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DEVELOPMENT OF QUALITY PROCEDURES FOR OILON US INC.

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Abstract

The purpose of this research was to create quality procedures for Oilon US Inc. It is a subsidiary of a Finnish company Oilon Oy, and it started operations a little over a year ago. The objective is not to implement a full quality management system, but rather create procedures that help the employees at everyday work tasks. There are yet not established procedures for work, which may cause errors in operations. The procedures that were created will be part of the subsidiary's quality management system in the future, and supposedly also part of Oilon's other subsidiaries as well.

The approach that was used for this study was action research, as the purpose of the process was to improve the work procedures of Oilon US Inc. This type of approach involves several different methods, and the methods used in this study were a literature review, discussions, participant observation, training sessions as well as Oilon's official documents. The procedures were written based on the requirements of standard ISO 9001:2008 in order to make the future process of implementing a new quality management system easier. The data collection and processing were carried through at Oilon Oy in Lahti in June and August as well as in Oilon US Inc. in Thomasville in July.

The quality procedures were added to the intranet of Oilon US Inc. at the end of August along with some important links and documents related to the content.

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1 INTRODUCTION

Quality issues are becoming more and more important nowadays as stakeholders, including customers, expect the organizations to be ethical, sustainable and responsible. Oilon Oy, a Finnish energy and environmental technology company, takes quality issues seriously. It has got a functional quality management system, but the new subsidiary in the United States has not still got one. The purpose of the research is to make sure that also the subsidiary will perform of high quality by creating documentation to support its processes.

The subsidiary started operations a little over a year ago, and thus it is not necessary for it to implement a fully working quality management system yet. Instead, the demand is for quality procedures that help the employees of Oilon US Inc. to perform the everyday tasks at work, and those procedures should be convergent with those of Oilon Oy. These procedures are part of a quality management system, so they can be included in the future as the subsidiary is ready to implement a full system. The quality procedures created are going to be used in the future for Oilon's other subsidiaries quality management systems as well.

The approach used for the research is action research. It is a type of approach used when the purpose is to improve something – a product or method, for example. That approach was chosen, because it seemed to suit the process and the aims very well. The process is cyclical with the steps of planning, acting, observing and reflecting repeating. Several different methods are used during the process in order to reach the best possible result. The methods used in this research are discussions, participative observation, literature review, training sessions and Oilon's official documents. The literature review concerning quality consists mainly of international book sources. The actual documentation, the quality procedures, are created based on the previous data sources as well as the ISO 9001:2008 standard.

I have been working at Oilon Oy several summers, so the company is fairly familiar to me. That increased my personal interest in this study. The documentation was created between June and August in 2015. Of that time, I worked over a month at Oilon Oy in Lahti, and a month at Oilon US Inc. in Thomasville, Georgia. My knowledge about quality issues before the project were fairly low, but now as the project is coming to an

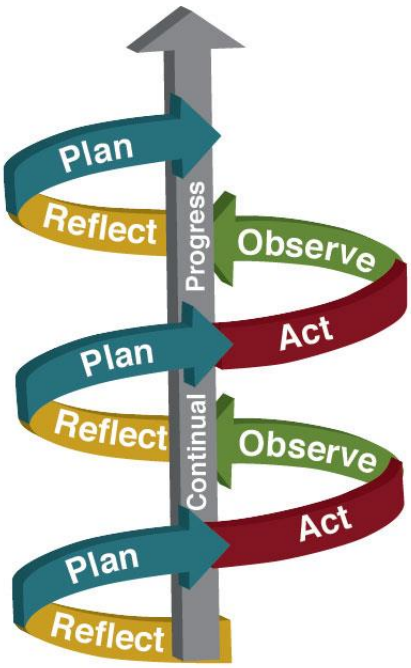
end, I am more interested about quality issues in organizations, and hope to work again on that area in the future.

2 METHODOLOGY

The approach that was used in this study is action research. This approach was chosen because it is a suitable method when trying to improve something. The process involves a cyclic process and several different methods. Combining different techniques to collect data improves the validity of the research and it is typical for the conduction of action research. The chosen approach and the methods used are discussed in depth in the following subchapters.

2.1 Study approach

As stated above, the main purpose of action research is to improve something - there is a concrete object, of which the researcher attempts to change and develop. This can be, for example, a product, work method, environment or quality of life. This development work is carried through in active collaboration with the client or target audience. (Ruohonen 2009.) Action research often tends to be qualitative, meaning that the study deals more with language than numbers. In addition to being participative and qualitative, action research is also a reflective and cyclic process. The steps of the process are shown in the picture below.



PICTURE 1. The cyclic process of action research (Purpose of action research 2014)

Reflection is an essential part of the cycle. Planning, acting, observing and reflecting repeat while there is continual progress. The nature of the research problem is dynamic, as the purpose of the research is to find out how things should be instead of finding out the current situation. The first step of the process is to identify the problem, and after this, the data can be collected and analyzed. The next step is to reflect and critique on the results and act according to the needs. The questions that should be answered at this point could include some of the following:

- What is known about the issue already?
- What else might be useful to know?
- Who else should be asked/included in the process?
- What are the next steps?

The final step is to revise the plan, ant think of ways to improve the outcomes. The process is then repeated until a desired result has been achieved. (Purpose of action research 2014.)

The results of an action reseach are often composed into a book, and the process itself may take several years. However, the approach may also be adapted to a shorter process.

In this case, the scope of an action research should be relatively narrow, so that the matter can be examined thoroughly. In fact, the development should rather continue after the action research is finished, showing the long-term effects of the process. Due to the extent of the process, keeping a research diary is very advisable. The diary is a separate document from the thesis, and it includes the records of the activities and thoughts throughout the research process. In order to achieve a desired result, the author of the action research should aim to create a practical whole consisting of the client's wishes, observations of the author and facts gathered from literature. Those views may contradict each other in some cases, and the decisions made should be justified accordingly. (Ruohonen 2009.)

2.2 Study methods

There were several study methods used during the process, and these were literature review, discussions with the quality manager Mr. Jarmo Flinkman and CEO Mr. Johan Tallberg, training sessions, and the official documents on Oilon's servers and intranet. In addition, observation method was used, while trying to figure out the working methods at Oilon US Inc.

The original plan was to conduct an interview for the quality managers and specialists, but as the project had been going on for a while, it became clear that not that many people at the company have a good understanding of the quality issues. I had the great opportunity to gather data at the Oilon companies in Lahti and Thomasville, USA, and thus a better alternative for interviewing was to have several discussions along the process with the people that had the greatest amount of silent, valuable information, or so called tacit knowledge. I made notes on my drafts every time we had these discussions, and made the appropriate changes right after them.

In Thomasville, I participated in two different training sessions. The first session was a training conducted by the CEO of Oilon US Inc., Mr. Johan Tallberg. The purpose of it was to train the process of order processing to two of the company's employees and me. The other training session was organized by me, and that was when I went through the whole quality manual's content with the employees, when it was nearly complete. I was asked if the employees had any questions about the documentation, and got some really good ideas and suggestions regarding it.

The official documentation that was used for the quality procedures included a huge package of work instructions and procedures on the company's server and intranet, the quality manual that is in use at Oilon Burners Co. Ltd. in China, and some old quality manuals, reports, questionnaires and so on. None of these documents could be used as such, as there was always something that was either irrelevant, out of date, or written in Finnish.

The last method that was used for this study was observation. The purpose of observation is to seek out and organize data that is being studied, while keeping records and monitoring is an essential part of this. The observation method was mainly used at the Oilon US Inc., and the type of it was participant observation. This method is an important part of action research, as without this method the researcher cannot know about the needs and requirements of the target audience. Participant observation is also more effective and profound in finding out information about the target audience than an interview. (Ruohonen 2009.) The aim was to find out the working methods at the company – what was needed to make the processes smoother, faster, and more efficient?

2.3 Reliability and validity of the methods

Action research as an approach has also got some limitations when it comes to validity and reliability of work. Reliability can be measured by how successfully a process can be repeated. Action research, however, is carried through in order to improve the object of the process, and thus the same result is not achievable after the intervention. Reliability in action research can, nevertheless, be measured by looking at the progress of the process, the means that have led to the end result, and why certain conclusions have been drawn. The author should define why certain ideas have been abandoned and why the others have been developed further. In addition, the process of how this process has been done should be explained. Validity of action process can be improved by concentrating on relevant and central issues during the research and in the report. Also, the explaining the significance of the study to the researcher improves the validity of the work. Using different study methods along the process and offering a solid theory background give more value to the results. (Ruohonen 2009.)

