A Role-based intranet
Overcoming information overload?

Teresa Kuu
Anders Lundberg

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Authors: Teresa Kuu and Anders Lundberg
Supervisor: Jörgen Lindh, Internationella Handelshögskolan, Jönköping
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Summary

In this thesis we have looked into the possibilities of creating a role-based intranet. The main purpose of a role-based intranet is to overcome the information overload problem. Overcoming information overload is a big achievement. It is the state when information exists in such abundance, making specific information hard to find. In a role-based intranet, the information presented to the user should be based on the role of the employee. An effect of such an intranet should be that employees work more efficiently as they in theory need less time to look for relevant information.

The main question that we faced in this thesis was how to define a role for a role-based intranet. By searching the internet, we found that a role can be defined in many different ways. To find further inspiration and to get an insight into how common role-based intranets are, we contacted several Swedish based organizations. The result of this research was a bit surprisingly. Our feelings for the subject at first, was that role-based intranets was not that widespread. This was mainly due to the fact that we found no relevant literature and no really relevant search hits on the internet. But our inquiries showed that several companies more or less use role-based intranets and several companies had looked into the possibilities of role-based intranets in the past. Their role-based intranets were not as we imagined them though. Their intranets where based on what we would like to call information demand criteria. Information demand criteria are different ways of filtering information in order to give user relevant information, this is what we call information demand coverage. Each employee in an organization has different demand for information. The information demand must be analyzed by organizations in order to give users relevant information. This can be done by interviewing each user to see what their information demands are, but this is of course an incredibly huge, more or less impossible undertaking in large organizations, even in midsized organizations. Instead of going through the time consuming process of interviewing each person in an organization, the information demand criteria could be used, we sorted these criteria into several different categories, geographic location, title, department/area of work to mention a few (Bark, Heide, Langen & Nygren, 2002). We believe that a role-based intranet could be formed based on the criteria mentioned above. Some interviews may be needed in order to get good information demand coverage, but they should not be very extensive.

Our conclusion is that a role-based intranet has the potential of overcoming information overload, but only with the use of the right information demand criteria, this is imperative for the outcome and success of a role-based intranet. The more information demand criteria, the better the information demand coverage will be.
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1 Introduction

In today’s organizations, employees are commonly faced with a huge information overload problem (Toffler, 1970). The problem arises in the use of information and communication technology (ICT) such as intranets, overloaded mailboxes etc. The information overload problem has risen to such an extent, that many employees are stressed and fail to perform their duties because of lack of information. Organizations need to find a way to overcome this problem. (For a more detailed description of information overload, see chapter 3.4.)

To examine the problem of information overload, we have chosen a complex organization, the IKEA intranet (IKEA inside, 2006) to be the focus of our study. The intranet is made up of 140 different websites that each reflects its part of the organization. This means that an employee might need to visit several different websites in order to get the required information for a certain task. The huge complexity of the intranet means that specific information is very hard to find. Employees are indeed too often faced with the information overload problem. In order to overcome this problem, IKEA believes that an intranet based on roles could be the solution to overcoming information overload (Tinnert, 2006).

1.1 Problem discussion

We wish to find a way to overcome the information overload problem. We believe that an intranet based on roles could have the potential to eliminate organizational information overload. In theory, an intranet based on roles means that the end-users should only receive required information based on their role in the organization. This could mean that employees work more efficiently – they spend less time to look for required information; they receive useful information without needing to look for it. The list of benefits for such an intranet can surely be made long, see chapter 3.3.1 for a look of the purpose and advantage of having an intranet. This should in the end mean a more well-informed and most of all more productive employee.

However, building and designing such an intranet brings up a number of questions. Question that rises are: What is the best way to define a role? We can think of several ways to define a role. Should a role be based on the tasks performed by the employee? Should it be based on the employee title or position in the organization? Or maybe a combination of the options named above? Clearly, defining a role can be very complex, we will discuss our view of this more deeply in chapter 5.2.

Other question that rises are: will a role-based intranet solve the information overload problem? Have any other companies developed such an intranet? Are there any backsides of a role-based intranet? We wish to look more deeply into this by conduction a simple study of other companies.

Another question that comes to our minds is the technical aspects of this project. Is it technically possible to build and maintain such an intranet? It is very clear that this is an important question that needs to be taken in account. However, we will mostly focus on the definitions of roles involved in such an intranet.
1.2 Organizational background

As the IKEA intranet is our main source of study for this thesis, we will give a short presentation of the company.

IKEA stands for Ingvar Kamprad Elmtaryd Agunnaryd. Ingvar Kamprad is the founder, lived on the farm Elmtaryd in the village of Agunnaryd. The Swedish based company was founded in 1947 (Inter IKEA Systems B.V., 2003).

For ordinary people, IKEA could appear to be a single company. However, IKEA consists of several different companies that together make the brand of IKEA. The development and design of products is one part of the company while the food served at IKEA is produced by another. The overall largest part of IKEA is called retail. This consists of store personnel and such. IKEA has about 100,000 co-workers worldwide (Inter IKEA Systems B.V., 2005).

The ownership is complicated, but to put it in simple terms, IKEA is owned by the INGKA Foundation, which is based in the Netherlands. The company was donated by Ingvar Kamprad in the early eighties for a number of reasons (Inter IKEA Systems B.V., 2003).

1.3 Research questions

- Is it possible to overcome information overload with a role-based intranet?
- From a functional point of view, what is the most effective way to present information on an intranet? (Which solution has IKEA chosen?)

The above question is our main research question. To answer this question, we see two prior questions that will give inspiration and input to our thesis:

- What is the definition of a role? How is a role based on task different from a role based on organizational position? (What is the IKEA definition of a role?)
- Which solution have other organizations chosen? (Are there any current organizations with role-based intranets?)

1.4 Purpose

The purpose is to get an insight into the possibilities of a role-based intranet and the questions that arise from the initial preparations of such an intranet. A primary focus is to explore the different ways of defining roles in organizations. We hope this will give IKEA and other companies’ inspiration and ideas to further develop the possibilities of role-based intranets.

1.5 Delimitation

It is clear that many different definitions of roles exist. At least two of those we will not discuss. These include: gender roles and social roles. This is an exciting area of research, but is of no importance when defining roles for a role-based intranet.
Setting up a role-based intranet includes technical questions. This is of course important questions that need to be answered before embarking on the road to the role-based intranet. We will give a description of the technical background but not focus on technical issues.

1.6 Intended audience

The intended audiences for this thesis are people involved in the functional part of intranet design, people that are interested in investigate intranet, people that are interested in information overload and also people that are interested in role-based intranet. This includes the IKEA staff employed at internal communications. Our fellow students at CIL are also intended readers. An overall goal is that this thesis should be readable for the majority of people, including people that have no previous knowledge of intranets and information overload.

1.7 Definitions

The matrix below describes term definitions in alphabetical order.

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information overload (IO)</td>
<td>When huge amounts of information become hard to handle. (Described more in the theory chapter).</td>
</tr>
<tr>
<td>Intranet</td>
<td>The digital information network used internally in organizations.</td>
</tr>
<tr>
<td>Internal communications</td>
<td>A department at IKEA IT that supports and maintains the IKEA intranet.</td>
</tr>
<tr>
<td>IKEA inside</td>
<td>The intranet of IKEA.</td>
</tr>
<tr>
<td>Open IKEA</td>
<td>An intranet page dedicated solely to give employee inspiration to change jobs within IKEA.</td>
</tr>
<tr>
<td>Role-based intranet</td>
<td>An intranet based on roles means that the end-users should only receive required information based on their role in the organization. This could mean that employees work more efficiently – they spend less time to look for required information; they receive useful information without needing to look for it.</td>
</tr>
</tbody>
</table>
2 Method

Our method of working will be presented in this chapter.

In order to answer our research questions we need to gather information and develop knowledge in certain areas based on the collected information. Information can be gathered in many ways; by literature study, interviews and etc. Discussed below are theories and ideas on how knowledge is created.

