

The Intranet and Information Quality

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Abstract

In this work, the quality of information in the Internet and intranet will be dealt with. What characterises information of quality cannot be decided ones and for all, as it always will be in relation to the user's needs. The factors, however, that can be thought of when evaluating information can be outlined. These factors will be discussed and compared to the methods that are used by web editors to secure quality of the information in the intranet.

The methods used to investigate the paper's thesis, are the study of literature and three interviews are conducted. The study of literature is meant to reveal the aspects that can be considered when evaluating information published via the Internet and intranet. The interviews are conducted to see how web editors secure that the information in the intranet is of high quality.

The study has revealed that the following aspects can be considered when evaluating information in the Internet and intranet. These aspects are the purpose of the information; the information's authority; the accuracy, maintenance, and currency of the information and last, the accessibility and presentation of the information.

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1 Introduction

Our society has been going through a dramatic change in the last decades. A change that is on such a large scale and extensive to be able to be called revolutionary. George A. Miller says that this is a clear signal of “a New Industrial Revolution” (Machlup et al. ix). This was said in the year 1983 when it was evident that the companies’ power were moving from relying mainly on material things and the employees body strength to using the immaterial resources, that is, the employees mental abilities. As soon as in 1983 a word like a ‘revolution’ has been used to describe the obvious change in society. In the media today, it is often one hears people say that we have only seen the beginning, mainly due to the immense power of the Internet technique. In 1983 when George A. Miller talked about a New Industrial Revolution, the Internet was yet to come. The World Wide Web, the part of the Internet we most often come in contact with, is made in the year 1991 (1997, Bark). From this can be seen that those who felt a revolutionary change in the beginning of the eighties had only seen the tip of the iceberg.

Information and knowledge play an increasingly important role in organisations today. The intranet has, therefore, been welcomed by organisations as it has proved to be an effective tool, not only for distributing information but also for information retrieval. Information, however, that is made available in the intranet has to be of high quality and up to date to be of use for the employees. The information in the intranet has to be well structured and arrangements must be made to avoid the intranet becoming filled with useless information to fight information stress and overload. The Internet has led to a new tradition in publishing information. There are no editors or decision-makers in the Internet to influence what information is to be published. This has changed our traditional way of receiving information. Even though it is much easier to control information in the intranet compared to in the Internet, it is even there becoming a growing problem. It is, therefore, interesting to examine how the quality of information can be assured on organisations’ intranets. In this paper, the quality of information will be dealt with. How can we tell that one piece of information is of high quality and another is not? How are organisations today dealing with this problem? Is some kind of quality control of information used in organisations intranet?

2 Background

In this chapter, the work's central concepts will be defined. Information, quality, and intranet are concepts that this work relies mainly on and thus, it feels natural to begin by defining them. Then the intranet's positive and negative sides will be discussed to illuminate this technique potentials to affect the organisation.

2.1 Information

Using the term information in computer context has revealed a certain level of inconsistency. The word information can not be used for the data that computers possess, as it has to be possible to distinguish between raw data and information. The Collins Concise Dictionary (1989) has a separate explanation for the term information in computer context: "The meaning given to data by the way it is interpreted" (p. 641). This explanation makes a distinction between data and information and implies that it must be someone who makes this interpretation. The dictionary also acknowledges that information is another word for data (1989).

Information scholars, however, cannot be satisfied with using the word information when they actually mean data. Avison and Fitzgerald (1995) use a similar definition and argue that "the essential difference between data and information [...] is that data are not interpreted, whereas information has a meaning and use to a particular recipient in a particular context" (p.12). This definition is a bit more detailed compared to the one in the dictionary. Avison and Fitzgerald mean that the context has to be taken in for the definition to be complete – that an interpretation of data has to take place in a relation to a certain context.

Börje Langefors(1973) definition of information is worth noting. His definition is broader than the ones above; takes more things into account. His equation on information clarifies his definition in an interesting way. The equation is: $I=i(D,S,t)$. He explains it as follows: "the information "I" that is communicated by a set of data (symbols) is a function "i" of the data "D" the receiving structure "S", and of the time interval "t" during which the communication is allowed to take place" (p. 248). He also says that "D" which stands for data that is used to carry the message, must be served in such a way that it will fit the peoples' semantic background "S" (1973). This equation highlights the part that people (and their background knowledge) and time have in the concept information. Data will only be information when someone has digested it so that it informs and in a certain period. This definition also emphasises that data can be interpreted differently by different people.

Alison Cooke (1999) has also defined the word information. She distinguishes between the meaning of data and information that differs from Langefors's definition. She argues that one can talk of information outside an individual's mind. Langefors is very strict in this respect. He thinks that a text or symbols that exists outside someone's mind is always data and can never be information. Alison Cooke, on the other hand, says that, "data becomes information if it is of potential value and has the potential to impact upon an individual's knowledge (1999, p. 13).

In this paper, the use of the word information will be built on Cooke's definition. This definition serves the subject of this essay well, as the quality of information will be

dealt with. The subject implies that it touches upon the word information from several viewpoints and it is, therefore, appropriate to use a definition that has a wide spectrum. If, for instance, Langefors's definition had been used, I had not been able to say information quality, as it is impossible to measure something that goes on inside someone's mind. The word used in this paper, had therefore been data quality and not information quality. I find Cooke's definition on information more sensible and suits the purpose of this paper well, as I find the word data has such a sterile sense to it to be able to used. Therefore, the word information will be used here for "any structured data [...] sent over the Internet which has the potential to transform or alter an individual's state of knowledge (Cooke, 1999, p.13).

2.2 Information quality

When I made my first tentative approaches to the word quality I found that quality must be a very subjective matter. What one person thinks being of good quality does not have to be experienced likewise by another. In the Encyclopædia Britannica Online the word quality is defined as a "degree of excellence". This shows that quality is at least considered something positive and on this point, I believe, most people agree on. Nevertheless, it must be more difficult to think of quality in relation to abstract things rather than material objects. For instance, when talking about furniture, a chair can be considered to be of a good quality if it does not easily break down. A chair is an object that exists in the real world - a tangible object. Therefore, there is a clear picture in ones mind of a chair of good quality and of one lacking it. It is not as easy, on the other hand, to envisage the quality of an abstract thing as information. To be able to envisage this kind of quality a much more complex definition is needed than simply a "degree of excellence".

In one of his lectures, Jónasson (personal communication, 1998), defines quality in a relation to a data system as follows: "Kvalitet är överensstämelsen mellan ett datasystem och de förväntningar som användarna/verksamheten har på det". This definition highlights that quality is something that cannot be defined ones and for all, as it always exists from the user's point of view – his/hers expectations. Cooke (1999) defines quality in a similar way. She uses the following definition from the British Standard Institution, as a standpoint. "The totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs" (Cooke, 1999, p.14). From this definition she makes her own interpretation of quality: "it is possible to interpret quality as the ability of a product or service to meet the needs of a particular user or group of users" (Cooke, 1999, p.14). This definition also states that quality has to be measured from the user's point of view. It has to be measured from how well one product meets the users' (customers' if you like) expectations.

These definitions show that, because of the diversity of the users' needs, it is almost an impossible task to make an absolute list of the criteria information needs to fulfil, to be called of high quality. It is, however, possible to measure information quality in a slightly different way, according to Cooke (1999). "As with a product or a service, an information source can be evaluated to determine the extent to which it meets the needs of a user, and therefore the extent to which it is of higher or lower quality within that particular context" (p.15). This means that a list can be made of the criteria information needs to fulfil to ascertain if it is of lower or higher quality in a certain context. In this work, the concept information quality will be based on Cooke's statement on how this measurement is possible.

2.3 Intranet

The intranet has its roots in the same technique as is used for the Internet. Thus, to be able to define the intranet, the Internet has first to be explained. The idea behind the Internet started first as a research project for the military in the late sixties (Bark, 1997). The main point was to make a network that would hold in catastrophic circumstances. This meant that a net was to be made that would not have unique and thereby, vulnerable information centres. The information was supposed to be scattered in the net and it was meant to be able to move from one place to another. This development led to the TCP/IP or Transmission Control Protocol (Bark, 1997). This protocol makes it possible that different types of computers can communicate, that is, it does not matter what software or hardware is being used. Each computer gets its own address; IP-address. Bark (1997) emphasises that it is not only due to this protocol that the Internet has grown so enormously, but also thanks to the fast development of software that facilitates both distribution and search of information.

Another important technical feature was developed for the Internet. This feature is recognised under the name WWW (World Wide Web). Text is structured in a way that it will appear on the web sites in the same way for all users. To be able to do this a standardised programming language is used – HTML (Hyper Text Markup Language) (Bark, 1997). The main idea with the WWW is that it is made possible to go through big amounts of text in a different way compared to the traditional way of reading a book, for instance. Now the web user is able to move from one piece of text to another by means of the so-called hypertext. One word is highlighted and, when clicked on, directs you to another piece of text.

The intranet uses web servers and browser in the same way as is done on the WWW (the Web). The only difference is that the information on the intranet is protected from external users by a firewall (Conzales, 1998). Therefore, an intranet can only be used of the organisation's employees. The intranet can also be built with groupware products, for instance, Lotus Notes. Lotus Notes requires TCP/IP but the main difference, compared to intranets based on the Web technique, is that Lotus Notes is a pre-packaged product (Conzales, 1998). All development of applications is done outside the organisation but the intranets based on the Web technique, on the other hand, is developed inside the organisation.

In this paper, the intranets' technical aspect is mainly explained to clarify its origin. The main emphasis here, however, is on how this technique is used. Therefore, Bark's (1998) definition of intranet is suitable. He defines the word intranet as follows:

Ett TCP/IP-baserat företagsnätverk med ett enhetligt användargränssnitt, oberoende av datorplattform och servermiljö, anpassat för att stärka och utveckla den interna informationen/kommunikationen, underlätta tillgången till och utbytet av kunskap/data inom organisationen, samt fungera som ett interaktivt arbetsredskap för att understödja processer och arbetssituationer (p. 9-10).

