing about the construction project happens mainly through other channels than the extranet. The main channel used is traditional mail. (YIT Rakentamispalvelut 2006.)

Veidekke ASA is the biggest construction and property development company in Norway and the fourth largest construction company in the Scandinavian market. The company carries out all different kinds of construction projects. Its main business streams are construction, property development and industrial operations (asphalt/aggregates, road maintenance and recycling of industrial waste). In year 2004 the turnover was 1.6 billion euros, which is about 0.19 billion more than the previous year. During the same year the company employed 6000 people in Scandinavia. (Veidekke AS 2005a.)

In Norway, Veidekke is organised in the companies Veidekke Entreprenør AS (construction), Veidekke Eiendom AS (property development) and Veidekke Industri (asphalt, recycling). In Denmark, the construction business is run by Veidekke's subsidiary, Hoffmann AS with head office in Copenhagen. Veidekke Entreprenad AB runs operations in Sweden, with subsidiaries in Stockholm, Gothenburg and in Skåne. (Veidekke AS 2005b.)

Veidekke has websites in English, Norwegian, Swedish and Danish. The English site is very informative, mainly concentrating on presenting the company itself. It includes contact information, that is telephone number, address and e-mail address, to each country. No information about the apartments on sale or anything like that are presented. The website does not seem to be planned for private households who are seeking for a new home.

Www.veidekke.no looks more interesting, when looking from the apartment buyer's point of view. It has really nice interactive presentation of the future buildings and apartments on sale. (Veidekke AS 2005c.) The interactive part of the site was really nice, but otherwise, the site could look more professional.

6 CUSTOMER SERVICE IN CONSTRUCTION PROJECTS

The goal of construction companies is to meet the demand of building and renovating residential buildings and business facilities. The construction process is a sum of co-operation of different parties and it is typical that the parties change in construction projects. Construction projects are all unique, the parties, locations, design and budgets all are different every time (Kankainen & Junnonen 2001, 23).

Big amounts of money are involved in a construction project so very careful planning and research is done before investing. Buying an apartment is a big investment for the customer as well, so it is important for the construction company not only offer quality work but also quality service.

Customers have become more demanding. They want to have more control during the design phase. This is a challenge for the construction company. Huge amounts of information have to be managed when each apartment is unique. Until now the construction companies have mainly offered standard apartments, but to be able to reach the customer satisfaction they have had to start offering more flexibility in designing the apartments.

In this chapter special characteristics of construction industry and customer service in construction industry are presented with the help of secondary information and the results from the surveys. Suggestions on how Customers' Extranet can be used to improve the customer service in Skanska Finland and Norway are presented in chapter seven. In that chapter, Customers' Extranet's potential to offer solutions to the current problems are discussed.

6.1 Customer service in the construction business

The construction process consists of presales and –marketing, construction and guarantee phases. Customer service differs in the phases. Customer service in the presales- and marketing phase is mainly responding to the interest by answering to the questions and sending out brochures. The alternative communication channels in customer service are telephone, e-mail, the Internet, fax, mail and personal meetings. The results from the surveys concerning the presales and –marketing phase are presented in the following tables.

TABLE 2. What is the most used communication channel during the presales and –marketing phase? (APPENDIX 1 Q1, APPENDIX 2 Q1, APPENDIX 3 Q1.)

Respondent	Number of respondents who ranked the channel as the most used channel
Customers	6 website 1 brochure 1 meeting 3 no contact
Skanska Finland	4 newspaper 3 website
Skanska Norway	3 newspaper 4 website

According to the respondents, website is the major communication tool and is used both in Finland and Norway. The responses show that also the newspaper is used a lot in the presales and -marketing. A small number of customers got their information from brochures and meetings.

TABLE 2. What would be the most ideal communication channel during the presales and –marketing phase? (APPENDIX 1 Q3, APPENDIX 2 Q3, APPENDIX 3 Q3.)

Respondent	Number of respondents who ranked the channel as the most used channel
Customers	4 e-mail 3 telephone 2 mail 2 FAQ
Skanska Finland	2 e-mail 1 telephone 3 FAQ 1 other: Customers' Extranet
Skanska Norway	6 e-mail 1 telephone

The results of Skanska Finland show that they prefer to be contacted through frequently asked questions (FAQ) on the website. E-mail is the most ideal communication method for the respondents in Norway and Skanska's customers in Finland.

TABLE 3. Have there been any communication problems during the presales and –marketing phase? (APPENDIX 1 Q4, APPENDIX 2 Q4, APPENDIX 3 Q4.)

Respondent	
Customers	No. No problems.
Skanska Finland	Mainly the kind of problems that customers do not get enough information.

(Continues)

TABLE 3. (Continues)

Skanska Norway	The challenge is always to separate from the huge mass of other projects that are in the market. There are often changes that need to be communicated.

Conclusions can be drawn of the results concerning the presales and -marketing phase that Internet (e-mail, website, FAQ) is used a lot in the presales and -marketing phase. Also other more traditional marketing methods are used such as newspaper and brochure. Telephone is still used in some level in the communication. It is obvious that Internet cannot replace the other medias, but it has gained a strong position both as a marketing and communication tool.

In the construction phase, besides answering to a variety of questions, big part of the customer service consists of handling the material and equipment choices and customer changes. It includes informing the customers about all the different alternatives available for the apartment and processing the choices made. In the construction phase the customers are also informed about the progress and timetables of the building process. The customers are often also offered a chance to visit the construction on special days when they can see the building project in practice and even take a look at their own apartments. The results from surveys' construction phase part are presented in the following tables.

TABLE 4. What would be the ideal communication channel for Skanska to inform the customers about the construction project? (APPENDIX 1 Q5, APPENDIX 2 Q5, APPENDIX 3 Q5.)

Respondent	Number of respondents
Customers	7 e-mail 4 website 2 mail

(Continues)

TABLE 4. (Continues)

Skanska Finland	1 e-mail 4 website 2 mail
Skanska Norway	1 e-mail 3 mail 1 SMS 1 no response

TABLE 5. How can the customers contact Skanska in the construction phase? (APPENDIX 1 Q7, APPENDIX 2 Q7, APPENDIX 3 Q7.)

Respondent	Number of respondents who ranked the channel as the most used channel
Customers	9 e-mail 1 SMS 1 no answer
Skanska Finland	4 e-mail 3 telephone
Skanska Norway	2 mail 1 e-mail 1 SMS 1 telephone 1 no response

TABLE 6. Have there been any difficulties in communication during the construction phase? (APPENDIX 1 Q13, APPENDIX 2 Q14, APPENDIX 3 Q14.)

Respondent	
Customers	Yes – Sometimes, I were not sent any confirmation that my messages (SMS/e-mail) were received – some kind of confirmation is normal! I did not reach the right person by telephone.
Skanska Finland	The informing about changes made during the construction period (eg. Changes in the timetables) did not reach everybody or traditional mail sometimes did not reach its destination. All of the customers do not have e-mail or Internet. It would make the communication easier if they did.
Skanska Norway	Get the right delivery to the right apartment It is time consuming

As the results show e-mail, website and traditional mail were chosen as the most ideal methods for informing about the construction project by both the customers and Skanska Finland. The order just varied – The customers preferred personal contact by e-mail and for Skanska, general informing on the website was preferred. Skanska Norway's responses were completely different. Traditional mail was chosen as the most ideal method nearly by the half of the respondents.

The respondents were asked what are the most used communication channels when the customers contact Skanska. The results show clearly that the customers prefer using e-mail. Nine out of eleven respondents answered that they had contacted Skanska most by e-mail. One of the customers chose text messaging as the most ideal way to contact Skanska. The answers of Skanska's employees in Finland show that besides e-mail the customers contact Skanska also by telephone during the construction project. The responses from Norway varied a lot. All the

respondents picked different channels. Only E-mail stood out a little bit from the other channels.

After the construction project is finished and the customers have moved in, the construction companies offer a guarantee for the apartments. During the guarantee time customer feed back and repair requests are collected.

TABLE 7. How is customer feedback collected? (APPENDIX 1 Q12, APPENDIX 2 Q13, APPENDIX 3 Q13.)

Respondent	Number of respondents
Customers	9 e-mail 2 has not left feedback
Skanska Finland	5 traditional mail 2 e-mail
Skanska Norway	4 mail 1 e-mail 1 Other: catalog with questions 1 no response

TABLE 8a. If the customers find some faults in the apartment, how can they inform Skanska about the problem? (APPENDIX 1 Q14, APPENDIX 2 Q15, APPENDIX 3 Q15.)

Respondent	Number of respondents
Customers	1 e-mail 10 have not been in contact with Skanska during this phase

(Continues)

TABLE 8a. (Continues)

Skanska Finland	4 telephone 2 e-mail 1 Other: There is a guarantee form, which can be filled in.
Skanska Norway	2 telephone 1 mail 2 website 2 no response

TABLE 8b. What would be the ideal approach channel in your opinion? (APPENDIX 1 Q14, APPENDIX 2 Q15, APPENDIX 3 Q15.)

Respondent	Number of respondents
Customers	Telephone, E-mail or on the Internet E-mail, Telephone or website Telephone, E-mail
Skanska Finland	Customers' Extranet Traditional mail Form on the Website, were the customers could sign in Internet Personal contact
Skanska Norway	E-mail or telephone Mail E-mail E-mail

TABLE 9. Q16 (Q15 for customers) Have there been any difficulties in the communication during the guarantee time? (APPENDIX 1 Q15, APPENDIX 2 Q16, APPENDIX 3 Q16.)

Customers	
Skanska Finland	Skanska is not sure what is the model or trademark of equipment that is ordered to the apartment and the fixing process will take longer. What are the instructions for certain equipment and has the customer ever received them. The customer do not live him/herself in the apartment
Skanska Norway	The customer contacts the wrong persons

The respondents were asked to choose the most used channel to give or receive customer feedback. At the moment Skanska collects actively feedback by sending a feedback form by mail to the customers after they have moved into their apartments. (Outila S. 2006) As the results show both in Finland and Norway, the feedback is mainly received by mail. The customers who answered to this survey had not yet received the feedback form. According to their responses e-mail was the most used channel to send feedback.

The majority of the customers who answered to this survey were not yet in the guarantee time. The Skanska's employees in Finland responded that the customers most commonly contact Skanska by telephone and e-mail in case the customers have found faults in their apartments. One of the employees also mentioned about the guarantee form, which is sent to the customers after the construction phase. In Norway telephone and website were mentioned as the most used channels. The results show that the currently used channels are not the same as the ones, which are thought to be the most ideal communication channels.