2.1 Methodology

Here is the methodology presented.

2.1.1 “Knowledging”

The process of gathering information and creating knowledge has been documented by Goldkuhl (1998) in his work *Kunskapande*. The term “kunskapande” which he has created could loosely be translated as “knowledging”, meaning “the creation of knowledge”. It refers to all the aspects and work involved in the process of creating knowledge. It can be used for personal growth (a person with a will to learn and to evolve), or used in conjunction with thesis writing.

In order to make full use of Goldkuhl’s theories, the points listed below need to be considered. The person in need of knowledge need to have certain personal traits. It is important to:

- Listen to others experiences and insights
- Participate in dialogues about knowledge making
- Put your own values and assumptions under criticism
- Act in order to get knowledge
- Analyze the aspects of the knowledge making process

According to Goldkuhl, a first important step is to decide which type of knowledge is needed. He has sorted knowledge into different types of categories; knowledge categorization. This is important because different types of knowledge demand for different types of information gathering. The sorting and identification of knowledge gives inspiration and directions to sources of information. Goldkuhl defines the following types of knowledge types: categorical knowledge, classifying knowledge, quality decided knowledge, character based knowledge, historical-reconstructive knowledge, explanative knowledge, predictive knowledge, value based knowledge, normative knowledge, knowledge of criticism, knowledge of the possible.

A knowledge we seek is categorical knowledge. This type of knowledge lays the foundation for all other types of knowledge types. Our main aim is to define the proper way to define roles in organizations.

Another knowledge we seek is explanative knowledge. This constitutes facts and explanations of, for example the causes to information overload. This type of knowledge is vital for our work.
Further we seek descriptive knowledge. This means knowledge that describes certain qualities of a categorized and studied phenomenon.

### 2.1.2 How knowledge is created

Diemers (2000) is another researcher which focuses on how information can be identified, produced and maintained. His main focus is how knowledge is created. He has presented an analytical model of the transformational process that answers the complex question of how contextualized information is transformed into personalized, situated knowledge. An analytical model of the transformational process:

![Figure 2.1 The tree levels of information transformation (Diemers, 2000).](image)

Three levels of information transformation:

*Comprehension* is the lowest level and basis for all information transformation. If we don’t comprehend certain information, because, for example, we are not familiar with the language or the syntax, or information seems devoid any logic or far too complicated to us, the transformational process will not commence.

*Contextualization* is the process of internalization. This constitutes a common interpretative space as a major prerequisite for the transformational process. Information is, as a matter of fact, never “stand-alone”, but always personalized and embedded into a social context and fabric. On this level, the transformational process is contextualized, and its success depends heavily on a commonly established interpretative space with a synchronized semantical interpretation and overlapping typifications.

*Valuation* is about belief and comprises a space of relevancies; this determines our acquisition or non-acquisition of knowledge in the transformational process. Acquiring knowledge includes always believing in information to be true or not to be true, and depending on the contextualization we consider persons or labels as experts for certain information, in the sense that they have specifically distributed knowledge about the topic in question. Accordingly, information is also valued on its importance and usefulness for my system of relevancies and my personal plans. Depending on this valuation the transformational process is finally successful or abandoned.

(Diemers, 2000)
2.2 Data and information acquisition

We will acquire our data and information by literature study, interviews, observations and Internet/intranet search.

2.2.1 Literature retrieval

To study literature is to receive great information during a short time period.

In this thesis we have used the following literature frequently:

- Forskningsmetodik (Holme & Solvang, 1997).
- Intranätboken (Bark, Heide, Langen & Nygren, 2002).
- Kunskapande (Goldkuhl, 1998).

2.2.2 Interviews

A preliminary study is needed to perform an analysis of the current situation. To get this analysis we have chosen to use the method interview. A set of questions will be used to investigate how other companies have solved their problems with intranets and information overload problems. We would also need to interview employees at IKEA. Not only those who using the intranet daily, but also those who have barely seen it. These set of questions could – if needed – be adapted for each department/employee we interview. It is important to think of the structure and language in the predefined questions. These questions will be the receivers’ first impression according to Holme and Solvang (1997). It is also important to ask right person to perform an interview, because “wrong” person can lead the result from the interview to non useful (Home & Solvang, 1997).

Many questions can be answered by using interviews. We believe that this is a strong method for data and information acquisition, because if you have asked the right questions to the right person, and this person has answered correctly, then you have all data and information you need. Though it is not always easy to find the right person or time to get to this person (if he/she lives in the other side of the globe) for an interview. There are, from another point of view, many ways to perform an interview on which we will discuss below in this chapter. We believe though that all different types of interviews are demand by prepared questions to the intened interview person. We have therefore written a questionnaire form with relevant questions, for a closer look at the predefined questions, see appendix A.

Below we discuss different types of interviews and the advantages/disadvantages that they offer.

Traditional interview (face to face)

Though it is a good method to acquire information, traditional interview is a time-demanding method and is therefore not in our focus. We will only conduct a limited amount of traditional interviews.

The advantages that traditional interview offers is the ability to interpret different signals, e.g. body language and face expressions and the immediate feedback it gives. This means that the chances of getting data with good quality increase. Those advantages have Björklund and Paulsson (2003) written about in their book Seminarieboken. They also bring up
other advantages, as the deeper understanding to the questions when the interview person has the ability to explain what he/she mean. As an interviewer you can reformulate the questions to fit the interview person or ask sub-questions. The main disadvantage with traditional interviews is that they are often time consuming, meaning that data and information acquisition takes long time (Björklund & Paulsson, 2003).

**Interview done by e-mail**

This type of an interview is a relevant method in this thesis, because our interview persons are not gathered in one city or country. Consider the limited time in this thesis we believe that this is a good method to collect data and information.

The majority of our interviews will be done by e-mail. Interviews done by e-mails offer different types of advantages/disadvantages compared with traditional interviews. First of all, the immediate feedback that traditional interviews offer is lost. On the other hand, the person being interview have more time to think about his/hers answers, meaning that the acquired information is potentially more correct (based on facts etc.) giving the information higher reliability.

**Interview done by telephone**

This method is very similar to traditional interviews. Interviews done by telephone is also a relevant method in this thesis. An advantage is that it is easy to ask corollary questions on the telephone like in traditional interviews. Interviews done by telephone are time saving, consider the limited time we have in this thesis. On the other hand can it sometimes be difficult to be put through to the right person. No body language or face expressions can be interpreted by telephone interviews.

As you can see, there are many advantages and disadvantages with telephone interviews. One of the main reasons of using this method is because of the advantages with the time saving.

**2.2.3 Internet and intranet search**

It is easier to find relevant information on the net when using a search engine. We have in this thesis searched in google.com and the most frequent search word or string were:

- Definition of roles
- Information overload
- Intranet

The Internet has much information, but also much irrelevant information. We hope to find great amounts of information regarding the subject of information overload, role definitions as well as the intranets. Any previous studies of role-based intranets or similar systems will be searched for.

The IKEA intranet may hold needed information as well. From the IKEA intranet we hope to find the IKEA definition of a role.
2.2.4 Companies to study

We wish to study several other companies in order to see if they have any experience of a role-based intranet and if so – how they have constructed the intranet.

We have chosen to study the following companies: AztraZeneca AB, TetraPak AB, Volvo AB, SonyEricsson AB, Arla Foods AB, SAAB AB, Electrolux AB, Swedbank AB, ABB AB, and TeliaSonera AB.

The reason we have chosen these companies is because they are similar in size to IKEA. We believe that smaller companies might not have the same need for a role-based intranet. Therefore, the chances for finding inspiration and knowledge to such a system, increases by looking at larger companies. It also gives the thesis more credibility.

