



Knowledge Management in ICT department

Case: Nokian Tyres plc

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Case: Nokian Tyres plc

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Tämän opinnäytetyön idea lähti Nokian Renkaiden ICT osaston tarpeista kirjoittaa yhteinen toimintamalli tiedon ja dokumenttien jakamiseen ja tallentamiseen. Mallia tullaan ehdottamaan käytettäväksi koko Nokian Renkaiden ICT osastolla globaalisti.

Opinnäytetyössä keskitytään tiedonhallinnan teoriaan, joka johdattaa tiedonhallinnan perusteisiin ja käytäntöihin. Tiedonhallinnan perusidea on jakaa tietoa juuri oikeille ihmisille oikeaan aikaan. Opinnäytetyössä toteutettava tiedonhallintamalli kokoaa Nokian Renkaiden ICT osastolle ohjeet tiedonhallintaan ja jakamiseen sekä kokoaa ehdotelmaksi sopivat järjestelmät. Opinnäytetyön teoria on rajattu hiljaisen ja kirjoitetun tiedon hallintaan sekä tiedonjakamista tukevien järjestelmien esittelyyn.

Opinnäytetyön tutkimusmenetelmänä käytettiin käyttäjäkyselyä, joka toteutettiin Nokian Renkaiden intranetin kyselypohjalla. Kysely lähetettiin kuuteen eri maahan viidellekymmenelle neljälle henkilölle ICT osaston sisällä. Kysely koostui erilaisista kysymyksistä seuraavista aihepiireistä: mitä tietoa jaetaan, mihin, millä kielellä ja kenelle. Lisäksi kyselyssä haluttiin selvittää onko nykyiset tiedonnomistajat tiedossa tai kenen vastuulla dokumentaatio on. Opinnäytetyön pohjana toimi kirjoittajan oma näkemys ICT osaston nykytilasta ja puuttuviin tietoihin yritetään kyselyn tulosten perusteella löytää vastaukset.

Kyselyn tulokset on purettu ja pohdittu niiden tarkempia syitä johtopäätökset ja yhteenvedo luvuissa. Kuten kirjoittajakin oli alussa päätellyt, oli tieto hukassa usealta henkilöltä ICT osastolla. Pääkehittämisalueina listattiin yhteenvedossa listata asiat, jotka pitää jakaa osaston kesken, julkaista sisäisille asiakkaille palvelukatalogi sekä löytää OCT osastolle yksi yhteinen tallennuspaikka dokumentaatiolle. Opinnäytetyö kokoaa lopussa ehdotelman Nokian Renkaiden ICT osaston käyttöön ja jatkojalostettavaksi.

Asiasanat: tiedonhallinta, dokumentinhallinta, tieto, globaali, prosessi, malli, häiriönhallinta ongelmanhallinta, muutoksenhallinta, intranet, extranet, dokumentinhallinta, kirjoitettu tieto, hiljainen tieto

ABSTRACT

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Case: Nokian Tyres plc

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The idea of this thesis began from Nokian Tyres ICT department needs to find a common approach to how to share and store information and documents. This thesis proposes a Knowledge Management model for Nokian Tyres ICT department in globally.

This thesis focus on Knowledge Management theory, which will guide the reader trough the criteria and practices of Knowledge Management. The basic idea of Knowledge Management is to share information to the right people at the right time. The thesis develops Knowledge Management model for Nokian Tyres ICT department. It uses guidelines for information control and sharing. The theoretical party of the thesis is limited to the tacid and explicit knowledge and also presents ICT based tools for knowledge sharing.

The research method is a user query. The survey was conducted in Nokian Tyres intranet. The data were collected from Nokian Tyres and Vianor's ICT department in six different countries. A total 54 ICT department employees were invited to participate in the survey. The questionnaire consisted of various questions on the following topics: what information is shared, where, in which language and to whom. In addition, the survey aimed to find out whether the current service owners are known, or who is responsible for the documentation. The basis of the thesis was author's own view of ICT department current state. The missing information is collected determined by survey results.

The results of this thesis suggest that the main development area were to collect a list of the kind of information needed to be shared, publish a service catalog to in the internal customers and to find out one common system for all ICT department users. The thesis identified development targets and proposed Knowledge Management tools for Nokian Tyres ICT management.

Key words: knowledge management, document management, information, global, process, model, incident management, problem management, change management, intranet, extranet, document management, explicit knowledge, tacit knowledge

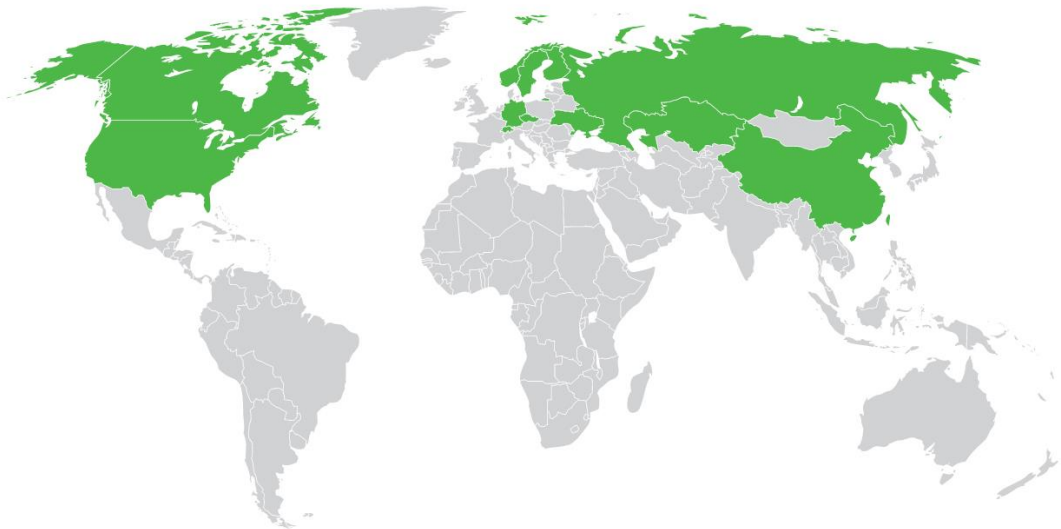
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1 INTRODUCTION

This thesis was commissioned by Nokian Tyres plc ICT department. Nokian Tyres plc produces tyres for car, trucks and heavy-duty equipment. Nokian Tyres has the only permanent winter tyre testing facility in the world. It owns 100 % of Vianor. The Nokian Tyres and Vianor together have about 4200 employees in 27 countries. The picture (PICTURE 1) shows all the countries where Nokian Tyres and its subsidiary and sales companies are located.