2.4 The intranet in use

The use of the intranet has shown that it has many positive features that can affect the communication in an organisation (Conzales, 1998; Bark, 1997). Information is the most important resource in an organisation today, in respect to competitiveness. An effective tool like intranet that makes it easier to distribute this information, must be welcomed by many organisations. One of the problems that organisations have today in distributing information is the time it takes to get them from decision makers and onward to every branch of the organisation (Bark, 1997). It does not only take time but also costs money. The main costs are not only measured in the paper used but also in the indirect cost in the time it takes employees to distribute information. Information needs to be gathered, put together to an intelligible whole, printed and then distributed inside the organisation or presented in a form of a meeting.

The intranet can change this traditional way of distributing information. When information is published in the intranet, the time elapsed from the one who makes the information to the one who receives it, shortens. Also, the way information distributes in an organisation can change dramatically; from information 'push' to information 'pull'. The traditional 'push' technique implies that the group that creates the information has the responsibility to 'sell' their product or inform other employees. The 'pull' technique, on the other hand, moves this responsibility from the creator to the consumer. The consumer needs to retrieve the relevant information by himself/herself (Eriksson, 1997; Conzales, 1998). Conzales(1998) says that the positive side of the 'push' model is that it is very efficient; "the specialist group is responsible for design and development, and can focus exclusively on the product" (1998). The main drawback, though, is that "the usage over time tends to be flat (Conzales, 1998). The 'pull' model, on the contrary, has considerably greater chances to succeed in the long run. Conzales (1998) argues that the main benefits are that it "creates alignment between vision and resources, between goals and objectives; between what is seen by designers as possible and what is seen by users as "real"" (p. 210).

The intranet has many other positive aspects. These aspects affect many different spheres in the organisation. Mellanie Hills (1997) has made a list of the tangible advantages as well as the intangible ones of implementing an intranet. This list sums up in an explicit way, how the intranet has a direct and measurable impact on the organisation.

Tangible benefits of intranets

- Fast and easy to implement
- Cheap to implement
- Easy to use
- Save time
- Provide operational efficiency
- Save cost
- Based on open standards
- Connect and communicate among disparate platforms
- Put users in control of their data
- Secure

- Scalable
- Flexible
- Provide the richness of multimedia
- Leverage your infrastructure and applications investments (p.29).

The effects of these points mentioned above can be more easily measured compared to the ones listed below. Hills(1997) argues that these points are not as apparent and therefore, more difficult to measure as far as direct economic profit concerns.

Intangible benefits of intranets

- Provide better communication
- Provide access to accurate information
- Capture and share knowledge and expertise
- Provide better coordination and collaboration
- Provide for creativity and innovation
- Provide new business opportunities
- Provide new business partnerships through access by suppliers and customers (p.29-30).

This shows that if organisations implement an intranet it can have many positive effects. An emphasis may be given to the word “can”, as these possible changes on the organisations cannot be taken for granted. There are many things that can influence an implementation of an intranet just as much as an implementation of any other information system. Things that can affect a successful implementation of an intranet are, for instance, the organisation’s management approval and support, the employees’ support and old working routines’ abolishment, to name only few. The organisation’s management approval is important because if one does not have it, there is a considerable risk that it will be an obstacle to the intranet’s development (Hjelm, 1996; Bark, 1997). Further, if the management does not change its working routines, for instance, by using the email instead of sending paper envelopes, it will influence the employees in using the new technique. In other words, the management has to give a good example.

Even though intranet can change the organisation’s information strategies for the better, there are pitfalls that has to be watched out for. One point can be added to Hill’s list. The time it takes to publish and distribute information diminishes. The side effects can be that the intranet overflows with information. This can further lead to that the employees can suffer from information stress or overload.

3 Thesis

The chances for an organisation to survive today rests on a quite different platform when compared to the situation several decades ago. Now the organisation's most important resource is not necessarily natural resources like aluminium and steel but rather the employees' knowledge. Due to the rapid changes in society this knowledge is not obtained once and for all - it has to be maintained by constant learning. Information is, therefore, among the organisation's most important resource. Consequently, it is of great concern that information is easily accessible and always up to date.

The use of an intranet in organisations has become more common (Bark, 1997). The intranet has proven to be an effective tool in structuring and distributing information (Hjelm, 1996; Bark, 1997). The time it takes information to go from its creator to its consumer has shortened. All updates and modifications of information have become easier and a good overview of the information in the organisation is obtained. The employees' search for the right and most recent information improves (Bark, 1997). The intranet can also change the traditional hierarchical structure of distributing information in the organisation. Hindrances in the flow of information inside the organisation, from the top to the bottom and also between employees on the same level, can disappear altogether (Bark, 1997). Intermediaries in distributing information become unnecessary and the most recent information is always available and nothing has to stand in the way of information dissemination. But to make the intranet such a success as described above, the preparatory work like development and design of the intranet has to be done with a great care (Bark, 1997; Hjelm 1996; Conzales, 1997).

When an intranet has been developed and implemented, its maintenance becomes important. An intranet is under a constant development. It is in the maintenance phase that the subject of information quality is of concern. It is not to a great surprise that the Internet has been of main interest to those who explore information quality. The Internet has changed dramatically our way of receiving information. The Internet has no editors or decision-makers to control the information in the Internet. Articles and books have been written on the subject, how we can find quality information on the Internet. It is not only the Internet that has drawn our attention to this problem, but also the vast amount of information that we are confronted with in our everyday activities.

This has aroused my interests on doing a research on this matter as I find it important for people today, to learn to separate the wheat from the chaff in this overload of information. The following will be studied:

- **How can we tell that one piece of information is of high quality and another is not.**
- **Is some kind of quality control of information used on organisations intranet.**

The first point will be discussed in relation to this new medium; the Internet and the intranet. The latter point will be dealt with in the intranet's maintenance phase but not the development phase. Consequently, how one decides what information should be made available in the intranet is outside the scope of this work.

3.1 Expected results

The area of information quality is very complex and extensive. For instance, information quality touches on the subject of relevance, that is, how we judge the quality of information from our needs. Just information relevance is a special field of research. Having this in mind, it is therefore not the intention that this research will conclude in an exhaustive description of the subject information quality. It is neither my intention, to make a list of all the aspects information has to have to be able to be said of good quality. Due to the complexity of the matter such a list cannot be made. The intention here is to discuss the general aspects that can be considered when evaluating information. This can hopefully be used as a guide for evaluating all kinds of information in our everyday life as well as, a guide for evaluating information in this new medium, intranet and the Internet.

4 Methods

This chapter deals with the methods used in this research. First, the methods are described that can possibly be used. Then the methods considered suitable for the research, and will be used here, will be explained and argued for.

4.1 Quantitative vs. qualitative

Patel and Davidson (1998) mean that the main research methods can be divided into two sections; a quantitative research and a qualitative research. These two research methods highlight the ways in which information can be treated and analysed (Patel and Davidson, 1998). A research that is done in a quantitative way uses statistical methods for analysing the material. A research that is done in a qualitative way, on the other hand, uses verbal methods for the analysis (Patel and Davidson, 1998). As Patel and Davidson (1998) emphasise a research cannot be said to be of one kind or the other. If a quantitative method is used, it always has an element of a verbal analysis and if a qualitative method is used, it has an element of statistical analysis. Patel and Davidson (1998) show this difference in figure 1 below, in an illustrative way and argue that a pure verbal analysis and a pure statistical analysis are the opposite ends of the same axis:



Figure 1. Kvantitativt och kvalitativt inriktad forskning illustrerade som ändpunkter på ett kontinuum utifrån användningen av statistiska eller verbala analysmetoder. (Patel and Davidson, 1998, p.12).

4.2 Possible Methods

The methods that come into question to use here are literature research, interviews and questionnaire. These three methods will first be described, beginning with the literature research, then the interviews, and last the questionnaire.

To study relevant literature, gives a broad knowledge in the research field. The most common sources are books, articles published in scholarly journals and essays (Patel and Davidson, 1998). Patel and Davidson (1998) say that each source has its own characteristics. Books often represent knowledge that has been put together in a systematic way, into an intelligible whole within one field of study. It is, therefore, more likely to find a thoroughly developed theories and models in books. If we, on the other hand, are more interested in the latest findings in the field, they are found in articles, reports and conference reports as it takes longer time to publish books (Patel and Davidson, 1998).

The use of interviews and questionnaire as methods for research means that the research is empirical. A research having an empirical character means that the

research is related to “experiment and observation rather than theory” (Collins **Concise Dictionary**, 1989). Both these methods, interviews and questionnaire, rely on the use of questions. The main difference though, is that when interviews are performed they are usually more personal compared to the questionnaires. The researcher either visits the persons to be interviewed or interviews via telephone. The questionnaire, on the other hand, are forms sent by post to the interviewees to be filled in. It is also possible to use the forms and visit the interviewees and guide them while filling them in (Patel and Davidson, 1998).

When using interviews and questionnaires as research methods, the level of standardisation and structure has to be thought of. By level of standardisation is meant how the questions are formulated and organised. The level of structure, however, means how much freedom the interviewee is given to interpret the questions from his/her attitude and former knowledge (Patel and Davidson, 1998). For instance, when conducting an interview with a high level of standardisation one asks similar questions in the exact same order to be able to generalise and compare the interviews (Patel and Davidson, 1998). Moreover, if the interview is very structured it is almost possible to predict the answers, but if it is not the interviewees get freer scope to answer (Patel and Davidson, 1998).

The level of standardisation and structure increases in the questions made for a questionnaire compared to the ones for the interview (Patel and Davidson, 1998). In questionnaires the questions need to cover related subjects. Furthermore, the possible answers should be relevant. In interviews, by contrast, those side questions can be taken up during the interview and do not have to be formulated in advance. The questionnaires do not give any chances to supplementary questions (Patel and Davidson, 1998).