Also, we have a variety of company types (production companies and service companies). IKEA is mainly a production company, but certain parts of IKEA also offer services. Therefore it is interesting to get inspiration from different types of companies. The mentioned companies above are production companies with the exception of Swedbank and TeliaSonera which are service companies. The mix of companies also gives the study a higher generality, as we can see how different companies solve similar problems.

We began our study by sending an e-mail to all companies mentioned above. The reason we choose to begin with e-mail contact was because of the time limit and also that it was weeks before Christmas. So we assumed that meeting them would be impossible at that time. AztraZeneca, TetraPak and SonyEricsson answered directly, though TetraPak and SonyEricsson said they do not have time at the moment. After a while, until one week before Christmas we decided to call all companies, expect for AztraZeneca, which we had already gather information from. Several of the mentioned companies had insufficient time to answer our questions. Also, some companies not mentioned above, choose not to participate in the interview.
3 Frame of reference

Three major definitions need to be discussed in this thesis: intranets, information overload and role definitions. Information overload and intranets etc. would not exist as we know them without computers and internet protocols etc. In order to give the reader the right conditions for understanding intranets and information overload, we will give a short presentation of the development of the computers.

3.1 Development of the computer

In this chapter the generations of computers will be presented.

3.1.1 3000 B.C

Basically, a computer is a tool for doing math. One could argue that computers have their beginnings back in pre-history, starting with the abacus, which is a simple counting aid (Cringely, 2006, Bellis, 2006 and Grytenius & Eriksson, 2006).

3.1.2 The first generation of computers

The German engineer Konrad Zuse (1910-1995), was a construction engineer for the Henschel Aircraft Company in Berlin, Germany at the beginning of World War two. He earned the semiofficial title of “inventor of the modern computer” for his series of automatic calculators, which he invented to help him with his lengthy engineering calculations.

The first binary computer, called the Z1, was made in 1936 by Konrad Zuse. This binary computer did not fulfill all his ideas, but still included several groundbreaking technologies in calculator development such as floating-point arithmetic, high-capacity memory and modules or relays operating on the yes/no principle. Other intended functions were more successful with each Z prototype. The last Z prototype, the Z4, was done in 1955.

These computers which were invented in the first generation, was called mainframe computer and used vacuum tubes.

(Cringely, 2006, Bellis, 2006 and Grytenius & Eriksson, 2006)

3.1.3 The second generation of computers

The second generation of computers used transistors, which is an invention that changed the course of history for computers. Computers could perform the same functions, using less power and space with transistors. These computers were called minicomputer.

John Bardeen, William Shockley and Walter Brattain were three scientists at the Bell Telephone Laboratories in Murray Hill, New Jersey. They researched the behavior of crystals (germanium) as semi-conductors in an attempt to replace vacuum tubes, which was used to amplify music and voice.

John Bardeen, William Shockley and Walter Brattain’s research was about to come to a fruitless end when a last attempt to try a purer substance as a contact point lead to the invention of the “point-contact” transistor amplifier. In 1956, these three scientists received the Nobel Prize in Physics for the invention of the transistor.
3.1.4 The third generation of computers

The third generation of computers used integrated circuits instead of transistors. Jack Kilby and Robert Noyce were two separate inventors. They both invented almost identical integrated circuits, though they were unaware of each other’s activities.

In 1958 did Jack Kilby (1923-2005) start his work for Texas Instruments. Jack Kilby was an engineer with a background in ceramic-based silk screen circuit boards and transistor-based hearing aids. Robert Noyce (1927-1990) was a research engineer. He had co-founded the Fairchild Semiconductor Corporation. From 1958 to 1959, both electrical engineers were working on an answer to the same dilemma: how to make more of less.

The IBM 360 series was introduced in April of 1964 and quickly became the standard institutional computer for small and medium-sized companies.

3.1.5 The fourth generation of computers

The fourth generation of computers replaced integrated circuits with microprocessors. In the late 1960’s, many scientists had discussed the possibility of a computer on a chip, but nearly everyone felt that integrated circuit technology was not yet ready to support such a chip. Federico Faggin, Ted Hoff, and Stan Mazor were three engineers employed by the company Intel publicly. They invented the Intel 4004, which was the world’s first single chip microprocessor in November 1971 Cringely, 2006, Bellis, 2006 and Grytenius & Eriksson, 2006).

3.1.6 The fifth generation of computers

The fifth generation of computers is the ones we use today. Most computers use the operating system based on Microsoft Windows. Microsoft Corporation formally announced Microsoft Windows on November 10th, 1983. Though they shipped Windows 1.0 on November 20th, 1985, almost two years past the initially promised release date. Microsoft Windows 1.0 was considered buggy, crude and slow. Later in 1987, in December 9th, Microsoft released a much improved Windows version 2.0. This version made Windows based computers look more like a Mac. Apple Computer saw a resemblance and filed a 1988 lawsuit against Microsoft.

Windows 3.0 was released on May 22nd, 1990. Three million copies were sold the first year, and Windows finally came of age. Later in 1992, in April 6th, Windows 3.1 was released. In the first two months three million copies were sold.

Windows 95 was released on August 24th, 1995. This was considered very user-friendly. Windows 98 was released on June 25th, 1998. It has Microsoft’s Internet browser “Internet Explorer 4” built in and supported new input devices like USB. Windows 2000 was released in 2000 and was based on Microsoft’s NT technology. Windows XP was released in October 2001 and offered better multi-media support and increased performance. According to Microsoft, “the XP in Windows XP stands for experience, symbolizing the innovative experiences that Windows can offer to personal computer users.”
3.2 Development of the network

With the evolvement of computer came the Internet. The Internet is a worldwide, publicly accessible network of interconnected computer networks that communicates under established roles. All computers/users have access to this network and the possibility to transmit data by packet switching using the standard TCP/IP (Transmission Control Protocol/Internet Protocol) (see chapter 3.2.2). You could say it is a “network of networks” that consists of millions of smaller domestic, academic, business, and government networks, which together carry various information and services. Those services could e.g. be, electronic mail (e-mail), file transfer such as music, movies, video and sounds, online chat (direct contact with one or more persons anywhere in the world using text windows to “talk” with each other), and the interlinked web pages and other documents of the world wide web (www) (Nationalencyklopedin, 2006).

To view internet pages, user must have a web browser installed. Netscape was the dominate browser in the ’90s until Microsoft developed their browser Internet Explorer. It was set as a standard in their operative system Microsoft Windows, and because of that, they took a greater part of the browser market and were developed to the most used browser. In the 21st century other alternative browsers became more popular, such as Firefox and Opera. In the Mac-family, Safari is one of the most used browsers (Carlsson, 2001).

3.2.1 Creation of the Internet

The forerunner to Internet called ARPANET was to create the Advanced Research Projects Agency (ARPA) in February 1958 to regain a technological lead and was created by the United States of America. The creators soon realized the value of the computer communication, that Internet communication became more and more useful. It was all types of communications, from short messages to great computer files. The main gains with ARPANET were the discoveries of different techniques for computer networks.

During the 1980’s this network was spread in the world’s universities and Sweden got their first pilot called SUNET (Swedish University Network) installed 1980. Eight years later, 1988, SUNET had reached all universities in Sweden and had also better and faster transfer speed.

Sweden has a large amount of Internet operators. Except SUNET they have Swipnet (Tele2) which was etablish in 1990. Afterwards came Telia and thereafter Telenordia, Global One, pi.se and Bahnhof etc.

(Nationalencyklopedin, 2006)

3.2.2 Internet protocols

In this context, there are three layers of protocols:

On top comes the application protocol. Application protocol defines the specific messages and data formats, which is sent and understood by the applications (Hagberg & Hellström, 2002).
Next come *TCP (Transmission Control Protocol)* and *UDP (User Datagram Protocol)* - the protocols by which one host sends data to another. The former makes a virtual connection. Important examples of this kind of protocols are SMTP (Simple Mail Transfer Protocol) is used for e-mail transmissions, FTP (File Transfer Protocol) is used for data transmissions, TELNET is for terminal connection and HTTP (Hypertext Transfer Protocol) is for the World Wide Web (www) (Nationalencyklopedin, 2006).