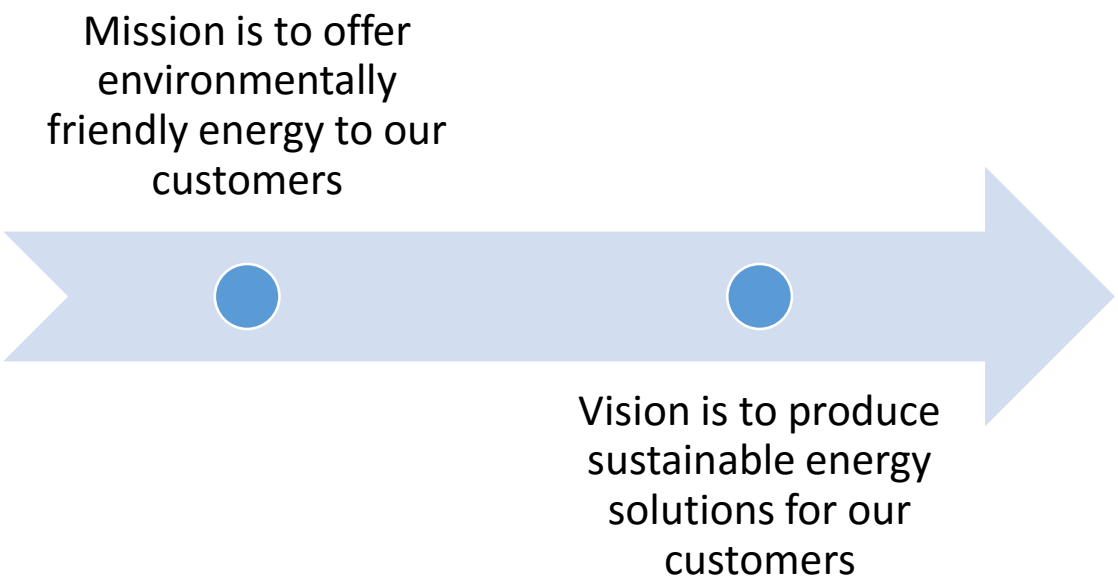
3 OILON OY

Oilon was founded in 1961, and it is a Finnish family-owned energy and environmental technology company. Oilon has production facilities in Finland, China, and the United States. There are also sales offices in Brazil and Russia, and resellers in more than 30 countries. The foreign operations constitute more than a half of Oilon's revenues. (Welcome to Oilon 2015.)

The products that Oilon manufactures include oil, gas, and dual fuel burners for power plants, industrial processes, hazardous waste incineration plants, district heating plants and ships. Oilon also manufactures heat pumps for industries as well as domestic heating applications including heat pumps, burners and solar heat collectors. Product research and development work are areas that Oilon invests into. The more specific focus areas are improving energy efficiency, decreasing emission levels, and developing new solutions using renewable energy sources. (Welcome to Oilon 2015.) Approximately five percent of the company's turnover is used exclusively for research and development (Corporate responsibility report 2013).

3.1 Quality issues at Oilon

Oilon is both ISO 9001:2008 and ISO 14001:2004 certified, meaning that it fulfils the requirements of ISO quality and environmental management systems respectively. The version 9 of standard ISO 9001:2008 was first certified in September 1995, and the standard ISO 14001:2004 in December 1998 (Oilon's quality and corporate responsibility policy 2015). The quality issues at Oilon seem to be appreciated and well taken care of. Oilon's quality and corporate responsibility policy as well as mission and vision can be found on Oilon's website. The mission and vision are shown in the picture below (picture 2).



PICTURE 2. Oilon's mission and vision (Welcome to Oilon 2015)

In addition, the corporate responsibility report is at the Oilon's front page. This report is, in fact, something to be proud of, since it won the first prize Finnish Corporate Responsibility Report Competition in 2012 in the category of medium-sized companies. These examples show that Oilon wants to develop as a company and also show it to its stakeholders. Many companies do not still have certified quality and environmental management systems, and thus implementing these systems is certainly a selling point to the company.

3.2 Oilon US Inc.

The subsidiary in the United States started its operations in the fall 2014. At the moment, there are total of seven people working at the office and warehouse in Thomasville, Georgia. The subsidiary sells and manufactures the group's gas and oil burners, along with maintenance and spare part services. The location is important to the company, because Oilon has got important customers in the North America. Due to the fact that the operations have just started, there are yet not established procedures.

4 WHAT IS QUALITY?

Quality is not a new concept in the modern world, but the definition and value of it have changed over the years. It used to be viewed as freedom from defects, but the definition

nowadays is more subtle. There is not one universally accepted definition of quality, but generally the concept is broader these days and includes meeting or exceeding customer expectations concerning products, services, people, processes and environments. According to Nicholas Steele, president of Ford Motor Company, a product can be flawless, but still be lacking quality. With the new definition, a product needs to be flawless and have all of the attributes that customers want in just the way they want them (Goetsch & Davis 2006, 7).

4.1 Two views of quality

The new view of looking at quality is often called the total quality philosophy. The traditional view of quality is different to the new total quality philosophy in many aspects. The distinctive characteristics of total quality are customer focus (internal and external), obsession with quality, use of scientific approach in decision making and problem solving, long-term commitment, teamwork, employee involvement and empowerment, continual process improvement, bottom-up education and training, freedom through control, and unity of purpose. (Goetsch & Davis 2006, 12-13.) The table below (table 1) shows some of the major differences between the traditional view of quality and the total quality perspective.

TABLE 1. Major differences between the two views of quality (Goetsch & Davis 2006, 11-12)

Aspect	Traditional view of quality	Total quality perspective
Productivity versus quality	Productivity and quality are always in conflict	Lasting productivity gains are made only as the result of quality improvements
How quality is defined	Quality is defined solely as meeting customer specifications	Quality means satisfying customer needs and exceeding customer expectations
How quality is measured	Quality is measured by establishing an acceptable level of nonconformance and measuring against that benchmark	Quality is measured by establishing high performance benchmarks for customer satisfaction and then continually improving performance
How quality is achieved	Quality is inspected into the product	Quality is determined by product and process design and achieved by effective control techniques

Attitude toward defects	Defects are an expected part of producing a product – measuring defects per hundred is an acceptable standard	Defects are to be prevented using effective control systems and should be measured in defects per million
Quality as a function	Quality is a separate function	Quality should be fully integrated throughout the organization – it should be everybody's responsibility
Responsibility for quality	Employees are blamed for poor quality	At least 85% of quality problems are management's fault
Supplier relationships	Supplier relationships are short term and cost driven	Supplier relationships are long term and quality oriented

It can be clearly seen that the total quality perspective focuses more on long-term profits and continual improvement, which make organizations more sustainable.

4.2 The reasons behind quality work

Quality is an important issue to the customer when buying goods or services. In addition to filling the customer expectations, quality and quality improvements often bring great success to companies through lower internal costs and a shorter design and development phase of a new product. However, organizations are created to achieve a goal, mission or objective, and satisfying the needs, expectations, and requirements of their customers is an important part of it. There are also other stakeholders, and their needs, wants, requirements, and expectations must also be taken into account. The other stakeholders are shareholders, employees, suppliers, and society, and they have slightly different requirements compared to customers' requirements. These are, for example, making profit, doing no unintentional harm, and conceiving and producing with due regard to prevailing legislation. (Hoyle 2007, 2.)

The final arbiter on product quality is the customer - without customers there is no business. Customers are the ones that bring in the revenue, and poor quality will be directly seen by loss of sales, reduction in market share, and, finally, loss of business. The product or service that the customer acquires must bring the benefits that the customer was after. The ideal situation is that customers are satisfied in a way that will satisfy the needs of other stakeholders as well. (Hoyle 2007, 5-6.)

Society is a stakeholder too, because it is interested in protecting itself. If the society is not satisfied, it can withdraw its support for an organization and protest or invoke legal action. Society is represented by regulators, who can withdraw their approval based on the laws and statutes of a national government. Employees, on the other hand, are interested in the conditions in which they work in. They can withdraw their labor if the conditions are not satisfactory. Suppliers are interested in the overall success of the organization, because it may lead to their success. They also have a possibility to withdraw their patronage if they are treated badly. Investors are often the most common type of stakeholders, as they can withdraw their stake if the organization fails to perform. These include owners, partners, and shareholders including banks. (Hoyle 2007, 6-9.) On the table below (table 2), there is a criteria that different stakeholders use to judge the effectiveness or success of the organization.

TABLE 2. Criteria used by stakeholders to judge organization's effectiveness or success (Hoyle 2007, 9)

Stakeholder	**Success criteria**
Owner	Financial return
Employees	Job satisfaction, pay and conditions and quality of leadership
Customers	Quality of products and services
Community	Contribution to the community – jobs, support for other traders in the community – care for the local environment
Suppliers	Satisfactory mutual trading
Investors	Value of shares
Government	Compliance with legislation

All these stakeholders' needs should be balanced such that all are satisfied. If an organization manages to do this, the total quality of the organization is at a fairly high level.

4.3 Quality management

Quality issues in companies and organizations are often referred to as total quality management, TQM, which, according to Bergman and Klefsjö (2010, 36-37), can be defined as "a constant endeavor to fulfil, and preferably exceed, customer needs and expectations at the lowest cost, by continuous improvement work, to which all involved are

committed, focusing on the processes in the organization". Quality management at its best is a continuous process, of which the purpose is to prevent any problems and improve the working methods along the way.