PICTURE 1. Nokian Tyres, Vianor and sales companies on the map.

This thesis focuses on Knowledge Management. What Knowledge Management is and what information should be shared and where. This thesis is partly mapping of Nokian Tyres ICT department's current state and create a new Knowledge Management model for Nokian Tyres ICT department.

1.1 Background and describing current state

Nokian Tyres plc has six ICT department globally. The head office is located in Nokia Finland with about 30 workers. The other five ICT department are located around the world; Russia, Sweden, Norway, Czech Republic and Colchester, USA. In Russia, the ICT department has about 20 workers and the rest are located in Central Europe, Norway, Sweden and North America. The head offices of Vianor's ICT department, which is part

of Nokian Tyres' ICT department are located in Nokia and Lappeenranta. Other departments are located around the world. The strength of the Vianor ICT department is 12 people. The number of employees is 54 in the entire Nokian Tyres Group ICT department.

The idea of this thesis comes from our ICT department. There is no global process on how to handle document or how to share information globally. All data and information are scattered in several systems or users network drives. There is now knowledge in our department if users doesn't know where information or documentation is available.

The chart (TABLE 1) shows that there are many empty boxes. That means that the current state is unclear and there are no agreed standards in our ICT department globally. This chart shows the current state of the entire Nokian Tyres' global ICT group.

TABLE 1. Current state in Nokian Tyres ICT department

	What	Where	Who	Which language	From whom
Business level	Where to get support, common agreements, service catalog, user manuals			In English and if it's possibly, documentation can be provide also in users own language	For internal users
Group ICT common level	Main user manuals, technical documents			In English	Only for Nokian Tyres group ICT department
Group ICT team level	Team specific purposes, tools & practices		ICT department employees or team leader	In English or in their own language	Specific ICT team

1.2 Research scope and objectives

The objective of this thesis is to prepare a framework for global ICT process for Nokian Tyres. The purpose is to give tools for ICT department to share knowledge and information to global ICT department. This thesis focuses on explicit knowledge and knowledge sharing, storage and refinement. This thesis formulate a model for Nokian Tyres ICT department to handle Knowledge Management. It brings together all collected information and documents and suggest tools for knowledge sharing.

1.3 Structure

The thesis is divided into six major chapters. The first chapter provides the reader with background information. It clarifies the importance and relevance of the topic to the writer and the writer's ICT department.

Chapter two focuses on theoretical backgrounds of the thesis. It gives an overview of previous research and literature regarding Knowledge Management and information and documentation sharing. Here a list the Knowledge Management ICT based tools is also discussed.

Chapter three focuses on the research. What kind of research is made and why. This chapter gives answers to the main research questions and why these questions are important to Nokian Tyres ICT department.

Chapter four found deals with all survey results categorized by main questions. The purpose of the main questions are also slightly described.

In chapter five, the conclusions of the work is presented, while chapter six is summary of all results and conclusions. Finally recommendation are made for Nokian Tyres ICT department.

In the appendix survey form, ICT service survey results, Knowledge Management model and ICT customer survey are presented. ICT Knowledge Management model provides recommendations for Nokian Tyres ICT department.

2 KNOWLEDGE MANAGEMENT

Knowledge Management means how to develop, share and effectively use organizational knowledge. It is essential get the right knowledge to the right person. Knowledge Management is about making sure that an organization can learn and use knowledge assets in current applications as they are needed. Knowledge Management consists of the initiatives, processes, strategies, and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge (Frost 2014).

What Knowledge Management should be focused on? One thing is to conduct a survey, develop, maintain and secure the intellectual and knowledge resources. It is also very important to promote knowledge creation and innovation by everyone. Training courses, procedures manuals and knowledge based systems can determine the knowledge and expertise required to perform effectively, make the requisite knowledge available and distribute them to the relevant point of action. The main purpose is minimize knowledge gaps and bottlenecks through the company and maximize the value added knowledge content of products and services. Knowledge Management must be a part of company's practices and culture. Knowledge Management must be provide capabilities and a knowledge architecture so that the company's facilities, procedures, guidelines, standards and practices facilitate and support active sharing. (Styhre 2003)

What the company needs to know is how to promote a culture conducive to learning, sharing and knowledge creation and also how to make the right knowledge available to the right people at the right time. (Koskinen & Pihlanto 2008)

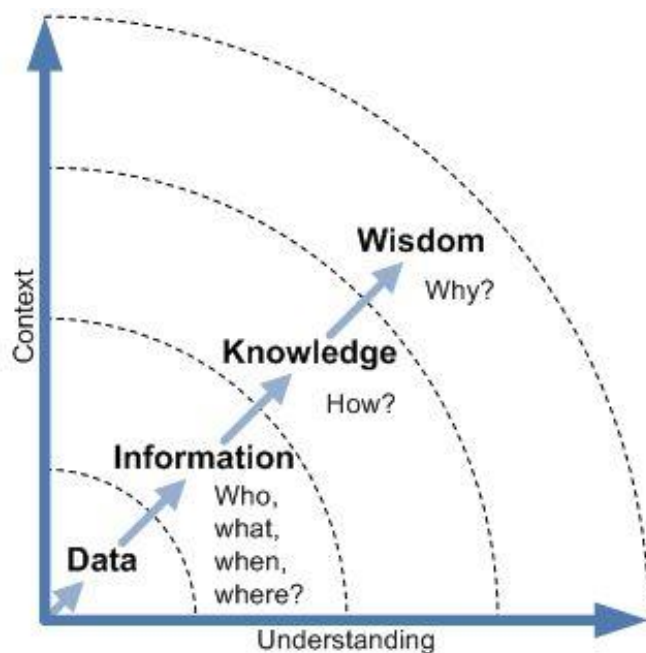
2.1 Defining data, information and knowledge