At the lowest level is *IP (Internet Protocol)*, this defines the datagrams or packets that carry blocks of data from one node to another. Every computer that is connected to the world must have an unique IP address (Hagberg & Hellström, 2002). The number combinations are divided in four number groups and are separated with dots, e.g. 130.237.88.3. The numbers are 0 to 255 (Nationalencyklopedin, 2006).

![Diagram of three layers of protocols](image)

Figure 3.1 Three layers of protocols (Hagberg & Hellström, 2002).

### 3.3 Development of the intranet

An intranet is a network of private computers. It has similar services as an Internet, but is not accessible for all users. It normally uses one or more server computers for world wide web in a TCP/IP network to have the possibility to send e-mail and distribution of internal information or operation within the organization (Nationalencyklopedin, 2006).

“Briefly, an intranet can be understood as ‘a private version of the Internet’, or as a version of the internet confined to an organization” (Wikipedia, 2006).

You could say that intranet is a closed network for computers, protected from the public by firewalls. It is predefined which should have access to the system. Though it is used in general as a channel for persons in their own organization, sometimes external users can have access, e.g. customers. External users often have limited access to the intranet. Customers for example can only see pages with relevant information and will not see corporate secrets. Intranets give the possibility to define which should have access to which information.

According to Bark, Heide, Langen and Nygren (2002), the first intranets where created in the middle of ‘90s. Since then, the spread has been fast, the majority of today’s organizations use intranets. The reason for this is that setting up an intranet is relatively simple and
cheap. The IT (information technology) foundation for using organizational intranets is usually already present as most organizations have been using the internet prior to intranets (Bark, Heide, Langen & Nygren, 2002). However, according to Tallving (1998), intranets have existed in more than twenty years.

### 3.3.1 Main purpose of having an intranet

The primary purpose of an intranet is to increase the vertical and horizontal flow of information in the organization, i.e. information from managers to employees, but also information that organization employees need for solving their daily tasks. In theory – the effect of the increased flow of information is that money is saved and that knowledge is spread throughout the organization (Heide, 2002).

According to Intranet Road Map (2006), an reason to have an corporate intranet “is that it is an effective tool to combat the waste of time, effort and materials within an organization at the same time generating new opportunities for collaboration and productivity” (Intranet Road Map, 2006).

“A good example of a tangible benefit is the reduction in paper cost from moving processes online. Certain statistics quote that 18% of corporate printed material becomes outdated after 30 days” (Intranet Road Map, 2006).

One of the huge advantages of having an intranet is the cost to publish information. The cost is much lower than traditional information channels such as organizational newspapers and letters etc. Information is also instantly available once it has been published; it is easily updated and deleted. The storing and handling of internal information is a tool for knowledge management. The sharing of knowledge is one of the main purposes of having an intranet (Bark, Heide, Langen & Nygren, 2002).

### 3.3.2 Advantages and disadvantages with intranet

Listed below are some advantages and disadvantages with intranets from Intranet Road Map (2006) and Wikipedia (2006).

**Advantages**

- Inexpensive to implement
- Easy to use, just point and click
- Based on open standards
- Scalable and flexible
- Connects across disparate platforms
- Puts users in control of their data
- Empowered users
- Builds a culture of sharing and collaboration
- Facilitates organizational learning
- Breaks down bureaucracy
- Improved quality of life at work

- **Workforce productivity:** Intranets can help employees to quickly find and view information and applications relevant to their roles and responsibilities. Via a simple-to-use web browser interface, users can access data held in any database the organization wants to make available, anytime and — subject to security provisions — from anywhere, increasing employees’ ability to perform their jobs faster, more accurately, and with confidence that they have the right information.

- **Time:** With intranets, organizations can make more information available to employees on a “pull” basis (i.e. employees can link to relevant information at a time which suits them) rather than being deluged indiscriminately by e-mails.

- **Communication:** Intranets can serve as powerful tools for communication within an organization, vertically and horizontally.

- **Web publishing:** The use of intranet, permits information to be published using hypermedia technologies.

- **Business operations and management:** Intranets are also being used as a platform for developing and deploying applications to support business operations and decisions across the internet worked enterprise.

**Disadvantages**

- Management could lose control of the material provided in the intranet

- There could be security concerns with who accesses the intranet, plus abuse of the intranet by users.

- Intranets may cause information overload, delivering too much information for users to handle.
3.3.3 Primary ways of designing intranets

The development of intranets often goes through two more or less defined phases. Intranets usually start out as small electronic dashboard. In this phase the main purpose of an intranet is to work as an information channel, distributing information such as corporate news, statistics and changes in management etc. This phase is supposed to be the replacement for meetings, newsletters and such where information would usually have been distributed.

In the second phase, the intranet has progressed into a work tool – a source where information and applications are stored which organizational members need to complete their daily tasks. This could be applications for handling orders, receiving customer complaints etc, there is no end to the possibilities.

The creation of an intranet is usually initiated by some kind of need, e.g. the need for internal communication or the need for business applications within the organization. When these situations arise, the main focus is to solve the immediate needs, meaning that the focus on design and functionality may not be of top priority. A result of this the implemented intranet solution often solves the immediate needs, but lack the ability to grow and evolve. As the organization grows, the flaws in the intranet design will become more apparent. When the day comes when the organization outgrows the intranet, the options to expand the intranets might be small or non existent. Further, the lack of a structured way of pub-
lishing and storing information could lead to an information overload problem (discussed in later chapter).

When organization grows, so does the intranet. In order to keep information accessible and findable, the information needs to be structured. Three major approaches to structuring intranets have been most commonly used. This is the organizational/logical oriented structure and the process oriented structure. A third way of structuring information is through a portal.

(Bark, Heide, Langen & Nygren, 2002).

**Organizational/logical oriented structure**

During the ‘90s, it was common that organizations focused on organizational/logical structure for publishing information. This means that intranets have been based on the organizational structure, i.e. management, marketing and supply etc. for structuring information. Each department could be responsible designing and maintaining its own part of the intranet. Person employed at the departments would expect to find all needed information in their corresponding intranet department. The problems with a organizational/logical oriented intranets are that organizational members have different demands and views on what is logical. Often, organizational members need information across the organization meaning that they must search other parts of the intranet in order to get the information they need (Bark, Heide, Langen & Nygren, 2002).

**Process oriented structure**

Another way of structuring intranets is based on a process oriented structure, this means that intranet is developed based the organizational processes, i.e. sales and purchasing etc. By placing guidelines, policies and templates for documents etc on the intranet, an organization is helped to follow a certain standard or process. The problem is to know which processes to put on the intranet. Undocumented processes will of course not be published on the intranet meaning that employees might miss out on important information (Bark, Heide, Langen & Nygren, 2002).

**Web portal/user-based oriented structure**

A web portal-based view on structuring web pages have been used during the ‘90s. Through a predefined portal interface users, would choose which information to be displayed. Web portals can be and have been used in intranets as well.

In an essence, this is getting close to what we think of as a role-based intranet; the user will only see the information needed for the daily work. The difference is that through a role-based interface, each user would not need to choose which information to be displayed; it would more or less be predefined from the beginning meaning less user action. A portal needs user interaction and knowledge in order to be of full use. An example of such an portal can be read below where the Swedish telephone company *Telia* is studied.

(Bark, Heide, Langen & Nygren, 2002).

**The study of Telia**

*Intranätboken* (2002) studies the Swedish company Telia and its development of an intranet portal for its organizational members. One of the goals of the development of the intranet at Telia was to give personalized information. The solution to this
was a combination of an organizational/logical structure complemented by a user-based portal. The user would complement needs to information and functions outside the organizational/logical structure, by simply adding these information/functions by intranet search (Bark, Heide, Langen & Nygren, 2002).