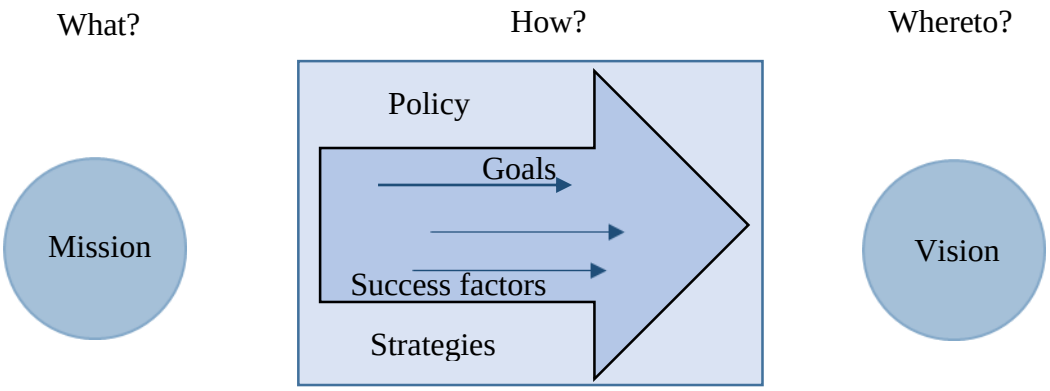
According to the ISO 9000 definition, quality management is coordinated activities to direct and control an organization with regard to quality. These activities are quality planning, quality control, quality improvement, and quality assurance. (Hoyle 2007, 21.) The purpose of quality planning is to set quality objectives and specify necessary operational processes and resources to fulfil the quality objectives. Quality assurance, on the other hand, focuses on providing confidence that quality requirements will be fulfilled. Quality control focuses on making sure that the quality requirements are fulfilled. Quality improvement is to increase the ability to fulfil quality requirements. (Bergman & Klefsjö 2010, 489.) Below is a figure (picture 2) showing the eight quality management principles, which form the basis for the ISO series quality management system.

PICTURE 3. The eight quality management principles (Hoyle 2007, 25.)

Based on the nature of the company, it may choose a suitable way to implement these principles. They may be used selectively, or a quality management system may be set up based on them.

4.4 Quality policy

Organization may choose to establish a company policy on quality issues in the company's strategy process. It should be constructed among the management team and quality specialists, so that it is built on current corporate values and objectives and integrated with them. The policy should be fairly short and simple, meaningful and relevant to the organization. It is vital that the employees comprehend it and realize that their effort contribute to product quality and the company's success. In addition to the values and objectives, the policy should also include the commitment to requirements and how the company practices continual improvement. (Quality policy 2014.) The policy may be integrated into a business policy, and should be based on the company's mission statement (Bergman & Klefsjö 2010, 444). Below is a figure (picture 3) that shows the way policy adapts to the mission and vision of the company.



PICTURE 4. Policy shows how the company should work to achieve its vision, based on its mission statement (Bergman & Klefsjö 2010, 446)

Creating a strong quality policy is not a very difficult task, but the deployment of it is the hardest part. Eureka & Ryan (1990, 24) developed eight steps for successful policy deployment. The steps are as follows:

1. Define the organization's vision
2. Work out long-term and medium-term goals, based on relevant data and communication with staff members
3. Gather facts and data and carry out analyses to provide a basis for an annual plan
4. Create an annual plan
5. Determine goal values
6. Communicate the annual plan
7. Implement the annual plan in the daily work
8. Evaluate regularly

The top management should analyze the activities each quarter against forecast values, while the mid-level management does this every month (Bergman & Klefsjö 2010, 449).

5 QUALITY MANAGEMENT SYSTEMS

In order for a company to successfully achieve the goals of quality policy, the business processes should be clearly defined and followed. These daily activities are stated in the company's quality management system (QMS), if the company chooses to build one. According to the ISO 9000, quality management system is defined as "a management system to direct and control an organization with regard to quality" (Bergman & Klefsjö 2010, 489). The design and implementation of the a company's QMS depends, according to the ISO, on following factors:

PICTURE 5. Factors that effect on the design and implementation of QMS (SFS-EN ISO 9001:2008, 9)

Quality management systems are needed in small and larger businesses regardless of the business sector. However, company should tailor the system so that it suits its needs, goals and requirements. It is absolutely possible to achieve a high quality level with well-planned quality system even without going through the steps of ISO certification.

5.1 The benefits of a QMS

The QMS should include all activities from identificating the customer requirements to customer satisfaction. These activities are expressed in terms of methods, materials and equipment, for example (Quality management systems 2000). The way these are expressed should set standards and goals for employees, help fight resistance to change, build motivation and establish a vision for the employees (Chapter 14 – Quality management systems 2007). At its best, a QMS will:

- Set direction and meet customers' expectations
- Improve process control
- Reduce wastage
- Lower costs
- Increase market share
- Facilitate training

- Involve staff
- Raise morale (Quality management systems 2000.)

An effective QMS will ensure that both the customers' and organization's requirement are met.

5.2 Standardized systems

The most well-known of the standardized quality management systems is the international standard, ISO 9000 series. The standard was established by the International Organization for Standardization in 1987. The administrative centre of ISO is in Geneva, and it has got over 160 members (in November 2015). There can only be one member per country. These members represent ISO in their own country – for example, in Finland the ISO member is SFS. There are three member categories, and they are full members, correspondent members and subscripber members. Of the three, SFS is a full member, meaning that it influences the development of ISO standards and strategy by participating and voting in ISO technical and policy meetings. It also has the right to sell and adopt ISO international standards nationally. (ISO members 2015.)

ISO 9000 is a series of standards that are not specific to products or services, but concentrate on the processes that create them. There are also other ISO management system standards that are targeted for specific business sectors, for example ISO/NP 21001, which are educational organization management standards and ISO/FDIS 13485, which are requirements for regulatory purposes of medical devices. (ISO Management System Standards 2015.)

5.3 ISO 9000 series

ISO 9000 is a standard family that addresses various aspects of quality management. The standards include:

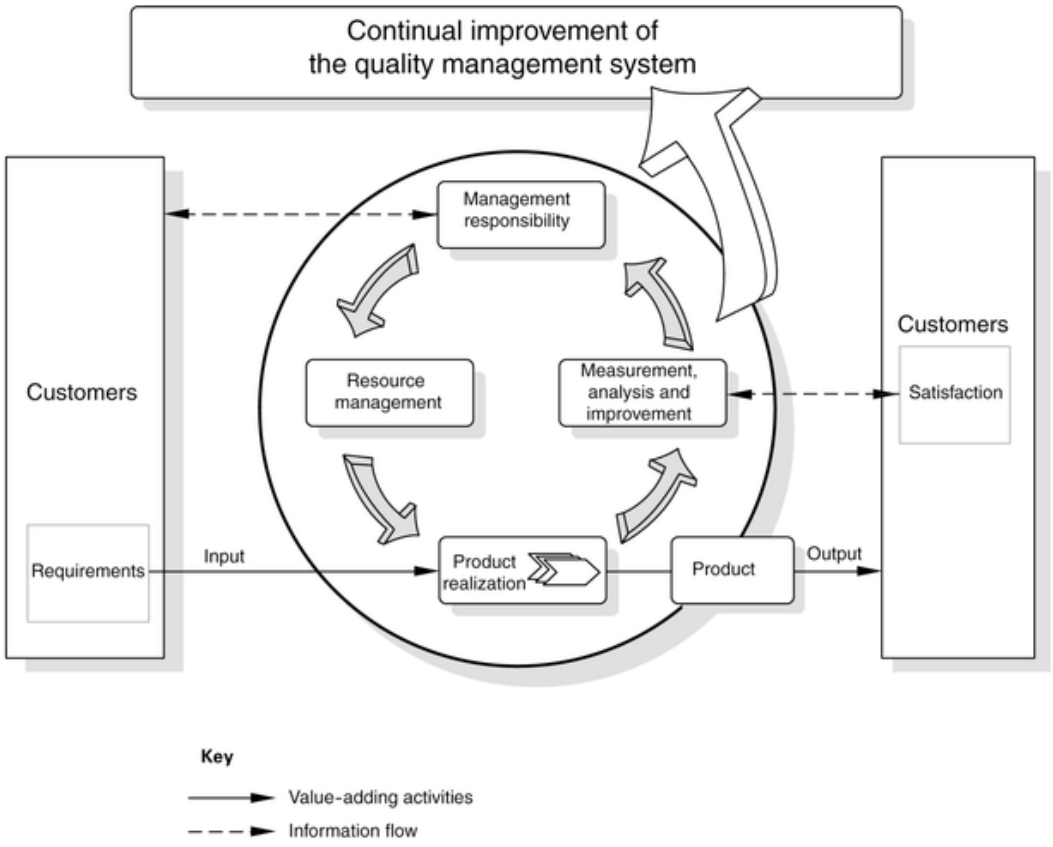
- ISO 9001:2015 - sets out the requirements of a quality management system
- ISO 9000:2015 - covers the basic concepts and language
- ISO 9004:2009 - focuses on how to make a quality management system more efficient and effective

- ISO 19011:2011 - sets out guidance on internal and external audits of quality management systems. (ISO 9000 – Quality management 2015.)