The respondents were also asked with an open question which channel would be the most ideal for customers to inform Skanska about the problem. Four customers answered the question and their responses included telephone, e-mail

and website. Only one of the respondents answered solely telephone, the others included also Internet in their answers.

Three of the respondents from Skanska Finland answered that the best way would be to use Internet solutions for example Customers' Extranet. Of the Norwegian employees, three answered e-mail, but also telephone and mail were mentioned. Majority of all respondents thought that the problems could be reported through the Internet.

6.2 Co-operation of different parties in the construction project

Different parties are involved in the construction project. These include for example the customers, suppliers, authorities and architects, designers, logistics and customer service employees from the construction company. Effective communication and information management between the parties is a challenge for the construction company. High quality customer service is obtained only when the cooperation works between the parties.

Old-fashioned role thinking still exists in the construction industry. Different parties of the construction project work separately from each other, which causes major cost deficits. Data and drawings are created over and over again. The advantage of networking have been recognised and efforts are made toward better cooperation. (Niemi K. 2005)

Skanska has started a project concerning the co-operation and development of the common product model based process in its business units in the Nordic region. Skanska conducted a survey to find out the expectations and current situation in the business units. Several of the respondents mentioned networking between the business units as the key for more efficient and productive operations. (Skanska 2005e.)

6.3 The changing requirements

Traditionally the construction companies have built standard apartments. The apartments are designed and built by the construction company and the customers have had little if any possibility to affect to the design process of their apartments. The customers are becoming more demanding and want to take part in the design of their new apartments and the construction companies have recognised it. Until now the problem has been, that it has been impossible for the construction companies to offer high flexibility in the design of the apartments in cost effective way. New tools are needed to manage the growing amount of information and IT offers totally new opportunities for the construction companies.

6.3.1 Customers expect more flexibility in customer service

Ministry of the Environment has conducted a study, Asuntosuunnittelun ja -rakentamisen tila asukas- ja ammattilaiskyselyn valossa, which is concentrated on customers' hopes, experiences and behaviour when buying an apartment in Finland. The study showed how the respondents experienced the importance of different themes of development in the quality of the construction business. According to the study 40 percent of respondents thought that the increase in the flexibility and variability of the apartments and buildings is very important. Other 40 percent considered it to be quite important. 44 percent of the respondents thought that the flexibility and variability of the apartments is poor or very poor. It was also found out that 30 percent of the respondents thought it would be very important to develop a household manual and a maintenance guide. 55 percent considered it to be quite important. (Hakaste, Hirvonen & Manninen 2005, 37-42)

The increase of the customer orientation in design and construction was seen as very important by 30 percent and as quite important by 50 percent of the respondents. According to a respondent, tools that enable customers to participate in the design and construction process, regardless of the customers' professionalism, should be developed. Customers' possibility to get involved in the design and construction process is starting to be every day life. The possibility

to have an influence on the process is usually limited to the equipment and material choices. The possibility for changes in the floor plans is more rare. The increase of the customer orientation in the design and construction process requires efforts to increase the customers' knowledge level, to develop tools for customers' use and to develop the process itself. The process development includes for example developing the contracts so that the changes are possible also in the construction phase. More options are needed to meet the customers' social and aesthetic preferences both indoors and outdoors. . (Hakaste, Hirvonen & Manninen 2005, 37-42)

The study conducted by Finland's ministry of environment showed clearly that the buyers of the apartments wish for more flexibility in the design and construction process. Project Manager Helle Moe from Skanska Bolig AS was interviewed to get her opinion on what the customers of Skanska Norway expect of them nowadays. According to her Skanska Norway has the same challenge than Skanska in Finland. "Customers want to buy a castle or a dream house and expect to have the possibility to change "everything" in the house/apartment", Ms Moe says and continues: "Skanska doesn't have the time or the tools to give the customers possibilities and that is a big challenge." According to Ms Moe Skanska Bolig AS sends a list of alternative materials and equipment for the customers, from which the customers can choose. They are not open for other changes. Ms Moe explains that due to their previous experience Skanska always looses money if they offer high flexibility for the customers. (Moe, H. 2006)

In Finland the customers' requirement to have an effect on the design of the apartment has been recognised. In February 2006, Sato started to take reservations for loft apartments, which will be built in Helsinki. That is the most extreme example of customer oriented design and construction. In a loft apartment only the frame of the apartment and bathroom is built. The buyer will do rest by himself/herself – for example design the floor plan and kitchen. The apartments are high enough to even add a second floor and this way the surface area of the apartment can almost be doubled. Thousands of interested people contacted Sato as soon as the apartments became available for reservation. The popularity of these loft apartments show that the people are interested in something else than

standard apartments. Especially young people are looking for individual solutions; they want to have an effect on the materials and equipment used in the apartment. (Salmela 2006)

The customers and Skanska's employees in Finland and Norway were asked in the surveys several questions about the process of making the material and equipment choices. Their responses are presented in the tables below.

TABLE 10. How should the material and equipment choices be presented to the customer? (APPENDIX 1 Q8, APPENDIX 2 Q8, APPENDIX 3 Q8.)

Respondent	Number of the respondents
Customers	8 Brochures 4 E-Mail 6 Website 5 Sales representative 8 Sample
Skanska Finland	5 Brochures 7 E-Mail 2 Website 0 Sales representative 2 Sample
Skanska Norway	4 Brochures 1 E-Mail 5 Website 2 Sales representative 3 Sample 1 Other: Showroom

None of the respondents chose just one ideal way to present the material and equipment alternatives, so it is obvious that more than one method should be used. For example, same customer may want to see the alternatives first on the Internet and after that study the samples more closely. The employees in Finland preferred clearly just two of the alternatives, the website and the brochure – E-mail and sales representative were not chosen at all. The results show that the customers want to see samples of the material and equipment. Also in Skanska Norway, the website and the brochure were most popular ones.

TABLE 11. Should it be possible for the customers to make their material and equipment choices on the Internet? (APPENDIX 1 Q9, APPENDIX 2 Q9, APPENDIX 3 Q9.)

Respondent	Number of respondents
Customers	7 yes 2 not necessary 2 no opinion Open comments: Yes, Links to the suppliers' site, it is clear to make the choices, cost calculator etc. Yes, It is handier than filling in and sending the paper forms No, Presenting the alternatives and the decision making require personal contact. Yes, If the "software" works without problems it can save both the customers' and Skanska's time. I do not know, the alternatives should be seen live e.g. tiles, surfaces. Some could be on the Internet.

(Continues)

TABLE 11. (Continues)

	Yes, Would make it easier. But the choices should be able to be printed out so that there would be documents in case of an unclear situation Yes, but additional information should be received by e.g. telephone.
Skanska Finland	6 yes 1 no Open comments: Yes, It is fast and it can be done anywhere, anytime Yes, It will make the choosing process faster and easier. Good alternative for the ones who like it.
Skanska Norway	5 yes 1 no 1 no response Open comments: Yes, makes the process efficient Yes, to spare some time Yes, easy to integrate on the Internetsite

As the results show the majority of the customers who answered would like the opportunity of making the customer choices on the Internet. Also the respondents of Skanska Finland and Norway liked the idea.

TABLE 12. How much do the flexibility of material and equipment choices affect to the customers' buying decision? (APPENDIX 1 Q16, APPENDIX 2 Q17, APPENDIX 3 Q17.)

Respondent	Number of respondents
Customers	2 a lot 2 quite a lot 3 average 3 little 1 no response
Skanska Finland	3 quite a lot 2 medium 2 little
Skanska Norway	1 very much 3 quite a lot 2 medium 1 little 2 no answer

The responses to the question "How much do the flexibility of material and equipment choices affect to the customers' buying decision?" varied a lot in each of the respondent groups. The results show that the flexibility of material and equipment choices had some effect to each of the customers' buying decision. Four of the customers answered that it had affected quite a lot or a lot to their buying decision.

TABLE 13. In which ways should the prices be presented for the customers? (APPENDIX 1 Q19, APPENDIX 2 Q20, APPENDIX 3 Q20.)

Respondent	Number of respondents who chose the method

(Continues)

TABLE 13. (Continues)

Customers	3 Offer by mail 5 Offer by e-mail 3 Meeting with the sales representative 5 Pricelist with brochure 6 Pricelist on the Internet 7 Price calculator on the Internet
Skanska Finland	0 Offer by mail 4 Offer by e-mail 1 Meeting with the sales representative 2 Pricelist with brochure 6 Pricelist on the Internet 5 Price calculator on the Internet
Skanska Norway	4 Offer by mail 3 Offer by e-mail 4 Meeting with the sales representative 3 Pricelist with brochure 2 Pricelist on the Internet 3 Price calculator on the Internet

The customers and Skanska's employees in Finland preferred the price calculator and pricelist on the Internet. None of the alternatives stood out from the others in Norway.

Managing the customer choices is becoming more challenging, as the residents demand greater flexibility in product and material choices all the time. Same time the competition in construction industry drives the companies to look for ways to make their business processes more efficient and cost effective. New tools for managing the growing amount of information are needed.

6.3.2 New tools in information management

An article about unnecessary expenses that occur in the construction projects was published in Tekniikka & Talous 7.1.2005. According to the article about 30 percent of construction costs are wasted due to mistakes, inefficiency and delays. In the article it was mentioned that a cost deficit like this in the construction business is unique. Old-fashioned role thinking still lives in the construction industry. Architects, consulting engineers and entrepreneurs each have their own strict responsibility areas and budgets. The different parties of the project work independently from each other. Even 80 percent of the registered information in one construction project is been created several times. For example such a thing as a wall can be drawn multiple times before the line is in the correct place in the drawing. The problem is that eventually the drawing is filled with corrections and by the time construction work begins some of the changes made might have disappeared completely so the plan has to be drawn one more time. (Niemi 2005.)

In the article it is pointed out that these problems could be solved with appropriate and sensible IT solutions. The application systems and technique already exist; only the principle of life cycle thinking has to be adapted. Life cycle oriented thinking means managing of the whole construction project from design and completion to production repair and renovations all the way to the demolition. When the construction and the building are viewed from this angle it is self evident that all parties must cooperate. (Niemi 2005.)

Information technology is not fully taken advantage of in the construction business. Information technology systems allow efficient and secure information sharing which is not used enough in the construction industry. There are plenty of investments made on information technology, but the problem is that they are not made from the right point of view. The tools for project management are simply not the first priority for the management. (Niemi 2005.)

