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Analysing the Outbound logistics process enhancements in  
Nokia-Siemens Networks Global Distribution Center

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## ABSTRACT

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Due to confidentiality issues, this work has been modified from its original form.

The aim of this Master Thesis work is to describe and analyze the outbound logistics process enhancement projects executed in Nokia-Siemens Networks Global Distribution Center after the Nokia and Siemens merger in 2007. The operations of the combined companies started during 2008 and outbound performance dropped on the second half of 2008 despite the fact that the used outbound logistics processes remained the same. The reasons that caused the poor performance with the outbound logistics process are analyzed. Further, the measures that were taken to get the performance back to the desired level are described.

The key outbound performance enhancement projects are described and the success ratios are being analyzed from the project work point of view as well as from process change point of view, the emphasis being on the Export Shelf Enhancement project (ExpoSe). The Export Shelf Enhancement project work is reviewed from international project work point of view and the multi-cultural aspects are considered. In addition, the future enhancement projects, which can utilize the process automation solution, are being listed.

Based on the analysis the poor performance was mainly originated by the tight schedule of the integration projects. Several performance improvement projects were established to get the performance back on the desired level. The finding of this Thesis is that those short-term projects were considered to be successful as the set goals were met on time. In addition, the ExpoSe project can be considered successful as the GDC outbound process was enhanced. Further study is needed to establish whether the same process can be copied to other HWS distribution centers.

Key words: outbound logistics, international project work, culture, virtual team work, lessons learned.

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# 1 INTRODUCTION

The aim of this Master Thesis is analysing the outbound logistics process enhancements executed in Nokia-Siemens Networks Global Distribution Center after the Nokia and Siemens merger in 2007. According to Harrison (2001, 77) the term 'logistics' is management of supply chain and the same approach to the term 'logistics' has been utilized with this study. The 'logistics' in this thesis includes the movement and the storage of the NSN goods and the associated information flows from distribution center to customer. I research and report what kind of improvement the export process has required and I am analysing the outcome of the projects.

## 1.1 Introduction of scope of the Thesis

Customer order management is an important part of the logistics end-to-end process however in this thesis I concentrate on fulfilled sales orders and stock transfers, i.e. the inbound and stock availability related logistic flows are out scoped. The out scoping is done despite the fact of that according to Harrison (2001, 37-38) the customer order management process to an extent overlaps with the outbound logistics. The outbound logistics process has to manage with changeable order quantities and the delivery frequency has to adapt accordingly to keep up the pre-defined performance indicators. The inbound and outbound processes are dependent. In addition, the distribution resource planning is not in the scope of this study as that relates more to the management of the material requirements in the distribution centers, in this case spare parts and repaired material.

The outbound process starts system- and process-wise, when there is an outbound delivery for the fulfilled order and that outbound delivery is picked and packed in the distribution center warehouse.

In the research I study the reasons that caused the declining performance with the outbound logistics process and the measures that were taken to get the performance

back to the desired level. Before the operational merger of Nokia and Siemens in 2008 and in the first half of 2009 the delivery accuracy was on the desired level. Therefore something happened after the merger despite the fact that the outbound logistics processes were to some extent the same.

Harrison (2001, 77) states that the “current concept of logistics is the integration of time and space.” In this study I concentrate on the HWS projects where the scope has been to optimize the correlation between time and space in the outbound logistics, i.e. how to get maximum amount of items shipped out from the DC with minimum time. The financial point of view cannot be forgotten therefore costs optimization should be added to the concept of logistics.

## 1.2 Nokia-Siemens Company introduction

Nokia Siemens Networks (henceforth NSN) is one of the largest telecommunications solutions suppliers in the world. NSN was created as a result of a 50-50 per cent joint venture between Siemens AG's COM division, excluding its Enterprise business unit, and Nokia Network Business Group. Nokia and Siemens established continuing business relationship type of joint venture.

The new company was introduced on 19th June, 2006 however officially it was launched at the 3GSM World Congress in Barcelona in February 2007. According to the CEO in 2007 Simon Beresford-Wylie, the two companies networks were complimentary only with little overlapping in their customer basis (Meyer 2007.)

NSN began full business operations on 1 April 2007. NSN headquarter is located in Finland. In 2011 Mr. Rajeev Suri is the Chief Executive Officer of Nokia Siemens Networks.

Due to the merger of Nokia and Siemens, NSN is the world's second largest telecommunications network provider, Erickson being the first and Alcatel Lucent being the third (Meyer 2007).

### 1.2.1 History of Nokia Networks

Nokia's company history starts in 1865, when Finnish engineer Fredrik Idestam established a wood-pulp mill to the city of Tampere and started manufacturing paper (Symbian Freak 2008). The Company became very successful because of the European industrialization in the mid 19<sup>th</sup> century and the growing consumption of paper and cardboard. Due to the location, other companies started to build their factories to the area. One of those companies was the Finnish Rubber Works that additionally started to use the brand Nokia when selling and marketing their rubber footwear, industrial parts and tires. Nokia shares were first listed on the Helsinki exchange in 1915 (Nokia 2010.)

After the Second World War the Finnish Rubber works purchased the majority of the Finnish Cable Works shares and gradually the ownership of the Rubber Works and the Cable Works companies consolidated. In 1967 the companies were merged to the Nokia Group. The company's material and service portfolio included integrated cable operations, electronics, tires, and rubber footwear. (Nokia 2010.)

Nokia started its telecommunication business when Nokia's Cable Work's Electronics department started to invest to research of the semiconductor technology in the 1960's. In 1992, the CEO of Nokia, Jorma Ollila, decided to focus on telecommunication business and cut out the other non-core operations. Ollila's hard work made Nokia successful and the company gained global recognition. Between years 1991 and 1995 company's sales more than doubled, from Fmk 15.5 billion to Fmk 36.8 billion. Nokia's bottom line rebounded from a net loss of Fmk 723 million in 1992 to Fmk 2.2 billion profits in 1995 (Funding Universe 2001).

It is stated by corporate analysts that Nokia's rising to the top of the wireless world by the end of the 1990s is due to the company's ability to consistently introduce high-margin products superior to those of its competitors and in tune with market demands. Nokia had always invested lots of resources to research and development. The success has not been certain since the competition of the third generation wireless and internet technology line of business has increased during the 21<sup>st</sup> century (Funding Universe 2001.)

### 1.2.2 History of Siemens

In 1846, Werner von Siemens designed an improved version of the Wheatstone telegraph by using cigar boxes, tins, pieces of iron and insulated copper wire. He entrusted the machine's construction to a mechanical engineer from Hamburg, Johann Georg Halske. Siemens and Halske established their own company, Telegraphen-Bauanstalt von Siemens & Halske, in Berlin in October 1847. (Siemens 2002-2009.)

In 1847, Werner von Siemens developed a press that made the creation of seamless insulation for copper wire possible. This invention, together with the telegraph, marked two key advances on the road toward modern telecommunications. During the year 1848 the company received a government contract to install the first long distance telegraph line between Berlin and Frankfurt/Main. (Nokia-Siemens Networks 2009.)

The internationalization of the company happened rapidly, in 1853 Siemens & Halske started to build a telegraph network in Russia covering a distance of around 10,000 kilometres. During the next decades the company constructed a telegraph line from London to Calcutta and the laying of ocean cables across the Atlantic followed soon. Europe and North America were combined by a cabling ship, which marked an outstanding technical accomplishment at the time. Siemens & Halske's internationalization reached very high volume and the management started to establish foreign agencies in all its key markets during the 1870s. (Siemens 2002-2009.)