All ISO standards are reviewed every five years in order to keep them current and relevant. The abovementioned standards are the newest versions, whereas during the process of writing this thesis, the ISO 9001:2008 was used. The new version was published in September 2015, and by that time the quality procedures were already created.

5.3.1 Requirements of the standard

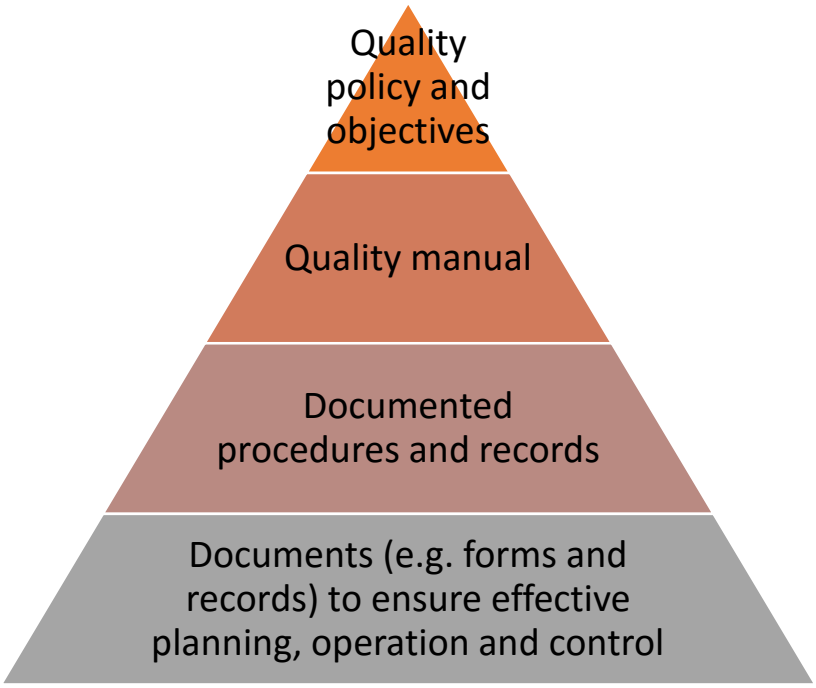
The main requirements of ISO 9001:2008 standard are covered in the picture below (picture 5):



PICTURE 6. The main requirements of ISO 9001:2008 QMS (SFS-EN ISO 9001:2008)

The main requirements of the ISO standard are management responsibility, measurement, analysis and improvement, product realization and resource management, but the detailed processes are covered in the standard. For example, the more specific requirements concerning the management responsibility include subchapters about management commitment, customer focus, quality policy, planning, responsibility, authority and communication, as well as management review. (SFS-EN ISO 9001:2008.)

The documents that the quality management system shall include, are shown below in the picture 6.



PICTURE 7. Documentation requirements (SFS-EN ISO 9001:2008)

The documentation that was created during this thesis process includes the documented procedures that are necessary for successful everyday operations of the company.

6 ANALYSIS

The quality documentation for Oilon US was created between June and August in 2015. The work began in Lahti in June, when all appropriate material was gathered together, and the contents of the quality procedures were constructed. In July, the draft of the quality procedures was taken to the Oilon US Inc., where I continued the process of

writing, took part in training sessions, was introduced to the operations of the subsidiary and practiced participative observation.

In this chapter, the process of the research will be explained and analyzed. It must be taken into consideration, that in action research the output of the action is the research outcome. Thus, the analysis in targeted more at the process of the research rather than the research output itself. The questions that are answered in this chapter include:

- How did the process advance, what were the steps of it?
- How were the results obtained?
- How did the author's reasoning proceed?
- How and why were certain ideas picked instead of others?
- How does the documentation equal/differ from the quality documentation of Oilon Oy?

In the following subchapters, the steps of the process are covered one by one – from the planning of the documentation to the final procedures on the Oilon intranet page.

6.1 Study process planning

In order to manage the extensive process of the action research, a study planning sheet was conducted according to the cyclic process of the action research. The research consisted of three cycles based on the working location. The first cycle was carried through in Lahti in June, the second cycle in Thomasville in July and the third cycle in Lahti in August. Each of the cycles included the four steps of an action research process: plan, act, observe and reflect. The study process planning sheets are attached as Appendix 1.

6.2 Cycle 1

The first step in the process was to gather some background information about the project. My previous knowledge about quality management was limited to a single report conducted at school a year before the project. The aim of the report was to think of ways that companies could be encouraged to implement quality management in their business. I started the literature review process by reading about quality management systems and the ISO standards. The first questions that rose about the project were related

to the location of the unit. How would it be possible to include all the requirements of the American laws and regulations, in addition to the requirements of the ISO 9001 standard? I attempted to find quality management systems conducted for foreign units online, but could not find any. Some theses, that included the implementation of a quality management system or a part of it for Finnish companies, were found.

The first task at Oilon in Lahti was to discuss about Oilon's quality issues with the quality manager Mr. Jarmo Flinkman. He introduced me to the Oilon's quality management system, and the file locations where all these documents related to quality could be found. A complete package of the Oilon's quality management system documents was not found – instead, the documentation related to quality was scattered on the Oilon's intranet, which meant that all the different parts of it were rather difficult to find.

We discussed the reasons for this project, the purposes it would serve and what the final product would look like. There was also discussion with Mr. Flinkman on whether the procedures should be created so that they were suitable and relevant for all the foreign business units or not. This would have been, however, a difficult task, as the processes in the units are very different to each other. There is a production unit in China, but the other two units in Brazil and Russia are sales offices. For this reason, some of the procedures created during this research would not be relevant for those units, and the procedures should have been made quite general. Thus, they were written only the needs and requirements of the Oilon US unit in mind. The documentation was planned to be located on Oilon US Inc. intranet, so that all documents needed would, in the future, be located in the same place. Below is a picture of the Oilon intranet view, with the tabs of Oilon US (OUS), group, workspaces, Oilon China, Oilon Brazil, Oilon Russia and Oilon Finland.

PICTURE 8. Oilon intranet view

It was important to determine the scope of the documentation, as the quality documentation was not meant to be too broad, general or precise. The aim was to create the documentation so that there was no overlapping with the Oilon group's documentation, which is quite broad in its content. Instead, the quality procedures on Oilon US intranet were supposed to supplement the quality documents on the Oilon group website. Accordingly, it was not meaningful to create very precise procedures, as there are separate work instructions for those purposes. The plan was not to conduct a full quality management system either, as the unit started its operations only a little over a year ago. As was stated in the picture 5, the size of the company and its organizational structure also affect on the design and implementation of a quality management system. For a unit that was established a year ago and with seven employees, it would not be reasonable to implement a full ISO 9001 quality management system yet. It was also stated earlier, that a company can achieve a high quality level even without an extensive documentation and certification that ISO requires. It would not be wise to use the scarce resources, such as time and money, of a small unit for the certification at the moment.

With this thought in mind, the contents for the quality procedures was created. The plan was to first create one big package of procedures as a word document, which would, in the end, be divided into separate pages on the intranet. Mr. Flinkman helped me plentifully in creating the contents, which, too, developed over time in the action research process. The contents were created in cooperation with Mr. Flinkman and Mr. Tallberg, while using the ISO 9001 standard requirements as a base for the work. In this way, the requirements of the client and the facts from literature were combined. The requirements of ISO 9001 standard were taken into account as much as possible, as then it would be easier to move from procedures to a full quality management system in the future. Some requirements were not fulfilled yet, as there was not enough time to cover all of them in these procedures.

In appendix two, there is the first table of contents that was created for the documentation. For comparison, in appendix three, there is a reviewed table of contents with some links to some usable sources. The links do not work, as the documents are located on Oilon's intranet, but they are included in order to show the extent of the sources used for the project. There were plenty of other documents that were used besides those as well. Nearly all the documentation used was in Finnish, and the translation of those took considerable amount of time.

The collection of pieces of information was like assembling a puzzle, as information was gathered from several different documents to form one single document. The format of a single procedure was the same for all: the text started with the objective and scope of the procedure, which were followed by the general information about the process. The request from the client was that the procedures would be as simple, unambiguous, and straightforward as possible, so that they were easy to follow and use. It was quite difficult, and at some parts impossible, for me the figure out which parts of the old instructions were still relevant. Some of the information was out-of-date and some was just irrelevant to the unit in the United States, as the operations in the two countries differ in many ways. For this reason, it was important to work in close collaboration with Mr. Flinkman and Mr. Tallberg, as they had more knowledge about the operations of Oilon in general and in the United States. During cycle one in Lahti, I had discussions with Mr. Flinkman several times a week, and during those discussions he made some corrections on the procedures I had written, and told me if there was some information that was either insufficient or irrelevant. During the process, it was also necessary to sharpen the focus and define the placement of the documentation in the group's quality management documentation.

Before travelling to Thomasville, the documentation was not complete yet, as some information was still missing and some needed translating. In addition, the procedures were written for the unit in Lahti, as the requirements of the unit in the United States were expected to become more distinguished on the spot. In fact, none of the employees in Lahti knew exactly how the unit in the US operates. The objects for the trip were to find out the specific differences in the operations of the two units, finish the documentation and train the new quality tools and the procedures to the employees of the unit.