It is estimated that even 70 percent of the design is used on corrections. The correction has to be made because the different parties of the project use different systems and applications or their interfaces are not compatible. Also the clashes in

combining 2D and 3D designs cause problems – information is lost and the manual handling increases the amount of errors. Constructor has the responsibility to fix the situation. The constructor has to set demand, which will help to get the work processes as efficient as possible and to improve the end result. The constructor also has to take life cycle thinking into account and set demand to the techniques, which are used. (Niemi 2005.)

Another article published in Tekniikka & Talous deals with the development and potential of information technology in the construction business. The article points out that the construction industry is preparing to take advantage of the virtual reality. If everything goes well, the customers' chances to get familiar with and have an influence on the design of their apartments are increasing. For the construction companies virtuality and product model based design mean faster construction work and more efficient use of resources. (Repo 2003.)

"With the help of virtual technology the building can be studied even before the building is finished. Expensive adjustments do not have to be made during the construction phase," says Mika Iltanen from TTY and continues: "If the drawings say that the bedroom is 8.9 m^2 it doesn't mean anything to the most of the people. But when the room can be visited reality like the space can be seen differently. The user can open doors and test how the space suites for his/her needs. And then modify it like she/he wants. The essential of the system is the adjustment calculator. Enlarging the windows in the living room, changing floor material or the width of the staircase will be seen immediately in the price estimate. This offers more realistic base for the adjustment requests." (Repo 2003.)

"The development of information technology in the construction business is very rapid at the moment. Skanska's purpose is not only to concentrate on virtual technology, but also proceed all the way to product model based design. " Juha Tammivuori Skanska. (Repo 2003.)

Product model-based design and data management present the latest technology in the construction industry. Product model-based data management combines all the information that is needed in a construction project. The same data can be used in

3D and then the traditional line drawing is changed into 3D-design. The benefits of product model-based data management are for example the co-ordination of drawings, faster communication of design alternatives and reduced fieldwork. When the drawings are co-ordinated the design problems can be resolved before construction and that way also costs can be reduced and time saved. (VTT 2005.)

Product model-based data management aims to improve customer service by producing useful information to back up decision-making and by visualising and comparing the options' functionality and costs. With the help of product model based design visualisation of the project and communication with the customer and other interest groups can be improved which helps to ensure that the customers' expectations are satisfied. (VTT 2005.)

Project manager from Skanska Talonrakennus Oy was interviewed to get information on product model based design. Mr. Hörkkö explains the benefits of product model based design compared to traditional way of design. In product model based design the building is designed in objects (e.g. walls, floors). The design is a sum of the objects, which each include detailed information on that particular object. Until now the designs have been on paper and it has been impossible to separate detailed information of different part of the design. (Hörkkö 2006)

Evianet Solutions Oy is using product model based design as a base, when planning 3D-models of the apartments to Customers' Extranet. Product model based design is used by the designers and other Skanska's personnel to manage the information. Evianet Solutions Oy improves the visual side of the design and transforms it into virtual presentation of the apartments, which can be used to present the apartments for the customers. (Hörkkö 2006)

Finland is a forerunner in developing the product model based design and is leading the project of co-operation and development of the common product model based process in the Nordic business units. The project team consists of representatives from each of the Nordic business units. The concept was created already in the 80s', but due to the recession in the beginning of 90s' and

undeveloped computer systems the concept did not break through back then. Now more than ten years later, Skanska is seriously developing the concept and starting to use it. (Hörkkö 2006)

6.4 Customers' Extranet in customer service

Different features can be added to Customers' Extranet. The potential of each of these features in improving the level of customer service are dealt in this chapter. These features include possibility to view the material and equipment alternatives, make the material and equipment choices, view 3D-models of the apartments, view the floor plans, follow the construction process, use the price calculator and contact Skanska.

Questions 21-27 (20-26 for customers) How much the customers would appreciate certain features of the Customers' Extranet. The scale started from very little and reached to a lot, the results are shown in tables 14-20.

TABLE 14. Possibility to make material and equipment choices on the extranet (APPENDIX 1 Q20, APPENDIX 2 Q21, APPENDIX 3 Q21)

Respondent	Number of respondents
Customers	2 a lot 5 quite a lot 1 medium 1 little 1 very little 1 no response

(Continues)

TABLE 14. (Continues)

Skanska Finland	1 a lot 3 quite a lot 3 medium
Skanska Norway	1 a lot 4 medium 2 quite a little

TABLE 15. Possibility to see the material and equipment alternatives on the extranet (APPENDIX 1 Q21, APPENDIX 2 Q22, APPENDIX 3 Q22)

Respondent	Number of respondents
Customers	4 a lot 5 quite a lot 1 very little 1 no response
Skanska Finland	6 quite a lot. 1 a lot.
Skanska Norway	3 a lot 2 quite a lot 1 medium 1 little

TABLE 16. Possibility to see 3D models on the extranet (APPENDIX 1 Q22, APPENDIX 2 Q23, APPENDIX 3 Q23)

Respondent	Number of respondents
Customers	6 a lot 3 quite a lot 1 very little

(Continues)

TABLE 16. (Continues)

	1 no response
Skanska Finland	3 a lot 2 quite a lot 2 little
Skanska Norway	5 a lot 2 medium

TABLE 17. Possibility to examine the floor plan on the extranet (APPENDIX 1 Q23, APPENDIX 2 Q24, APPENDIX 3 Q24)

Respondent	Number of respondents
Customers	4 a lot 4 quite a lot 1 little 1 very little 1 no response
Skanska Finland	2 a lot 5 quite a lot
Skanska Norway	5 a lot 2 quite a lot

TABLE 18. Possibility to follow the construction process on the Internet (APPENDIX 1 Q24, APPENDIX 2 Q25, APPENDIX 3 Q25)

Respondent	Number of respondents
Customers	9 a lot 1 very little 1 no response

(Continues)

TABLE 18. (Continues)

Skanska Finland	3 a lot 4 quite a lot
Skanska Norway	3 a lot 1 quite a lot 2 medium 1 little

TABLE 19. Possibility to use price calculator on the extranet (APPENDIX 1 Q25, APPENDIX 2 Q26, APPENDIX 3 Q26)

Respondent	Number of respondents
Customers	2a lot 2 quite a lot 2 medium 1 little 2 very little 2 no response
Skanska Finland	2 a lot 4 quite a lot 1 very little
Skanska Norway	1 a lot 3 quite a lot 1 medium 2 very little

TABLE 20. Possibility to contact Skanska through Customers' Extranet during the different phases? (APPENDIX 1 Q26, APPENDIX 2 Q27, APPENDIX 3 Q27)

Respondent	Number of respondents
Customers	Presales and –marketing phase: 4 a lot 3 quite a lot 1 medium 2 very little 1 no response Construction phase: 5 a lot 3 quite a lot 2 very little 1 no response Guarantee phase: 4 a lot 4 quite a lot 2 very little 1 no answer

(Continues)

TABLE 20. (Continues)

Skanska Finland	Presales and –marketing phase: 5 a lot 2 quite a lot Construction phase: 4 a lot 2 quite a lot 1 no response Guarantee phase: 4 a lot 2 quite a lot 1 very little
Skanska Norway	Presales and –marketing phase: 4 a lot 1 quite a lot 2 medium Construction phase: 1 a lot 2 quite a lot 3 medium Guarantee phase: 1 a lot 3 quite a lot 2 medium 1 little

TABLE 21. Should the customers be able to follow up the building process on the Internet? If yes, in which ways should the process be presented on the website? (APPENDIX 1 Q6, APPENDIX 2 Q6, APPENDIX 3 Q6)

Respondent	Number of respondents
Customers	11 yes 11 photo gallery 10 FAQ 8 construction journal 11 timetables 2 Other: Customer choices Photo gallery about own apartment
Skanska Finland	7 yes 7 photo gallery 5 FAQ 7 construction journal 2 timetables
Skanska Norway	3 yes 2 sometimes 1 no 1 no response 5 photo gallery 2 FAQ 1 construction journal 2 timetables

All of the respondents in Finland thought that there should be a possibility to follow the construction process on the Internet. According to the results six of seven respondents in Norway thought that the possibility should exist, if not always at least in some sites.

The customers' opinions about the extranet were asked with open questions 28-32 so that the answers would not be limited in any way and the customers would be using own words to describe the services and the extranet itself.

The general opinion about the services offered by Customers' Extranet was positive. Some customer replied that the extranet decreased clearly driving by the construction site and that the service was very welcome. One customer who replied that the answers in FAQ were very positive and helpful also appreciated the photo gallery. One customer considered the extranet to be a good channel for informing, when another appreciated the accessibility of the service. Only one of the respondents had a negative tone in the answer, the customer thought that the extranet had too few services available and that the extranet is updated too seldom.

The customers were also asked how the extranet's services could be developed. One customer hoped that there would be some kind of a chat room where people could ask questions and chat without any middleman and delays. Also another customer hoped for a chat forum. One customer replied that the reliability of the server should be improved. Also the possibility to choose from extra alternatives in the extranet and adding a price calculator to the services were suggested by one customer. All seven respondents considered the extranet to be clear and easy to use.

Three respondents answered that the information on the extranet could be more frequently updated, when the customers were asked how the functioning of the extranet could be developed. One respondent thought that the extranet is functioning quite well already and could not think of any suggestions. Six of the respondents answered to a question regarding the appearance of the extranet. All of them agreed that the appearance is OK and none of them had any improvement

ideas. Other thoughts that they had, were for example “the site looks professional”, “clear as it is, no improvement needed” and “clear enough, does not need any ´fancy stuff´”.

7 CONCLUSIONS

This study is used by Evianet Solutions Oy, when it is selling Customers’ Extranet to Skanska’s Finland’s and Norway’s organisations. In this chapter the results from the study are collected together.

7.1 The aim of the study

The aim of this study was to answer the following questions: “Can the customer service be developed in the construction industry in Finland and Norway with the help of Customers’ Extranet?” “What are the problems with current communication methods?” In the study, the potential of the extranet in developing customer service in the construction industry was studied. Customers’ Extranet can be used to support or manage multiple business operations. In this study the concentration was laid on how Customers’ Extranet can be used to improve the customer service in Skanska’s organisation.

7.2 Results from the study

Both in Finland and Norway, the future prospects in the construction industry look bright. The economic growth is stable in both countries and the number of housing investments grew during the year 2005. The number of Internet users in both countries is high. In Finland 62.6 percent of the total population was using the Internet in 2005 and in Norway the corresponding percentage is 68.2 and the percentage is growing all the time. Finland and Norway were among the top ten on EIU’s global e-readiness ranking list. In addition the inhabitants of Finland and Norway are active mobile phone users. Skanska’s net turnover increased during the year 2005. Company’s future prospects look good, but to be able to keep its

market position, Skanska is developing its business operations constantly. It is important that Skanska stays up to date with the rapid development of technology in both countries. In this thesis it is studied whether Customers' Extranet could be used in developing the customer service in Skanska. Due to the fact that the number of Internet users is increasing all the time, Extranet can be considered as a tool in customer service.