3.4 Information overload

Information is a vital tool for decision making in organizations, both private and governmental. The amount of information available and the overall quality of the information, affects the decision making.

There is no question that the information technology (IT) of today has meant huge progress in knowledge management and the handling of information. The easy way of storing large amounts of data means that information and knowledge is available and accessible at request. There are however, also negative aspects of IT; there is a point where handling information becomes a problem. People worldwide are having trouble finding specific information and knowledge. One would assume that such a problem would be caused by the lack of information. This is not the case however, a common term mentioned in this thesis and in society in general is the term information overload (IO). The term was originally coined by Alvin Toffler in 1970. It refers to a state when information exists in abundance. The large amount of information available means that users are flooded with information, making it hard to find specific information needed for a certain task or purpose (Toffler, 1970).

A metaphor used for this problem is signal-to-noise ratio. This term originates from the music industry, used to describe the proportion of desired sound, e.g. music, to unwanted sounds such as the crackling noise of a vinyl record (Wikipedia, 2006).

The IO problem is supposed to be a cause to physical illness. According to Softpanorama (2006) an illness called information FatigueSyndrome is discussed:

“Information FatigueSyndrome: Symptoms include paralysis of analytical capacity, increased anxiety, greater self-doubt, and a tendency to blame others. When people are faced with more information than they can process, they become unable to make decisions or take action. There are several aspects of this problem.

- One is information overload due to overwhelming complexity of the situation. Typical examples include network troubleshooting, complex programming and/or networking problem when complexity of the stuff is over human capacity to comprehend and people spend days trying to figure out what is wrong and why. Network administrators and security analysts know this type of situations pretty well.
- The second situation is ‘junk’ information overload when civilization produces more information than necessary for normal functioning, with most information of low quality. This is kind of new type of pollution, information smog.”

(Softpanorama, 2006)

The above cite gives us the perspective that IO comes in two forms. The feeling of overwhelming complexity and the situation when civilization produces more information than necessary for normal functioning. Our view on IO is that of the second statement, when society (or organizations in general) produces more information than necessary.

An article written by InfoWorld (2000) gives some inspiration on how to overcome information overload. This is their suggestions:
Do

• “Develop an information management strategy that works for you. Filter information.”
• Accept that not all pertinent data can be examined prior to a decision when data volumes are ex-
ceeedingly high.
• Attempt to recognize quality data.
• Take contro.”

Don’t

• “Let information take control of you by working 60 to 70 hours per week.
• Take cell phones or computers on vacations.
• Attempt to examine every piece of data available.
• Focus on things beyond your control, such as the number of new web pages being added daily.”

(InfoWorld, 2000)

3.4.1 Different types of IO

IO is usually connected with the use of IT. The internet and the use of e-mails are causes to IO. Many intranets, (IKEA inside too) have similar problems. We agree that the different kinds of IT are the major cause to IO. Below are listed the different types of IO:

• The internet
• E-mail
• Intranets
• Books

The internet

The cost to publish data on the internet is very low; this means that the internet is packed with all kinds of information. The creation of the internet has meant that information is constantly available worldwide and in a great proportion, through the internet users have access to worldwide knowledge. The data that exists online can be very useful depending on what the user is looking for. But one must also remember there is no way of knowing if the information found is facts or simply unproven theories. Further, the internet holds incredible amounts of data that is irrelevant depending on the user needs.

An example of this problem can easily be illustrated by searching the internet for the key-
words “information overload”, at the particular time of search, google returned more than 16 million hits. There is no doubt that incredible many of the returned pages hold information that would be of use. The only problem that the authors of this paper – and users all over the world – face, is reading through all the available material in order to narrow down the information that is of use and is relevant. The time it would take to go through all 16 million hits is overwhelming. This means that useful information is missed out.
E-mail overload

E-mail must be seen as a big cause to information overload. With the birth of the internet, e-mail was soon to arrive. E-mail has become one of the most important tools for internal communication. It is a very simple and cheap media for communicating. The sheer simplicity of sending e-mail makes it a cause to information overload. The medium is used for all kinds of information, i.e. an upcoming birthday, information about meetings etc. As good as this may seem, user spend much time reading through e-mails that may or may not be of use. Information about upcoming birthdays etc is not a necessity for the majority of the readers and in reality the time spent reading such e-mails could have been better spent elsewhere. So the use of e-mail is not always good for productivity, a study from the United Kingdom published on newscientist.com showed that:

“Far from boosting productivity, the constant flow of messages and information can seriously reduce a person's ability to focus on tasks” (New Scientist, 2005).

The research showed that staff can be affected by misleading or incomplete e-mails, increasing the time required to complete a task.

Spam

Spam is a big problem that means users are flooded with advertising e-mails. According to Datamation spam accounted for 82 percent of all e-mails within United States of America in March 2004 (Datamation, 2004).

Intranets (organizational IO)

The IO problems of intranets are much similar to that of the internet. The cost to publish information on intranets is usually low and easy to do. Intranets are more or less build the same ways as the internet, but in a much lower scale and for internal corporate use only. A major difference is that intranets often have publishing rules that decide where and how information is published. Tools for monitoring the traffic on certain pages can help intranet responsible to decide which information is relevant and is being used. This should help eliminating IO, but depending on the organization size, the complexity and design of a intranet will vary, meaning that IO is still a problem. Without the right design, intranets will face the same problem as the internet: users will not find relevant material, users will be flooded by irrelevant articles and information that is of no use.

Books

Books are in a way, a cause to IO. This is clear even when writing this thesis, searching for relevant literature give thousands of hits. Reading through all of those books are an impossible task and those that you do read may in the end turn out to be completely irrelevant for the thesis writing.

3.5 Defining roles

The definitions of roles are complicated. We have found that a role can be defined in many ways. Our view of roles and how they could be defined for an intranet will be presented in chapter 5.

Here is an abstract of role definitions from the internet:
• Function: the actions and activities assigned to or required or expected of a person or group; “the function of a teacher”; “the government must do its part”; “play its role” (Google, 2006).

• A function or part performed, especially in a particular operation or process. Service Area: A specialty/program area of a service provider, typically in a Receiving Agency. Examples: hospital surgical or labour/delivery program; community Home Care Nursing program (Health Sciences Placement Network, 2006).

• A role (sometimes spelled as rôle) or social role (in sociology) is a set of connected behaviours, rights and obligations as conceptualised by actors in a social situation. It is mostly defined as an expected behaviour in a given individual social status and social position (Google, 2006).

• A set of responsibilities, activities and authorisations (Dream Catchers, Inc., 2006).

• In the context of SCBOS, Role is short for Security Role. An example of a role is an Entity Administrator. Privileges (or privilege groups) are assigned to users through Security Roles and are used to determine which SCBOS application features users can access. Refer to the definition of Privileges (South Carolina Business One Stop, 2005).

• A group of users, defined within an organization (BEA, 2006).

• The part played by an information system component; for example, the role of a network administrator is to keep the system functioning; the role of a scanner is to read documents and convert them into digital form that the computer can process (McKinnon, 2006).

3.5.1 Previous studies of role based intranets

Through extensive internet search we have found systems that very much resemble a role-based intranet. Below is a Role-based access control model, created with computer security in mind.

Role-Based Access Control Models

Role-based systems have been made in conjunction with computer security. With the increased use of IT in organizations, an awareness rose to increase computer security in order to control unauthorized access to classified data. System administrators and software developers solve this problem by focusing on different kinds of user access control. Access control ensured that only authorized users were given access to certain areas of a computer system, such as certain data or application resources.

One type of access control that was developed was the role-based access control (RBAC). System administrators could create roles according to job functions performed by organizational members. Roles were defined by the specific task competency, such as a physician or pharmacist. It could also be based on the authority and responsibility of for example a project supervisor. Based on the above factors, users where granted rights to view certain data, and rights to edit certain data.