6.3 Cycle 2

Once I travelled to Thomasville, I had a raw draft of the quality procedures, albeit some was still in Finnish. I continued the translating, and acquired more data for my project. I got plenty of information from the CEO of Oilon US, Mr. Johan Tallberg, and wrote notes about that information as well as made corrections to the quality procedures draft based on Mr. Tallberg's review. These discussions were extremely helpful and made

the content more accurate, because some processes at the Oilon US are somewhat different compared to the processes at Oilon in Finland. For example, at Oilon US, the persons in charge of specific tasks differ to those of in Finland, as the unit in the US does not have a quality manager to update quality management system. Thus, an employee with another title was allocated for the task. There are certainly many differences in the operations of two units with a personnel of 7 employees and 200 employees. The quality objectives in the units should not, however, be very different from each other. The several units work often as a whole, meaning that a product may consist of components produced in different units and countries. A final product is as good as its weakest part, which leads to that all units of Oilon should aim to the same high quality standard in their operations.

Training sessions and participative observation brought plenty of new information in the form of tacit knowledge. During training, I learned about the business processes along the employees, such as information that must be known when receiving an order from a customer. This information was added to the procedures. I also attempted to observe the operations as much as possible. This observation process gave me information about how organized the operations were. For example, I made following observations:

- Due to the small amount of employees, they do not have specific tasks dedicated to them. This leads to that responsibilities are unclear, and some tasks may be left undone. For example, there was a package of spare parts on the table that should have been sent some time ago, but no one had done it.
- The procedures must be described in great detail, because there has not yet formed a systematic way of doing things. Processes, however, should be organized, because not having a clear procedure leads to errors. In addition, the procedures should be uniform in the Oilon group. For example, there was not a procedure for marking unclear deliveries, in other words deliveries that differ from the purchase order in any way. In accordance with Oilon Oy, these will be marked with a black and yellow tape in the future.

A part of the new procedures that were created, was the management of nonconformances. In the Oilon group, a nonconformance register is used to register nonconformances, mark faulty items, handle nonconformances and carry out measures in order to

amend the error and prevent it from recurring. Mr. Flinkman gave me a training on the register, and my job was to train the use of it to the employees at the Oilon US unit.

During the first cycle, one question was that how could the American national laws and regulations be included in the procedures. It was found out that they do not need to be considered in the procedures, as there was set a hierarchy for the different instructions that guide the operations of the unit. The laws and regulations of the United States should always be obeyd before anything else. After this follow the unit-specific procedures and instructions that may be available. The procedures included in this thesis are the last ones in the hierarchy. Of course, it would be ideal that there would not be controversy between these three, which means that the requirements of laws, regulations and the unit would all be taken into consideration in the procedures. This should be noted in the future editing process.

Before returning back to Finland, I went through the finished procedures with the employees, in case there was something they did not understand or something they wanted to ask about. There were also two people allocated for keeping the procedures updated. At this point, I had all the procedures on a single document, and the next step was to publish the procedures so that they would be easily available for the Oilon US employees. It was already set, that the place for those would be the intranet. The employees at OUS had never seen the Oilon intranet, which means that they had never had an access to the Oilon group's quality documentation. The intranet was, at that point, still in progress, meaning that some of the documents on the Oilon group tab were in Finnish. By introducing the Oilon intranet, the employees had now access to the Oilon group documents, and later on, they were able to find the quality procedures on the OUS tab.

6.4 Cycle 3

Back in Finland in August, I made the final changes to the quality procedures, and started the process of transferring the documents to the Oilon US intranet. I received a training regarding the content editing on intranet, and started adding documents there. In addition, some relevant files and links were added beside the texts. For example, beside the text about management of nonconformities, there is a link to the company's electronic nonconformity form and register. All the procedures and their introductory

texts open on separate pages, which hopefully makes finding specific information easier.

The act of adding the quality procedures to the intranet was one step in the process of attempting to make the intranet a valuable information source for the employees. The aim was to create the intranet as attractive as possible, so that employees would use it daily as an information source. On the OUS tab, there are already links to social media and other important information, and the employees are also able share their unit specific news and information there. Lack of communication may cause problems in the operations, and the intranet might be a tool to prevent these problems. The ideal situation would be that the employees would use the intranet regularly, as this might increase the usage and reference of the quality procedures too.

For information sharing purposes on the intranet, the employees should receive training in the web page editing. Especially the two persons in charge of editing the quality procedures, should receive more extensive training, so that they may edit the procedures if needed. Editing is an important part of the process, because in case there were errors on the procedures, the employees would not refer to them, if needed.

As the outcome, which is presented in the following chapter, is the result of the development work, the validity and reliability of it should be evaluated against the methods used, rather than the outcome of the process. Some challenges, that the procedures may have, and actions that can be used to reduce them, are listed below:

Challenge: The procedures may not be 100 % relevant to the operations of the unit: some information may be irrelevant, and some important information may be missing
Actions: As the operations of the unit develop and its procedures establish, the content of the documentation should be reviewed and edited, if there is a need. The management level should take part in the editing process.

Challenge: The procedures are never used by the employees.
Actions: The push should come from the management level to use the intranet and the procedures. The procedures include the guidelines for internal audits, and those should be scheduled periodically by the management level. The procedure states, that the following questions should be answered during the audit:

- Are the instructions being followed?
- Is there a need for editing the instructions or procedures?
- Are the principles, procedures, methods and instructions known well enough?
- Are the responsibilities clear and the division of responsibility appropriate?

If the previous questions are answered during an audit and relevant actions taken to improve the procedures, they become more meaningful to the employees.

Challenge: The procedures do not increase the quality of operations in the Oilon US. For example, there is loss of business, the unit does not make profit, or the customer satisfaction is poor.

Actions: According to the table 1, the management is responsible for at least 85 % of the quality problems. The actions should, therefore, come from the management level. One chance is to broaden the quality documentation of the company and put more emphasis on the quality issues. Deploying a quality policy, including the earlier stated steps, is a good way:

1. Define the organization's vision
2. Work out long-term and medium-term goals, based on relevant data and communication with staff members
3. Gather facts and data and carry out analyses to provide a basis for an annual plan
4. Create an annual plan
5. Determine goal values
6. Communicate the annual plan
7. Implement the annual plan in the daily work
8. Evaluate regularly (Eureka & Ryan 1990, 24).

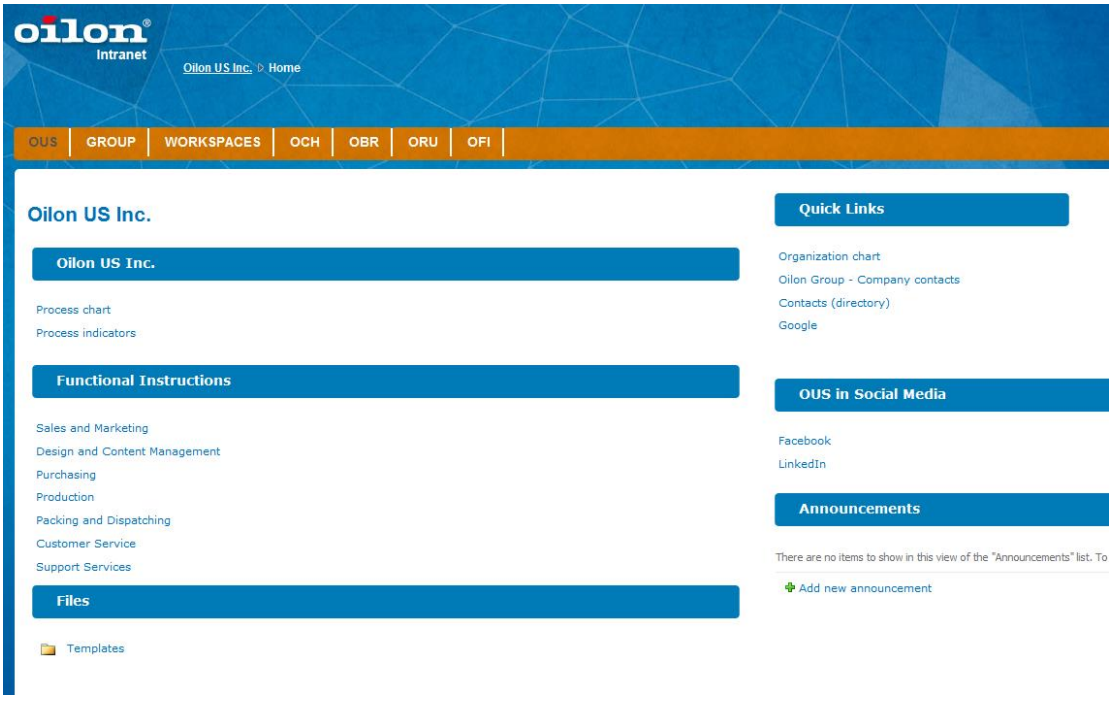
The goals should be appropriate and easily measurable. There should be indicators showing the strengths and weaknesses of business processes in numbers. These indicators were planned to deploy during my stay in Thomasville, but there was not enough time for this. The future improvements include therefore deploying a quality policy, goals and indicators.