Two of Skanska's biggest competitors in the residential construction in Finland, YIT and NCC, have invested in developing their Internet services. YIT is using a service like Customers' Extranet in a couple of their sites in the south of Finland. NCC has very developed website, which includes lots of special features. It is clear that YIT and NCC have recognised the value of quality Internet services and Skanska must now utilize the opportunities, which are offered by Customers' Extranet offers to gain competitive advantage. The product has been developed together with Skanska according to their individual needs and is now ready to be taken full advantage of. In Norway, Skanska's biggest competitors in residential construction are NCC and Veidekke ASA. Veidekke's website also includes nice interactive presentations of the buildings under construction.

The results from the surveys for Skanska's employees and customers show that Internet (website, e-mail) is already used a lot in the communication between the parties. This fact would make the implementation of Customers' Extranet easier compared to a situation where other communication channels than Internet were mainly used.

A big part of the customer service deals with making the material and equipment choices. Managing the information of the choices and changes made is a challenge for the construction companies. Skanska is aware that customers value flexibility in the design, but has not been able to offer the level of flexibility the customers want in a cost effective way, because they lack proper information management systems. The assumption was, before the study, that Customers' Extranet could be the needed tool to manage the process of making the material and equipment choices. The results from the surveys made for Skanska's employees and customers prove this assumption correct.

The results show that the customers want to see also samples of the material and product alternatives. The customers were asked to choose the best ways to present the material and equipment alternatives. Some customers chose both website and samples. They may want to see the alternatives first on the Internet and after that study the samples more closely. At the moment it is not possible to make the choices on the Internet, however Skanska's customers and employees in Finland and Norway answered almost unanimously that they would like it to be possible.

Customers' Extranet could improve several sectors of Skanska's business operations. One of the main problems is that old-fashioned role thinking exists in the construction industry and there is lack of cooperation and information sharing between the parties. This leads to inefficient operating. Customers' Extranet offers a unified information management system, which improves both internal and external networking.

Information technology is not yet fully taken advantage of in the construction business. The construction companies have realised the importance of the opportunities the technological innovations offer. Product model based design is an example of this. The concept was developed already in the 1990's but the recession held the development back. The concept has now, for the first time, been taken in to use in Skanska's operations. Product model based design can be used as a tool to create the visual side of Customers' Extranet. Product model-based data management combines all the information that is needed in a construction project. The same data can change the traditional line drawing into 3D-design.

Skanska Oy has received a lot of feed back about problems in customer service. This was the main motivation to start developing Customers' Extranet. If all business processes are not working efficiently it easily reflects on the quality of customer service. Customers' Extranet is not only a tool for the customers but it also supports Skanska's operations in multiple ways.

The fact that everybody does not have a computer or access to the Internet must be taken into account. Other communication channels should not be forgotten. Customers' Extranet brings special value for the customers and really good choice of communication channels for the customers who like to communicate through the Internet. The information about the customers who are not using the extranet can be stored in the system as well and the necessary information can be sent to them by using alternative methods.

Customers' Extranet can solve many of the problems that came up in the survey made on Skanska's customers and employees in Finland and Norway. The respondents were asked to list the problems they have faced during the different phases of the construction process. One of the problems, which were mentioned by a customer, was that the types of equipment of each apartment are not very well documented in Skanska. The make, model and the instructions for each piece of equipment should be known in Skanska. Improper documentation leads to, for example, delays in maintenance. This information can be easily stored in Customers' Extranet and instructions are available for both the customers and Skanska's employees. This helps in the maintenance and all the information is easily transferred to the new owner when the apartment is changing ownership.

One respondent from Skanska Norway mentioned that the customers easily contact the wrong persons in the company. One customer from Finland had faced the same problem. The customers can contact Skanska from their own Customers' Extranet site. The messages are directed to the right persons who are involved in that particular construction project and department. The extranet also includes the contact information of those persons in case the customers want to contact Skanska by phone, fax or e-mail instead of sending a message through the extranet.

One of Skanska's Finnish employees brought up that there have been problems with delivering information to the customers. Sometimes the information did not reach everybody or traditional mail got lost along the way. When information is on Customers' Extranet, it is available for everyone using the service. When information is sent by e-mail, there always remains a risk that it ends up in a

trashcan or gets lost among the other messages. These problems can be avoided by using the Customers' Extranet.

One of the respondents from Norway, state that they have faced problems in delivering the materials and equipment to the right apartments. When all the information is stored in the extranet and available for the different user groups, it is easier to manage the supply chain.

The responses from the surveys show that the customers prefer communication through e-mail when Skanska informs them about the construction project. One idea could be that when Skanska updates Customers' Extranet, a notice e-mail is sent to the customers and so the customers would not have to sign in to the extranet unless there is updated news

At the moment, feedback from the customers is mainly collected by using the guarantee forms, which are sent to the customers by traditional mail after the construction phase is finished. If the Customers' Extranet is used the feedback forms can be transferred to the extranet. This way feedback could be actively read during the whole construction project and after. The feedback can be also archived to the extranet.

As can be seen from the results, Skanska is already using Internet (e-mail and websites) a lot in communication with customers. Customers' Extranet would offer a more advanced alternative for Internet communication. The study also shows that the customer service in Skanska and in the construction industry in general needs improvement. The construction companies are not able to meet the customers' demand, for example, for more flexibility in design with the current systems. Customers' Extranet could make the information management and sharing between the different user groups more efficient, which would give a base for better customer service. Many of the problems in customer service, which were listed in the surveys, could be solved with the help of Customers' Extranet. So the answers to the research question, whether Customers' Extranet could be used to improve the customer service in Skanska's organizations in Finland and Norway, is yes. The results from the surveys show, that in Finland the Internet is

used more in the communication with the customers than in Norway. In Finland, the employees also were more clearly interested in the possibilities the extranet offers. In Norway, they use more traditional methods such as mail and phone. However, the results show that they are interested in the extranet.

The pace of developing new Internet solutions to improve the business operations in the construction industry is rapid. When the research was started, the number of Customers' Extranets was five and none of Skanska's competitors were known to have customers' extranet service in use. Now six months later the number of Customers' Extranets in use has increased to fifteen and YIT has launched its own customers' extranet - it is only a question of time when it is self-evident that extranet service is offered to the customers.

7.3 Future studies

This study gives preliminary information about how Customers' Extranet can improve customer service in Skanska in Finland and Norway, which can be used by Evianet when it is selling Customers' Extranet more widely in the Finnish construction sites and Norway. Before the implementation of Customers' Extranet into Skanska's construction sites, more detailed research must be conducted.

SOURCES

Printed sources

Alasilta, A. 2000. Verkkoajan viestintä – tulkinta, ilmaisu, vuorovaikutus. RT-Print Oy, Pieksämäki

Hakaste, H., Hirvonen, J. & Manninen R. 2005. Asuntosuunnittelun ja -rakentamisen tila asukas-ja ammattilaiskyselyn valossa. Edita Prima Oy, Helsinki.

Hirsjärvi, S., Remes, P. & Sajavaara, P. 2000. Tutki ja kirjoita. 5th revised edition. Tammer-Paino Oy, Tampere

Hirvensalo, I., Vaarnas, M. & Virtanen, J. 2005. Menestyjä kilpailee tiedolla – markkinatieto kansainvälistymisen tukena. 3rd revised edition. Multikustannus Oy.

Jussila, M. & Leino, A. 1999. net. – verkkoviestinnän käsikirja. Karisto Oy, Hämeenlinna

Kankainen, J. & Junnonen, J-M. 2001. Rakennuttaminen. Tammer-Paino Oy, Tampere

Laine, A. 2005. Asumistaso – Asuntopolitiikan ajankohtaiset suuntaukset 2004-2005. Viestintätoimisto Luova Ratkaisu Oy/PRIIMUS Paino Oy

Manninen, H. 2005. Asumistaso – Asuntopolitiikan ajankohtaiset suuntaukset 2004-2005. Viestintätoimisto Luova Ratkaisu Oy/PRIIMUS Paino Oy

Proctor, T. 1997. Essentials of marketing research. Pitman Publishing, London.

Paavilainen, J. 1999. Internetin liiketoiminnallinen merkitys. Gummerus Kirjapaino Oy, Jyväskylä

Siegel, C. 2004. Internet marketing: foundations and applications. Houghton Mifflin Company

Statistics Finland 2005a. IBS World Newsletter 8/2005.

Newspaper articles

Salmela, M. 2006. Loft-asunnot kiinnostivat tuhansia. Helsingin Sanomat 28.2.2006

Electronic sources

CIA Factbook 2005. Finland
http://www.cia.gov/cia/publications/factbook/geos/fi.html

Economist Intelligence Unit 2006. The 2005 e-readiness rankings
http://graphics.eiu.com/files/ad_pdfs/2005Ereadiness_Ranking_WP.pdf

Internet World Stats 2005a.
http://www.internetworldstats.com/stats4.htm#e

Internet World Stats 2005b.
http://www.internetworldstats.com/stats4.htm#eu

Liikenne-ja viestintäministeriö 2005. Mobiilipalvelumarkkinat Suomessa 2004. Julkaisu 34/2005
http://www.mintc.fi/oliver/upl497-Julkaisuja%2034_2005.pdf

NCC AB 2006.
http://www.ncc.com

NCC Oy 2006.
http://www.ncc.fi

Niemi, K. 2005. Turhat kulut imaisevat kolmanneksen rakennusbudjetista. Tekniikka & Talous 7.1.2005.
http://www.tekniikkatalous.fi/doc.ot?f_id=663846

Oikarinen, J. 2005. Rakentamisen toimialakatsaus 11/2005. Statistics Finland.
http://www.stat.fi/til/artikkelit/2005/art_2005-09-28_002.html

PTT 2005. PTT's macroeconomic forecast
http://www.ptt.fi/en/forec02sp.htm

Repo, H. 2003. Rakennussuunnittelu loikkaa suurin toivein virtuaaliaikaan. Tekniikka & talous.
http://www.tekniikkatalous.fi/doc.ot?f_id=429515

Skanska 2005a. Skanska AB – About Skanska - Introduction
www.skanska.com

Skanska 2005b. Skanska AB – About Skanska – Operations – The company
www.skanska.com

Skanska's newsletter The Hub [online]. 27.1.2006 – [reference 2.2.2006]
www.global100.org/index.asp