The questions should be organised hierarchically, that is, beginning with broader questions and then narrowed down to the more specific ones. This can be turned up side down, by beginning with the more specific questions, which then lead to the more general ones. This can be useful when one does not expect that the interviewees have definite opinions in the subject matter (Patel and Davidson, 1998).

Patel and Davidson(1998) have made a table (see figure 2) that shows in an illustrative way the general difference between a high and low level of standardisation and structure.

	Hög grad av strukturering	Låg grad av strukturering
Hög grad av standardisering	enkät med fasta svars- alternativ intervjuer där man önskar göra en kvantitativ analys av resultaten	enkät eller intervju med öppna frågor projektiva metoder ex vis Rorschach-test
Låg grad av standardisering	läkarens upptagning av tidigare sjukdomshistoria fokuserade intervjuer	intervjuer där man önskar göra en kvalitativ analys av resultaten journalistiska intervjuer

Figure 2. Exempel på olika typer av intervjuer och enkäter beroende på hög eller låg grad av standardisering och strukturering. (Patel and Davidson, 1998, p. 62).

4.3 Methods used

The methods that have been chosen to illuminate the problem dealt with, are the study of literature and interviews. These were found appropriate, as the study of literature will give a broad and comprehensive picture of the subject field. The study of literature will give a good standpoint for discussing the strategies used in the organisations. An interview was preferred to a questionnaire as an interview will make it easier to dive deeper into the problem matter as the purpose is to get a good picture of how each organisation deals with the problem. The questionnaire, by contrast, had been good to use if the study was meant to compare the organisations by measuring some aspects.

Literature about information quality is examined and also literature about finding information of quality in the Internet. This is mainly to illuminate the differences of the quality standards we set up when using this new medium. These aspects that affect our way of judging information on the Internet can also be said to affect us in a similar way when using the intranet. The main difference though is that we have editors who control the information in the intranet. The results from the literature research is used to see if any of the things mentioned there, to secure the quality of information, is also used by editors of the intranet in organisations. This is done by an empirical study by interviewing the editors of the intranets in three organisations.

The interviews are qualitative, that is, the main emphasis is on a qualitative analysis and therefore, they are neither highly standardised nor highly structured. The questions were supposed to be sent to the interviewees beforehand, so they were able to prepare for the interview. This was meant to increase the possibility of receiving answers of value. However, this was not successfully carried out in all of the interviews. In the first interview it came out well, as the time elapsed from the first contact to the interview was long. In the second interview it turned out that the one I contacted first, was not the one who was going to answer my questions and that person had not forwarded them to the interviewees. In the last interview, the time

between the first contact to the actual interview was so short that there was no time for the interviewee to look at the questions in advance.

The organisations were chosen mainly by their size in mind. It is more probable that bigger organisations have developed and used their intranets for a longer time which in return means more experience of their use. The questions were mainly used as a foundation for the interview so nothing would be forgotten. The questions can be referred to in the appendix.

The search for suitable literature about the subject required a considerable time and energy. Several databases were searched on the Internet, like, Katalogen (the database of the library of the University of Skövde), LIBRIS (a database for all the libraries in Sweden), Elsevier, Compendex, Science Citation Index, and Ebsco.

Some magazines were searched through like, *Isj* (Information Systems Journal ca 1995-1999), *International Journal of Cooperative Information Systems*, *Journal of Information Science* and volumes 29-33 from the *Annual Review of Information Science and Technology*.

5 The Material

In this chapter an account will be given of the literature referred to and the interviews that were conducted with the focus on the problem dealt with.

5.1 Literature

To certify information to be able to say ‘this is information that has quality’ is an impossible task. Information can only be said of quality for a specific person under certain circumstances. As defined above, quality of information can only be measured from how well it meets the needs of the user. Bradley (1998) calls this *applied information quality* that stresses that information quality is “(1) made by a specific person or persons, (2) in a specific situational context for use of that information, and (3) based on the characteristics of the information” (Bradley, 1998, p. 864). This report is not done with a specific user or users in mind and therefore, quality of information will be discussed in a general way to see what to think about when evaluating a piece of information, especially regarding the use of intranet and the Internet. The aim is to support users in this task as Bradley (1998) puts it: “Applied judgements of information quality are ultimately the responsibility of the individuals using the information; they need to be supported in this professional activity as they are in the other responsibilities of their professional practice” (p. 864). Cooke (1999) has discussed the subject matter from certain points and will these points be used as a standpoint for my discussion.

5.1.1. The purpose of the information

When looking at the purpose of a piece of writing, one looks at the overall aim (Cooke, 1999). Why is it written (the objective), for whom (the audience) and how much will it cover (the scope) (Cooke, 1999). Cooke (1999) argues that it is of a particular importance for the user to determine for whom the author is writing to be able to decide if it is presented at a level that fits his/her needs. To look for statements that reveal these points can help people to decide if a piece of information will suit their needs.

Bradley (1998) discusses the purpose of an information in a little bit different way to Cooke’s. He talks of the perspective of information. By what means has information been created? All kinds of biases that can exist, ranging from the influence of a methodology used in a research to the influence of the writer’s ultimate goal, for instance, selling products. Bradley emphasis that this does not have to be interpreted as a negative aspect as “every item of information has a perspective that results from the context of its generation” (Bradley, 1998, p. 873-4).

To determine coverage means that aspects that affect coverage have to be looked at. These aspects are the subject fields and the diversity of subjects covered (the breath), how detailed the text is on each subject (the depth), and lastly how much it intends to cover (the scope) (Cooke, 1999, Bradley, 1998). The user can either browse the text to estimate coverage or read what the author says about coverage in the introduction. Links should get a special attention in this respect, as they can affect the web site’s coverage (Cooke, 1999).

To determine the content, purpose and coverage of a piece of information will always be in relation to the user's needs. Rieh and Belkin (1998) did a research on this matter using several scholars studying at a university and how they determined information quality on the Internet. For more detailed description of the study I refer to their report (Rieh and Belkin, 1998). One of their results was, namely that it depended on how the information was to be used, how it was evaluated. The consequences of using the information affected how strictly it was evaluated. An example was taken of persons who made strict quality measures because the consequences of using the information could be disastrous if the information was not reliable. One of the research persons wanted to download executable code to run on his computer, and another was writing a research paper and needed information (Rieh and Belkin, 1998). This is one example of how the circumstances can affect our judgement when deciding if information is of quality for us or not.

Bradley (1998) mentions one common pitfall to be looked out for and that is the tendency to believe information that is well-known to us; "fits familiar disciplinary, professional, or problem frameworks" (Bradley, 1998, p.868). It saves time and often produces good results in the information search (Bradley, 1998). Information that is marked by this drawback should be treated cautiously as controversial viewpoints have not been investigated, but only things that support the author's previous opinions.

5.1.2 The authority of the information

To assess the authority of an information is primarily aimed at the expertise of the writers or the persons responsible for producing it (Cooke, 1999; Bradley, 1998, Rieh and Belkin, 1998). If the text is written by an expert in the field or published by institutions that are known for good expertise, the information is authoritative. Authority is also related to reputation (Cooke, 1999; Bradley 1998, Rieh and Belkin, 1998). If the institution that is responsible for the publication or just the document itself has a good reputation, the information will be more relied on and thereby, influence people "perceptions of its relative quality" (Cooke, 1999, p. 58). Bradley (1998) argues that this kind of quality judgement is a delegated judgement. This means that some aspects of the context of the information is valued rather than "the content of the information itself" (Bradley, 1998, p.867).

When one considers authority it is very helpful if the site has somewhere stated the authors' experience. Further, the site's counter can be looked at. The counter shows how many visitor a site has had. But this should be treated with caution as popularity does not have to mean high quality (Cooke, 1999) A literature search can be conducted to see whether the author has published in refereed periodicals. (Cooke, 1999). In addition, reviews about the authors' work in such journals can be of value to access authority and reputation. Cooke (1999) warns though that reputation can be a very subjective thing and that "a newcomer to a field may be capable of producing high-quality work" (p. 60).

To assess authority in the Internet is more difficult compared to documents published in print (Bradley, 1998). We have a well-established system in the print publication that the key persons role in this system are well known, such as, researcher, author, editor, and publisher (Bradley, 1998). These roles are still very unclear in the Internet,

which can be illuminated by the term 'web master' that is not clear how much authority of content the title implies (Bradley, 1998).

Bradley (1998) emphasises the difference between a printed document and an electronic one as to attribution. We have established a tradition in the printed information system concerning attribution, even though one can even there not get all the information one might want (Bradley, 1998). In the electronic system, however, this is a major problem as it is easy to make copies of the same document and distribute from diverse sources without definite attribution or permission of the authors (Bradley, 1998). Even though, dates are given relating to copyright and modification, it is not certain that they refer to the content because in some cases they can be referring to the page format (Bradley, 1998).

5.1.3 The accuracy, maintenance and currency of the information

The act of assessing accuracy is concerned with the correctness of the information. The type of information assessed matters as it is much easier to evaluate the correctness of mathematical information compared to theoretical information that it becomes more subjective as there is no right or wrong answers (Cooke, 1999). This evaluation is not only affected by the type of information assessed but also the evaluators' knowledge. The evaluators who have some knowledge in the subject matter are able to assess the information quality, but those who have little knowledge need to do a literature search and compare the information sources to be able to assess accuracy (Cooke, 1999).

There are other aspects to look at to check for the accuracy of information. These are; has the information gone through any kind of editing process? Is it based upon a research? Do the authors introduce any biases? How is the overall quality of the information as relating to spelling, grammatical or typographical errors (Cooke, 1999, Bradley, 1998). Cooke (1999) mentions also another important point that shows the authors or the organisations concern for accuracy: "Some sources provide a facility to send corrections to any inaccurate information, which is not only useful, but also suggests a concern for accuracy (p. 61).