7 QUALITY DOCUMENTATION FOR OILON US INC.

The procedures that were created, were divided into categories, so that there would not be too many headings on the Oilon US intranet's front page. These categories are:

- Sales and marketing
- Design and content management
- Purchasing
- Production
- Packing and dispatching
- Customer service
- Support services

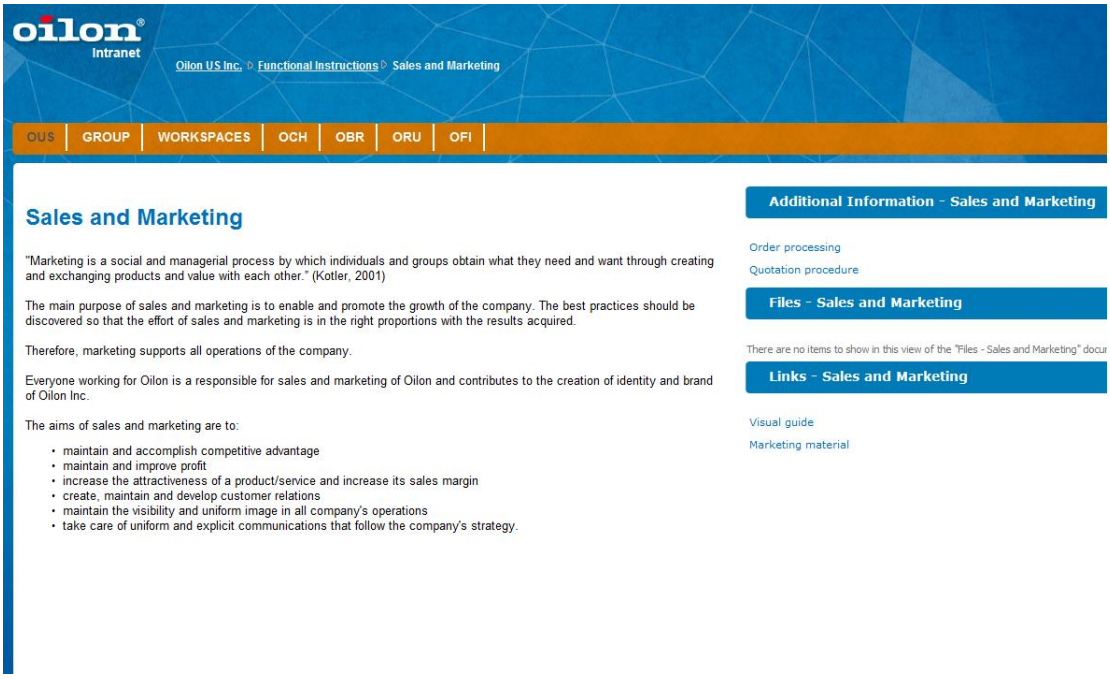
Below is a picture (picture 9) showing the view of the Oilon US intranet's front page.



PICTURE 9. Oilon US Inc. intranet front page

The quality procedures are named as functional instructions, and they can be found on the front page. In addition to those, links to OUS social media and other useful information were added. The categories and their content will be covered briefly in the subchapters below.

7.1 Sales and marketing



The category of sales and marketing contains the main text as well as more specific information about order processing and quotation procedure. The view of the sales and marketing page is below (picture 10).

PICTURE 10. Sales and marketing

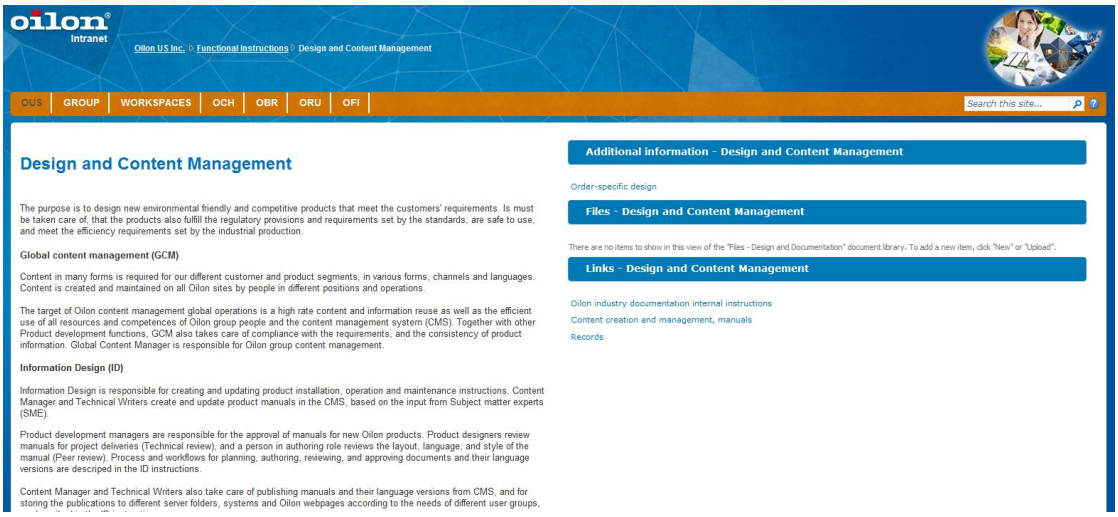
The main text states the purpose and aims of sales and marketing, and reminds that all employees are responsible for this task, which contributes to the identity and brand of Oilon. There also two links to relevant documents, which are the visual guide and marketing material. The texts about order processing and quotation are the actual procedures, which all have similar design. The procedure begins with the titles objective and scope, which state the purpose of the task, and the people that are involved in the process. These proceduers are very detailed.

7.2 Design and content management

The content about design and management includes the procedures for designing high-quality products. The purpose of it is stated followingly:

The purpose is to design new environmental friendly and competitive products that meet the customers' requirements. Is must be taken care of that the products also fulfill the regulatory provisions and requirements set by the standards, are safe to use, and meet the efficiency requirements set by the industrial production.

A view of the design and management page is shown below (picture 11).



PICTURE 11. Design and content management

There is additional information about order-specific design, and also links to some other relevant documents.

7.3 Purchasing

The section on purchasing covers things such as tasks and responsibilities of purchasing department, and the purchasing process. The standard ISO 9001:2008 requires this section to address following things:

- The purchased product must conform to the specified purchase requirements
- The suppliers must be evaluated and selected based on their ability to supply product
- Purchasing information, such as QMS requirements, must be determined prior the purchase
- The product must be verified to ensure that it meets specified purchase requirements (ISO 9001:2008).

All these aspects are included in the purchasing section of the documentation.

7.4 Production

The production section includes some things about production in Oilon, and the product categories that are produced at each of the Oilon's production units. This section has the following subtitles: condition monitoring of measuring devices, inspection of incoming material, production process and material receiving. The ISO 9001:2008 standard requires, as applicable, the production and service provision under the following controlled conditions:

- the availability of information that describes the characteristics of the product
- the availability of work instructions, as necessary
- the use of suitable equipment
- the availability and use of monitoring and measuring equipment
- the implementation of monitoring and measurement, and
- the implementation of product release, delivery and post-delivery activities. (ISO 9001:2008.)

At Oilon US, I did not have the time to check whether there are all required work instructions for completing different procedures. I doubt this, but that is definitely something that should be taken care of in the future. At the time that I visited the subsidiary, there were only a few pieces of equipment, but the quality procedures that were completed, give clear instructions on how the devices are categorized and calibrated, if needed.

7.5 Packing and dispatching

This section contains the procedures for dispatching and packing. There are not specific requirements on this on ISO 9001:2008, but these must be taken care of for the following reasons:

The aim of packing and dispatching is to ensure that the products are delivered to a customer without a damage at the most competitive cost of transportation. The package

needs to include appropriate documentation, information about the contents, customer and supplier, handling and storage information.

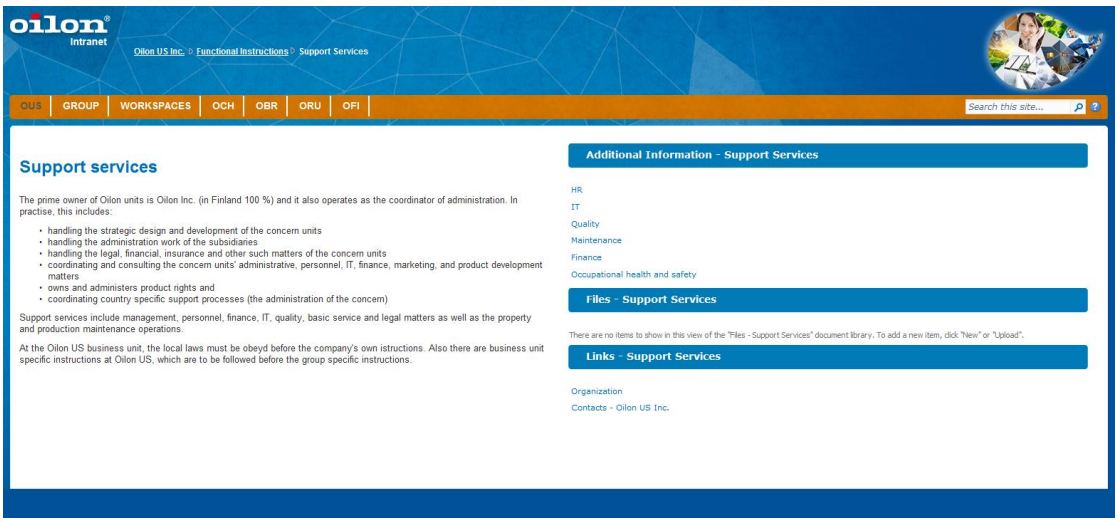
7.6 Customer service

The customer service section consists of management of nonconformities, continual improvement as well as identification and traceability. All these are required in the ISO 9001:2008 standard. An action was taken to manage nonconformities during the process of creating these procedures. Mr. Flinkman trained me the use of the nonconformance register, which I then taught to the employees in Thomasville. Every time there is a nonconforming product, an electronic form is filled in, and added to the register.