Skanska 2005c. Skanska AB – Annual Report 2004
www.skanska.com

Skanska 2005d. Skanska Oy – Skanska yrityksenä
www.skanska.fi

Skanska 2006. Skanska AB - Annual Report 2005.
www.skanska.com

Statistics Finland 2005b. Economics
http://www.stat.fi/tup/suoluk/suoluk_kansantalous.html#oktvolyymi

Statistics Finland 2005c. National Income
http://www.stat.fi/til/vtp/2004/vtp_2004_2005-07-14_tau_003_en.html

Statistics Finland 2005d. Inflation
http://www.stat.fi/tup/suoluk/suoluk_hinnat.html#inflaatio

Statistics Finland 2005e. Asuntokunnat ja asuinolot 31.10.2005
http://www.stat.fi/til/asuolo/index.html

Statistics Norway 2005a. Statistical Yearbook 2005 – Construction statistics
http://www.ssb.no/english/yearbook/tab/tab-395.html

Statistics Norway 2005b. A soft landing for the Norwegian economy?
http://www.ssb.no/kt_en/

Statistics Norway 2005c. House prices up 0.9percent the last quarter.
http://www.ssb.no/english/subjects/08/02/30/bpi_en/

Statistics Norway 2005d. Building work started and building work completed.
http://www.ssb.no/english/subjects/10/09/nos_byggjeareal_en/nos_d336_en/tab/tab-1.html

Statistics Norway 2005e. Strong rise in construction of new buildings.
http://www.ssb.no/english/subjects/08/04/bygganlprod_en/)

Statistics Norway 2005f. Continued growth in largest cities.
http://www.ssb.no/english/subjects/02/01/10/beftett_en/main.html

Statistics Norway 2005g. Fewer live in crowded dwellings.
http://www.ssb.no/english/subjects/05/03/bo_en/

Veidekke AS 2005a. Veidekke Group
http://www.veidekke.no/english/veidekkegroup/

Veidekke AS 2005b. Business areas
http://www.veidekke.no/english/businessareas/

Veidekke AS 2005c. Interactive presentation.
http://www.aastad.no/panorama/flash.asp

VTT 2005. ProIT – Product model based design
http://virtual.vtt.fi/proit_eng/indexe.htm##_top

YIT 2005. Market situation remains good in Northern Europe
http://www.yit.fi/page.asp?path=1;4620;4623;4625;3094;4694;4990;27767

YIT 2005.
http://www.yit.fi

Interviews

Hörkkö, J. 2006. Skanska Talonrakennus Oy, Project Manager. 23.1.2006

Moe, H. 2006. Skanska Bolig AS. Trends in Norwegian residential construction 2.3.2006. E-mail interview.

NCC Bolig AS 2006. Few questions about customer service 16.1.2006. E-mail interview.

Outila, S. 2006. Skanska Talonrakennus Oy, Customer Service Engineer. 23.1.2006

Ruuska, E. 2006. Evianet Solutions Oy, Chief Executive Officer. 23.1.2006

YIT Rakentamispalvelut 2006. Few questions about customer service 24.1.2006. E-mail interview.

Unpublished sources

Evianet Solutions Oy, 2005a. Business Plan 2005-2006

Evianet Solutions Oy, 2005b. Kiinteistöportaalin kehitys - yhteenveto

Skanska 2005e. Nordic Survey. Skanska Talonrakennus Oy 15.8.2005.

APPENDICES

Customer survey (APPENDIX 1)

Survey for Skanska's employees in Finland (APPENDIX 2)

Survey for Skanska's employees in Norway (APPENDIX 3)

Interview – CEO Erkki Ruuska, Evianet Solutions Oy (APPENDIX 4)

Interview – Project Manager Jukka Hörkkö and Customer Service Engineer Sari Outila from Skanska Talonrakennus Oy (APPENDIX 5)

Interview – Project Manager Helle Moe, Skanska Bolig As (Appendix 6)

Survey – YIT and NCC (APPENDIX 7)

APPENDIX 1

Kysely (Asukkaille / In Finnish) **1/7**

Tämä kysely on osa opinnäytetyötämme, joka toteutetaan Evianet Solutions Oy:n toimeksiannosta. Tutkimuksen tarkoitus on kehittää saatujen palautteiden pohjalta Asukasportaalia, sekä selvittää onko portaalille tarvetta laajemmin Skanskan Pohjoismaiden toiminnoissa ja missä muodossa.

Tällä hetkellä Evianetin Asukasportaalia käytetään kommunikoinnin ja kanssakäymisen apuvälineenä Skanska Talonrakennus Oy:n ja asiakkaiden välillä muutamissa Suomessa rakennettavissa kohteissa. Asukasportaalia käytetään pääasiassa tietokoneen avulla Internetin kautta, mutta tekniikka mahdollistaa että sitä voi jatkossa käyttää myös digi-tv:ssä ja vaikka matkapuhelimen kautta. Asukasportaalilla on neljä eri käyttäjäryhmää: asukkaat ja osakkeenomistajat, tavarantoimittajat ja kohteen markkinoinnissa ja rakentamisessa mukana olevat Skanskan henkilöt. Asukasportaalia käytetään rakennusprosessin kaikissa vaiheissa - se toimii tiedonhallinnan, verkostoitumisen ja markkinoinnin apuvälineenä. Lisäksi sitä käytetään keskitettynä tiedotuskanavana.

Tällä kyselyllä keräämme tietoa Internetin käytöstä Skanskan ja asiakkaiden välisessä kommunikoinnissa sekä lisäksi portaalin mahdollisuuksista kommunikoinnin parantamiseksi.

Tämän tutkimuksen on hyväksynyt projektipäällikkö Jukka Hörkkö Skanska Talonrakennus Oy:stä sekä Evianet Solutions Oy:n toimitusjohtaja Erkki Ruuska.

Vastausta odotamme 8.1.2006 saakka. Antamanne vastaukset käsitellään ehdottoman luottamuksellisesti.

Kiitokseksi vastauksestanne postitamme mielellämme kopion opinnäytetyöstämme sähköpostitse, mikäli aihe Teitä kiinnostaa. Työmme on määrä valmistua keväällä 2006.

Kiitokset osallistumisestanne.

Ystävällisin terveisin,

Veera Ruuska ja Inkeri Kokko
Liiketalouden Laitos, Lahden Ammattikorkeakoulu

Kysely (Asukkaille / In Finnish) **2/7**

Perustiedot

Sukupuoli *
Nainen Mies

Ikä *
24 tai alle 25-34 35-44
45-54 55 tai yli

Ammatti*

Asema*
Työntekijä Päällikkö Johtaja
Muu
Joku muu, mikä?

*-merkillä merkityt kysymykset ovat pakollisia

Kysely (Asukkaille / In Finnish) **3/7**

Ennakkomyynti ja -markkinointi

Ennakkomyynti ja -markkinointi vaiheessa lopullista päätöstä talon rakentamisesta ei ole vielä tehty. Tässä vaiheessa asuntojen kysyntää tutkitaan.

1. Mitä kommunikointikanavia käytit ennakkomyynti ja -markkinointi vaiheessa?

Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on kanava, jota käytit eniten.

	1	2	3	4	5	6	7
Internetsivusto							
3D-mallit Internetissä							
Messut							
Sanomalehti							
Esite							
Aikakauslehti							
Muu							
En kommunikoinut Skanskan kanssa ennakkomyynti ja -markkinointi vaiheessa							
Jos muu, mikä?							

2. Joissakin tapauksissa asiakas voi valita useammasta materiaali -ja varustevaihtoehdosta (esim. laatat, lattiat, keittiön kaapit ja koneet). Tulisiko eri vaihtoehdot esitellä ennakkomyynti ja -markkinointi vaiheessa?

Kyllä	Ei	Joskus, riippuen kohteesta
En tiedä		

3. Mikä olisi potentiaalisille asiakkaille ihanteellisin tapa olla Skanskaan yhteydessä ennakkomyynti ja -markkinointi vaiheessa?

Sähköposti	FAQ*	Puhelin
Posti	Messut	Muu
Jos muu, mikä?		

* FAQ = Frequently Asked Questions/Usein kysytyt kysymykset. Asiakkaat voivat lähettää kysymyksiä Skanskalle, kysymykset ja vastaukset julkaistaan Internetissä.

4. Ilmenikö ennakkomyynti ja -markkinointi vaiheessa kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Kysely (Asukkaille / In Finnish) **4/7**

Rakennusvaihe

Rakennusvaiheessa, kun asunnot ovat jo myyty, asiakkaat voivat tehdä materiaali- ja varustevalintoja sekä muutospyyntöjä pohjapiirustuksiin.

5. Mitkä ovat sopivimmat kanavat Skanskan tiedottaessa asiakkaille rakennusprosessin vaiheista, esim. aikataulumuutoksista?

Aseta seuraavat vaihtoehdot järjestykseen, joista nro 1 on sopivin kanava.

	1	2	3	4	5	6
Posti						
Sähköposti						
Internetsivusto						
Puhelin						
Muu						
Jos muu, mikä?						

6. Tulisiko asiakkaiden pystyä seuraamaan rakennusprosessin etenemistä Internetissä?

Kyllä Ei Joskus, riippuen kohteesta

Jos kyllä, niin millä tavoin?

Valokuvagalleria FAQ * Rakennuspäiväkirja
Aikataulut Muu
Jos muu, mikä?

* FAQ = Frequently Asked Questions/Usein kysytyt kysymykset. Asiakkaat voivat lähettää kysymyksiä Skanskalle, kysymykset ja vastaukset julkaistaan Internetissä.

7. Kuinka olit yhteydessä Skanskaan rakennusvaiheessa?

Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on kanava, jota käytit eniten.

	1	2	3	4	5	6
Posti						
Sähköposti						
FAQ*						
Tekstiviesti						
Puhelin						
Muu						
En ollut yhteydessä Skanskaan rakennusvaiheessa						
Jos muu, mikä?						

8. Millä tavoin asuntojen materiaali-ja varustevaihtoehdot tulisi esitellä asiakkaille?

Esite Sähköposti Internetsivusto
Myyntiedustaja Näyte Muu
Jos muu, mikä?

9. Tulisiko asiakkaiden voida tehdä materiaali-ja varustevalinnat Internetissä?

Kyllä	Ei	En tiedä

Mikäli kyllä tai ei, miksi?