(ACM portal, 1996)
3.6 Frame of reference summary

In this chapter we have discussed the development of the computer, the internet and intranets. We have described how protocols form the basis for communication on the internet and how this has laid the foundation for the use of intranets. We have discussed how an intranet is usually designed and the purpose, advantages and disadvantages of having an intranet.

Further we have looked into where, how and why information overload is created and the effects it can have on people in organizations and society. This is to give the reader an insight into our desire of eliminating information overload.

We have searched the internet and literature for definitions of roles and presented different views on how this is done. The definition of roles is important in the use of role-based intranets. In chapter 5 we will present our view of how it could be done to suite role-based intranets.
4 Results
In this chapter we will present our results from our interviews and our study of the IKEA intranet.

4.1 Answers from the interviews
We have asked some companies the questions in appendix A. The companies are AstraZeneca AB, Volvo AB, Arla foods AB and SAAB AB. They all have answered our questions by e-mail except for Arla which has answered by telephone. To follow the entire interviews see appendix B and appendix C.

The result from the interviews was pointing at the same direction. All four companies have a sort of role-based intranet. Though roles are not defined as what we mean with the word role. E.g. AstraZeneca and Arla have more like an area-based intranet, where all information in one area e.g. production are logged on the same page (Gyllenvik, 2006 and Sjöberg, 2006). A person in marketing sees other information on its intranet. Volvo on the other hand said that they use a different type of role-based intranet, based on geographic location (Kuylenstierna, 2006). So if you are in e.g. Russia, the information not only presents in Russian but the information displayed only concerns employees in Russia. SAAB has developed what they call a personalized intranet, that is steered by which city you are in, which business area you belong to and to which computer domain you are connected to. (Berndtsson, 2007).

All four companies think that an intranet should be adjusted to each demand. Everyone in one company do not have the same demands, therefore is it important to have, what we would call, a demand-based intranet. Arla have experienced a disadvantage with demand-based intranet – hard to find other information that does not concern its daily demands. SAAB has also experienced a disadvantage with demand-based intranet – this is the difficult the responsible intranet publisher has to steer relevant information, and to not make all information visible for all intranet users.

4.2 Study of the new IKEA intranet
IKEA have tested to implement role-based intranets for some of its retail units (i.e. employees in IKEA stores) in Canada, Switzerland and Italy, this means that the intranets are not completely role-based. As it is toady, the role-based parts are mostly there in an experimental stage, to test and evaluate the possibilities of having such an intranet. The old intranet still coexists along with the new. Late on in the process of writing this thesis, we where allowed to examine these versions of the role-based intranet. The result of this is displayed below.

4.2.1 Italian dashboard
By studying the Italian dashboard it is obvious that IKEA have chosen to base the intranet on two selection criteria: user must first select a role from a dropdown list and then choose a geographic location. The names of the roles seem to come from “Open IKEA” (IKEA inside, 2006). (Open IKEA is an intranet page dedicated solely to give employee inspiration to change jobs within IKEA). Currently, only five different roles are available on the Italian intranet, these all belong to the retail Italy part of IKEA. User must select a geographic lo-
cation; in this case the list consists of Italian stores, user can select a specific store or choose to view all.

When user has chosen a role and geographic location, a “dashboard” is displayed containing “portlet” with various information, as seen in appendix D. A portlet is a small window within the dashboard that brings up information from different categories. As seen in appendix D, a portlet can be references, tools, marketing mix, news, and activities, but this vary depending on role and the information displayed in the portlets also vary depending on role. In theory, two different roles can share the same portlet for news, but could have different portlets with tools and references etc. The information displayed in the dashboards seems to be the same, whether the user chooses a specific store or all (which in an essence renders the option to choose store useless). The dashboard only change depending on the role you choose.

(IKEA inside, 2006)

4.2.2 Swiss dashboard

The Swiss dashboard is more or less built in the same way as the Italian. The difference is that there are fewer roles to choose from on the Swiss intranet. The Swiss intranet has two different roles to choose from which is leader and co-worker. This is more of a function than a title. User must also select a geographic location, which in this case is called a unit. Currently only one nationwide unit is present, which is simply called Switzerland. After a work function and unit has been chosen, the dashboard will be presented to the user, example of such a dashboard can be seen in appendix E (IKEA inside, 2006).

4.2.3 Canadian dashboard

The Canadian dashboards have a different design compared to the other dashboards we have analyzed. First of all, there is no option to choose a geographic location. User can choose to view a dashboard based on title or area/department. The Canadian dashboard has a mix of dashboards based on title and areas. For example, there is a dashboard made especially for Communication and information manager (title) and there is a dashboard designed for marketing (department/area of work), an example of a Canadian dashboard can be seen in appendix F (IKEA inside, 2006).

4.2.4 Swedish dashboard

In Sweden a similar project is currently undergoing. It will more or less be constructed in the same way as the other role-based intranets. The process for developing this intranet is such: selected employees with different work roles have been interviewed in order to gather their information demand. The demand is then compared with other work roles to see if same roles can share same dashboards/portlets (Orvarsson, 2006).

Primarily, employees in retail are the main focus for the role-based intranets. The reason for this is that retail is the biggest part of IKEA. This is where the biggest improvements can be found and where most money can be saved (Tinnert, 2006).

Tinnert also said that the roles where based on the descriptions in open IKEA.
5 Analysis

Based on our collected results from IKEA and our other research, we have conducted an analysis of the material. This is presented below.

5.1 Interviews

From the interview results we found out that all companies has defined the term role different, except for AstraZeneca and Arla. The reason why they all do not have the same definition is because a role can be defined in many different ways. There is no standard definition of role yet, therefore is it so difficult to set a standard mode on intranets. We have in chapter 3.5 defined different definitions of roles. Some would say that a role is a function (Health Sciences Placement Network, 2006 and Google, 2006) and other says it is a social role (in sociology), that is a set of connected behaviors (Google, 2006). South Carolina Business One Stop (2005) on the other hand explains that a role is a short for security role. Despite different role definitions is the primary purpose of having an intranet for all companies, to increase the vertical and horizontal flow of information in the organization (Heide, 2002) and also to share knowledge (Bark, Heide, Langen & Nygren, 2002).

According to AstraZenea, Volvo, Arla and SAAB you can have, what you could call a demand-based intranet, which means that a company should base their intranet on factors that is suitable for the employee demands. The company that has chosen to implement an intranet should think of what needs and demands the users have of information. It is thought important to remember that an intranet grows when the organization grows. In order to keep information accessible and findable, the information needs to be structured (Bark, Heide, Langen & Nygren, 2002). There are many different demands or factors that an intranet could be based on, e.g. title-based intranet, department-/area-based intranet, geographic location-based intranet, work task-/function-based intranet or security-based intranet (more about this in chapter 6). According to Bark, Heide, Langen and Nygren (2002) are there three major approaches to structuring an intranet on. This is the organizational/logical oriented structure and the process oriented structure. A third way of structuring information is through a portal (Bark, Heide, Langen & Nygren, 2002).

AstraZeneca and Arla have based their intranet on department/area of work, (much like the organizational/logical oriented structure mentioned in chapter 3.3.3). This is the most common demand or factor to base an intranet on (Bark, Heide, Langen & Nygren, 2002). This is also one of the easiest ways to base an intranet on, because companies usually have a clear definition of their departments. The backside with department/area-based intranet is that organizational members have different demands and views on what is logical. Organizational members need information across the organization very often (Bark, Heide, Langen & Nygren, 2002), which Arla also agreed with (Gyllenvik, 2006).

Volvo has based their intranet on geographic location (country level). This seems to be another easy way to base an intranet on, because focus is on what concerns Volvo employees in each country. This has a backside though; focusing only on one country can lead them to missing out on important news from other countries, this could though on the other hand reduce information overload (New Scientist, 2005). AstraZeneca has not only based their intranet on department/area of work but also on language (Sjöberg, 2006). This means that they are focusing on more than one demand, which we think is good. However, we do not believe that language is a good enough demand to be focusing on; instead we feel that a
standard language as English should be used, because of the big work which translating intranet pages to local languages would mean. You should consider a corporate intranet as an effective tool to reduce the waste of time, effort and materials within an organization (Intranet Road Map, 2006), which means that focusing on right demands is very important. A corporate intranet should also generate new opportunities for collaborations and productivities (Intranet Road Map, 2006).