There are several tasks included in the procedures, such as environmental damages, internal audits and analysis and monitoring of financial performance. However, one thing that was not yet established, was the use of indicators. In the literature review, on table 1, there was a point stating the two views for how quality is measured. The total quality view is that "quality is measured by establishing high performance benchmarks for customer satisfaction and then continually improving performance" (Goetsch & Davis 2006, 11-12). There are yet not indicators or benchmarks in use at Oilon US, so they should be put to use as soon as possible.

7.7 Support services

This section consists of several subsections: human resources, information technology, quality, maintenance, finance and occupational health and safety (picture 12).



PICTURE 12. Support services

In addition, there is an important text below the introductory text ot support services: “At the Oilon US business unit, the local laws must be followed before the company's own instructions. Also, there are instructions specific the Oilon US business unit, which are to be followed before the group specific instructions.”

There is safety science company called Underwriters Laboratoriers Inc. in America, which performs inspections at Oilon US four times a year. They have their own requirements that must be followed. In addition, the requirements of The Occupational Safety and Health Administration (OSHA) must be followed as well.

8 DISCUSSION

The project was very extensive, even though the procedures that were created form only a part of a quality management system. Most subjects were still covered in the documentation, which hopefully helps the employees at Oilon US Inc. in their tasks. The instructions may end up very beneficial, if they are successfully implemented and updated. This, however, requires push from the management level. The procedures should be updated in the future, and modificated according to the needs and requirements. It is not possible that the procedures would be exactly the same than they are in Finland.

The best-case scenario was that the procedures were successfully implemented and utilized at Oilon US Inc., and the same procedures were used as a base when creating

quality documentation for Oilon's other subsidiaries and sales offices. It would be interesting to make an interview or survey for the employees in order to find out how the procedures have been taken into use. In fact, I realized that a very important part of an action process is to find out the results of the improvement process in order to find out the actual benefit to the target group.

Some results can, however, only be seen in the long-term, as was stated earlier in this thesis. These results can be seen through quality control, which requires goals and indicators that can be monitored and evaluated. In order to see good change, the procedures should be implemented and internally audited regularly. Deploying a quality policy would also be a good idea. In fact, successful quality management itself should follow the process of action research, where internal audits start a new cycle. The effects of quality management are evaluated during audits, and based on the results of the audit, the quality management of the company is then improved and put to use. Quality management is a process, which should be improved continually. There is always room for improvement, and a company should not stop its quality work once it achieves the goals, but rather set them a little higher for next year.

The development process of quality management of Oilon US should continue whilst the unit grows. The unit gets a good example of quality work from the unit in Lahti, and may learn from their observations during audits. It might be a good idea to benchmark other companies as well, and benefit from the work they have done for quality management. Some famous companies implementing the TQM in their businesses are Xerox, Toyota, and Motorola. In the United States, there is even an award, called The Malcolm Baldrige National Quality Award, which recognizes annually American organizations that demonstrate performance excellence.

One challenge during the proceses was the large amount of information sources and data that was used. This is often the case when doing action research, and that is why effective and systematic data management should be utilized. The research that was conducted was also challenging, because the only way to do it was to combine several different information sources. The basis for the procedures was taken from the Oilon's old documents, but they had to be edited for the purposes of Oilon US. This, however, could not have been done by anyone working in Lahti, as the employees there do not have the tacit knowledge about the operations in Thomasville. This editing work could

only been done by the employees in Thomasville, or more specifically, the CEO Mr. Tallberg.

Oilon has also got a production unit in China, and sales offices in Russia and Brazil, and the implementation of quality management is current in those countries as well. The procedures that were created were modificated to suit the needs of Oilon US, but those procedures could be edited to fulfil the other units' requirements as well. The work that was done for the Oilon US unit would definitely shorten the process, if the procedures were chosen to be used at other units. The easiest way to edit the procedures would be, again, to work in collaboration with the CEO of the unit, and find out the unit-specific differences. At all units, the process could be carried out further by setting up indicators and quality policies for units, and attaching other ISO 9001 documents when needed.

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STUDY PROCESS PLANNING SHEET

Cycle 1

Time period: 01.06. -26.06.2015
Location: Lahti, Finland

PLAN			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Gathering background information	What is the importance of quality management systems for companies?	Saara	100 %, 10.06.2015
Contents of the procedures	What should the procedures include and what should be left out?	Saara, Mr. Flinkman	90 %, 15.06.2015 – does the unit in the US have specific requirements?
Timetable	When should each of the cycles be finished?	Saara, Mr. Flinkman	100 %, 10.06.2015
End result	What are the expectations for the final result? What is the format of it?	Saara, Mr. Flinkman	90 %, 15.06.2015 – US needs/requirements?
ACT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Data collection	Which formal documents/old instructions should be used for the procedures? Which instructions should be rewritten?	Saara, Mr. Flinkman	80 %, 26.06.2015
Writing the procedures	Which parts of the old documents are up-to-date?	Saara, Mr. Flinkman	70 %, 26.06.2015 – what are the unit specific differences?
OBSERVE			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
US specific requirements	How do the operations differ in the units in Lahti and Thomasville?		0 %, 26.06.2015
Format	What should the outcome be like so that the procedures were easy to use, understand and follow? Unity between the units	Saara, Mr. Flinkman	80 %, 26.06.2015 – the needs of the US unit?
REFLECT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**

Quality of the procedures	The procedures needed some editing after the revision by Mr. Flinkman. Some of the content was not relevant to the US and some of it was out-of-date.	Saara, Mr. Flinkman	70 % 26.06.2015 – the revision work must continue in the US unit

Cycle 2

Time period: 26.06. -24.07.2015
Location: Thomasville, GA, the United States

PLAN			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Data collection	Are there some unit specific instructions? Ensure that there is access to the Lahti server in the US (gather all relevant information for the trip)	Saara, Mr. Tallberg	
Training	Training sessions should be attended in order to gain some knowledge about the unit's procedures	Saara, Mr. Tallberg, employees	
ACT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Training	Attend all relevant training sessions	Saara, Mr. Tallberg, employees	100 %, 24.07.2015
Relevance	Edit the procedures so that they are relevant to the US unit, find out the differences in operations between the units, ask Mr. Tallberg to review the procedures at times	Saara, Mr. Tallberg	90 %, 24.07.2015 – editing may continue by the persons in charge at the unit
Quality tools	Train the appropriate quality tools to the employees, such as the non-conformance register	Saara, employees	90 %, 24.07.2015 – more time should be spent of material receiving and condition monitoring of measuring devices
Implementation	Training session organized by me in order to train the procedures to the employees, the CEO elects persons in charge for the editing work of the procedures	Saara, Mr. Tallberg, employees	100 %, 22.07.2015
OBSERVE			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Editing	The final format should be simple enough, so that it can be edited and used		Training for the web page editing in Finland

REFLECT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Final editing	The procedures should be finished in Finland. Based on the employees reviews, the procedures could be understood.		
Implementation	How can we make sure the procedures are implemented successfully?		70 %, 24.07.2015 – think of some ways

Cycle 3

Time period: 24.07. -14.08.2015
Location: Lahti, Finland

PLAN			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Format	Plan the final format so that the procedures can be found and followed easily	Saara, Mr. Flinkman	100 %, 03.08.2015
ACT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Training	Receive training from an IT person related to the web page editing	Saara, IT person	100 %, 05.08.2015
Intranet	Add procedures to the Oilon intranet (learn to edit web pages first) + relevant documents and links to other pages (such as nonconformance register)	Saara	100 %, 11.08.2015
OBSERVE			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**
Review	How should the procedures/Oilon US intranet be edited? It was asked that the web page editing would be trained to the persons in charge of the editing work	Saara, Mr. Tallberg, employees	80 %, 14.08.2015
REFLECT			
Task	**Topics/questions to be solved**	**People involved**	**% ready, follow-ups?**

APPENDIX 1(2).

Study process planning sheet

Further ideas	The CEO must take part in encouraging the employees to quality work and using the procedures. Long-term effects can be seen in the future, indicators maybe?	Mr. Tallberg, employees	

APPENDIX 2(1).