10. Tarjottiinko sinulle valmiita materiaali- ja varustepaketteja, esim. keittiöpaketteja?

Kyllä	Ei, pystyin valitsemaan kaikki varusteet ja materiaalit erikseen ilman lisäkustannuksia	Ei, materiaalit ja varusteet olivat kaikille samat

11. Kuinka monta eri tarvike- ja varustevaihtoehtoa, jos yhtään, Skanska tarjosi?

Merkitse kuinka monta vaihtoehtoa oli tarjolla seuraaviin asunnon osiin.

	0*	1	2-3	>3
Keittiön varusteet (Astianpesukone, jääkaappi...)				
Keittiön materiaalit (Keittiön kaapit, laatat...)				
Lattiamateriaalit				
Kylpyhuone				
Sauna				
Valaistus				
Parveke				
Säilytystilat				

* Ei ollut yhtään vaihtoehtoja. Kaikki materiaalit ja varusteet olivat standardeja.

12. Miten jätit asiakaspalautetta rakennusvaiheessa?

Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on kanava, jota käytit eniten.

	1	2	3	4	5
Posti					
Sähköposti					
Puhelin					
Internetsivusto					
Muu					
En jättänyt asiakaspalautetta rakennusvaiheen aikana					

Jos muu, mikä?

13. Ilmenikö rakennusvaiheessa kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Takuuaika
Skanska takaa asunnot tietyksi ajanjaksoksi.

14. Jos olet löytänyt puutteita asunnosta, miten olet tiedottanut Skanskaa asiasta?
Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on kanava, jota olet käyttänyt eniten.

	1	2	3	4	5
Posti					
Sähköposti					
Puhelin					
Internetsivusto					
Muu					
En ole ollut Skanskaan yhteydessä takuuaikana					

Jos muu, mikä?

Mikä olisi mielestäsi ihanteellisin lähestymiskanava?

15. Ilmenikö takuuvaiheessa kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Kysely (Asukkaille / In Finnish) **6/7**
Asukasportaalin kehittäminen

16. Kuinka paljon materiaali- ja varustevalintojen joustavuus vaikutti ostopäätökseesi?
Hyvin vähän Melko vähän Keskimääräisesti
Melko paljon Hyvin paljon

17. Kuinka paljon seuraavat tekijät vaikuttivat ostopäätökseesi? Aseta seuraavat vaihtoehdot järjestykseen, joista nro 1 vaikutti eniten.

	1	2	3	4	5	6
Keittiövarusteet (kodinkoneet)						
Keittiömateriaalit (laatat, keittiön kaapit...)						
Kylpyhuoneen varusteet (lavuaari, wc-istuin...)						
Kylpyhuoneen materiaalit (kaapit, laatat...)						
Säilytystilan määrä						
Muu						
Jos muu, mikä?						

18. Miten materiaali- ja varustevaihtoehdot tulisi mielestäsi esitellä?
Esitteet Myyntiedustaja Esimerkki asunnot
Internet Muu
Jos muu, mikä?

19. Miten varusteiden ja materiaalien hinnat tulisi mielestäsi esitellä asiakkaalle?
Tarjous postitse
Tarjous sähköpostitse
Tapaaminen myyntiedustajan kanssa
Hinnasto esitteen mukana
Hinnasto Internetissä
Laskuri Internetissä*
Muu
Jos muu, mikä?

*Materiaali-ja varustevalintoja tehtäessä Internetissä, laskuri laskee valittujen tuotteiden yhteishinnan.

Kuinka paljon arvostat seuraavia palveluita? Arvostele asteikolla 1-5 (1= ei ollenkaan, 2= vähän, 3= keskimääräisesti, 4= melko paljon,5= paljon)

	1	2	3	4	5
20. Mahdollisuus tehdä materiaali- ja varustetilauksia Asukasportaalin välityksellä.					

21. Mahdollisuus tarkastella kuvia materiaali-ja varustevaihtoehdoista Asukasportaalissa.
22. Mahdollisuus tarkastella 3D-mallia asunnosta Asukasportaalissa.
23. Mahdollisuus tarkastella asunnon pohjapiirustusta Asukasportaalissa.
24. Mahdollisuus seurata rakennusprosessin etenemistä Asukasportaalissa.
25. Mahdollisuus käyttää hintalaskuria Asukasportaalissa.

26. Mahdollisuus ottaa yhteyttä Skanskaan Asukasportaalin kautta.

	1	2	3	4	5
Ennakkomyynti ja -markkinointi vaiheen aikana.					
Rakennusvaiheen aikana					
Takuuvaiheen aikana					

27. Muita ehdotuksia asiakkaiden ja Skanskan välisen kommunikoinnin parantamiseen?

28. Mitä mieltä olit Asukasportaalin palveluista?

29. Kuinka Asukasportaalin palveluita voisi mielestäsi kehittää?

30. Oliko Asukasportaali mielestäsi helppo- ja selkeäkäyttöinen?

31. Kuinka asukasportaalin toimivuutta voisi mielestäsi parantaa?

32. Mitä mieltä olit Asukasportaalin ulkonäöstä, kehitysehdotuksia?

Lähetämme mielellämme kopion opinnäytetyöstämme kaikille kiinnostuneille. Lisää alle sähköpostiosoitteesi työn toimittamista varten.

Kiitos yhteistyöstä!

Kysely (In Finnish) **1/8**

Hyvä Vastaanottaja,

Tämä kysely on osa opinnäytetyötämme, joka toteutetaan Evianet Solutions Oy:n toimeksiannosta. Tutkimuksen tarkoitus on kehittää saatujen palautteiden pohjalta Asukasportaalia, sekä selvittää onko portaalille tarvetta laajemmin Skanskan Pohjoismaiden toiminnoissa ja missä muodossa.

Tällä hetkellä Evianetin Asukasportaalia käytetään kommunikoinnin ja kanssakäymisen apuvälineenä Skanska Talonrakennus Oy:n ja asiakkaiden välillä muutamissa Suomessa rakennettavissa kohteissa. Asukasportaalia käytetään pääasiassa tietokoneen avulla Internetin kautta, mutta tekniikka mahdollistaa että sitä voi jatkossa käyttää myös digi-tv:ssä ja vaikka matkapuhelimen kautta. Asukasportaalilla on neljä eri käyttäjäryhmää: asukkaat ja osakkeenomistajat, tavarantoimittajat ja kohteen markkinoinnissa ja rakentamisessa mukana olevat Skanskan henkilöt. Asukasportaalia käytetään rakennusprosessin kaikissa vaiheissa - se toimii tiedonhallinnan, verkostoitumisen ja markkinoinnin apuvälineenä. Lisäksi sitä käytetään keskitettynä tiedotuskanavana.

Tällä kyselyllä keräämme tietoa Internetin käytöstä Skanskan ja asiakkaiden välisessä kommunikoinnissa sekä lisäksi portaalin mahdollisuuksista kommunikoinnin parantamiseksi.

Tämän tutkimuksen on hyväksynyt projektipäällikkö Jukka Hörkkö Skanska Talonrakennus Oy:stä sekä Evianet Solutions Oy:n toimitusjohtaja Erkki Ruuska.

Vastausta odotamme 23.12.2005 saakka. Antamanne vastaukset käsittellään ehdottoman luottamuksellisesti.

Kiitokseksi vastauksestanne postitamme mielellämme kopion opinnäytetyöstämme sähköpostitse, mikäli aihe Teitä kiinnostaa. Työmme on määrä valmistua keväällä 2006.

Kiitokset osallistumisestanne.

Ystävällisin terveisin,

Veera Ruuska ja Inkeri Kokko
Liiketalouden Laitos, Lahden Ammattikorkeakoulu

Kysely (In Finnish) **2/8**

Perustiedot

Sukupuoli*
Nainen Mies

Ikä*
24 tai alle 25-34 35-44
45-54 55 tai yli

Työnkuva*

Asema*
Työntekijä Päällikkö Johtaja
Muu
Jos muu, mikä?

Kuinka kauan olet työskennellyt Skanskan palveluksessa? *
Alle vuoden 1-4 vuotta 5-9 vuotta
10 vuotta tai kauemmin

Maa*
Suomi Norja Ruotsi
Tanska Muu
Jos muu, mikä?

*-merkillä merkityt kysymykset ovat pakollisia

Kysely (In Finnish) **3/8**

Ennakkomyynti ja -markkinointi
Ennakkomyynti ja -markkinointi vaiheessa lopullista päätöstä talon rakentamisesta ei ole vielä tehty. Tässä vaiheessa asuntojen kysyntää tutkitaan.

1. Mitä kommunikointikanavia käytetään ennakkomyynnissä ja -markkinoinnissa?
Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on käytetyin kanava.

	1	2	3	4	5	6	7
Internetsivusto							
3D-mallit Internetissä							
Messut							
Sanomalehti							
Esite							
Aikakauslehti							
Muu							

Jos muu, mikä?

2. Joissakin tapauksissa asiakas voi valita useammasta materiaali -ja varustevaihtoehdosta (esim. laatat, lattiat, keittiön kaapit ja koneet). Tulisiko eri vaihtoehdot esitellä ennakkomyynti ja -markkinointi vaiheessa?

Kyllä	Ei	Joskus, riippuen kohteesta
En tiedä		

3. Mikä olisi potentiaalisille asiakkaille ihanteellisin tapa olla Skanskaan yhteydessä ennakkomyynti ja -markkinointi vaiheessa?

Sähköposti	FAQ *	Puhelin
Posti	Messut	Muu

Jos muu, mikä?

* FAQ = Frequently Asked Questions/Usein kysytyt kysymykset. Asiakkaat voivat lähettää kysymyksiä Skanskalle, kysymykset ja vastaukset julkaistaan Internetissä.

4. Onko ennakkomyynti ja -markkinointi vaiheessa ilmennyt kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Kysely (In Finnish) **4/8**

Rakennusvaihe
Rakennusvaiheessa, kun asunnot ovat jo myyty, asiakkaat voivat tehdä materiaali- ja varustevalintoja sekä muutospyyntöjä pohjapiirustuksiin.

5. Mitkä ovat sopivimmat kanavat Skanskan tiedottaessa asiakkaille rakennusprosessin vaiheista, esim. aikataulumuutoksista?
Aseta seuraavat vaihtoehdot järjestykseen, joista nro 1 on sopivin kanava.

	1	2	3	4	5	6
Posti						
Sähköposti						
Internetsivusto						
Tekstiviesti						
Puhelin						
Muu						
Jos muu, mikä?						

6. Tulisiko asiakkaiden pystyä seuraamaan rakennusprosessin etenemistä Internetissä?
Kyllä Ei Joskus, riippuen kohteesta

Jos kyllä, niin millä tavoin?
Valokuvagalleria FAQ * Rakennuspäiväkirja
Aikataulut Muu
Jos muu, mikä?