Currency and maintenance are also important factors when assessing quality of information, as outdated information is useless and can be misleading. Currency refers to how up to date information is and maintenance relates to whether the information is kept up to date (Cooke, 1999). This is significant for this medium because the Internet is supposed to provide the most current information (Cooke, 1999). It depends on the nature of the information assessed whether it needs to be updated frequently. A site with news needs to be updated more frequently than a site with plants' description.

Cooke (1999) mentions several points to look for when assessing currency and maintenance. One should begin by "examining the date when any information was produced (either on the Internet or initially as a printed source), when the source was last updated, when it will next be updated, and the frequency of updating" (p. 64). Bradley (1998) also stresses the importance of knowing when information was created for judging its quality and says that this is less reliable in the Internet than in printed documents. Cooke (1999) thinks that there is a reason to be careful as it is not certain that the sites are updated as frequently as promised, and also that the dates can be

referring only to part of the sites. Some sites have an updating policy that is clearly stated in the site. There can be seen details as to who are responsible for the maintenance, and their knowledge and expertise and, last but not least, their motivation. It can affect the maintenance if the person responsible for it is a volunteer, because they are often very enthusiastic in the beginning but the enthusiasm diminishes often in the long term (Cooke, 1999). The currency can also be assessed by checking the links: Do the links lead to what they are meant to?

Currency, however, is not only a temporal measure because one also has to consider how current is the content compared to what is known now (Bradley, 1998). This can be assessed with the help of some well-written document that provides background information (Bradley, 1998). Also synthesis written by experts in the field will be of help, as well as, review articles in reputable journals that judge the relative position of the information in its field (Bradley, 1998). Bradley (1998) argues that even classic information can be current in the way that it has “played an essential role in moving the field to its current position” (p. 875).

5.1.4 The accessibility and presentation of the information

The accessibility of information matters when assessing the quality of information - if information is not easy to access it will not be used and, thereby, loses its value. This is of special concern when using the Internet, as the user expectations to the medium are high. The myth of Internet is that, therefrom one gets information quickly and easily. The things that affect the web site’s accessibility are for instance, the images and the location. There are web sites that offer mirror sites. Cooke (1999) takes **AltaVista** as an example. **AltaVista** is a general search engine that has its original site in the USA, but has other locations in Asia, Canada and Australia. If one is situated in Asia, you get much faster access by using **AltaVista**’s mirror site in Asia compared to using the original web site.

The use of images can also affect accessibility. If a web site has many images and does not make use of thumbnail images the time of download will be too long and the users lose interest. A thumbnail image is “a small image which can be selected to display a much larger graphic” (Cooke, 1999, p. 66). Companies that are dependent on using images need to consider some solutions to making the time of downloading shorter. Dd[David design] is a good example of a company that has found a solution to this problem. They use images that are easily downloaded (pencil drawings) but if the user wants to have a better picture of the products, they offer links to photographic images in colour.

There are several other things that can be considered as to evaluating accessibility, and could be discussed in much more detail, but here only few will be mentioned. For instance, some sites are not available during particular times of the day. Information of the time of possible downtime should be available in the web site’s description. Another issue is when a web site moves to another location. Information of this change and a link should be provided to the new location (Cooke, 1999). A further consideration is relating to software. If the information is published using some special software, the web site address to this software should be given as well as instruction how to download it. The last point mentioned here refers to copyright. Users often want to reuse material from the Internet. As a general rule, the electronic information in the Internet is covered by copyright law, and that includes text

documents, images, contents of e-mail and Usenet messages (Cooke, 1999). However, this can vary from country to country. Therefore, it can be useful for the users of the material published via the Internet, that the author provides information about the copyright ownership of materials and whom to contact when copyright permission is needed (Cooke, 1999).

The presentation of the information is usually not what the users are interested in first, but can affect them when making use of the information. There are several things that help the user orienting in the web sites. One can mention a site map, contents list, index, menu system or search facility as examples that help users to find the information they need in the web site (Cooke, 1999). The software used in intranets and in the Internet give the authors several options in presentation that are not available when publishing on paper. In some web sites one can see an effective use of this. An example, is the content list that appears in one frame and by clicking on one item in the content list, the page will appear in another frame. One is able to scroll up and down in the page without affecting the content list. This is very convenient for the user to be able to move from one place to another, and also makes it easier for the user to know where he/she is situated in the web site.

The author can also divide the document into several shorter ones and make links available to the other parts. This can be useful when publishing longer documents that deal with diverse subjects. This should, however, be used sensibly, as it will be tiresome having to do many 'clicks' to reach the information wanted. Useful shortcuts are also always of help, such as 'home' to get to the first page (Cooke, 1999).

Another issue is the use of images. Images should be used meaningfully to add value to the text. Too much graphics can lead to slower download and results in irritated users. Some users also use functions as downloading without graphics that speeds up the access time. It is therefore, useful for these users, when the authors have put a text to be displayed as an alternative to the picture. This text is usually a brief description of the image (Cooke, 1999).

Many things can be discussed as relating to presentation, but it is difficult to give any definite rules as this is often a matter of personal taste (Cooke, 1999). It can, however, be stated that what matters most is that the web site has a good overall design and that the information is presented and arranged in a logical, clear and consistent way (Cooke, 1999).

5.1.5 Organisational sites

Cooke has written a special chapter on the evaluation of different types of resources in the WWW. These types are for instance, personal home pages, subject-based WWW sites, electronic journals and magazines, Usenet newsgroups and discussion lists and organisational WWW sites, to name only few (Cooke, 1999). As organisations' intranet is of concern in this report, it is interesting to see what is recommended to users to pay attention to when using the part of organisations' intranet that is made available in the WWW. These recommendations can just as well be used for the intranet as a whole, as an employee can be viewed as any other user. This is written from the user's point of view, that is, what is recommended to them to pay attention to when assessing the web site's quality. I mean that this can also be used for editors to evaluate their web sites.

Cooke (1999) begins by defining what is meant by organisational Web sites. “Organizational WWW sites’ refers to a collection of WWW pages which are created and maintained by a particular organisation. These include company and university sites, the site of a professional group, and of any other society or organization” (p. 86). She says that the organisation’s basic facts, such as an address, a phone number and opening times etc. should be easily accessed and located on the web site, as this is what people often access organisation’s web sites to get. Some organisations have a detailed description about the organisation and even links to related sites for example business partners. All the general criteria already discussed are of concern here, but special attention should be made to authority and reputation and currency and maintenance (Cooke, 1999).

The organisation’s authority and reputation within a field is significant, as here one decides if one uses their expertise. How this is done has already been discussed above. Currency and maintenance is also of importance as unreliable information can, for instance, affect the organisation’s reputation. Even though, it is not usual that organisation’s information has to be updated frequently (on a daily or weekly bases), it is important that the user can see when it was last updated to be able to determine its accuracy. Every web page should have a date. (Cooke, 1999).

5.2 Interviews

In this chapter an account will be given of the interviews that were conducted. The list of questions used can be referred to in the appendix. The questions were mainly done to secure that a comprehensive picture would be attained, and nothing would be forgotten. As the questions were only used as a foundation for the interview, they will not be used here directly. Instead, the answers will be summed up into a comprehensive whole. To secure accuracy this summary is then verified by the interviewees, to secure that the answers have been rightly apprehended.

5.2.1 Volvo

An interview was conducted with Stefan Högström, an employee at Volvo IT in Skövde. All information that is reported in this chapter is according to information received from him. The direct quotations below are received from the intranet and from the research project. For clarity the name ‘Violin’ will be used when referring to the main intranet, and the word ‘intranet’ will be used when referring to the local intranet in Skövde, which is a part of Violin. Stefan Högström is one of sixty web editors who edit the part of the intranet that serves Trucks and Volvo IT; two of Volvo’s organisations. These organisations are situated i.a., in Skövde in Sweden. This part of the intranet serves ca 4000 employees.

Volvo is divided into five independent organisations; Volvo It, Trucks, Buses, VCE (Volvo Construction Equipment), Penta and Aero. Volvo’s intranet, named Violin (Volvo Information OnLine), serves c.a. 25.000 employees. Violin has c.a. 500 diverse web sites and c.a. 600.000 web pages. For each level in Violin there is one info master who is *responsible* for that level’s structure and content. Each info master has several subordinates – the web editors. The web editors are responsible for publishing information via the intranet as well as for some quality control. They are also the ones that decide the text documents’ metadata. Appendix two shows examples of subject fields that the metadata is classified by. None of the web editors

work full time as web editors. Some of them have this as 50% of their main work. Violin has an *hierarchical structure* and it is therefore, possible to browse further to different divisions and subject headings from the main menu. Violin has also a *search engine* and an index of links.

The purpose of Violin is to improve the internal communication. The main objectives for internal communication are i.a. “to actively improve the employees’ awareness of the company’s situation, results, goals, and direction, and to create commitment and an open exchange of ideas.” The main aim of Violin is to:

increase the rate at which knowledge is transferred between business areas, departments and Volvo employees. The information on Violin can quickly reach many people at the same time. This also means that other channels of communication, such as meetings and Memo (mail system), no longer need to involve general information. Violin is also a cost-effective alternative to printed information.

In the spring 1999, Volvo hired a company to make a research on how the employees used Violin and the Internet. The scope of the research extended to 4000 users and was done in the form of a questionnaire. The result of the study concerning the usage is as follows:

:	<i>Source of information</i>	<i>Tool</i>	<i>Discussion forum</i>
<i>Trucks</i>	54	37	6
<i>Buses</i>	53	30	6
<i>Penta</i>	62	39	2
<i>Aero</i>	46	14	-
<i>VCE</i>	72	22	3
<i>Volvo IT</i>	74	48	3

The numbers show the percentage of the users that use VIOLIN, as a source of information, as a working tool or as a tool for discussion, often or very often.

Volvo has consequently, a fresh information about how the intranet is used and also how many in each organisation uses Violin. These results show that Violin is mostly used as a source of information but also as a working tool.