In 1866 Siemens discovered the dynamo-electric principle which enabled the generation and distribution of large amounts of electrical energy cost-efficiently. Werner von Siemens was quickly appreciated of the economic significance of his discovery. Since the 20<sup>th</sup> century, Siemens company has been innovating new solutions to meet the expectations of modern needs. (Siemens 2002-2009.)

### 1.2.3 Introduction of Hardware Services

Network elements occasionally suffer hardware failures despite the high quality standard of their production. Hardware Services (henceforth HWS) business is the NSN solution for managing, replacing, and recycling hardware and spare parts. HWS is one service line within NSN Care Services. The main purpose of HWS business is to sell hardware-related maintenance services to operators and value added resellers. In addition, HWS fulfils customer orders for brand new spare parts and serves internal customers such as installation teams during commissioning or test beds with commissioning spares.

Hardware service's customers are all the network operators or groups that provide services to network operators who could use any service related to hardware. HWS provides services to customers who are willing to have HW-related services for their networks. HWS is focusing on operators who have networks all over the world. HWS refuses to concentrate on any specific geographical region.

The target of the HWS business is to create value for the businesses of NSN customers by providing world-class maintenance services throughout product lifecycles and to enable NSN to have a profitable Care business. This is ensured by having an efficient service delivery network and by utilizing global partners. HWS provides high quality network maintenance by providing the services that meet customer needs and help the

I work as a Concept Owner for Customer Order Management (henceforth COM) in HWS organization. I have worked in HWS since 2003 and despite the fact that my tasks have changed over the years I have always worked with international logistics. I started my career as Order Fulfilment (henceforth OF) logistics coordinator. My main task as logistics coordinator was to ensure the global logistic end-to-end chain, including order handling, export document creation and invoicing. I became SAP system Key user in 2005. The SAP Key user work contained more project work and system specialist tasks than routine logistics work.

I started in my current position in the fall of 2007. My main task is to be the specialist of the customer order management and order fulfilment related issues. Whenever there is ERP deployment or other project, my task is to ensure that the planned roles and responsibilities and processes are fitting to the COM and OF concepts. In addition, my task is to develop the customer order management related processes and system solutions to be more automated and flexible.

### 1.3 Content of the Thesis

In chapter 2 the research questions and methodology are discussed. Moreover, the chapter 2 introduces the motive for the thesis work. Outbound logistics is a part of supply chain hence the theory of supply chain management is included to this thesis work. The supply chain management theory is presented in chapter 3. The post-merger GDC outbound process is analysed in chapter 4. Chapter 5 includes information about the GDC outbound enhancement projects with the main focus on the Export Shelf Enhancement project. In the chapter 6 the Export Shelf Enhancement project milestones and the related deliverables are discussed in more details. Chapter 7 describes the importance of understanding cultural aspects in the international project work. The lessons learned concept and the Export Shelf Enhancement lessons learned are discussed in chapter 8. Chapter 9 introduces the future enhancement projects and finally, chapter 10 concludes this thesis work.

## 2 RESEARCH QUESTIONS

The general aim of this thesis is to analyze what the reasons behind the export delivery accuracy decreasing in 2008-2009 were. Further, how those challenges were overcome with several recovery activities. The recovery activities were considered as short time solution to gain back the desired performance level. Long term GDC outbound process improvement needed further innovation. That innovation was executed and implemented on the GDC Export Shelf Enhancement project.

In this thesis work I describe how the GDC outbound process was changed during the Export Shelf Enhancement project and what the challenges met by the project team during the implementation were. The enhancement project's goal was to utilize automated system solution and implement automation as a part of the outbound process from GDC. This thesis describes how the measurable aim i.e. the amount of packages in the export was received and what the actions needed to fulfil that goal were.

Additionally, the aim was to study the impact of the lessons learned sessions. Further, how recorded notes and documented processes in the similar future enhancements and export related management strategies could be utilized. The long-term implication is to copy the tested and documented outbound process and system solution to other locations within HWS with minimum localization needs. The thesis can be utilized as lessons learned documentation when NSN outbound related enhancement projects are planned to new locations.

I conduct descriptive case study. Case studies present realistic simulations, that allow the researcher balance theory with practice. In the case study, the researcher is acting as a problem solver. However researcher is not expected to provide answers, only the preferred solution (Millar 1999, 4). The aim of the case study is to identify the problems and interpreter relevant data with analytical and critical thinking. I have chosen the format of the case study since it should be as realistic as possible and case studies are usually based on actual, real life situations.

Due to the nature of my research topic, I report the facts as openly as possible however I have to consider the confidentially aspects. Since case studies are based on real life problem, case studies can quickly become obsolete. The volumes and costs used in my Master's Theses will become outdated eventually. Therefore I will not describe the

volumes and costs in depth unless described as project deliverables. In addition, the results of this case study can be utilized only for improving the outbound logistics in Hardware Services distribution center. The results of this research cannot be necessarily generalized.

In the Master's thesis, I have created organizational framework as follows:

- Review and analyze the outbound logistics process after the merger
- Review organizational structure together with roles and responsibilities
- Analyze the outcome of the outbound logistics improvement projects.

I have not conducted specified surveys to identify the gaps in the GDC outbound process. The members of the operations team represented the business and the customer's requirements. Further, I together with my team members from Business Modelling (henceforth BMO) team represented the process organization. In the workshop, the outbound logistics steps were analyzed and the gaps and the so called workarounds were identified in the GDC outbound process.

After the identification of the gaps, the plan was to assign the topics to responsible persons who would analyze them further. The project, which started from the workshop, would monitor and report the outcome of the analysis.

### 3 SUPPLY CHAIN MANAGEMENT

Supply chain management can be translated as having the correct amount of stock in the right time at the right place. It is a constant, efficient and smooth flow of information and material (Harrison, 2009). The information flow consists of the controlled planning and execution actions within a closed loop systems with several counterparties. The material flow begins from the supplier and ends to the customer.

Demand management is a part of the supply chain. It is optimizing the capacity and inventory management against planned and unexpected customer demands (Harrison 2009, 43). There should be no excess stock as it is increasing the stock value and infrastructure costs. Instead, there should be constantly sufficient amount to fulfil the demand in order to deliver the customers orders on time. Controlling the inventory and the related supply chain management steps is called Just-in-Time (henceforth JIT) technique. The goal of JIT is to have materials arriving only when the manufacturing or repair process begins. That is reducing the need to reserve stocks in a warehouse. The successful JIT process requires integration between the parties related in the end-to-end supply chain. In the warehousing environment, such as GDC having the correct amount of stock is justified requirement. The limited space of the distribution center set its limitations for overstocking the material.

Another part of supply chain is the logistics. It consists of integrated movement of the material throughout in the supply chain. Logistics processes are providing the value to the supply chain by optimizing the timing and positioning of the material stock and the related services. (Bowersox & Closs & Cooper, 2007, 4-5.)

The warehouse related actions regarding the outbound and shipping of the material can be considered as a part of customer order management. The integrated order management contains customer specified service for material, status tracking, financial aspects and technical support (Harrison 2009, 37). The backbone of the efficient customer order management process is functional supply chain management and information tool such as SAP system solution. SAP can be used as order management system and therefore it should have capability to provide just in time deliveries within the customer requested quantities and lead times. The integration between the used

systems brings benefits as the transparency of the transactions and the time between fulfilling requests in several systems reduces. The integrated system provides the customers and suppliers a common and consistent interface with the company. (Bowersox et al. 2007, 115.)