Knowledge Management is quite a broad subject and it's contains data, information and knowledge. Data include fact and figures which relay something, but which aren't organized in any way. A traditional way to categorize knowledge is to make distinction between data, information and knowledge. Knowledge isn't information, and information isn't data. (Frost 2014)

Data are raw facts and it is symbolic representation of numbers, letters, facts, or magnitudes. Data don't provide further information about context. For data to become information, it should have a purpose or use. (Frost 2014)

Information is found in answers to questions who, what, where, when and how many. It is the grouping of data and placing it in a context that makes a valuable output. Information is an aggregation of data that has a meaning. (Frost 2014)

Knowledge includes terms know-how, understanding and experience. Knowledge shows in an organization as embedded documents, repositories, routines, practices and norms. Understanding of what constitutes data, information and knowledge, helps understanding the whole picture of Knowledge Management. Picture (PICTURE 2) shows the transformation of data to wisdom. Knowledge is based on learning and thinking about the problem area. (Simmons 2011)



PICTURE 2. Knowledge Management process including definitions for data, information, knowledge, and wisdom. (Simmons 2011)

2.2 Explicit and Tacit Knowledge

Explicit knowledge is knowledge that has been articulated, codified and stored. It is evident that the knowledge captured in a document need to be managed for example stored,

retrieved, shared and changed. The most common forms of explicit knowledge are notes, memos, manuals, documents, procures and videos. (Frost 2014)

Tacit knowledge is opposed to explicit knowledge. It is the kind of knowledge that is difficult to transfer to another person. Tacit knowledge is hard to formalize and difficult to communicate to others and it also be impossible to capture. Tacit knowledge is intuitive knowledge and know-how for examples practice, values and experience. (Frost 2014)

2.3 Knowledge Management Tools

In the first instance company must know what the employees know and where knowledge is located. IT based tools and systems can help Knowledge Management fulfill its goals. It is not a good idea that knowledge is in the mind of a specific expert, it should be stored in some way in files or on paper. The picture (PICTURE 3) present reflect the main technologies that currently support Knowledge Management system. The next chapter will collect some different IT based tools where company can store their knowledge. (Frost 2014)



PICTURE 3. The picture reflects the main technologies that currently support Knowledge Management system. (Chapel 2007)

2.3.1 Incident Management

Incident Management is an IT Service Management process area. The main goal of the Incident Management process is to restore a normal service operation as quickly as possible and minimize the impact on business operations. The incident may match existing problems under Problem Management. (Rouse 2008)

2.3.2 Problem Management

Problem Management is the process responsible for managing the lifecycle of all problems and incidents. The primary objects of Problem Management are to prevent problems and incidents from happening. Problem Management's main goal is to eliminate recurring incidents that cannot be prevented. From each problem can be learned and therefore this information and knowledge sharing is important to the company. (Rouse 2008)

Incident Management process includes the activities required the root cause of incidents identified and determine the resolution to those problems. It's also responsible for ensuring that the resolution is implemented through the appropriate control procedures. Problem Management maintains information about problems and the appropriate workarounds and resolutions, so that the company is able to reduce the number and impact of incidents over time. Problem Management has a strong interface with Knowledge Management and Knowledge Management tools such as the known error database. Even if Incident Management and Problem Management are separate processes, they are closely related and will typically use the same tools. Problem Management requires higher availability of IT service and higher productivity of business and IT staff. (Rouse 2008)

2.3.3 Change Management

Change Management is an approach to change to a desired future state. For example in a Project Management context it may refer to a Project Management process wherein changes to the scope of project formally introduced and approved. The main purposes of Change Management are recognizing the changes, developing the necessary adjustments for company's needs, training employees on the changes and winning the support of the

employees with persuasiveness of the appropriate adjustments. Change Management has three aspects: adapting to change, controlling change and effecting change. The most important thing in Change Management is to adopt a proactive approach in dealing with change. (Rouse 2014)

2.3.4 Intranet and Extranet

What is the role of intranet and extranet? The main purpose of Intranet is to share news, list all the key tools, supports internal marketing and communication and to increase collaboration. An extranet is a private network designed specifically to allow company's clients, vendors and suppliers to communicate with internal employees in a closed virtual space. The main purpose is to share document with public. (Frost 2014)

2.3.5 Document Management

Document Management is the process of handling documents in such a way that information will be created shared, arranged and stored efficiently. Document Management systems are systems that aid in the publishing, storage, indexing and retrieval of documents. The main purpose of Document Management is to deal almost exclusively with explicit knowledge. It includes functions such as capturing, classifying using metadata, and indexing. It also provides document search capabilities, versioning, comparison and collaboration features. (Ward 2015)

2.3.6 Contract Management

Contract management refers to the processes and procedures that organization may implement in order to manage the negotiation, execution, performance, modification and termination of contracts with various parties including customers, vendors, distributors, contractors and employees. (Gutterman 2013)

3 RESEARCH

In this thesis research the method used is a survey, conducted among the employees Nokian Tyres ICT departments. The purpose of the survey was to find out the current state of the ICT department. How far are we prepared to go and what is needed to get there? Table (TABLE 1) describes our present state from my point of view. This survey helps to get clarification of the current situation.