The intranet contains all kinds of information. The *main fields of subjects* are in direct connection to the working field of the departments but also information about leisure activities, general information about the organisation, and information from the labour union as well as educational courses. The information can then be divided as follows; information as a working tool and other information resources related to the subject field. The material that can be said to be of direct working character is information, such as manuals, instructions for construction and the like. Often the web editors have a certain user group as their target group. It is usually one employee of the department or the division who takes care of a web site that serves the department’s needs. The type of information that is published via the intranet can, for example, be the department’s results, working hours and instructions. The information about leisure activities is regarded as a subject field that is supposed to increase the employee’s interest and use of the intranet. In addition, there are also web sites that have been constructed mainly in the purpose of increasing certain

employees' knowledge in special fields. These employees are for instance, CAD draughtsmen, programmers and managers.

It is possible to navigate from the intranet to the *Internet*. It is also allowable to make *links* to interesting sites. Every web editor can make links to sites that he/she thinks is relevant. These links lead to sites as Volvo's suppliers, competitors and customers. Even links to the daily papers, as Aftonbladet exists, as it is not considered a disadvantage to use the intranet to follow news and the like, during the lunch hours. The organisation's purpose of having access to the Internet is to make information accessible to employees that cannot be accessed as easily through other information canals. This type of information is, for instance, about Volvo's suppliers, competitors and customers. A special link has been made for Volvo's competitors to make it easier for employees to follow up their latest products.

It is considered a drawback that it is only 60 persons that have the ability to publish information via the intranet. Stefan Högström illustrates this by saying that it is just as much hindrance as having to ask someone else to print a document on the printer every time one needs to print a document. As to the future, it is hoped and even aimed at that almost every employee will be able to publish information via the intranet. Högström is quite conscious of the risk for the intranet getting overloaded with information. One possible solution to the problem of overload is that every web site will only have two months life span and disappear altogether, if not updated. This problem exists even today and has often the consequences that web sites not updated sufficient number of times, are not as often visited by the users. It has also been a problem that links made to other web sites suddenly cease to exist or change their location. Högström even feels that this area of the intranet is the most difficult one to uphold quality on. As to other web sites it is not as difficult because the information that is most commonly published has a well-structured format that the writers only need to fill in.

Concerning the *quality* of the information, the web editors get quite strict requirements that each document has to satisfy from the head quarters in Gothenburg. These requirements only concern the layout and structure of the documents, for instance, which headings are supposed to be used and the like. This is to maintain a consistency in presentation and arrangement throughout the intranet that helps the user to find his/her way around the material. Högström thinks that this can often be troublesome, as people often like to decorate their sites in a different way to the one that is recommended. In addition, the requirements concerning documentation that is requested are the web site's owner email address, datum when the document was created and last updated, what type of information this is and to what department it is meant to serve. More detailed information of authority is not required.

Concerning the quality control on the intranet's content, it is the information manager for Trucks in Skövde who decides what information is *relevant* for the intranet. Högström says that this control is mainly on the web sites' topic. He mentioned web sites or links to sites that contain, for example, music files, pornography or texts of political extremists. The intranet's firewall has also special protection for this kind of sites. The main control concerning quality control of the content of the intranet comes from its users. Every web site has someone who is responsible for the information. This person's email-address appears on the site to

generate feedback from the readers. Högström says that this has been a successful way to maintain quality on the intranet. Spelling errors and other errors related to questionable material have proven to be reacted upon by the users. The information manager for Trucks controls the quality of the information by having meetings regularly with several web editors to discuss the intranet's content as well as its structure.

One thing that has been of concern in relation to the users' ability and educational background and that is the language used. Swedish is the main language used in the intranet, even though the organisation's official language is English. Several other departments have decided to use the official language only and have met many complaints on behalf of the users. As to the writers' target group, no other special considerations are made in relation and the users' background knowledge. It is considered a great probability that the web site owners come from the same department as they are writing for, and therefore uses words that the employees understand.

The quality control on the web *links* made is not much or at least not clearly stated. It is only applicable to the subject of relevance. It is as with other information on the intranet, up to the employees common sense to decide if one piece of information is of quality or not. Therefore, one can say that the organisations' managers have full confidence in their employees judgement as to using this medium sensibly; both as on publishing information as well as on searching for information. It can also be mentioned that these users that surf the intranet and the Internet and consequently, give the most feedback to the information published, are almost always the ones that work in the offices and have the computers to hand. The feedback that is used so much as a quality control is therefore mostly received from this group of employees.

As to the Internet, there are no special guidelines or advises made available to the employees on what to have in mind concerning the quality of the information on this canal. There is one web site "Beginner's Guide to Surfing" that contains advises and guidelines only on how to use this technique (browsers and search engines). The employees get no instructions on how to use the Internet or the intranet effectively. Högström means that this kind of education should be available for the employees. However, Volvo run their own library with information experts who assist employees in using the Internet or even find the information they need or that the employees have ordered.

5.2.2 The University of Skövde

An interview was conducted with Kristina Appelqvist an information secretary and Ulrika Johansson an information assistant at the University of Skövde. All information that is reported in this chapter is according to information received from them. Appelqvist and Johansson work at the information department. The University of Skövde (HS) does not have an intranet, but a web site that is open to public. One institution at the university, though, has an intranet but on a very small scale and only for the individuals who work there. Consequently, there is information on the web site that normally would only be published internally, such as the employees' periodical. There are web pages on the web site that are not easy to access, as their content is not considered to be for public use. These pages have, therefore, no links to them and the users need to know the exact address to be able to access them. The information

department is working on a project on implementing an intranet. The intranet is supposed to serve the employees at the university but also, to have the possibility for a communication between teachers and students. The intranet will be divided into sections so that each institution has its own area that is not accessible to other institutions. The intranet's main objective is however, to computerise diverse forms that are in a paper form today.

The web site's *main objective* is to give the students information that they need in a neat and easy way. It is very simple to update information and thereby inform the student of recent changes. There are links from the university's web site to other organisations. Those are organisations that the university is in direct co-operation with as for instance, CSN and Skövde Bostäder. These links are not examined especially as concerning their quality, because they lead to organisations that are considered having good reputation.

Kristina Appelqvist is an editor for the employees' periodical that can be accessed under the link "Nyttigt" (Of Use). This periodical contains all kinds of information for the employees. For instance, information about events inside the university and information from Högskoleverket (a central organisation for the universities), like news of future events as well as central decisions that affect the university. Appelqvist receives information about decisions from the rector and institutions that she forwards to this web page. Other materials that she uses as a source are all kinds of magazines and periodicals that she considers having information of quality, but she does not use sources from the Internet. The main reason is that she finds it more difficult to trust information on that medium as she thinks it more difficult to evaluate the sources. She judges the information sources mainly from their reputation and finds it easier to trace reported data to the original sources when working with information on printed paper compared to the one received from the Internet. When Appelqvist publishes information received from other resources she only states the resource, if it is from the bigger institutions like Högskoleverket.

There are no definite rules for the *quality control* of information received from others. When Johansson and Appelqvist receive information to be published via the web site from other persons, they skim through the text to check if its contents have any easily detectable faults before it is published. This text is then published in the web site's existing format. The whole web site has, therefore, the same layout with the exception of the institutions. Each institution has its own layout. Appelqvist thinks that this custom of publishing material on the web site is good as the employees at the information department have the chance to check the quality of the information before it is published. As to the future, this publishing authority is supposed to enlarge. One part of the web site is supposed to contain material from almost anyone in the university. Appelqvist says that the material under this link will not be as easy to control.

What *feedback* concerns then the user does not get a direct email address to Kristina Appelqvist but to the webmaster. Even though Appelqvist is responsible for most of the material on this web page, it also has material from diverse institutions at the university. In that case the person who is responsible, is mentioned in the article. The feedback that is sent to the webmaster is received by Ulrika Johansson. If she receives a message directed at the material written by Appelqvist, she simply forwards the

message. There is also a link “Tyck till” (Make Comments), that is especially made for the users to make comments on the web site. Johansson says that she gets comment every now and then, and sometimes positive ones. She says that these comments are often very good and reveal interesting points that she makes use of.

Each department at the university has its own part of the web site that it is responsible for. It is therefore, the employees at each department that have the *authority* to publish on their part of the web site. How many persons or their position who have this authority, is not clear. Each department is responsible for the information that is published on its part of the web site, but the main responsibility for the web site as a whole is not certain, if it is Agneta Grydbeck’s (a head of the information department) or the rector’s.

As for *updating* web pages there are no definite rules. Web sites like ‘News’ and ‘Of Use’ are updated regularly but as for others it is more when it is needed. It is quite possible that there can be pages that have not been updated even though the material is outdated. There are several possible reasons for this. The two main reasons are first, that the employees can be replaced by new ones and therefore, it is not certain that the new person knows about all web pages that exists. It can therefore, easily be some material somewhere in the web site that the new person responsible has no knowledge of. Second, is time. To surf the web site and check every site is very time consuming and Johansson thinks that lot of things on the site can be improved. It is almost an endless work. The following example shows how easily a page can get outdated: A person makes a web page that mentions information about the library’s opening hours. This web page gets outdated as soon as these opening hours change. Johansson mentions one solution to this problem is simply making a link to the library’s web page to ascertain the user will always get fresh information.

It is a general rule, however, that every web page has a date showing when it was last *updated*. A date, for when the web page was made, does not exist. Some pages are of that character that Johansson thinks that a date is not suitable and has, therefore, removed them. An example is the home page. The structure of the home page does not change and only has links that lead to the material on the web site. Johansson thinks that if this page has a date, the whole web site feels outdated. As for the other material it is not certain that every web page has a date.