Customer lead time is the time taken between customer ordering and customer receipt (Harrison 2009, 42). The pre-defined customer lead time includes all the warehouse transactions and the transportation time. Therefore, the supply chain management system and process has to ensure the efficient outbound. If one step in the process fails or gets delayed, it has an impact to delivery accuracy and the order fulfilment. The whole supply chain needs to be reviewed if there are constant delays in fulfilling the customer orders on time. One cause for lead time failure might be that the pre-defined lead time is too tight and the other parts of the supply chain, such as production or repair services, cannot perform on the planned schedule. In addition, there should be enough time reserved for transportation, document creation and other outbound related practicalities. Despite the fact that the order management system has the capability to fulfil orders fluently. In addition, physical picking and shipping of the material is required. The warehouses are usually operated by human workforce therefore the resources might be limited by the date and time and thus should be considered when the lead time is planned.

The short customer lead time is an important value or marketing asset to a company however the company should consider the success rate of the lead times (Bowersox et al. 2007, 24).

The lead time can be additionally defined as 'Ex works', which means that the requested delivery date is the date when the goods are issued from the shipping destination.

The location of the stock should be near to customer to avoid transportation costs, reduce the time reserved for transportation and to avoid unnecessary waste of environmental resources. In addition the customization should be considered as all the neither customers nor supply chains works alike. The aim of the logistics in supply chain management is to keep the total costs low. The companies must evaluate if manufacturing an item in low-cost country and pay the high transportation cost is more

cost efficient than produce it nearer to distribution centre and save the high manufacturing costs with the saved transportation.

There are numerous books and studies conducted regarding supply chain management and enhancement of the end-to-end logistics flow. Some researchers state that supply chain management can be fully optimized only when the whole process is considered (Jones & Hines & Rich 1997, 153 - 173). Moreover, Cohen and Roussel (2004, 9-13) argue that money is not saved in individual parts of the supply chain.

Bowersox, Closs and Cooper (2007, 7) suggest that improvements to supply chain logistics can be gained with the integrative management within the whole process instead of trying to achieve better performance on a certain function. The improvement of specific step in a logistics process should be not done at the expense of another process step. On the other hand the focus of integrated management is lowest total process cost. When improving the supply chain management the gains and losses must be put to perspective. The high costs at some point of the process might mean increased savings at another step. The ration between the costs should be considered when the each step of the supply chain process is included to the review.

I endorse the importance of the overall enhancement of the supply chain. However in large companies that enhancement would require enormous resources to develop the process possibly in various locations. In addition companies should emphasize more the lower total process costs instead of focusing the costs of certain system or process enhancement. Introducing a new warehouse or transportation management tool might create start up costs or high operations costs. However, the same time it improves the overall process significantly.

Companies often start to review their supply chain only when the process fails to serve its pre-defined goals. The customer lead times are not met or the inventory management is not optimal (Cohen et al. 2004, 9-13.) Certain recovery activities and projects are started to minimize the failures in the supply chain management. One of such managerial commitment programs of zero defects in the supply chain process is called the six sigma performance. According to Bowersox, Closs and Cooper (2007, 3) the six sigma performance reflects a level of achievement having an error rate of 3.4 defects per million.

Automation of the certain steps in the supply chain is a possibility to reduce the order cycle time throughout the process (Harrison 2009, 38). In addition, elimination of manual steps reduces the possibility of manual handling errors when those are replaced by the system driven steps. The automation requires harmonization of the process steps regardless of the customer or destination. The harmonization should not jeopardize the customer or destination country specific legal or trade compliance related requirements. The harmonization and automation should consider customer specific customizing in some extent to meet the legal and customer satisfaction requirements.

Despite the fact that projects can come in all shapes and sizes, Wysocki and Lewis (2000, 18-19) captured the essence of all projects in two definitions. The first definition is that project is a job that consist multiple well defined tasks and is done in certain period of time with a budget of some kind. The other definition is that a project is a problem scheduled for solution. This does not refer 'problem' in a negative sense, because in addition, you can start a project e.g. to ramp up a new product. Laamanen (2001, 27) describes a project in more detailed level. He lists factors which are essential for a project. The factors that a project has are following:

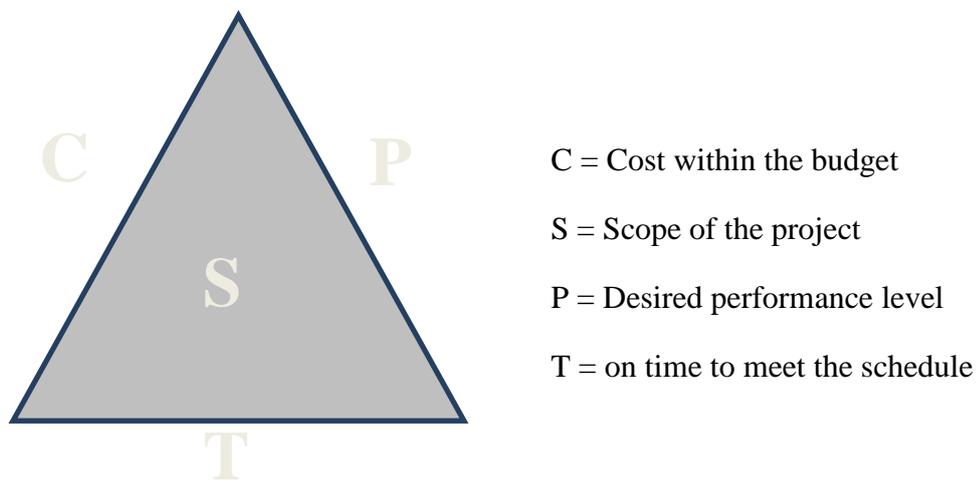
- Named project manager and a responsible person
- Mission or a task
- Schedule tied in a calendar
- Project plan
- Follow up-method comparison between planned and executed tasks.

Laamanen (2001, 26- 27) additionally mentioned that a project is unique and linear implementation of a process. Organizations are usually full of different kind of ongoing projects. For example there can be delivery-, sales-, R&D-, development- or marketing projects active at the same time.

In a typical project, project manager reserve needed resources for the project and make plans and schedules. Moreover, control and steering groups or boards are being established to monitor the project work. There might be occasional crisis meetings, re-allocations of resources and re-definition of project personnel. At the end of the project

a project closing event is held and evaluations how the project went is done. (Laamanen, 2001, 27.)

Project management is facilitation of the planning, scheduling and controlling of activities needed to accomplish objectives e.g. cost, performance, time and scope (Wysocki & Lewis 2000, 20). As easy and clear it might seem, it usually is not that. The pressure from the top management concerning cost or schedule can affect to the quality of the project. Wysocki and Lewis (2000, 21) defined an equation  $C = f(P,T,S)$  to describe this dependency by acknowledging the fact that it is not possible to have it all. The equation means that “Cost is a function of Performance, Time and Scope” as presented by Wysocki and Lewis in figure 1.



**Figure 1.** The four objectives of Project Management (Wysocki & Lewis 2000, 21).

Regardless of knowing the fact that in an equation with four variables, only three can have values assigned, project managers might have given commitments to the management for all of the four objectives. The fourth objective is naturally whatever the three other objectives define it will be. This puts a project manager in a difficult position where she or he needs to find the best possible alternatives from which management needs to pick one.