We do believe that a combination of two or more good demands can create an even better intranet. E.g. SAAB has based their intranet on three demands, which city you are in, which business area you belong to and to which computer domain you are connected to (Berndtsson, 2007). Some of the IKEA role-based intranets have also based their intranet on three demands (see chapter 5.2 below) (IKEA inside, 2006).

### 5.2 IKEA

From what we can tell, the dashboards that IKEA has created seem to function well. When viewing the dashboards it is clear that the information displayed is very limited, this is presumably good. This could mean that IO is eliminated to an extent. The dashboards gives the employee access to tools and information needed for solving their daily tasks, which is one the primary purpose of an intranet according to Bark, Heide, Langen and Nygren (2002). Most of all, the news, tools and such seem to be relevant for the role you choose, they appear to be adapted for the processes that each employee work in (similar to the process based intranet in chapter 3.3.3) (Bark, Heide, Langen & Nygren, 2002). However, as we have not been able to discuss the functionality of the dashboards with the end-users, it is hard to know how well they work. If we examine how IKEA has defined which information to display, it is clear that the have Italy and have mainly chosen to base their roles on two main factors: work title and geographic location. The Canadian dashboard is similar (see appendix F), however they have also chosen to base some roles on department/area of work, while the Swiss dashboard use geographic location and work function. (IKEA inside, 2006)

Each role covered by the dashboards at IKEA has different needs and demands of information. We have studied the information stored in open IKEA to examine some of the work titles found in the role-based intranets: we believe that the information presented in the dashboards cannot be based solely on the description in Open IKEA. Also, not all roles are present in the Open IKEA section. There are thousands of jobs at IKEA which means that extensive work would be needed if all roles at IKEA should be covered by the role-based intranet. For each of the role-based intranet we have examined, it is clear that work has been made in order to gather information for each title and for each department/area of work, where employees with the specific titles in the specific departments/areas have been questioned for their need of tools and information.

The option to choose a geographic location is good; it would give the end user relevant information based on their location of choice which could help reduce IO. They must be careful though not to block out relevant information from other countries or stores. This they have solved by giving the user option to change store. However from our studies, it seemed that the geographic option was not used for any of the IKEA intranets. We have not been able to confirm whether this option is used or not.

The use of “portlets” is smart as roles with similar information demand can share portlets. This means less work for the intranet responsible persons. We believe that the design of these portlets is similar to that of a web portal (as described in chapter 3.3.3), which uses a
similar design of portlets on a dashboard. The difference is that no option exists to add user based information. The intranets are very much standardized for selected roles (which is exactly what they intend to be based on our interviews with IKEA), but the role-based intranets that we have in mind are even more personalized, we will discuss our theories about this in chapter 6.2. The intranets have a feedback option though.

5.3 Role-based intranet

Our main important thought based on our results is that a role-based intranet should be based on information demand. We want to formulate the term information demand coverage; this term covers the need and demand that each user has of information. If every user is meant to have use of the role-based intranet, interviews need to be done with employees in major parts of the organization in order to map the information demand coverage. If the users information demand coverage is not completely mapped, there is an obvious risk that user will miss out on certain information. IKEA has mapped the information demand coverage by conducting interviews with selected employees in its organization, but we are not sure if this is the most cost effective way of doing it. The information demand coverage will probably be mapped to a high grade, but the time consumption will be huge. We believe that the use of information demand criteria (discussed in chapter 6.1) could be a better solution.

Further, it would be wise to let users have an option to add information to their portlets, much similar to web portals as described in 3.3.3 (the study of Telia), this is to help users cover their own information demand coverage (Bark, Heide, Langen & Nygren, 2002).

The role-based intranets have its dark sides as well however. The process of setting up a role-based intranet is huge, especially when using methods as in the example of IKEA. As the interview with SAAB revealed, a role-based intranet means higher demand on metadata. Metadata is information about the information and it is important as it defines where the information belongs and to which users the information should be visible. Without metadata or with wrong metadata, there is a risk that new information would not reach the intended audience. This in turn puts higher demand on the intranet responsible/publisher, as they are most likely responsible for setting the metadata.
6 Conclusion and recommendations

In this chapter our conclusions and recommendations will be presented.

In this thesis we asked the question: is it possible to overcome IO with a role-based intranet? We believe that the answer is partially yes, it is possible to overcome some types of IO to a certain extent. In our frame of reference we discussed different types of IO. We believe that the IO seen in intranets could very well be minimized by the use of a role-based intranet. However, the other types of IO will not be affected by the role-based intranet; meetings will still take place, the internet will still be as huge as before etc. But the main important thing is that time can be saved when employees use their role-based intranets, when they need less effort to look for tools and information in their daily work.

Another important question that we have searched is how to define a role. From the early beginning of this thesis it was clear that the definition of a role is a bit unclear, as many different ways of defining roles exists. From what we have learned, IKEA has chosen to define their roles by four different factors department/area of work, title, geographic location and work function.

We have found that there are two ways to develop a role-based intranet. It is hard to say which way is better. IKEA has developed a simple, yet – to our knowledge – functional dashboard which serves very much as a role-based intranet. Building these dashboards seems to be a fairly easy job. The real work lies in doing interviews with key persons in selected roles to identify their information demand. In smaller organizations this might be possible, but in large organizations where thousands of different roles could exist, it would be an incredible large task to firstly identify every role in the organization, and secondly – to identify the information demand of these roles. But if an organization wishes to develop an intranet for a limited number of roles, the IKEA dashboard could be the easiest solution.

We have however identified another way of developing a role-based intranet, this intranet would work on a larger scale, as not just a limited group of employees should use it, but every employee in the organization. The interviews with the other companies showed that an intranet should be based on demand. We believe that from a functional point of view, this is the most effective way to present information on an intranet. In these intranets, filters such as mentioned by InfoWorld should be used to help remove irrelevant information (these filters are discussed in chapter 6.1 below). There is no doubt that such a role-based intranet still incorporates a lot of work. The main thing is that all material on the intranet must have accurate metadata that tells where the information belongs. Information which is added to the intranet also needs to be marked with metadata, which means that a good routine for publishing new material needs to be implemented in the organization. But once the metadata is in place, the filters should be able to do their job and irrelevant information will be removed by the filters.

6.1 Information demand criteria

In this chapter we will present our idea on how to improve the role-based intranet and how information should be selected for each role in an organization. Our study of IKEA and the interviews with other organizations has given us some input in this matter.
It is clear that different roles have different information demands. Examining the information demand coverage for each role does not seem to be a plausible way. Our study showed that one must attack the question from another angle. InfoWorld suggested in their article of how to overcome information overload, that filters should be used to remove irrelevant e-mails and information. Further the article suggests that one should attempt to recognize quality data. For this matter, we would like to formulate the term information demand criteria; this is more or less a filter that defines which type of information the user is interested in, as well as which information that is irrelevant. Some of the information demand criteria could be set and defined by intranet responsible and some could even by chosen by the end users themselves. In theory, the more information demand criteria available to filter information, the more accurate information the user should receive. Below is a list of different ways of defining information demand criteria, these are merely examples. Future research could surely help define other and more precise information demand criteria.

6.1.1 Title

An information demand criteria role could be defined as the title of the employee. An employee with the title “purchaser” would get access to documents, tools and news relevant for buying goods.

This might be insufficient however as two persons with the same title may have completely different work tasks. What if different types of purchasing demand different types of documents? Someone responsible for purchasing office supplies might need completely different documents and tools compared to someone responsible for purchasing raw materials. This information demand is what we below call department/area of work.