* FAQ = Frequently Asked Questions/Usein kysytyt kysymykset. Asiakkaat voivat lähettää kysymyksiä Skanskalle, kysymykset ja vastaukset julkaistaan Internetissä.

7. Kuinka asiakkaat voivat ottaa yhteyttä Skanskaan rakennusvaiheessa?
Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on käytetyin kanava.

	1	2	3	4	5	6
Posti						
Sähköposti						
FAQ*						
Tekstiviesti						
Puhelin						
Muu						
Jos muu, mikä?						

8. Millä tavoin asuntojen materiaali-ja varustevaihtoehdot tulisi esitellä asiakkaille?

Esite	Sähköposti	Internetsivusto
Myyntiedustaja	Näyte	Muu

Jos muu, mikä?

9. Tulisiko asiakkaiden voida tehdä materiaali-ja varustevalinnat Internetissä?

Kyllä	Ei	En tiedä

Mikäli kyllä tai ei, miksi?

10. Tarjoatteko valmiita materiaali- ja varustepaketteja, esim. keittiöpaketteja?

Kyllä	Ei, asiakas voi valita kaikki varusteet ja materiaalit erikseen ilman lisäkustannuksia	Ei, materiaalit ja varusteet ovat kaikille samat

11. Kuinka monta eri tarvike- ja varustevaihtoehtoa, jos yhtään, Skanska tarjoaa asiakkailleen?

Merkitse kuinka monta vaihtoehtoa on tarjolla seuraaviin asunnonosiin.

	0*	1	2-3	>3
Keittiön varusteet (Astianpesukone, jääkaappi...)				
Keittiön materiaalit (Keittiön kaapit, laatat...)				
Lattiamateriaali				
Kylpyhuone				
Sauna				
Valaistus				
Parveke				
Säilytystila				

* Asiakkaalla ei ole yhtään vaihtoehtoja. Kaikki materiaalit ja varusteet ovat standardeja.

12. Missä muodossa ja minne asiakasvalinnat ja - muutokset arkistoidaan? (esim. materiaali- ja varuste valinnat/muutokset pohjapiirrustuksiin)

Ketkä käyttävät tätä tietoa?

Skanska	Taloyhtiö	Asiakkaat

Muu

Jos muu, kuka?

13. Miten asiakaspalaute kerätään?

Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on käytetyin kanava.

	1	2	3	4	5
Posti					
Sähköposti					
Puhelin					
Internetsivusto					
Muu					

Jos muu, mikä?

14. Onko rakennusvaiheessa ilmennyt kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Takuuaika
Skanska takaa asunnot tietyksi ajanjaksoksi.

15. Jos asiakkaat löytävät puutteita asunnosta, miten he voivat tiedottaa Skanskaa kyseisestä ongelmasta?
Aseta seuraavat vaihtoehdot käyttöasteen mukaiseen järjestykseen, joista nro 1 on käytetyin kanava.

	1	2	3	4	5
Posti					
Sähköposti					
Puhelin					
Internetsivusto					
Muu					

Jos muu, mikä?

Mikä olisi mielestäsi ihanteellisin lähestymiskanava?

16. Onko takuuvaiheessa ilmennyt kommunikointiongelmia? Jos kyllä, niin minkälaisia?

Kysely (In Finnish) **6/8**

Asukasportaalin muokkaaminen

17. Kuinka paljon luulet materiaali- ja varustevalintojen joustavuuden vaikuttavan asiakkaan ostopäätökseen?

Hyvin vähän Melko vähän Keskimääräisesti
Melko paljon Hyvin paljon

18. Kuinka paljon luulet seuraavien tekijöiden vaikuttavan asiakkaan ostopäätökseen? Aseta seuraavat vaihtoehdot järjestykseen, joista nro 1 vaikuttaa eniten.

	1	2	3	4	5	6
Keittiövarusteet (kodinkoneet)						
Keittiömateriaalit (laatat, keittiön kaapit...)						
Kylpyhuoneen varusteet (lavuaari, wc-istuin...)						
Kylpyhuoneen materiaalit (kaapit, laatat...)						
Säilytystilan määrä						
Muu						
Jos muu, mikä?						

19. Miten materiaali- ja varustevaihtoehdot tulisi mielestäsi esitellä?

Esitteet Myyntiedustaja Esimerkki asunnot
Internet Muu
Jos muu, mikä?

20. Miten varusteiden ja materiaalien hinnat tulisi mielestäsi esitellä asiakkaalle?

Tarjous postitse
Tarjous sähköpostitse
Tapaaminen myyntiedustajan kanssa
Hinnasto esitteen mukana
Hinnasto Internetissä
Laskuri Internetissä*
Muu
Jos muu, mikä?

*Materiaali-ja varustevalintoja tehtäessä Internetissä, laskuri laskee valittujen tuotteiden yhteishinnan.

APPENDIX 2

Kuinka paljon mielestäsi asiakkaat arvostaisivat seuraavia palveluita? Arvostele asteikolla 1-5 (1= ei ollenkaan, 2= vähän, 3= keskimääräisesti, 4= melko paljon,5= paljon)

	1	2	3	4	5
21. Mahdollisuus tehdä materiaali- ja varustetilauksia Asukasportaalin välityksellä.					
22. Mahdollisuus tarkastella kuvia materiaali-ja varustevaihtoehdoista Asukasportaalissa.					
23. Mahdollisuus tarkastella 3D-mallia asunnosta Asukasportaalissa.					
24. Mahdollisuus tarkastella asunnon pohjapiirustusta Asukasportaalissa.					
25. Mahdollisuus seurata rakennusprosessin etenemistä Asukasportaalissa.					
26. Mahdollisuus käyttää hintalaskuria Asukasportaalissa.					

27. Mahdollisuus ottaa yhteyttä Skanskaan Asukasportaalin kautta.

	1	2	3	4	5
Ennakkomyynti ja -markkinointi vaiheen aikana.					
Rakennusvaiheen aikana					
Takuuvaiheen aikana					

29. Muita ehdotuksia Skanskan ja asiakkaiden välisen kommunikoinnin parantamiseen?

28. Muita ehdotuksia Asukasportaalin tarjontaan?

Kysely (In Finnish) **7/8**

Skanskan kilpailijat
Näkemyksesi kilpailijoista

30. Nimeä Skanskan kolme suurinta kilpailijaa ja niiden vahvuudet

31. Millä tavoin kilpailijat esittelevät materiaali-ja varustevaihtoehtonsa?

Esite	Internetsivusto	Myyntiedustaja
Sähköposti	En tiedä	Muu

Jos muu, mikä?

32. Tarjoavatko kilpailijat asiakkaille mahdollisuuden tehdä materiaali-ja varustevalintoja Internetissä?

Kyllä	Ei	Joskus
En tiedä		

33. Tarjoavatko kilpailijat asiakkaille mahdollisuuden seurata rakennusprojektin etenemistä Internetissä?

Kyllä	Ei	Joskus
En tiedä		

34. Kuinka kilpailijat kommunikoivat asiakkaidensa kanssa?

Posti	Sähköposti	FAQ
Tekstiviesti	Puhelin	En tiedä
Käyttöliittymä (portaali)	Muu	

Jos muu, mikä?

35. Tarjoavatko kilpailijat asiakkaille mahdollisuuden valita useammista eri materiaali-ja varustevaihtoehdoista ilman lisäkustannuksia?

Kyllä	Ei	Joskus
En tiedä		

36. Käyttävätkö kilpailijat joitakin hyviä kommunikointitapoja tai muita asiakastukipalveluja, joita Skanska voisi harkita myös?

Lähetämme mielellämme kopion opinnäytetyöstämme kaikille kiinnostuneille. Lisää alle sähköpostiosoitteesi työn toimittamista varten.

Kiitos yhteistyöstä!

Survey (In English) **1/8**

Dear respondents,

This questionnaire is a part of our thesis and is carried out by the request of Evianet Solutions Oy. Our main goal is to find out if there is a niche for Evianet's Customers' Extranet in Skanska's Scandinavian operations and to customize the portal to each market.

At the moment Evianet's Customers' Extranet is used as a communication/interaction channel between the customers and Skanska Oy (Finland). It can be used through the Internet, Digital TV and mobile phone. The Customers' Extranet has four different usergroups: shareholders, residents, suppliers and Skanska's personnel. The Customers' Extranet is used during the whole construction process. It works as an information-managing, networking and marketing tool for Skanska. It is also used as a centralized communication channel.

With this questionnaire we collect information about how widely Internet is used in communication between Skanska and the customers and how the communication could be improved.

This study is approved by Project Manager Jukka Hörkkö from Skanska Talonrakennus Oy and CEO Erkki Ruuska from Evianet Solutions Oy.

Please submit the filled form by 8th January 2006. The answers will be handled confidentially and anonymously. We are happy to send the thesis report to you if you are interested in the subject.

We thank you in advance for your participation.

Veera Ruuska and Inkeri Kokko
Lahti Polytechnic, Faculty of Business Studies

Survey (In English) **2/8**

Personal information

Gender*
Female Male

Age*
24 or under 25-34 35-44
45-54 55 or over

Department*

Position *
Employee Manager Director
Other
If other, what?

How long have you been working for Skanska?*
Less than 1 year 1-4 years 5-9 years
10 years or more

Country*
Finland Norway Sweden
Denmark Other
If other, what?

*-merkillä merkityt kysymykset ovat pakollisia

Survey (In English) **3/8**

Presales and –marketing phase
In the presales and –marketing phase the final decision whether to start the building project or not is not yet made. During this phase the demand for the apartments is being studied.

1. Which communication channels are used in presales and -marketing?
Please rank the channels, no 1 being the most used channel.

	1	2	3	4	5	6	7
Basic Website							
3D-models on the Internet							
Fairs							
Newspaper							
Brochure							
Magazine							
Other							

If other, what?

2. In some cases the customers can choose from different equipment and material alternatives (e.g. doors, walls, tiles). Should these be introduced at the presales and -marketing phase?

Yes	No	Sometimes, depending on the site
I do not know		

3. What would be the most ideal way for potential customers to contact Skanska at the presales and -marketing phase?

E-mail	FAQ *	Phone
Mail	Fairs	Other

If other, what?

* FAQ = Frequently Asked Questions. The customers can send questions which will be published and answered on the website by Skanska

4. Has there been any difficulties with communication at the presales and -marketing phase? If yes, what kind of problems?

Survey (In English) **4/8**

Construction phase
In the construction phase the apartments are already sold. The customers can make their choices (materials and equipment) and change requests (changes in the floor plans)

5. Which channels are the most suitable ones when Skanska informs the customers about the construction process (e.g. changes in timetables)?
Please rank the channels, no 1 being the most suitable channel.