Project needs a clear schedule and goal. Schedule or goals should be reasonable, because too tight schedule or impossible goals will not add effectiveness. Project personnel need to know its responsible areas to ensure successful project. In addition, it is important not to plan the project too far ahead, because there should be always room for things to change. (Laamanen, 2001, 27.)

## 4 THE OUTBOUND AFTER THE NSN MERGER AND ANALYSIS OF THE CHALLENGES

Approximately after one year of the Nokia and Siemens merger, NSN announced the selection of its Global Distribution Centre location and operator.

### 4.1 HWS Supply Chain Optimization project

The HWS Supply Chain Optimization (henceforth SCO) project was established in 2009 to optimise the NSN HWS supply chain globally and enable achievement of the required synergy savings. The aim of the project was to unite legacy distribution centres to a single global location for HWS, outsource the warehousing and order handling activities to a limited number of global LSP's.

The goal of the SCO project was to have lean logistics processes with consideration of the process and system requirements from the involved organizations.

It was desired that the teams could co-operate seamlessly as possible to fulfil the expected turnaround times and fulfil customer needs.

Jones, Hines and Rich (1997, 153 - 173) have studied various logistics solutions in their study. According to them, the optimization of each piece separately in the supply management chain is not the most cost efficient solution. The end-to-end supply chain should be reviewed as whole to gain the most benefits. On the other hand in larger companies such as NSN, the supply chain is a vast process and focusing on the whole chain at once would require huge resources to meet the set targets on time. The HWS Supply chain optimization project considered the end-to-end supply chain as whole and the project was aiming to improve everything in the process.

When the post merger export GDC export process was analyzed, the main raised topics were the lack of visibility, lack of data and the slowness of the process.. However it was soon discovered that the functionalities that were originally developed were not sufficient and the tool required enhancement.

As described in the chapter 5.2 the outbound process was very complicated and it was managed in three different non-integrated systems and it had too many process steps altogether. From the reporting point of view, the slowness was challenging to proof since, as was stated previously, from SAP P20 point of view the packages are shipped once the deliveries were PGI'd,

The logistics between two separate warehouses was one of the disadvantages as the logistics between the two locations took time. The communication between the warehouses had to be executed by email or by phone which was delaying the outbound project.

## 5 OUTBOUND ENHANCEMENTS

NSN management decided to establish a 'Recovery project' to rise up the performance within one month time period. In addition to the high speed recovery project, the long term improvements were needed that the situation would not repeat itself in the future. The short-term 'emergency' projects will bring up the operations back to desired level fast. However a long-term strategy is needed to keep the performance in the desired level. Keeping the operational performance is important as it is being measured and reported. Improving the customer service and reducing costs should be considered just as important while planning that strategy.

### 5.1 Recovery project

The aim of the recovery project was to identify and clear the inbound and outbound related backlogs and blocking points at GDC. Management gave time frame to get the performance back on track by reducing the number of packages in the export shelf and by getting the inbound and outbound related backlogs cleared.

Order type target based cross functional project team working and end-to-end approach was used as project method and external resources outside daily operations were used as project leads. With this approach, the additional project workload did not impact as heavily to the operations team members who still had to ensure that the normal daily operations were done. Moreover, the external resources had a fresh view to the challenges and new approach to solve the issues.

The management committed to hands on approach to the project for the pre-defined period. The figures for each measurable goal were pre-defined by the management. The recovery project gained good results the pre-defined performance targets were met during the given timeline. In addition, the cross functional working improved as the site and team based communication got better due to the daily calls between the different

team members. In addition new tools were developed to gain better visibility on the existing processes.

One of the reasons why recovery project was successful was the leadership style used throughout the short project. Goleman (2000, 81) has done a research on different leadership styles and according to the author the way a project or company is successfully managed, depends on the leadership style chosen for the moment in question. According to Goleman (2000, 82-87) there are at least six different leadership styles that can be identified based on people's behaviour. The leadership ideology that made the recovery project successful can be identified as The Pacesetting style.

The Pacesetting style should be used sparingly hence it is suitable for short frame projects like recovery project was. In that particular leadership style, the leader sets very high performance goals to him or her and to the project team. The Pacesetting leadership style is especially suitable for projects as the goal is to perform better and faster and it is about identifying the poor performers or downsides of a process. This was done during the recovery project, the downsides and poor performers were acknowledged. However, the improvements of those were left on the future projects as the aim was only to improve the performance during short time. The Pacesetting leadership style is not suitable for long term projects as it might make the working environment unpleasant due to its 'quick win' goal orientation. Goleman (2000, 86) states that the employees or project members might be overwhelmed by the manager's demands on excellence.

Despite of the good results, it became clear during the recovery project that the existing export process was not functional or efficient enough. However the goal was not feasible with the short term project. Management decided to launch an export shelf enhancement project, ExpoSe, to improve the outbound process from the GDC to non-EU countries.

## 5.2 Export Shelf Enhancement project (ExpoSe)

GDC were insufficient to cope with regards to requirements of the strongly increased volumes of orders to be handled. Especially the fact that goods leaving the main GDC warehouse CEVA1 into export shelf location in CEVA3 contributed to missing

transparency in the process. In addition, a lot of processes were not reflected in an integrated system.

The above indicates that even when a full integration of all activities into one business application is not possible, the process design, implementation and maintenance needs to have the strongest focus. The focus is needed to allow a volume work-flow which is understandable, transparent and creates traceable work product. A number of activities were already started and some completed in order to improve the general situation around throughput and quantity of units in export shelf. In addition, it was identified that new activities were needed and the already started ones needed to be completed under one main project.

I was assigned to be the project manager because of my previous experience of working with the GDC warehouse operations. I had been on site at GDC during my OF LC tasks getting to know the processes and I had additionally supported the GDC outbound operations during the Nokia and Siemens merger. In my role as order fulfilment concept owner I knew the pitfalls in the existing outbound process and I had SAP system knowledge to do the needed system development. I had no previous experience of project manager work however my strong knowledge of the operations, tools and processes convinced the management to offer me the position.

### 5.2.1 ExpoSe Project Scope

Project 'Export shelf Enhancement, ExpoSe' can be regarded as a collection of various subprojects which had been identified during the analysis of previous process enhancements and gap workshops. ExpoSe served as the main driver to define, plan, manage, execute and report the related the GDC outbound related activities.

The two export document pricing related requests consisted of SAP P20 functionality development. The required functionalities did not exist in SAP P20 and for the export control reasons those had to add to the export documentation manually. The solution to this issue was to change the pricing logic

The two mentioned issues did not require any process change however the development was more SAP P20 system related. The development was considered crucial as the second scope item requires ending of all kinds of manual modifications in the export document creation phase.

The export document creation in HWS was a very manual process as was described previously in the chapter 4.2. In order to make the export process more cost efficient and faster, the decision was made to automate the certain part of the export document creation process. Alternatively, create an innovation out of my development idea. The countries were selected based on the SAP P20 integration degree in the order management process. Further, the country specific export document requirements were analysed in detailed level together with the trade compliance team to review the validity of the requirements.

The second part of the automation was do develop SAP system to recognize the destination country's requirement for the correct export document layout type and generate the export document after the outbound delivery post goods issue.