6.1.2 Department/area of work

Employees with same titles can be found in different parts of an organization. It could therefore be relevant to choose a department/area of work for the title. This could include such departments/areas as: administration, finances, logistics, management, marketing, development etc. It could also be certain business areas in organizations.

6.1.3 Geographic location

The geographic location could be used as an information demand criteria. This could be on different levels: user could get information from the local area, e.g. specific stores or country specific information. Local weather reports could be presented in order to help planning the weekly number of customers. In some cases it could even be relevant to get nationwide information.

6.1.4 Security

Another way to filter information is by security levels or access levels. Besides working as a filter to sort out irrelevant information, it would also serve as a protection against unauthorized use of classified or sensitive material much as described in 3.5.1 (role based access control models). We believe that this is what SAAB has done.
6.1.5 User interaction

If the filters available are not sufficient for the user, there should be an option for the user to add and remove information. This method is already used today as we have read in Intranätboken (2002) and their study of the Telia intranet.
7 Reflections and future research

It was not clear to us from the beginning that IKEA was testing small role-based intranets. Although there was enough time to examine the dashboards, there was limited time to successfully evaluate the dashboards. What we would want to do is to talk to the end users of the role-based intranets in order to get their view of its effectiveness as information supplier. It would be most interesting to interview end users at the other companies that we included in our study as well. We feel that especially SAAB has one of the most interesting intranets. By evaluating the end users experiences of the intranets, it could be further improved by defining more information demand criteria.

About our chosen method, we simplified the interviews by using e-mail contact. This was not only for our own good, but also for the companies. Mostly because of the time limit and the busy period before Christmas for all companies. If we would have had more time and the companies as well, we would have chosen to use traditional interviews instead of interviews by e-mail, in order to have the possibility to ask corollary questions and to get immediate feedback.

A clear disadvantage was that books about role-based intranet and the term role did not exist. We had spent much time in searching for relevant books without result. The books about intranets that we found though, where from 2002 or older, e.g. *Intranätboken* (2002), *Intranät – en ny area för kommunikation och lärande* (2002) and *Intranätutveckling – från idé till vardagsrutin* (1998). We did have a personal contact with the author Mats Heide (2006) to ask him about intranets and why there are no new books about the subject. He answered that 2002 was the year when intranets became common among most companies. He also said that intranet is not news anymore, therefore there are no new books written about this tool. We already know that intranets are no news anymore, but we believe that the development of intranets happens continuously, therefore new books about intranets should be written.

The work to overcome information overload could be near. We have brushed the surface of the subject in this thesis, but much research remains to be done. This is clearly an exciting area to explore and much is to be gained when IO is finally eliminated.
References


Berndtsson, A. (2007). Intranet responsible at SAAB AB. [E-mail contact]. 2007-01-03.


Appendices

Appendix A – predefined questions

Pre study

Questions to intranet responsible / internal communicator

1.) Do you have a role-based intranet?
   a.) Why do you have role-based intranet?
   b.) How do you define the roles?
   c.) How many roles do you have?

   a.) Why do you not have role-based intranet?
   b.) Have you discuss the possibility to implement a role-based intranet?

2.) What are the advantages and the disadvantage with a role-based intranet?
Appendix B – Interview done by e-mail

We have sent an e-mail to AstraZeneca AB containing the questions in appendix A. Their intranet responsible Eva Sjöberg has answered our questions. Here is the e-mail interview:

1.) Do you have a role-based intranet?
Answer: Yes, if you by that mean that we can offer partly personalized information. Our intranet is not role-based on HR defined posts though.

1a.) Why do you have role-based intranet?
Answer: Because we are a great organization that shares one portal, so everyone does not need to see all information.

1b.) How do you define the roles?
Answer: In areas, e.g. R&D, production, market company and so on, and also in languages. Though this pre settings are changeable for each person.

1c.) How many roles do you have?
Answer: I do not know, this is a HR question.

2.) What are the advantages and the disadvantage with a role-based intranet?
Answer: The advantage is to receive relevant information. I see non disadvantages with a role-based intranet.

(Sjöberg, 2006)

We have sent an e-mail to Volvo AB containing the questions in appendix A. Their intranet responsible Eva Kuylenstierna has answered our questions. Here is the e-mail interview:

1.) Do you have a role-based intranet?
Answer: No, technical we do not have a role-based intranet where the users are identified, based on its pre defined role definition, and gets relevant information for its role.

1a.) Why do you not have role-based intranet?
Answer: We have on the other hand, implemented a new intranet that was developed in 18 months, that is locally relevant. So you could say that it is a type of role-based intranet because this is relevant for the users in each local area. E.g. we have websites for our employees in Umeå and Gent in local language and local content.

1b.) Have you discussed the possibility to implement a role-based intranet?
Answer: Yes, we have chosen to not implement a traditional role-based intranet, because we are a great organization with more than 80,000 employees both in production department and office department. This means that we would have to define enormously many different roles. We calculated that the estimate of the cost and resources would be too big to invest in a traditional role-based intranet.

(Kuylenstierna, 2006)
We have sent an e-mail to *SAAB AB* containing the questions in appendix A. Their intranet responsible Anders Berndtsson has answered our questions. Here is the e-mail interview:

1.) Do you have a role-based intranet?

Answer: No, we have a personalized intranet that is steered by which city you are in, which business area you belong to and to which computer domain you are connected to. We do not have roles by the type: sales, economy or production etc.

1a.) Why do you not have role-based intranet?

Answer: The personalizing parameters are used to steer information to all intranet users in order to avoid information overload. With the personalizing parameters users only retrieves relevant information. The backside is that the informer must steer relevant information and not make all information visible for all users.

1b.) Have you discussed the possibility to implement a role-based intranet?

Answer: No.

(Berndtsson, 2007)
Appendix C – Interview done by telephone

We have called Arla foods AB to ask the questions in appendix A. Their intranet responsible Ulrika Gyllenvik has answered our questions. Here is the telephone interview:

Question: Do Arla foods have a role-based intranet?
Answer: Yes, we have a role-based intranet.

Question: Why do you have a role-based intranet?
Answer: Because we all have different information needs to fulfill our tasks, therefore is it necessary to have role-based intranet.

Question: How do you define the roles?
Answer: In areas, e.g. HR, technique, production, and so on.

Question: How many roles do you have in Arla foods?
Answer: It is quite new, so it is undergoing expansion. But I would say between eight to ten roles.

Question: What are the advantages with role-based intranet?
Answer: The advantages are to have adapted information.

Question: What are the disadvantages with role-based intranet?
Answer: The disadvantages are that a person that needs information from other roles, have to memorize a lot to find the right information. What I mean is that it is harder to find information that is located in other role-pages then him-/herself.

Question: Does all have access to all pages in different role-pages? (corollary question)
Answer: There are levels. A person can see some information but not all in other role-pages.

(Gyllenvik, 2006)
Appendix D – Italian dashboard

Figure D.1 Italian dashboard (IKEA inside, 2006).

Roles covered by the Italian dashboard
There are five different roles currently covered by the Italian dashboard at IKEA (IKEA inside, 2006).

- Communication & Interior Design Manager
- Interior Decorator
- Logistics Manager
- Shopkeeper
- Visual Merchandiser – Retail
Appendix E – Swiss dashboard

Roles covered by the Swizz dashboard
There are only two different roles currently covered by the Swiss dashboard at IKEA (IKEA inside, 2006). Those two are:

- Leader
- Co-worker
Appendix F – Canadian dashboard

Figure F.1 Canadian dashboard (IKEA inside, 2006).
Roles covered by the Canadian dashboard

There are ten different roles currently covered by the Canadian dashboard at IKEA (IKEA inside, 2006).

- Communication and Interior Design Manager
- Controlling
- Food service
- Human resource
- Learning and development
- Logistics
- Loss prevention
- Marketing
- Sales
- Travel services