5.2.3 Skaraborgs Sjukhus

An interview was conducted with Ida Noppa, a leader of a project team that prepares the implementation of an intranet for Skaraborg Sjukhus. Skaraborg Sjukhus is a hospital for the region Skaraborg and the intranet will, therefore, serve several hospitals situated at diverse towns in Skaraborg; Falköping, Mariestad, Lidköping and Skövde.

The intranet is under construction. The first matter to consider in the construction work is deciding what technical platform to use. Noppa sees the intranet as a pulsometer and not as an information tool, that is, the intranet will sense every pulse in the organisation and reflect its activities. She argues that an intranet is a working tool that is related to information. The intranet’s *main objective* is to increase and support democracy. An example of this is that before a decision is taken, the information that forms the basis for the decision is first published via the intranet before it is published

publicly. To secure that this working tool supports democracy is not as easy as it looks. The main problem is that it is not certain all of the employees have adequate knowledge to be able to use the computers. The intention is, however, to increase the employees' knowledge by offering courses in the subject field.

There are many things to be considered and decided. The intranet must have detailed rules about who is going to update, who is going to take care of maintenance, who is going to be responsible and for what. Ethical questions have to be considered and what communication policy is to be used. Juridical questions must also be considered. For instance, an email policy like: Can an employee write an article to Aftonbladet and send it via the hospital's intranet? Can an employee order music via the intranet? When has an employee crossed the borderline and abused his or her rights when using this tool? There is no idea of having a policy if one does not have sanctions. It can be compared to our driving licence. One gets a licence to drive a car but it is not allowed to jump the lights.

Another point that has to be thought of in the preparatory phase, is the intranet's structure and how the information is to be *classified*, that is, the metadata. Also, that information can be classified by different forms of expression, like reports, forms, text document, for public knowledge and research, to name few. The information will be classified with a hierarchical structure. The search engine will work wherever you are situated in the structure. Quality for Noppa is *traceability*. It depends on how the information is classified how well the search engine works. If the classification is not good, it is more probable that the user gets too many search results. The project team has chosen not to use a web oriented tool because they want to have a good search engine. The search engine has to be able to search the web hierarchically, linearly, horizontally and diagonally. Those are some of the reasons for choosing Lotus Notes R5. The persons responsible for the web pages are the ones that decide how the information is classified and where in the structure it is to be put. Noppa says that considerable work is spent on this as she wants the user to receive relevant information. Thinking takes time. Noppa is quite aware that she uses quite a lot of time in the preparatory work.

Many *standards* concerning information quality have already been decided on. Each web page has to have information about; who wrote the text, who has approved it, when it was created, in what purpose, when it was last updated and what version it is. This information has to be easy to detect. These guidelines are received from an ISO standard. The intranet as a whole, however, can not be ISO standardised as the organisation is not ready nor ripe enough for it to be possible. It is even a problem today that information printed on paper does not have this clearly stated. Employees write for instance, "Skaraborg Sjukhus has..." instead of personalising and, thereby, have someone responsible. This is supposed to be ensured in the intranet as it always has to be stated who wrote this piece of text and also, that it has to be someone else that approves. The problem in the paper version has been that if a person wants to make a comment on a certain piece of information, he or she does not know whom to talk to, as it is not stated. The use of intranet will affect people's tradition on publishing information as now the employees will be confronted by definite demands that the form and media has. They have to find a form for their communication. As this is public organisation there are requirements that the documents need to fulfil.

Additionally, when the documents are published electronically, many things become clearer and more obvious.

There are six levels of *authority*. These levels range from the smaller units in the hospital to the whole region. There are the smaller units like the photographic division, then the clinics, the divisions, the hospital's management and lastly region as a whole. The idea is also to have special canals for communication that will be closed for everyone, except to those concerned. An example of such a communication canal, can be one made for a group of people working in the same project. Some employees have expressed the opinion that the information for each division in the intranet should be closed, and only those that work in the division should have the authority to access this information. This is, however, not considered right by Noppa, as information that we produce in our work is not our property, and shall be accessible by other divisions in the hospital. Information from one division can be of use to another. Some parts of the intranet will even be accessible from the Internet as this is a public organisation.

Noppa uses an ISO standard as a help to, for instance, inspiring *confidence* that she considers of very high importance. The employees must be able to trust the information that is published via the intranet. The web page does not only need to have all the information stated above as concerning authority etc, but it also has to be determined when this information shall be updated next. This is decided from the web page content. Is the information of that nature that it has to be updated often (daily or weekly) or very seldom (yearly)? The technical platform that Skaraborg Sjukhus will use (Lotus Notes, R5), supports this form of updating. It works in the way that the web page's author receives a message, announcing that this web page is outdated and needs to be looked at. If the employee in question is sick, two other get the same announcement.

Noppa has experienced that the *terms* 'web master' and 'info master' are often used wrongly. Organisations use the word web master when they actually mean info master. She says that this is just like saying an electrician when one means the carpenter. This can be very problematic, as when it stands a web master in a web site, one can not be sure if it is the one who has the technical responsibility or the one who is responsible for the information. Therefore, one has to make clear first, in what sense the organisation is using the word.

The project team has decided on how to delegate *responsibility* for the intranet. There is one web editor for each division. The web editors give the persons who are responsible for the web pages support. The web editors have this as a part of their work (ca 30%) just as the persons responsible for the web pages, who also have this as a part of their main work. The web editors get more education and all information concerning the intranet. They go on conferences and are supposed to be up to date as concerning the media and also information science. Even though they are not experts in this field, they are supposed to develop to be ones. They are supposed to give support to the ones responsible for the web pages who can be up to twenty persons. The web editors are supposed to function as some sort of co-ordinators. The web master has the main responsibility for the main web page. The web editors are links for the web master to the diverse branches of the intranet. The persons responsible for the web pages are often the divisions' secretaries. They are two to three persons and

are responsible for the web pages per clinic, that is, they publish the web pages that can be written by someone else. The author is always stated in the web page and those responsible for the web pages are supposed to give some quality control and have the technical knowledge to be able to publish them. The main responsibility has the division's manager, that is, for the pages that the division has. This responsibility is mainly with the content of web pages in view.

It is even being considered to give the info master the overall responsibility for this kind of quality - to give random inspections - to be a sort of a quality police. This is very important, as it has proven to be a problem with the use of the prototype that a doctor has approved a document written by him/herself. It is of great concern that this sort of failure does not occur because the doctors often publish, for example, medical guidelines for the patients' treatments. It can, therefore, have serious consequences if for instance, it stand ml instead for mg. The IT division is supposed to give the technical support and the information division is considered just like an ordinary division - they do not have a patent for information.

The employees will be able to surf the *Internet* from the intranet. The main objective is to facilitate communication with others outside the organisation. To support the employees in the use of the Internet, every employee will have the opportunity to attend courses. This is meant to ensure that the Internet will be used in a sensible manner. This education will not be given ones and for all, as that is not possible. This field of subject changes so rapidly that the education has to be current. Therefore, the employees will have an opportunity to attend courses often. Further, to secure that the use of the Internet will be used sensibly, ethical inspections will be conducted. This means that the user's history will be looked at. Before this is conducted the users will get knowledge of it in advance. In addition to educating the employees in the use of this medium, there will be a link on the web site leading to a page that has the hospital's web policy.

The intranet will have *links* to other organisations. It is very difficult to secure that the information is of quality on the web pages that these links lead to. It can be an organisation with a very different web policy. Also, for instance, some think that the intranet should be free of advertisements. This is very difficult to have as a policy as, for instance, medical research is published and there one can not escape to mention organisations. Noppa has decided to give this task to the web jurist to find a sensible solution. This has proven to be more complicated than one thought in the first place.

There will also be special links to diverse *research databases* that publish various research reports and other valuable information. These research databases are very expensive - knowledge costs money. There will also be links to the electronic version of periodicals. The physiotherapist have one special research database, the nurses another and the doctors yet another. Noppa is trying to negotiate with these organisations and only pay for the real-time users instead of all users. Just like the libraries are not able have the same book on a loan to many users at the same time but rather to many users over a long period.

The employees will decide the intranet's *content*, which means that the information phase is done inductively. When the employees have decided upon what information they want to have in the intranet, the info master will examine the results and co-

ordinate. The intranet will also have knowledge databases and reference databases. Even though this is a public organisation, there has to be some area available for the employees' social interests, like when someone is going to get married and the like. This can be published via the intranet.

A prototype of an intranet has been used at Skaraborg Sjukhus that is not in use now. The best ideas from this prototype will be used in the intranet and also the experience that this prototype has given, but much will be reconstructed. Noppa has had a year for the preparatory work that she considers very important, as there are so many things that have to be considered. Many organisations start an intranet without this preparatory work and think it is better develop on the way. However, this often leads to chaotic intranets that will take even more time to structure afterwards. Noppa thinks that it is important not to hurry and try to be calm – not to be nervous but not too plucky either. Noppa compares this to marriage; the fire is supposed to last and not to burn out after the first year.

6 Analysis

In this chapter, the material discussed in the previous chapter is analysed in the light of the problem dealt with. The literature is meant to illuminate the things to look for when the quality of information is dealt with. The interviews are meant to give a picture of how the web editors deal with the editing work of the information before it is published via this medium – the intranet or the Internet. Attention should be drawn to the fact that when the interviews were conducted the questions referring to the quality control were very general. This was done intentionally, because of the risk of influencing the interviewees if the questions had been more detailed. However, this also invites the possibility that the interviewees do not mention every detail concerning quality requirements on the documents published via the intranet. To ensure that these details would be brought forward, the interviews were sent to the interviewees for approval.

6.1 The purpose of the information

In the literature it is said that the purpose of a piece of information is its overall aim. To be able to discover this aim, one has to pay attention to, why the text is written, for whom and how much it will cover. It is particularly important that the reader is able to see for whom the information is written, as it is therefrom the reader sees if it fits her/his needs.