The precondition for automated export document creation process was to enhance the outbound packing process as at the time, the measurements, weight and volume of a package were manually added to the export document. The GDC packing enhancement required some SAP P20 system enhancement. Moreover, it required process changes in the warehouse outbound packing area. The real measurements with weight were recorded manually to packing lists from where they were copied to export documentation. The system packing happened prior to physical packing therefore the whole packing area layout needed to be changed to match the new packing process. During the physical packing the packer would first select correct size box and then scan the respective SAP P20 carton code to SAP P20. The weighting of the physical items would happen before the actual weight is recorded to SAP P20. Based on the carton code and the correct weight SAP P20 is automatically calculating the correct volume for the package and the data is copied automatically to packing lists and export documents. The packing process enhancement made the automated export document creation and printing possible.

The performance needed improvement however it was challenging to pinpoint the exact area of the process that was in the need of enhancement. Originally, the idea was to

develop a reporting tool. However, during the scoping it was identified that similar kinds of reporting tools were already being developed in other HWS projects. The decision was to create and implement tool that would have more operational advantages and not only reporting benefits.

### 5.3 HWS Outbound processes enhancement with help of business intelligence

An important part of strategic management of a company is business intelligence. The optimization of company's assets and providing a good return on investment business intelligence systems should be capable of leveraging. Constant renewing, developing and applying of business intelligence are a key part of competitive advantage for a company. Company that has the best understanding of their operations really succeed better than their competitors. (Ryabov 2009, 4.)

Business intelligence is required in day-to-day operations and additionally in business strategy and planning. In daily operations, the products or services should be produced and provided with time and cost efficiency however still maintaining the customer satisfaction. Companies have to constantly review their operations how to improve their business and look for areas of improvements to keep their competitive advantage. (IBM Redbooks 2004, 2.)

An important type of Business Intelligence is competitive intelligence. The focus of Competitive Intelligence is external business environment. Competitive Intelligence includes only legal methods however the difference between legal and illegal might be difficult to differ in practice. (Ryabov 2009, 4, 8.)

Company should collect and analyze information actively about the competitors within legal and ethical limitations. The weaknesses in own company can be seen when reflecting to competitor's strengths as an example. Competitive intelligence and information technology go hand by hand in the sense that advances in information technology have benefited competitive intelligence. (Prescott 2001, .xi.)

Collecting, summarizing, classifying and analyzing information about competitors and customers is competitive intelligence. Analyzing is the most important part and the

highest degree is forecasting and it gives the company a perspective what it its position compared to the competitors. (Ryabov 2009, 3, 8.)

Competitive Intelligence includes only legal methods however the difference between legal and illegal might be difficult to differentiate in practice. Mostly the data gathering methods can raise a concern about the ethnics. Questionable collection techniques are those methods that obtain information that a company has not revealed and is not obligated to reveal in public. Competitive information can be gathered public sources such as brochures and company's internet pages. In addition, industrial or corporate espionage is used as a data collecting resource.

## 6 PROCESSES CHANGE EXECUTION IN PROJECT MODE

The projects have to follow certain pre-defined project milestone (PM) set up. The project milestones are being applied in stakeholder management steering group meetings. The steering group meetings are held regularly once per month. The steering group consists of managers who have an interest and knowledge on the topic of the project and they either approve or reject the applied project milestone.

### 6.1 Project milestones

The project has to have a clear scope and project plan ready before the project can apply the first project milestone (PM) zero. Moreover, there has to be a pre-approval from the HWS business regarding the project before the project plan can be presented to the Steering group.

All the PM's must be applied in pre-defined order and each milestone requires certain steps to be done in the project and certain defined requirements must be fulfilled. The set up ensures the high quality and the usability of the project deliverables.

Solution results, which are required for PM1, are engineering results. On the other words documents and outcomes, like specification documents, design models, test cases and software for developing and support of a solution or a service. The outcomes can be defined as results to be used in change management activities and use-Phase preparation activities. Solution results are included under configuration management and change control documentation. Those are updated over solution life-cycle release by release in subsequent projects.

The project management results are project plans, such as planning of change management, use-phase preparation, engineering, project administration, project reports, agendas and meeting minutes. In addition, the project management results must show the planned resources to execute the project in question.

## 6.2 Project scoping

The ExpoSe project followed the NSN milestone model. During the PM1 the project members were certain of the idea what they were trying to achieve, which was the automation, however the uncertainty existed with the deliverables. According to Turbit (2011) the starting point is to define what you need to deliver to achieve that outcome. The outcome should not only be defined. Moreover, it should be understood and agreed between all major stakeholders.

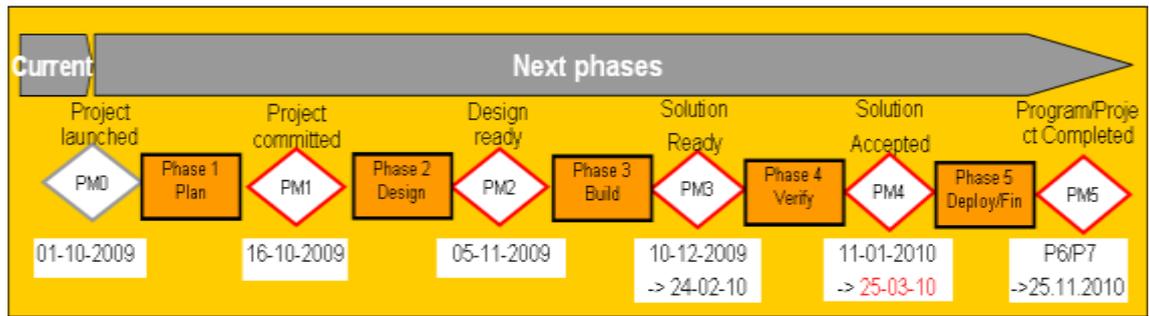
Excluding items from the project scope, is just as important as to understand what is included in to project. Determining scope is a difficult exercise; it is not just about listing different topics that need improving. Definition of the project scope is acting as a backbone throughout the whole project. Project schedule can be finalized only after the project scope is finalized. (Turbit 2011.)

According to Turbit's (2011) Project perfect scope tips the best project outcome is received by answering to couple of simple questions such as: "What will be different in the organization when the project is completed?" Regarding the ExpoSe project, the impacted organization changed during the project. In the beginning, the aim was to help the global Order Fulfilment team with their export document creation work. Therefore, they would have more resources to handle other responsibilities. The goal did not serve mutual benefits to all the involved parties.

According to Turbit (2011), the scope must be defined carefully by asking what is included to the scope and what is excluded. Concerning the ExpoSe project, it was clear from the beginning which sales modes were excluded from the automated export mode however the scope of the so called shipping functionality implementation was not defined clearly enough. The reason for that might be that the easy system solution required complex planning and layout changes to implement.

## 6.3 Project building phase

ExpoSe project's planned and achieved project milestones are described in figure x.



**Figure x.** Achieved project milestones for ExpoSe project (ExpoSe Project documentation. Nokia-Siemens Networks, 2009)

ExpoSe project stayed in the planned project milestone schedule until PM3 as can be seen from figure 6. The double dates from PM3 onwards are showing the planned milestone receiving date and the actual milestone receiving date. The previous project milestones were applied approximately within month from each others.

Enormous pre-work was already done for the scope countries as the SAP P20 system master data was not updated despite of the expectations. Further, once the amount of work that was required for each country was realized, the implementation was decided to be done country by country. In the beginning the country specific implementations executed approximately two weeks from each others. By July 2010 the third of the original scope countries were live with the automated export process.