3.1 ICT department survey

In the ICT department there are 54 employees in a six different countries. This research collects information about the current state from the department employees. The target groups of the survey are Nokian Tyres and Vianor's global ICT department.

The survey (APPENDIX 1) consisted of various questions on the following topics: what information is shared, where, in which language and to whom. In addition, the survey aimed to find out whether the current information owners known or whose responsibility is documentation.

The research method is a user query. The survey was conducted in the Nokian Tyres Intranet. The data were collected from Nokian Tyres and Vianor's ICT departments. The research questions types were single line of text, choice or rating scale.

3.2 Research questions and frames

The purpose is get answers to the following questions:

1. Who?
2. What?
3. Where?
4. In which language?
5. To whom?

The first question "Who" is to find out whether users know who the responsible is for, documentation or management parts? The second question in the thesis is "What" and it

deals with what information should be saved. What is the most relevant information? The third the question is “Where”. The purpose of this question is to find out whether users know where information should be saved. The company has so many different systems and users do not always know where to put the current document. Information and knowledge have no meaning, if they are not shared or not accessible. (Mether 2015)

The fourth the question is “In which language”. This question is to find out if users know in which language documentation or other information should be distributed. And the fifth the question, “To whom” is to find out whether users know to whom they can share information.

4 RESULTS

This chapter presents the outcomes of the ICT internal survey. In the survey 18 out of 54 responded to the questionnaire. It means that the response rate was 33 %. 68 % of the respondents are Nokian Tyres employees and 32 % are Vianor's employees. The results, distributed by country are presented in the chart (CHART 1).

All the survey data were collected to one attachment (APPENDIX 2).



CHART 1. All answers by country.

4.1 Who?

The first question in this thesis was "Who". The meaning of this question was to find out whether users know who the responsible people are? As the chart (CHART 2) shows, that the majority of respondents thought that they themselves are responsible for documentation. Also system supplier produces documentation.

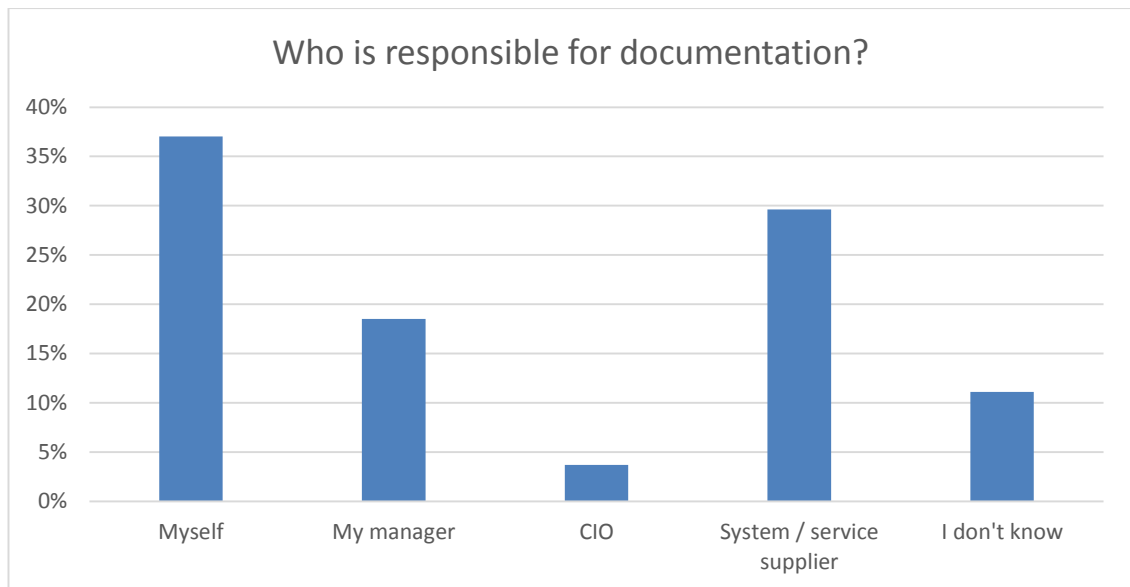


CHART 2. Who is responsible for the documentation?

83 % of respondents agree or almost agree that they know where to contact if they have something to ask about the Service Management. 89 % of the respondents agree or strong agree that they know who is responsible for the Request Management. 44 % of the respondents strongly agree that they know to whom they can contact when they have some questions concerning Problem Management. 72 % of the respondents know who is responsible for the Data Management. The Information Management question has wide distribution in the answers. As the chart (CHART 3) shows that 28 % of the respondents disagree when they asked if they know from whom they can ask more about the Information Management. 33 % agree and 33 % strong agree.