At Volvo and at Skaraborg Sjukhus the web editors have a certain user group as their target group and therefore, the authors have always certain users in mind when writing. As to the web site's content, it is mostly evaluated from its relevance, that is, whether the topic fits the needs of the organisation's employees or customers. At Volvo it also has to be stated what department the information is supposed to serve. This can increase the quality of the information, as it is more probable that the information will fit the users needs.

At HS (The University in Skövde) this is not as clearly stated for the web site as a whole, but it can be considered probable that the information at each divisions' site is directed at the student of the division. The information division has the general student and teacher as its main user group.

Skaraborg Sjukhus is the only organisation of the ones interviewed, that the text purpose is clearly stated.

The literature reveals that text coverage affects how much value a text is to a user. The aspects to look for are the subject fields and the breath (diversity of subjects covered), the depth (how detailed the text is on each subject), and lastly the scope (how much it intends to cover). It is, therefore, helpful for the user if this is stated in the introductory part of the text. Links can also affect the coverage.

How much will be covered is not a requirement that has to be declared openly in the text at none of the organisations interviewed. This, however, does not have to mean that the authors do not mention it in their text.

6.2 The authority of the information

In the literature it is expressed that readers can assess the authority of information by checking the expertise of the writers or the persons responsible for producing it. It is also said that authority is related to reputation. Therefore, it is very helpful if the site has somewhere stated the authors' experience. Additionally, the problem of terminology has been mentioned. The terms, researcher, author, editor, and publisher or all known to us in printed documents, but the meaning of the terms web master, info master and web editor are not as clear.

At Volvo, the author of a web page has to state his/hers email address for feedback from the readers. More detailed information about the author, like position and specialisation is not required. The same can be said for Skaraborg Sjukhus and HS, that is, no detailed information about the author is required. As for Skaraborg Sjukhus the author's name is required but not the email address. At HS the authority of the information is given when the material comes from someone outside the information division. In that case, the author's name is mentioned. However, as for the information from the division, the author is not stated but an impersonal email address (the web master's) is given.

None of the organisations mentioned that they defined the terms, used for the persons' working titles. The terms 'web master', 'info master', and 'web editor' can be good to define to help the users find out what the persons actually do. Especially, until these terms have gained a firm footing in this field. Noppa at Skaraborg Sjukhus expressed a concern in this matter and said that this can be very confusing as she has found out that these terms are not used in the right way. Therefore, it takes longer time to get a contact with the right person.

As to responsibility for the information published, two of the organisations interviewed explained how responsibility is delegated in the organisation. At Volvo, there is one info master for each level in the web site who is responsible for that level's structure and content. Each info master has several subordinates – the web editors. The web editors are responsible for publishing information via the intranet, as well as for some quality control. They are also the ones that decide the text documents' metadata. It is the information manager for Trucks in Skövde who decides and is responsible for what information is published in the part of intranet that belongs to Trucks. He/she is, therefore, the one who has the overall responsibility.

At Skaraborg Sjukhus the network of responsibility has been constructed. The project team has decided on how to delegate responsibility for the intranet. There is one web editor for each division and two to three persons responsible for the web pages at each division. Then the web page author's are stated that are responsible for the content, plus another who approves. The web master has the main responsibility for the main web page. The web editors are links for the web master to the diverse branches of the intranet. The main responsibility has the division's manager, that is, for the pages that the division has. This responsibility is mainly with the content of web pages in view. It is even being considered to give the info master the overall responsibility for this kind of quality and to give random inspections.

At HS there can not be said to be any overall network as to the responsibility of the web site. However, at each division there are persons that have the responsibility for

their part of the web site. How many persons or their position that have this responsibility is not clear. The main responsibility for the web site as a whole is not certain, if it is Agneta Grydbeck's (a head of the information department) or the rector's.

6.3 The accuracy, maintenance and currency of the information

To assess the *accuracy* of information is easier when the text is mathematical compared to a theoretical one, because often in theoretical texts there are no right or wrong answers. Also, the evaluators' knowledge affects the assessment. If the evaluators do not have enough knowledge in the field, they need to use time to get informed. Spelling, grammatical and typographical errors need to be corrected, because these errors can affect the organisation's reputation. Furthermore, it shows the organisation's concern for accuracy and also has proven to be useful, if a facility is provided to make comments on the text in question. To increase accuracy, all sorts of biases should be mentioned, such as, if the information is based on a research or if it is sponsored etc.

At Volvo the web editors do not make any special checking on the content's accuracy before it is published. Högström says that the feedback made available with the email addresses to the authors, has proven a very effective solution for the content's accuracy. The employees feel free to comment and use this facility often.

The same can be said about HS, at least as to the web pages that the information division takes care of. There is some editorial work spend on the content, that is, the text is skimmed through to check if it contains some errors. The general rule is, however, that the division's employees trust the authors for the reliability of the information. An email address is also made available for feedback. However, as mentioned above, the email address provided is impersonalised (the webmaster's) and, therefore, not certain that the users make comments to him/her about the content. This would probably be more effective if there were direct email addresses to the authors or to a person who has the responsibility for the information (info master) instead of having the web master's. As to the web site as a whole, it is not certain that an email address is made available for comments. Each division can make its own rules in this matter. From the home page, however, one is able to find a web page that has a link named "Tyck till" that the users can give feedback on the web site as a whole.

Skaraborg Sjukhus is the only organisation that checks the accuracy of the content before it is published. Before each web page is published it has to be approved by someone else than the author. Additionally, the web pages' content relating to medical instructions has to be agreed on by all the specialists working in the hospital in each field of specialisation. This means that they have to come to an agreement on the content of the pages before they are published. The author's name is always stated for possible feedback and also the name of the one that approves.

Only one of the interviewees did mention that spelling and grammatical errors were considered, but all of them said that the typographical errors were checked especially. This is the sort of failures that is usually easier to correct compared to the ones relating to the content. At Skaraborg Sjukhus, the persons who approve the documents are supposed to look out for these errors. At Volvo, the web editors do not check the

documents as to these inaccuracies. Again, it is the feedback from the emails that is supposed to correct possible failures, as well as the errors relating to the content. Kristina at HS, skims through the text possibly for this kind of errors, however, she did not define it clearly what errors she searches for.

None of the organisations interviewed mentioned that there were any existing policy concerning requirements on the authors to mention any kind of biases, as concerning research or sponsor. Ida Noppa, however, said it had been discussed not to allow any advertisements, that she considers very difficult to uphold. Appelqvist always mentions sources if she receives information from bigger organisations like Högskoleverket.

In the literature it is argued that *currency* and *maintenance* are important aspects to be looked at when assessing quality of information. Outdated information is useless and can be misleading. By the word 'currency' is meant, how up to date information is and 'maintenance' relates to whether the information is kept up to date. This is of significance for this medium as on intranets it is technically easy to update information and therefore, the users expect the information to be current. It depends on the nature of the information assessed whether it needs to be updated frequently. A web page with news needs to be updated more frequently than a page containing the organisation's overall description.

As to dates, all of the interviewees mentioned a concern for having date on the web pages. At Volvo, every web page has to have a date showing when the document was created and last updated. The web editors check that this information is on the document before it is published. However, there is no policy concerning how often a page has to be updated. Therefore, it is known that too many web pages are available on the intranet that contain outdated information. Consequently, it is a general interest that a policy will be made to prevent this to happen. One idea is that after certain amount of time (ca two months) a web page will disappear.

At Skaraborg Sjukhus the same policy is used relating to dates. Every web page has to have a date when it was created and when it was last updated and also when it will next be updated. They are also the only ones of the interviewees who include also what version it is. Skaraborg Sjukhus is, further, the only organisation of the three that has formed a policy for the maintenance of updating. Every document will have the function, offered by Lotus Notes R5, that calls the author's attention to that now it is time to look at this document and check if it needs to be updated.

At HS, the information division has as a general rule that every web page has date showing the last update, but not when the document was created. It is not certain though, that all the web pages have a date for the last update. Johansson says that in some pages she thinks the date disturbs. An example, is the home page that contains the links to all the main divisions. There she has removed the date because, otherwise, the whole content of the web site feels outdated. She adds that as for herself she tries to use the technique to link to information on other pages instead of repeating it on her own page. This is a good technique to avoid the risk of the information being outdated – as soon as the web page that one has a link to, is updated the link also becomes updated. The risk, however, that this functions vice versa – if web page is not updated that the link leads to your web page also gets outdated. As for policy of maintenance

there is none. Just as at Volvo, there is no function used for reminding people to update their web pages. Again, as for the web site as a whole there is no knowledge of how each division deals with the question of dating or updating.

6.4 The accessibility and presentation of the information

The *presentation* of the information can affect the users when making use of the information. Several orienting ‘tools’ can help the users find their way in the web sites and, thereby, makes the information easier to *access*. These tools are, for example, a site map, contents list, index, and menu system or search facility. These tools can be used effectively. An example, is the content list that appears in one frame and by clicking on one item in the content list, the page will appear in another frame. This is very convenient for the user to be able to move from one place to another, and also makes it easier for the user to know where he/she is situated in the web site. The general rule, however, can be said that the web site should have a good overall design and the information should be presented and arranged in a logical, clear and consistent way.

At Volvo there are quite strict requirements made on the presentation of the information relating to headings and the like. This is to maintain a consistency in presentation and arrangement throughout the intranet that helps the user to find his/her way around the material. At Volvo they make use of a search engine and also have the intranet structured to make browsing easier.

Johansson and Appelqvist at HS did not mention the presentation or the structure of the information. A search engine was not discussed either. In the interview, however, they talked of the blue and yellow pages, which implies that the pages have an overall design. The blue and yellow pages are the pages that the information division takes care of. Again as to the other divisions’ web pages it was not mentioned whether they had a consistent structure.

In the interview with Noppa at Skaraborg the overall presentation was not mentioned. After the interview she sent me the project plan and there one can see that this has been thought of. Rules shall be constructed that give instructions on how to use headings, fonts, font-size, etc. Noppa, however, talked about how the information is to be classified. She thinks this is very important for the search engine to work effectively. She means that traceability is significant for the users to be able to use the intranet effectively.