#### 6.4 ExpoSe project resourcing

Originally the project organization was planned to be separated between the business and Process and Tools. The goal was that the business takes care of the takes care of the planned solution implementation to the operational organization and the Processes & Tools will develop the needed system related tools, concept work and overall process documentation.

Usually there are teams and groups of people from various organizations involved in the project and the project management. The project team is the group of persons responsible for planning and executing the project. It consists of a project manager and a variable number of project team members, who are expected to deliver and fulfil their tasks according to the project schedule.

The project manager is the person responsible for ensuring that the project team completes the project. The project manager develops and plans the project plan together with the project team. The project manager oversees the team member's performance of project tasks. Applying the acceptance and approval for the project deliverables from the steering group is the responsibility of the project manager. The project manager's tasks include communication, status reporting, risk management, escalation of issues and making sure the project is delivered on schedule and within scope.

As ExpoSe project manager, I was responsible for leading the project in such manner that lead the project to be ready to apply the milestones in the pre-defined time schedule. My task was to make sure that the project was proceeding, the solutions were received and implemented on time. Further, that the solutions were according to the general HWS processes. In the ExpoSe project, the resourcing was not a part of my responsibility as they were assigned by the steering group. Therefore, most of the project members did not commit to the ExpoSe project. The nomination was more theoretical than practical commitment as the project team needed to have representatives from various different teams.

The project team members are responsible for executing tasks and producing deliverables as outlined in the project plan and directed by the project manager, at whatever level of effort or participation has been defined for them (Cornel University, 1992-2004).

## 7 INTERNATIONAL PROJECT WORK

Working in the international project often requires working and interacting with different cultures. Unless the cultural aspects are acknowledged and identified, the project might face challenges with communication and other important project work related tasks.

According to Bird (2008, 50) “International business requires an appreciation of what people in different countries have in common; it also demands an acceptance that essential national differences – those customer creates that make the world more interesting – are here to stay, whether we like it not.” In addition, this statement is valid for international project work with multicultural team members. One has to keep in mind that the concepts such as punctuality and way of communicating differs per country and culture and it is the task of the project manager to consider these aspects during the project work.

### 7.1 Cultural awareness in project work

Rigsbee (2000) has listed pitfalls of successful strategic alliances According to Rigsbee (2000) one of the common areas of conflict in alliance relationships are the culture clashes. In addition, Anawati and Craig (2006, 44-55) are emphasizing the importance of culture in the modern and international work. Moreover, these culture clashes might harm the project work especially if the project schedule and deliverables are not clearly communicated to all of the participants. According to Anawati and Craig (2006, 45) communication between multicultural team members is crucial element for successful team work and project. The people with different backgrounds are bringing their cultural perspective into the communication and that might unintentionally conflict with the other members of the project team. In the discussion the used phrases and metaphors might be unknown or misunderstood between team members.

Anawati and Craig (2006, 44) are describing culture as one of the key issues in project management and at the same time it is a significant challenge. These challenges can be avoided when the cultural differences are recognized and taken into consideration already before the project starts. The acknowledgment and acceptance of cultural differences leads to awareness how to communicate correctly with people cultural backgrounds makes the project more fluent.

The Finns are considered to be more individualists than collectivist. Individualism pinpoints the moral worth of individual compared to collective group of people. The team working is therefore often a group of capable specialists from different areas who are completing a pre-defined project goal. The Finnish team members are usually keeping the project defined project schedule. The project leader is expected to lead the team by defining the goals, project goals and schedule. Further, each project member has their saying about the matter. It is not expected the project leader to check each project members proceedings daily as that might be considered as patriotism and criticism towards individuals ability to complete the pre-defined tasks. (WorldBusinessCulture, 2010.)

People are addresses on first name bases and project members are considered equal, regardless of the job status. In addition, rewarding the team instead of single individual is considered important. (WorldBusinessCulture, 2010.)

Despite of the Netherlands reputation of being a liberal society still a low percentage of women appear to be active in business life at least in Ceva. The lower female percentage can be partly explained with the warehousing environment which is usually considered to be more male dominant working area. In Finland women have had role in business life for longer period. Finland was the first European country to give women right to vote in 1906. In the Netherlands the right for stand for election was granted in 1917 and right to vote couple of years later, in 1919 (Teachers 1996-2011).

Relatively large part of Dutch women leaves work life once they have children and they attend not to return back to the old position afterwards. In Finland, is it encouraged to return back to work after the maternity leave and the company is obligated to offer similar level task for the women when they return. It is not as common in the Netherlands to see women in senior management positions as in many other European countries.

## 7.2 Corporate culture

In addition to national or regional culture, there might be corporate or company culture to consider during the project work. Corporate culture can be described as combination of particular strategies, style, systems and environment as well as shared values within an organization which contribute to its individuality. (Marketing Information Centre 2007.)

The used terms and ways of working should be to some extent similar to all of the NSN employees who are a part of the projects.

In NSN the corporate culture belongs to every member of the company. Regardless of national background of the workers, the new company and its new corporate culture is being developed during the daily interactions. According to Bird (2008, 52) the existing corporate culture helps during the project execution. The company culture is aligned and similar, regardless of the location of the company's office. When the company has developed a company culture, the ways of working, followed processes and company lingo are the same for example in India and in Finland.

Developing a corporate culture a complex process and it cannot be implemented successfully by top-down order. Cultures grow over time, and that is what NSN is driving to do consciously. Creating the culture of Nokia Siemens Networks is not about merging two existing legacy cultures. It is about co-creating a totally new culture based on people's engagement. It underlines many of the perceptions that people have of NSN and it helps define the kind of relationships the company has with the customers, partners and within the workers.

Moreover, shaping the new corporate culture means interweaving the processes, the customer relationships, company brand and code of conduct. Additionally, it is about sharing the recruitment operations, the business excellence and change management. The efforts to create shared meaning out of the done actions will require extensive effort over the longer term. NSN has not had long time to shape the corporate culture as a consequence of learned ways of working. The company has not had time to test the

procedures in practice. Therefore, the commitment has to be done based on assumption on how given values succeed in practice.

One of the NSN's mottos is; 'Regardless of who we are we all shape our culture in our daily interactions'. To enrich the NSN culture, the company has defined five values to fulfil that goal. All the employees are considered to be responsible to embed these principles to guide the actions and serve as the cultural cornerstones. (Nokia-Siemens Networks 2009.)

The values must be clearly defined by the creating group and the group has to own them to share them. The values created by the value core team cannot fully shape the corporate culture alone. The NSN employees have given their inputs as the culture cannot be established without two-way communication with the human resources. Formalizing the values, operating systems development, and establishing measurements as KPI's must be owned by the group responsible for them. Otherwise, employees will not assimilate the values.

According to the value core team, NSN employees should drive for recognition of others, shape the company culture and the management should reward those who function according to the Nokia Siemens Networks values. (Nokia-Siemens Networks, 2009.)

Focus on customer value consists of urge to help the customer to succeed on their business and exceed the customer's expectations on NSN's service. The products, services and solutions NSN provides to the customers should be the best available with the highest quality and represent outstanding value for money. With inspire, NSN wants to generate excitement about the customers within the teams. In addition NSN wants to highlight that there are no boundaries within the company and everyone should inspire colleagues, partners, employees and society. One of most important values of NSN is open communication. The aim is to communicate openly with all the NSN employees regardless of hierarchical, organizational or geographic borders. The diversity of opinions and ideas is encouraged. The employees are allowed to speak their mind freely and openly however there is a zero tolerance approach to politics within the company.