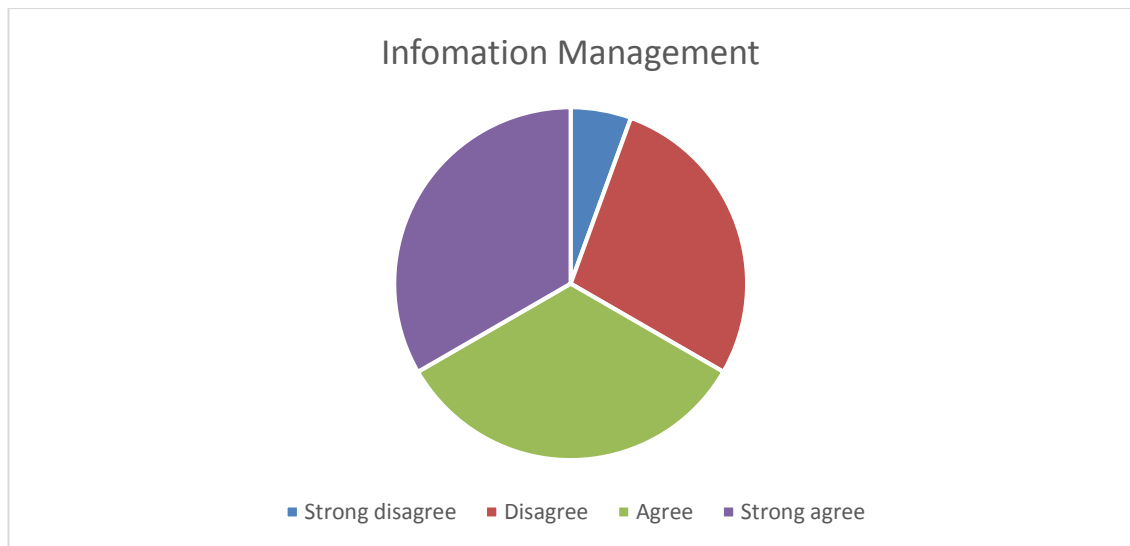


CHART 3. Who is responsible for the Information Management?

78 % of respondent agree or strong agree when they asked about if they know their own job description. So 22 % didn't know they own job description. 89 % of the respondents know their colleagues job descriptions.

Even 94 % of respondent know who is responsible for network issues, and a third of the respondents don't know who is responsible for support systems. 83 % of the respondents know what our service desk is responsible for. If users have any question about system or services, 65 % of them will send a service request to our service desk or call them. Only 6 % use the Data Management system for looking for more information of systems and services.

4.2 What?

The second question in the survey was “What” This question deals with what information should be saved.

27 % of respondents didn't found information of systems main users or ICT support contact persons. Even if 63 % of the respondents know where information of systems maintenance breaks is, 37 % do not.

56 % of the respondents disagree or strongly disagree with the following statement: I know from where I can find all vacations and substitutes as the chart (CHART 4) shows.

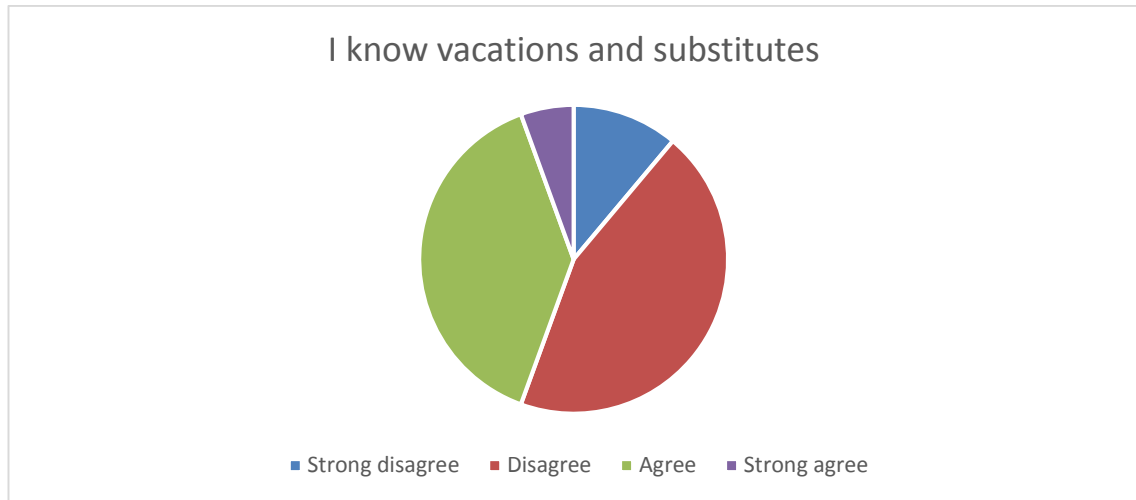


CHART 4. Statement: I know all vacations and substitutes

61 % of respondent knows who their back up person is and 56 % did not know when holidays are globally. 67 % of respondents disagree or strongly disagree when they asked if they know about projects in the ICT department.

4.3 Where

The third question in the survey was “Where”. The purpose of this question was to find out whether users know where all information should be save.

Half of the respondents knows where to locate our Contract Management system, but 78 % of respondents did not know where the License Management is located. 50 % of the respondents found systems passwords and user manuals found only 33 % of the respondents. 78 % of the respondents did not know where project documents are located.

When users were asked about where information of servers and servers specifications are located, 57 % of them didn't know correctly. Even 21 % of the respondents did not know all where information of systems and services are located. And the remaining 79 % of respondents had different views from storage location as the chart (CHART 5) shows.

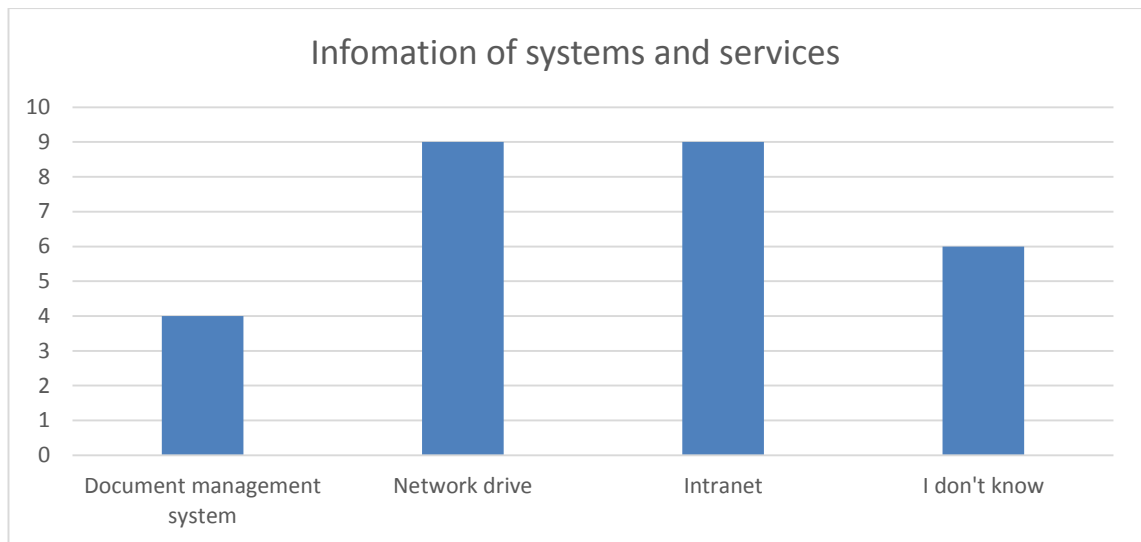


CHART 5. Where information of systems and services located?