The search engines and the overall structure of the information can affect accessibility. There are also other things that affect the accessibility. These are images; the web site’s downtime; web site’s move to another location; the use of some special software for presenting the information and the information copyright.

None of the organisations interviewed mentioned any of the points mentioned above as to accessibility, with the exception of two of them that talked about the search engines and the web site’s structure to facilitate navigation.

7 Results

In this chapter, the general results that the research has given will be explained with a focus on the problem dealt with.

7.1 The purpose of the information

The purpose of the information means that its overall aim should be looked at. This can be found out by asking questions like, why is it written? For whom is it written? How much will the text cover?

At Volvo it is required that one of the above questions are answered, that is, for whom is the text written. Skaraborg Sjukhus says the overall purpose shall be stated but does not explain it further. HS did not mention it. All of the organisations think of the content as to its topic, that is, they check if the piece of information is relevant for the intranet. A conclusion can be made that it is not a clearly stated requirement that answers to all of the questions above have to be found somewhere in the document published.

7.2 The authority of the information

To assess the authority of the information can be done by checking the author's expertise.

None of the organisations interviewed has as a requirement that the author's expertise shall be stated. However, in two organisations of three the author is stated, either his/her name or his/her email addresses. One of the organisations has often only the web master's email address and the author is not mentioned. None of the organisations has defined the new working titles, such as the info master. Two of three organisations had it well defined, how responsibility for the information published, is delegated in the organisation. It can, therefore, be stated that it is generally considered necessary to name the author and also make someone responsible for the information. However, to mention the authors' expertise is not considered as important.

7.3 The accuracy, maintenance and currency of the information

How easy it is to assess the accuracy of the information varies considerably relating to the nature of the information dealt with. Spelling, grammatical and typographical errors also need to be corrected. Further, to give the opportunity for feedback shows a concern for accuracy. All sorts of biases should be mentioned as well. Currency and maintenance are important aspects that affect the accuracy of the information.

Only one organisation of three interviewed checks the accuracy of the content. All the organisations check typographical errors and one checks grammatical and spelling errors. All of the organisations provide facilities for feedback. None of the organisations has requirements as to mentioning biases clearly stated. Relating to the currency and maintenance aspects, all of the organisations control that the web pages have dates. There is, however, a slight difference of how detailed these dates are. One of the organisations has only the last update, the others have also when the document was created, and only one states the next update. As for maintenance, only one of the organisations has constructed a policy on how often documents should be updated. From this can be seen that aspects that are easier to check for accuracy are

incorporated like for instance, the dates. Other aspects as concerning the content that are not as easy to construct a policy on are not as commonly considered.

7.4 The accessibility and presentation of the information

The presentation of the information can affect the user when using the information. The medium and the diverse software applications offer a variety of possibilities to present the information. The general rule is that the intranet should have a consistent and good overall design and the information should be presented in a logical and clear way.

All of the organisations have thought of having a consistent and overall design. Two of three talked about the importance of an effective search engine as well as a good structure of the information to facilitate browsing. Other aspects that can affect the accessibility of the information like the use of images and the web site's downtime were not mentioned by any of the interviewees. This shows that the presentation of the information is thought of but the accessibility is not as obviously considered as concerning the quality of information.

7.5 Summary

The results above are discussed in a general way. The intention is to bring forward what the literature recommends when dealing with the quality of information and to compare it to the web editors' general ideas of information quality when working with this kind of publishing. It is very difficult to force a statement that announces one clear result in a research of this character. The subject touches so many aspects that this is not possible and neither the intention. It can be said, however, that the tendency seems to be that the factors that are easy to introduce are more often used to improve the information quality. These aspects refer to dates, email addresses, typography and design. The factors that are not as easily applied seem not to be used as commonly. These factors are for instance, stating possible biases, the purpose of the text and the like. However, as can be seen above, the three organisations are very different in almost all the aspects discussed and also on how thoroughly their policy is developed on the subject of information quality. However, all the interviewees have one thing in common. They are all very interested in this matter and are all working on improvements on the quality of information published via the Internet or the intranet.

8 Discussion

The experience that this work has given is that the search for relevant literature can take a considerable effort and time. Today there are many more opportunities to search for information than it was before. Several years ago, the search was often concentrated on the local library. Therefrom one could order articles from journals from other libraries. These articles had to be ordered and received by mail. Too long time could elapse from finding the article to receiving it. Therefore, the time spent to search for these articles could be used in vain. Therefore, the local library was often the main focus of the information search.

Today, the situation is quite different. To look in the local library for information is only the beginning of the search. Number of databases can be searched for material. Just to get familiar with these takes time. Then follows a period of analysis. Because the sources found are not always available at the local library one has to try to estimate their relevancy from their topic, or if one has luck, from the abstract. Therefore, much material has to be ordered that sometimes proves to be actual and sometimes not.

In addition, a time was spent on reading material that was related to my thesis but that I later realised, lay outside the scope of the paper. The main reason for this is that the subject dealt with touches on many aspects. I could easily dive into subjects like, information overload, search methods used by search engines, the search engines and knowledge databases available in the Internet. Therefore, lots of material was read that could not be squeezed in the paper, but could quite possibly be used in a work of a different calibre.

An experience was also gained of conducting the interviews. I realised that it can be difficult to decide how detailed the questions shall be. I felt that if the questions were more detailed, the risk for influencing the interviewees would increase. I thought, that if aspects relating to information quality were directly asked for, the interviewees would answer more from policy than from what actually is practised. The risk, though, by using general questions is getting general answers. Every method has its positive and negative sides. However, in my case, the negative side effects were diminished, by offering the interviewees to complement the text written after the interviews.

8.1 Suggestions for further research

In this research the things that can affect the quality of information have been listed. This has been compared to the criteria used by web editors to secure the quality of information. It would also be interesting to investigate what editors in the printed publishing field use as criteria when securing the quality of information before it is published. This in order to see possible differences in their methods compared to these working with this new media – the Internet and intranet. Further, every section discussed as concerning the evaluation of information can be dealt with in more detail. The presentation of information is one example. Just this aspect is a special field of study that can be dived more deeply into, for instance, the use of links, colours, the relevancy of images, to name only a few.

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Appendix 1: Questions for the interviews

Intervju

1. Hur många användare har intranätet?
2. Vilket är intranätets huvuduppgift? (utifrån de ansvariga synvinkel)
3. Hur är intranätet mest använt? (de ansvariga synpunkt på själva användatet)
4. Vilken information läggs ut på nätet? (ämnesområde)?
5. Vilken/vilka lägger information ut på nätet? dvs. hur många är ansvariga. I fall det är fler än en, är det någon som är huvudansvarig?
6. Vilka fördelar är det med att det är en respektive fler som lägger information ut på nätet?
7. Vilka krav ställs det på kvaliteten på informationen som ligger på nätet?
8. Har det varit svårare att säkerställa kvaliteten på något ett ämnesområde jämfört med andra?
9. Finns det länkar till andra vebsidor ifrån intranätet?
I så fall, är det några krav som ställs för kvaliteten på informationen som dessa sidor innehåller?
10. Finns det information på intranätet som har uppgiften att öka de anställdas kunskap eller hålla de informerat inom deras område?
11. Finns det möjlighet på att från intranätet gå ut på Internetet?
12. I så fall, har ni några råd till de anställda hur de kan säkerställa kvaliteten på denna information?
13. Något annat som Ni tycker är viktigt?

Appendix 2: An Example of Volvo's Metadata

Exempel på hur man i metadata om dokument kan klassificera information utifrån ämnesområde:

IT

"Informationsteknik, Telekommunikationer, Hård- och mjukvaror, CAD, datasäkerhet"

Legal

"Affärsjuridik, mönsterskydd, patent, avgasbestämmelser, skattelagar, EMU"

Environment

"Energifrågor allmänt, råvarutillgång, yttre miljöskydd, återvinning, avfallshantering, luft- och vattenföroreningar"

Communications and sales

"Marknadsföring, Pressinformation, internkommunikation, PR, Sponsoring, Försäljning, Återförsäljaraktiviteter, Internet, Intranät, Varumärke"

Economics and finance

"Bokföring, Budgetering, Finansiering, Ekonomiska nyckeltal, Lönsamhetsanalys, revision, Aktier, Räntor, Valutakurser"

Management

"Affärsidé, Affärsstrategi, Organisation, Processer, Ledarskap, Fusioner, Långtidsplanering, Ägarförhållanden, Projekt, Affärstrender, Supply chain"

Human resources

"Lediga jobb, På nya poster, Resor, Personalreglementen, Personaladministration, Löner, Arbetstider, Löneförmåner, Fackföreningar, Internutbildning, Företagshälsovård, Frisk- och sjukvård, Arbetarskydd, Arbetsmiljö, Buller, Skyddsutrustning, Ergonomi"

Manufacturing

"Produktionsorganisation, Produktionsplanering, Produktionsteknik, Lageroptimering, Materialhantering, Interna transporter"

Product development

"Naturvetenskaplig teori (elektronik, kemi, matematik, hållfasthetslära, etc), Fordonsteknik (motor, elsystem, kraftöverföring, design, etc)"

Quality

"ISO, Systemteknik, Kvalitetsstyrning"

Safety

"Krockprov, air bags"

Distribution and logistics

"Återförsäljarnät, distributionsvägar, just-in-time"

Market watch

"Konkurrentanalys, emerging markets, potentiella leverantörer, konsumentbeteenden"

Aftermarket and service

"Reservdelar, Verkstäder, Garantier, Försäkringar, Handel med begagnade bilar"

Purchasing

"Inköp, leverantörer"

Internal service

"Städning, Fastighetsskötsel, Matsalar, Catering, Kontorsförbrukningsvaror"

Security

"Sekretess, Industrispionage, Personlig säkerhet, Datasäkerhet, Riskabla regioner"

Miscellaneous