	1	2	3	4	5	6
Mail						
E-Mail						
Internet website						
SMS						
Phone						
Other						

If other, what?

6. Should the customers be able to follow up the building process on the Internet?
Yes No Sometimes, depending on the site

If yes, in which ways should the process be presented on the website?
Photo gallery FAQ * Construction journal
Timetables / changes in timetables Other
If other, what?

* FAQ = Frequently Asked Questions. The customers can send questions which will be published and answered on the website by Skanska

7. How can the customers contact Skanska?
Please rank the channels, no 1 being the most used channel.

	1	2	3	4	5	6
Mail						
E-Mail						
FAQ *						
SMS						
Phone						
Other						

If other, what?

8. In which ways should the materials and equipment for the apartments be presented to the customers?
Brochures E-Mail Internet Website
Sales representatives Samples Other
If other, what?

9. Should it be possible for the customers to make their material and equipment choices on the Internet?

Yes No I do not know

If yes or no, why?

10. Do you offer ready-made material and equipment packages (e.g. kitchen packages)?

Yes	No, the buyers can choose every material and piece of equipment separately, without extra cost	No, the materials and equipment are all standard

11. How many different alternatives, if any, does Skanska offer to its customers when choosing materials and equipment for the apartment?

Please choose the correct number of offered alternatives for the following parts of the apartment.

	0*	1	2-3	>3
Kitchen equipment (Dishwasher, fridge...)				
Kitchen materials (Cabinet doors, tiles...)				
Floor material				
Bathroom				
Sauna				
Lighting				
Balcony				
Storage space (Number of cabinets)				

*The customer has no alternatives; all materials and equipment are standard.

12. In which form and where are the customer choices/changes documented? (e.g. material and equipment choices / changes in the floor plans)

Who uses this information?

Skanska Housing company Customers

Other

If other, who?

13. How is customer feedback collected?

Please rank the channels, no 1 being the most used channel

	1	2	3	4	5
Mail					
E-Mail					
Phone					
Website					
Other					

If other, what?

14. Has there been any difficulties in communication at the construction phase? If yes, what kinds of problems?

Survey (In English) **5/8**

Guarantee time
Skanska guarantees the apartments for a certain period of time.

15. If the customers find some faults in the apartment, how can they inform Skanska about the problem?
Please rank the channels, no 1 being the most used channel

	1	2	3	4	5
Mail					
E-Mail					
Phone					
Website					
Other					

If other, what?

What would be the ideal approach channel in your opinion?

16. Has there been any difficulties in communication during the guarantee time? If yes, what kinds of problems?

Survey (In English) **6/8**

Customisations of the Customers' Extranet

17. How much do you think that the flexibility of the product choices affects to the customers' buying decision?

Very little Little Medium
Quite a lot Very much

18. How much do the following affect to the buying decision in your opinion? Please rank the alternatives, number 1 affecting the most.

	1	2	3	4	5	6
Kitchen supplies (electric equipment)						
Kitchen materials (cabinets, tiles...)						
Bathroom equipment (sink, toilet seat, shower…)						
Bathroom materials (cabinets, tiles...)						
Storage space						
Other						
If other, what?						

19. How should the alternative products be presented to the customers in your opinion?

Brochures Sales representatives Sample apartments
Internet Other
If other, what?

20. In which ways should the prices of the materials and equipment be presented to customers?

Offer by mail
Offer by E-Mail
Offer by Sales representative
Price list with the brochure by mail
Price list on the Internet
Price calculator on the Internet*
Other
If other, what?

* When choosing materials/equipment on the Internet the calculator calculates the total cost automatically

How much would the customers appreciate the following services? Please, rank on scale 1-5 (1= no importance at all, 2 = low importance, 3 = average importance 4 = high importance, 5 = very high importance)

	1	2	3	4	5
21. Possibility to carry out orders of materials and equipment through the extranet					

22. Possibility to view pictures of the alternative products on the extranet
23. Possibility to view a 3D-model of the apartment on the extranet
24. Possibility to view the floor plan of the apartment on the extranet
25. Possibility for the customers to follow the progress of the construction project
26. Possibility to use a price calculator on the extranet

27. Possibility for customers to contact Skanska through the extranet

	1	2	3	4	5
During Presales and – marketing phase					
During Construction phase					
During Guarantee time					

28. Other suggestions for services offered on the extranet?

29. Other suggestions how to improve the communication between Skanska and their customers?

Survey (In English) **7/8**
Skanska's Competitors in the field of Housing Construction
Your view about the competitors

30. Name the three biggest competitors and their strengths.

31. In which ways do the competitors present their product ranges for materials and equipment for the apartments?

Brochures	Internet website	Sales representatives
E-Mail	I do not know	Other

If other, what?

32. Do the competitors offer a possibility for the customers to make product choices on the Internet?

Yes	No	Sometimes
I do not know		

33. Do the competitors offer a possibility for their customers to follow the progress of the building project over the Internet?

Yes	No	Sometimes
I do not know		

34. How do the comperitors communicate with their customers?

Mail	E-Mail	FAQ
SMS	Phone	I do not know
Customer interface (Portal)	Other	

If other, what?

35. Do the competitors offer their customers the possibility to choose from different material and equipment alternatives without extra cost?

Yes	No	Sometimes
I do not know		

36. Are the competitors using some good methods of communication or customer support that Skanska could consider as well?

We are happy to send the final thesis to you if you are interested in the subject. Please fill in your e-mail address here

Thank you for your time and cooperation.

APPENDIX 4

23rd January 2006, Helsinki

Interview – CEO Erkki Ruuska, Evianet Solutions Oy

Evianet

- Henkilöstökuvaus?
- Mitkä ovat yrityksen kohderyhmät ja miten kohderyhmät valittu?
- Yhteistyökumppanit? Miten auttavat tarvittaessa?

Skanska

- Miten tällä hetkellä sovitaan portaalin käyttöönotto työmailla? Työmaakohtaisesti?
- Mitkä ovat Evianetin tavoitteet Skanskaa ajatellen?
- Miten neuvottelut kehittyy? Suomessa? Konsernissa?
- Onko tilanne muuttunut Skanskan ja Evianetin käymässä konsernisopimus –neuvottelussa?

Asukasportaalista

- Asukasportaalin mahdollisuudet Digi-Tv:ssä? Entä kännykässä?
- Kehitysideoita?
- Potentiaalia minkälaisiin ominaisuuksiin?
- Miten eri Skanskan osastot (markkinointi, myynti jne.) voivat hyödyntää portaalia?
- Asukasportaalin arvo Skanskalle, Asukkaille ja Toimittajille?
- Hinnasto

Markkinoista

- Ovatko Skanskan kilpailijat osoittaneet kiinnostusta portaalia kohtaan?
- Jos kiinnostusta, onko muilla portaalipalvelu kehitteillä?
- Miten tuotemallipohjaista suunnittelua voidaan hyödyntää Asukasportaalissa?

APPENDIX 5

23rd January 2006, Helsinki

Interview – Project Manager Jukka Hörkkö and Customer Service Engineer Sari Outila from Skanska Talonrakennus Oy

Pohjoismaiden toimintojen yhtenäistämisprojekti

- Koskeeko se kaikkia yksiköitä (rakentamispalvelut, asuntoprojektikehitys jne.)?
- Koska projekti on alkanut? Missä vaiheessa mennään nyt? Koska projekti saadaan päätökseen?
- Miten yhtenäistäminen tulee vaikuttamaan yksikköjen jokapäiväiseen toimintaan?
- Mitä hyötyjä projektista on?

Onko olemassa 'tyypillistä' asunnonostajaa? Onko Suomessa rakennuskohtaisia eroja? Onko Pohjoismaissa keskenään eroja?

Skanskan markkina-asema maailmassa / Suomessa /Ruotsissa / Tanskassa / Norjassa?

Mitkä ovat Skanskan myyntivaltit? Entä kilpailijoiden myyntivaltit/heikkoudet?

Asukasportaalista

- Onko portaalille kysyntää?
- Ovatko asukkaat löytäneet sen hyvin? Mikä on ollut palvelun keskimääräinen käyttöprosentti kohteissa?
- Kuinka paljon tarvitsee vielä vaihtoehtoisia kommunikaatiokanavia niissä kohteissa joissa Asukasportaali on jo käytössä? Mitä kommunikaatiokanavia käytetään eniten?
- Onko Asukasportaalin sisällölle, ulkonäölle ym. kehitysideoita?
- Mitkä ovat mielestäsi Asukasportaalin suurimmat hyödyt Skanskalle, toimittajille ja asukkaille?

- Kuinka asukasportaali helpottaa työtäsi?
- Miten asukasvalinnat on tähän saakka tehty?
- Miten palvelua kannattaisi markkinoida asukkaille?
- Miten toimialalla yleensä suhtaudutaan Asukasportaalin kaltaisiin palveluihin? Ovatko muut rakennusfirmat alkaneet myös suunnitella portaalin/extranetin käyttöönottoa?
- Ketkä Skanskassa käyttävät asukasportaalia?
- Miten tuotamallipohjaista suunnittelua voidaan hyödyntää Asukasportaalissa?

APPENDIX 6

Hello Helle,

We would appreciate if you could find a few minutes to give your comments. At the moment we are gathering some information about trends and future prospects of construction industry in Norway.

In Finland the customer orientation in design and construction of residential buildings is increasing. Customers' possibilities to make material and equipment choices and changes in the floor plans are starting to be everyday life. Can the same trend be seen in Norway? The latest in Finnish residential construction industry is that only the frame of the apartment is built and the customer can later build walls and even a second floor to the apartment ("loft apartments"). What is new in residential construction in Norway?

Thank you again for your help.

Best regards,

Inkeri Kokko and Veera Ruuska
Lahti University of Applied Sciences

APPENDIX 7

Dear Sir/Madame,

Please, forward to the marketing department or the person responsible for the customer relations.

We are two business students from Finland. We are making a schoolwork on construction industry. As a part of our schoolwork, we are examining some of the leading construction companies in the Nordic region. It would be greatly appreciated if you could answer to few questions.

Does your company offer extranet service for the buyers of the apartments? No

What services are available on the extranet (floor plans of the apartments, making the material and product choices, following the construction process etc.)?
Product choises

If you don't have an extranet, which channels are used between the communication of your company and the customers (e-mail, post, phone etc.)?
Mail and personnel information

Thank you for your cooperation and Merry Christmas!!

Veera Ruuska and Inkeri Kokko
Faculty of Business Studies, Lahti Polytechnic