89 % of the respondents do not know where all project documents are. Even 28 % of the respondents did not know the difference between intranet and extranet. The lastly respondents were asked from where they download their documents, chart (CHART 6) shows the differences in the answers.

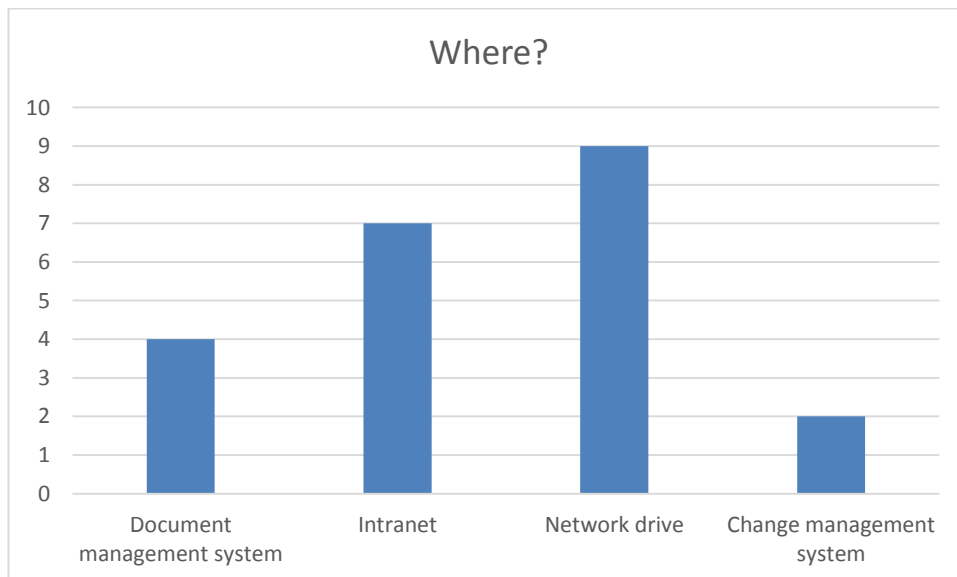


CHART 6. Where do you download your documents?

4.4 In which language

The fourth question in my survey was “Which language”. This question was used to find out if users know in which language documentation is distributed and published.

94 % of the respondents knows that English is the official language of the ICT department. The 52 % of respondents think that they should provide documentation to the users in English and the 37 % of respondent think it should be provided in users own language.

4.5 To whom

The fifth question in the survey was “To whom”. The purpose is to find out whether users know to whom they can share information or documents.

Most of the respondents knows to whom they can give administration manuals (67 %), server documents (67 %) and an access to ICT documents (72 %). A third of the respondents was unsure to whom they can give employees contact information. And 78 % of the respondents know to whom they can give the passwords of the systems or the servers.

5 CONCLUSIONS

In this chapter I will present the conclusions of survey results. I will analyze those results and compare them to the table (TABLE 1) in the first chapter. Are the survey responses in the same line as my conclusions of the ICT department's current state? Finally, I will make a proposal of Knowledge Management model (APPENDIX 3) to Nokian Tyres ICT department.

The survey response rate was very good and I'm glad the respondents from five different countries. This gives a good variation employees perspectives. There are many different systems and processes between Nokian Tyres and Vianor, and it is rewarding to receive so many answers from Vianor ICT department as well.

5.1 Who is responsible for?

As the survey results show, it seems that the responsible person is mostly known. In the Request Management (89 %), Data Management (72 %) and Service Management (83 %) areas respondents knew who the responsible person was. In those areas communication has worked well in the ICT department. The person responsible for Problem Management and Information Management was not as known by the majority. 17 % of the respondents did not know who the Problem Management or Information Management (32 %) responsible person was. The reason is probably that there is not any particular individual taking care of those areas.

When users have problem with systems, 65 % of the respondents always take contact to service desk via phone call or email. This action creates backlog to the service desk. Only a few of them (6 %) use ICT service request form, so the Request Management system is less used. Either our users did not find information about systems or systems responsible persons on their own, or they are not used to looking for information themselves. I think that it is the first claim, because only few of the respondent take contact directly to the systems main users. They do not know the main users, system owners and they are not aware of the service catalog, where all these information is saved. It is a good thing that they still contact the service desk, but we have to make sure that the service desk personnel know necessary information about systems and services. This problem is not confined

only inside the ICT department. I investigated the ICT customer survey answers (APPENDIX 4) and there were several complaints that the internal customers did not know who was the responsible person for either system or service.

It seems that people are more well-known than the systems, because almost all of the respondents knew their own (78 % of the respondents) or others (89 %) job descriptions. Because the obvious reason could be that the teams are close to each other. However from the same question had been asked from users from other countries, the answer probably will be quite different.

5.2 What should I save?

The question about what should and must be saved in the systems was slightly unclear to the survey respondents. 33 % of the respondent did not know where information systems and services must be saved. In the other words, all necessary information cannot saved. The same conclusion can be drawn from the question of system maintenance breaks, because so many of the respondents (37 %) didn't know when the next break will start. My suggestion is to publish our ICT service catalog and schedule of coming maintenance breaks to all internal users. In that way the department will know where to find that information.