The win together value promotes the importance of the human resources within NSN. The company wants to offer best working conditions that are based on trust, respect and

honesty. The diversity, equal opportunities and personal development is being promoted.

However, is the corporate culture something that can be learned based on predefined values? The management can define the company culture however eventually it is the employees who contribute largely to the culture by defining it during the day to day actions in the workplace. In that sense, the company culture is learned through interaction and taught with the usage of the values. In other words it is still a behaviour that is learned. According to Heathfield, (2011) first contact with the corporate culture is during the job interview. Further, applicant will be reviewed if she or he fits to the existing company culture. Moreover, the personality is reflected to the company values. That is contradicting on the statement that company values influence on employee and not the other way around. Schein (1984, 3) reviews corporate culture in his article by stating that organizational culture is a pattern of assumptions that a specified group has invented or developed based on learning's from faced challenges. Those patterns have proven to be successful and therefore those are taught to new employees.

If the corporate culture is being taught to new employees already in the beginning and the employees are being appraised based on the given values already during the job interview, what are the changes that the new comers can influence or the existing organizational culture? Regardless how well thought and analyzed the values are, there should be always room for improvement and innovation therefore the culture must adapt. As a result, every generation of new members can not influence on it by providing their own behaviour patterns.

According to Heathfield (2011) people learn to behave through rewards or through negative consequences of their actions at the workplace. The rewarding makes people to repeat their successful behaviour and eventually that becomes a part of the culture. Schein (1984, 5-7) indicates that the problem-solving situations might take several attempts before a workable behaviour is found and it then becomes a part of corporate culture. The rewarding has to come from the management and it does not always mean financial or material reward. Most of the time verbal recognition is even more inspiring than material recognition.

The values defined by the NSN core value team are designed to whole NSN regardless of the organization within the company or the office location. Both Heathfield (2011)

and Schein (1984, 5-8) states that there might be organization specific cultures inside the company culture, especially within large companies such as NSN. This can be seen in practice as HWS has its own organization culture that differs from the other NSN cultures. The followed values are the same however some of the defined values play more important role than the others.

Innovation has always been one of the driving forces within HWS. There is a constant drive to design new and improved processes which serve the business and operations more efficiently. The ExpoSe project is a good example of the innovation that has been invented and implemented during relatively short time. HWS as organization is smaller than others within NSN and somehow it has been left out from the main stream business. That has enabled HWS to develop and improve its own ways or working. The development is innovative and implementation fast due the straightforward hierarchy within the organization. Moreover, the mindset of the personnel is to innovative.

The corporate culture can be developed with long lasting business partners. The ways of working and co-operation between NSN and Ceva has become standard routine as both companies are familiar with other's procedures. On the other hand, sharing a long term business relationship might set a false sense of security regarding the familiarity with the team members. One has to keep in mind the nature of the relationship between the service provider and serviced party as each is still looking to get the most benefit for their company.

### 7.3 Virtual teams

Most of the project works in NSN or in HWS takes place with virtual teams. As discussed previously, the project members are rarely all located in the same physical location. There might be limited amount of face-to-face meetings within the project team every once in a while. Virtual team work is about managing the project and team members at a distance by using technology for the communication. Anawati and Craig (2006, 45) are defining the virtual teams as "Individuals organized to work together to accomplish a specific objective." Rayner (1997) is describing virtual teams as teams where "members are geographically separated and may reside in different time zones in

various parts of the world.” The opposite of virtual teams, according to Rayner (1997), is neighbourhood team where the team members are usually located in same building or same immediate area. In the neighbourhood teams the interactions between team members are frequent and the team members see each other during the project work regularly.

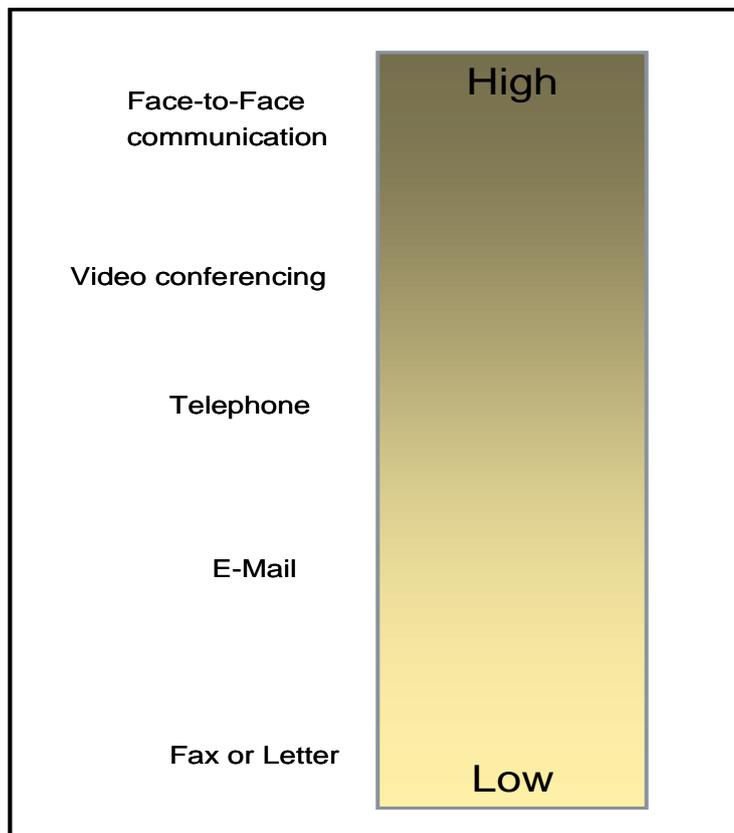
It was seen in the early phase of the project that the face-to-face meeting were very beneficial. Further, the smaller issues were solved faster while on site. In the beginning of the project, the travelling was seen necessary as the business project manager did not have experience on warehousing related activities. That is considered beneficial for the project as the aim was to improve the export outbound efficiency. Further, that aim could have not been reached without getting to know the pain points or the bottle necks in the outbound process first.

Especially when the other project members were not visiting in GDC and the communication was not as effortless. The virtual teamwork requires the same close communication between the project members as the on-site project work. However, the cultural differences and the ways of communicating are bringing its own challenge to the project. The change of misunderstanding is high when the meeting participants are not able to see each other’s facial expressions or body language during the meeting. (Global Change 2011.)

In the ExpoSe project the virtual team communication was done by phones, e-mails and occasional virtual meetings. The meetings were organized only if an issue could not be handled or solved by e-mailing or with phone calls between the project members. The occasional meetings were not recorded in the beginning. However, after frequent misunderstandings and missed deadlines the meeting minutes were distributed by e-mail right after the meetings were held. During the project, the e-mailing of the meeting minutes did not help to keep the planned project schedule as the dead lines were not communicated clearly enough. Moreover, Sasso (2008) has identified coordination of the activities in the virtual team very challenging. Usually the project members have their normal daily tasks to be taken care of and the schedules might be very different. According to Sasso (2008) the emails are often unanswered and poorly read. On the other hand the lack of communication is slowing the project down.