Contents and sources – 2nd draft

Sisällysluettelo

Myynti

Tarjoaminen

- tarjousvaltuudet
- katselmus

Tilauskäsittely

- tilauksen vastaanotto
- tilausten katselmointi ja vahvistaminen (standardi vai ei?)
- tilauksen tallentaminen AX:n

Tilauskohtainen suunnittelu

- lähtötiedot ja katselmukset

Rakennesuunnittelu

Tuotannon suunnittelu

Osto

- ostotilauksen tekeminen (laatuvaatimukset)
- ostotilausvahvistukset
- toimittajien valinta ja seuranta

Materiaalien vastaanotto

Saapuvan tavaran tarkastus

- milloin tarkastetaan?
- raportointi

Hyllytys, varastointi, kirjaamiset

Tunnistettavuus ja jäljitettävyys

Hyvän työn tekemisen edellytykset valmistuksessa

Keräily

Pakkaaminen

Lähettäminen

Laskuttaminen

- Prosessimittarit
- Poikkeamien hallinta
    - työkalun valinta (Thomasville)
- Sisäiset ja ulkoiset auditoinnit (konserniohje)

- Asiakirjojen hallinta ja tallenteet
- Mittalaitteiden kunnonvalvonta (konserniohje + excel)
- Tukitoiminnot:
    - IT
    - fina
    - laatu
    - henkilöstö
    - kunnossapito: tuotanto ja kiinteistö
    - tuotantomenetelmät
- Asiakaspalvelun ohjeita:
    - tekninen tuki
        - asiakaskontaktien käsittely
        - takuuasiat
        - laatuyhdyshenkilö, reklamaatiot (excel), raportoinnit
    - varaosaliiketoiminta; myynti, varasto, lähetys
    - koulutus

APPENDIX 3(1).

Contents and sources – 2nd draft

Sisällysluettelo

Johtaminen:

- konserniohje
- OUS:n johtaminen, prosessimittarit, organisaatiokaavio, tehtävämääritykset, vastuut & valtuudet, politiikat (konserni?)

Prosessikuvaukset:

- tilaustoimitus
- markkinonti
- asiakaspalvelun eri toiminnot

Tukitoiminnot:

- konsernihallinto
- paikallisia: HR, IT, Laatu, Turvallisuus, Talous, Kunnossapito, Viestintä

Tarjoustoiminnan ohjeita:

- konserniohje

Tuotannon työohjeita:

- valmistus: keräily, kokoonpano, testaus, pakkaaminen

Logistiikan ja varaston ohjeita:

- vastaanotto ja tarkastaminen
- varastointi
- keräily

Oston ohjeita:

- konserniohje
- ostot ja kotiinkutsut paikallisesti
- ostot konsernin muilta tytäryrityksiltä

Tilauskäsittelyn ohjeita:

- tilauksen vastaanotto, tarkastaminen, katselmukset, tallentaminen, vahvistaminen
- huolinta
- laskuttaminen

Tilauskohtaisen sovellussuunnittelun ohjeita

Asiakaspalvelun ohjeita:

- tekninen tuki
    - asiakaskontaktien käsittely

- takuuasiat
- laatuyhdyshenkilö, reklamaatiot, raportoinnit

- varaosaliiketoiminta; myynti, varasto, lähetys
- koulutus

Poikkeavien tuotteiden hallinta

Jatkuvan parantamisen ohje

Mittalaitteiden kunnonvalvonta ja kalibrointi

Tuotannon ja kiinteistön koneiden ja laitteiden kunnossapito

Tallenteiden hallintaohje

Taloushallinnonohje: Konserniohje / Punainen kirja

Käytettäviä lähdedokumentteja

Tarjoaminen

http://oilonintra/FI/Oilon%20Group/Files%20%20Tarjoustoiminta/Tarjousvaltuudet.doc

http://oilonintra/FI/Oilon%20Group/Files%20%20Myynti%20ja%20tilausksittely/FINANCE%20PÄIVITYS%20Luotto%20Asiakkaiden%20luottokelpoisuus%20ja%20sen%20valvonta.doc

Tarjouspohjat

http://oilonintra/FI/Business%20Units/OIB/Files/VRT%20MYYNTI%20TARJOUSTOIMINTA%20quotationinformation.doc

Tynkkysellä hyvä pohja poltintarjouksille

Tilauskäsittely

AX-ohjeet

http://oilonintra/FI/Business%20Units/OIB/Files%20%20Industryn%20myynti/tep-sihteerit%20per%20asiakas.doc

http://oilonintra/FI/Business%20Units/OIB/Files%20%20Industryn%20myynti/tep-myyjät%20per%20maa.doc

http://oilonintra/FI/Business%20Units/OIB/Files/Suunnittelussa%20sovellettavat%20direktiivit%20ja%20standardit.doc

Katselmukset

http://oilonintra/FI/Business%20Units/OIB/Files%20%20Industryn%20myynti/Katselmukset%20ja%20tilauskäsittely%20TEPssä.doc

Tilauskohtainen suunnittelu

http://oilonintra/FI/Oilon%20Group/Files%20%20Suunnittelu/YHDISTÄ%20JA%20PÄIVITÄ%20QIFI-DE-Tilauskohtainen%20suunnittelu.doc

Toimitusdokumenttien teko

http://oilonintra/FI/Business%20Units/OIB/Files%20%20Tilauskohtainen%20suunnittelu/TEPin%20vakiotuotteiden%20dokumentaatiotoimitukset.doc

Dokumentit ja sisällön hallinta

http://oilonintra/FI/Oilon%20Group/Additional%20information%20%20RD/Sisällönhallinta.aspx

http://oilonintra/FI/Business%20Units/OIB/Files%20%20Industryn%20myynti/Teknisen%20dokumentaation%20laadinta%20keltaisissa%20toimituksissa.doc

Tuotannonohjaus

http://oilonintra/FI/Oilon%20Group/Additional%20information%20%20Production%20control/Bill%20of%20materials.aspx

http://oilonintra/FI/Oilon%20Group/Production%20instructions/Production%20control.aspx

Vastaanotto

http://oilonintra/FI/Oilon%20Group/Production%20instructions/Material%20receiving.aspx

http://oilonintra/FI/Oilon%20Group/Files%20%20Material%20receiving/TUOTANTOON%20QP-PP-02-Receiving%20Verification%20in%20Wuxi.en.doc

http://oilonintra/FI/Oilon%20Group/Files%20%20Material%20receiving/TUOTANTOON%20Vastaanotto-ohje.doc

Varasto

http://oilonintra/FI/Oilon%20Group/Production%20instructions/Storage%20management.aspx

http://oilonintra/FI/Group%20Services/Files%20%20Kiinteistöjen%20tiedot/Kartat/Varastoaluekartta,%20Lahti.xls

Tuki

http://oilonintra/FI/Oilon%20Group/Quality%20tools/Mittalaitteet.aspx

Tarkastus

http://oilonintra/FI/Oilon%20Group/Production%20instructions/Production%20control.aspx

http://oilonintra/FI/Oilon%20Group/Files%20Quality%20Control/TUOTANTOON%20Inspection%20report%20for%20components%20imported%20from%20China.xls

http://oilonintra/FI/Oilon%20Group/Files%20Quality%20Control/TUOTANTOON%20JA%20PÄIVITYS%20Pistokoetarkastusohje.doc

Valmistus

http://oilonintra/FI/Oilon%20Group/Production%20instructions/Testing.aspx

http://oilonintra/FI/Business%20Units/OIB/Additional%20information/Poltinkokoonpanon%20ohjeet.aspx

Pakkaaminen Lähettäminen

http://oilo-nintra/FI/Oilon%20Group/Best%20practices/Packing%20and%20shipping.aspx

http://oilonintra/FI/Business%20Units/OIB/Additional%20information/Pakkaaminen.aspx

http://oilo-nintra/FI/Business%20Units/OIB/Files%20%20Industryn%20myynti/Teollisuuspolttimet_pakkaustiedot_lähetyspäivä.doc

Osto

http://oilonintra/FI/Oilon%20Group/Best%20practices/Purchasing.aspx

http://oilonintra/FI/Oilon%20Group/Oston%20ohjeet/Osto-%20ja%20hyväksymisoikeudet.aspx

http://oilonintra/FI/Oilon%20Group/Oston%20ohjeet/Uuden%20toimittajan%20valinta.aspx

http://oilonintra/FI/Oilon%20Group/Oston%20ohjeet/Toimittajareklamaatioiden%20käsittely.aspx

http://oilonintra/FI/Oilon%20Group/Oston%20lomakkeet/Salassapitosopimus%20fi.doc

http://oilonintra/FI/Oilon%20Group/Oston%20lomakkeet/Yhteistyösopimus%20en.doc

http://oilonintra/FI/Oilon%20Group/Oston%20lomakkeet/Ostolaskujen%20tarkastus-%20ja%20hyväksyntätyövaiheketju.ods

Poikkeamien hallinta

APPENDIX 3(5).

Contents and sources – 2nd draft

http://oilonintra/FI/Oilon%20Group/Lists/Poikkeamarekisteri1/Unhandled%20cases.aspx

Perehdyttäminen

http://oilonintra/FI/Group%20Services/Files%20-%20OHS%20program/Urakoitsijan%20perehdyttäminen%20-lomake.docx