Holidays, substitutes and back up persons were also missing from about half of the respondents. Users probably knows their own back up people, but when the issue concerned other users, they did not know who contact. We need a common place to save all vacations, substitutes and back up persons.

Almost 80 % of the respondent did not knew where they can save all the information and documents of projects. 67 % of the respondents also did not know what projects the ICT department was running. This is a quite a big issue in our company, because there is not any list of open projects anywhere. There is no common Project Management system. This was reflected in the survey results as well. Some of the respondents also wanted to add more dialog and communication of projects and create common Project Management rules and practices. Also from ICT service survey (APPENDIX 4) respondents wanted

our ICT department to organize common workshops or teambuilding, and inform frequently about changes, activities, projects and technologies.

5.3 Where to?

The company has specific Contract Management system and about half of the respondents (50%) know about the systems. The majority of the respondents (78 %) did not know where to save information of licenses. Our department do not have any specific License Management system for licenses and that showed in answers. It is recommended that one common system be developed to store all licenses. The same problem is with system, service and server passwords, because only half of the respondents know where they can save those kinds of passwords safely. We need a safety system to store all classified information.

Two thirds of the respondent (67 %) did not know where they can store user manuals or where they can look for them. How our department employees can guide the internal users if they themselves don't find the instructions? This is a very important to our service desk, because they have to answer to support requests every day.

Over half of the respondents (57 %) did not know where information about servers, systems and services are located. There are two or more systems in our ICT department at the moment, and that is the reason why respondents did not know exactly which one is the correct one. We have the same information on the intranet, network drive, Document Management system, Change Management system and even extranet.

There was one open text box in the survey for suggestions to improve our information or document sharing, and almost every one of the respondent (55 %) wants to have one common place for all documentation. Also the respondents (33 %) wants to have a common understanding and rules about how to share information or documentation and from whom can ask more.

5.4 In which language

The documentation language was well-known to all respondents. English is the official language of Nokian Tyres ICT department and about half of the respondents (52 %) answered so. We are global company and we have to publish all our information and documents in English. If it is possibly, documentations can be provide also in users own language as well. 37 % of the respondents wanted to offer documents in users own language. This is needed when, for example, general instructions are publish for the business level and also for internal customers.

5.5 To whom

A third of the respondents (28 %) did not know what the difference between intranet or extranet was. So how can they decided where to upload documents and to whom? It seems that is was pretty clear to whom users can give ICT documentation (72 % of the respondents), passwords (78 %) or access to the systems (72 %). But a third of the respondents (33 %) were unsure to whom they can give employees contact information. I think this needs also a common rule and guidelines for our department.

6 SUMMARY

The purpose of this thesis was to find out about the current state of ICT department knowledge and information sharing system. All the five questions about Knowledge Management answer the main question: “Why?” Because Knowledge Management is about making the right knowledge available to the right people. If we add our communication, information and documentation sharing, it will increase our knowledge. So I hope that we can increase our knowledge and wisdom in our department by sharing all information with others inside our department.

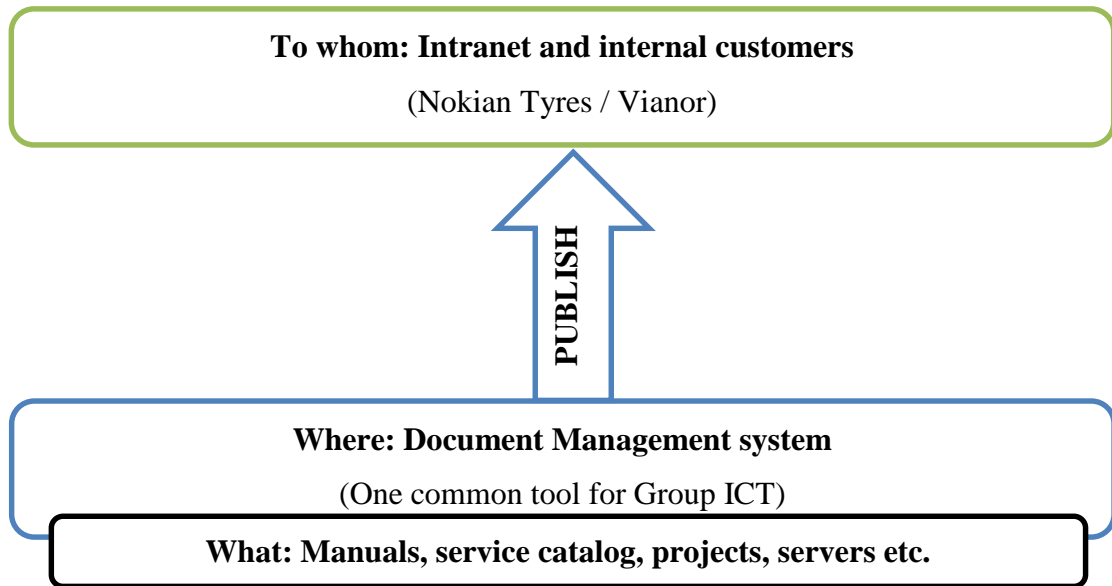
The results are that our common rules are quite weak and documentation is all over in different systems. The following chapters list our department’s biggest problems and try to find the solution to the problem.

6.1 This is what we need

In conclusions, firstly (TABLE 1) there is no list of any problems about what kind of information we need to share. But it seems that the respondents disagree with me. We may have some knowledge of this in Finland, but clearly elsewhere there is not. So we need to collect a list of things to share inside our department and to our internal customers. The list is written in the Knowledge Management model (APPENDIX 3).

Secondly there is the need for one common system for all documentation. Documents must be collected in one system so that users will not have to think about which system to look for information. Access will be given to only for the ICT department employees.

Thirdly, we need a service catalog. That catalog must be sent to all the internal customers and must include a list all services, support contact and service owners. But the main system cannot be the intranet of Nokian Tyres because Vianor users do not use our intranet. There must be one system where all common information will be located. Necessary information will be published to the different services like intranet. Picture (PICTURE 4) shows my suggestion for our department.



PICTURE 4. Suggestion for documentation places.

When we have the service catalog, which has been published globally, we can support our internal customers better. Our service desk can delegate the query to the correct service owner or ICT support contact persons. In addition, a list of critical systems and their supplier contact will speed up the problem solving.

Fourthly, we do not know what project we have in our company. If we share our ICT project in one common place, it will list most of our company's projects. At least it would be a good start. That list can also be published in the intranets.

6.2 One ICT system for all

As described in the previous picture (PICTURE 4), we need one common system for all documentation. A place where have all necessary information to our department employees, from both Nokian Tyres and Vianor. We all are doing the same thing in our company, and that is to support Nokian Tyres and its subsidiaries systems, services and customers. We need a common place to share information and make our ICT department a more comfortable and friendlier place to work. My suggestion is that we have one common Document Management system in our department. See attached (APPENDIX 3).

6.3 Other suggestions

A recommendation to our ICT department is that all documentation should be published at least in English. It is better if the instructions and guidelines can also be found in users own language, but English is the official language in our company and we have to stick to that decision.

When we talk about ICT documentation, it is recommended that all documentation is restricted for ICT department use only. In our Document Management system we are not allowed to access outsiders. We can publish information from our system in the intranet if we want to.

Finally, we need to inform our internal customer more about our service breaks or new products. Maybe we can start writing a blog? However we need to improve our customer service and information sharing in the whole company.

This thesis identified development targets and proposed of knowledge management tools for Nokian Tyres ICT department. I hope that the results of the survey will be used when management updates the ICT Knowledge Management model and guidelines.

All empty the boxes in the table (TABLE 2) are now filled. More proposals are described in Nokian Tyres Knowledge Management model (APPENDIX 3).

TABLE 2. Proposal for Nokian Tyres ICT department

	What	Where	Who	Which language	From whom
Business level	Where to get support, common agreements, service catalog, user manuals	Document management system and will be published to the intranet	ICT department employees, service owner	In English and if it's possibly, documentation can be provide also in users own language	For internal users
Group ICT common level	Main user manuals, technical documents	Document management system	ICT department employees, service owner	In English	Only for Nokian Tyres group ICT department
Group ICT team level	Team specific purposes, tools & practices	Document management system	ICT department employees or team leader	In English or in their own language	Specific ICT team

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APPENDIX

1 (4)

Appendix 1. Knowledge Management in ICT department –survey

Knowledge Management in ICT department - Survey

Finish Cancel

1. Country *

- Finland
- Russia
- Sweden
- Norway
- Central Europe
- North America

2. Usually I work with *

- Nokian Tyres
- Vianor
- Specify your own value:

3. I am aware of the ICT information safety policy *

- Yes
- No

4. Who is responsible for documentation in ICT department?

- Myself
- My manager
- CIO
- System / service supplier
- I don't know

5. To what extent do you agree or disagree with the following statement: I know from whom I can ask more about.. *

	Strong disagree			Strong agree	
	1	2	3	4	N/A
Information Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Request Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. To what extent do you agree or disagree with the following statement: I know *

	Strong disagree			Strong agree	
	1	2	3	4	N/A
my own job description	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my colleagues job descriptions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
who is responsible for network issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
who is responsible for support systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
what our helpdesk/service is responsible for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. If I have any questions about system/service, I .. *

- can send a ICT service request
- call to our helpdesk/service desk
- send an email to one of the mainusers
- look more information from our data management system
- ask more information from my manager
- I don't know

8. To what extent do you agree or disagree with the following statement: I know ... *

	Strong disagree			Strong agree	
	1	2	3	4	N/A
where are all project documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where are all user manuals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where are passwords	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where locate licence management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where locate contract management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where I can find all vacation list and substitutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Information of servers and server specification is located on.. *

- Network drive
- M-Files
- Insite (SharePoint)
- I don't know

10. Information of systems and services are located on.. *

- Network drive
- M-Files
- Insite (SharePoint)
- I don't know

11. Information of services mainusers and ICT support contacts can be found on.. *

- Network drive
- M-Files
- Insite (SharePoint)
- I don't know

12. I can look information of system/service maintenance breaks in the... *

- Network drive
- M-Files
- Insite (SharePoint)
- I don't know

13. Where I can get information about the trainings?

- on the Internet
- on the intranet (Insite)
- from my manager
- Some where else
- I don't know
- Specify your own value:

14. To what extent do you agree or disagree with the following statement: I know ... *

	Strong disagree		Strong agree		
	1	2	3	4	N/A
what projects we have in global ICT department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
where all project materials is shared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
what is difference between Insite and Outsite	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
when are holidays globally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
who is my back up person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Which is the official language of the ICT department globally? *

- English
- Finnish
- Russian
- Swedish
- Norwegian
- I don't know

16. In which language must provide documentation to the users? *

- English
- Finnish
- Russian
- Swedish
- Norwegian
- in their own language
- I don't know

17. To what extent do you agree or disagree with the following statement: I know ... *

	Strong disagree		Strong agree		
	1	2	3	4	N/A
whom I can give server passwords	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
whom I can give server documentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
whom I can give administrator guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
whom I can give access ICT documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
whom I can give employees contact informations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Where you upload all your documents? *

19. Do you have any suggestions for improving our information or documentation sharing? *

Appendix 2. Knowledge Management –survey results (Confidential)

Appendix 2 contain business secrets, and will not be shown in the public version of the thesis.

Appendix 3. Nokian Tyres Knowledge Management Model (Confidential)

Appendix 3 contain business secrets, and will not be shown in the public version of the thesis.

Appendix 4. ICT service survey (Confidential)

Appendix 4 contain business secrets, and will not be shown in the public version of the thesis.