According to Rayner (1997), the interpretation of given message depends highly on the used communication method and the personality that the communication method can provide. Based on several researches it is estimated that 55% of communication is provided by the body language we use. The body language can be defined as use of eye contact, gestures and facial expressions. 38% is conveyed in the voice; its quality and used tone. Only the remaining 7% is being transferred with the words hence during the face to face communication the likelihood to interpret the given message correctly is the highest. The body language can be seen by the team members which emphasizes the given information and there is less room for misunderstanding (Thompson, Delia 2011).

The figure 8 indicates the likelihoods of misunderstanding the given message according to Rayner (1997).



**Figure x.** Likelihood message gets interpreted correctly (Rayner 1997)

The video conferencing and phone calls have the next highest likelihood to provide correctly interpreted messages. Despite the fact that the people communicating via these devices are not in the same physical location, the communication still has a personal nuance. All the more challenging issues were handled with the voice conferences rather

than just by e-mails which are considered to be most likely to cause misunderstanding together with faxes and letters.

The project manager's role is highlighted in the virtual team project as the communication methods are limited by technology. The project manager has to make sure that the effectiveness of the project work does not suffer due to the limitations of available communication technology. Moreover, arranging video conferences was not a possibility from either side. NSN is using WebEx as virtual meeting service provider. NSN users can start WebEx meetings and invite internal and external attendees to collaborate online whenever needed. WebEx meeting participants can present documents, share applications and desktops, chat, send live video, arrange polling, transfer files and utilize whiteboard for brainstorming. All meeting notes, chat, poll questions and answers and documents can be saved for future usage. That limited the communication as project members were located in large office spaces with lots of background noise.

In addition to the challenges with communication, the project members might struggle with the psychological distance with each other. When the interaction is happening only via the electronic communication devices, the team members might be less satisfied with the work, less motivated and it might hurt the innovative state of mind. (Sobel & Lojeski & Reilly 2008.) During those periods on site, there was a lot of 'brain storming' how the possible issues were solved and usually the solution in the joint efforts was achieved. During the virtual phases of the project work, the problem solving was not as fluent due to the above mentioned challenges with communication etc.

## 8 LESSONS LEARNED

It is considered valuable to gather the lessons learned material after a project has ended regardless of the size of the executed project. The project manager gathers feedback from the project members and stake holders about the overall project work, deliverables and the given project schedule. The feedback should be collected right after the project has ended as usually the project members are moving into new projects and tasks. Further, shortly after the project the issues are still clear in the minds of the project members.

### 8.1 Execution of lessons learned

Lessons learned can be conducted as project audit that reveals the issues and challenges during the project execution. Stanleigh (2009) suggests in his article “Undertaking a Successful Project Audit” that the lessons learned or project audit, as he calls it, should be done already during the midway of the project to review and analyze the received victories and identify the possible improvement needs. Second round of project audit should be done at the end of the project to review and record the elements which were successful as well as the issues that caused the possible challenges. Stanleigh (2009) recommends that the project audit should be conducted by outside resource to ensure the frank and honest feedback. Further, to assure the confidentiality of the results. Giving the feedback anonymously helps the project members to share their ideas and thoughts regarding the project more openly. Stanleigh (2009) states that the outside facilitator allows the team members to openly express the impact the ongoing project has had on them both on professional and on personal level. Stanleigh (2009) lists three phases for successful lessons learned as follows:

- Success Criteria, Questionnaire, and Audit Interview Development: Project audit’s success criteria are being determined by interviewing the core project members. Questionnaire is requested to be filled as a preparation for the project audit to act as a backbone for the project audit’s facilitator interview. The audit

interview is conducted so that the participants are encouraged to communicate openly.

- In-depth Research is conducted with each project member and also by the stake holders. Deep analyses should be done to identify if the project deliverables are matching with the expectations of the stake holders. Also the projects quality management should be appraised; is the project documentation up to date and are the estimated benefits of the project still valid.
- Report Development: The information gathered with the questionnaires and interviews should be combined and analyzed to identify the possible risks and concerns of the project members. Also the positive feedback should be considered. From that data the lessons learned are being gathered and recorded for the remaining part of the current project and for the future projects.

The well documented lessons learned might help the next projects of overdoing the same mistakes. Alternatively, they can repeat the actions which proved to be successful. The lessons learned analysis helps the whole company especially if there are simultaneous projects ongoing. It is to be expected that project managers who work on similar kinds of projects will run into same obstacles, it is very important that they share how their project overcame the challenges. In addition repeating the same failures, the cost of project delay creates project budget overruns. Further, customer and stakeholder's dissatisfaction can be diminished. (Seningen 2005.)

Seningen (2005) highlights the importance of recording the Lessons learned from the projects with "Project Implementation Review" (PIR) on his article with "Learn the value of Lessons-Learned. According to Seningen (2005) the recording of PIR prevents the repetition of the mistakes and teaches to manage the costs in the future projects. In addition, Seningen (2005) lists the most common mistakes and problems that usually occur during the project work and therefore should be a part of the lessons learned documentation as follows:

- Vendor management
- Equipment delivery
- Project approval

- Budget approval
- Communication (lateral and vertical)
- Testing
- Technical support
- Training.

The well documented and analyzed lessons learned documentation can be utilized with the planning of the next project's risk management. According to Seningen (2005) the lessons learned can be incorporated to several areas of risk management, one of those being the inputs to risk identification by capturing the historical information to company's data base. "An input to both qualitative and quantitative risk analysis is identified risks, which can be obtained via lessons-learned meetings as well as the database or shared knowledge folder. As well, project communication is an input to Risk Monitoring and Control, and much of the communication about problems and risk factors would occur at your lessons-learned meeting" (Seningen 2005).

Stanleigh's (2009) approach to lessons learned is more positive than Seningen's (2011) approach. Stanleigh (2009) is encouraging to list issues that have been successful in the project and Seningen (2011) is stating more about listing issues that could have gone better. Both have good points in their arguments and they both endorse on the meaning of using the lessons learned as a basis in the future projects. Both highlight the purpose of lessons learned for the future projects and the benefits what utilizing of the results of the project audit brings.

On the other hand, how generally these lessons learned can be then utilized in the future projects even within the same company? The project scopes and schedules differ a lot from others and the projects measurable are not similar. Moreover, people who participate on the project work do have different personalities. The mood the project team can be measured with the project audit and there might be something to be learned about the documentation, communication and overall project management.

## 8.2 Lessons Learned process in NSN

Within NSN the lessons learned (henceforth LL) is defined as knowledge and understanding which is gained by positive or negative experience during the project work. As a result, the lessons are really learned through the experience during the project, it is not just a vision or a theory. In addition, lessons learned are not an idea without the proven solution. The experience should be significant in its impact to NSN's operations and it should be applicable to a specific design, process or decision.

The collected and recorded LL should be valid, i.e. it is based on facts and it is technically correct. It cannot be considered as general assumption for example about positive results or cost reduction. With the recorded LL the company should be able to reduce or eliminate costs, failures or risks and the benefits should be provable in that lessons learned documentation. A general statement about best practices in the project work without details, estimation or speculation about future benefits is not sufficient.

When is an experience a real rule that can be utilized for the future purposes and how that experience can be turned into concrete benefit? There is a difference between real lessons and ideas for future improvement, for real lesson there is a verified solution already available and for the future improvement idea is a description of a problem or situation without verified solution.

Contrary to Stanleigh's (2009) proposal to use external person to gather the lessons learned, in NSN it is created by persons directly involved with the project, such as project manager, project team or steering group members. NSN does not promote the idea that external resource would bring additional value revealing the true feelings of the project members as openness is one of the core values within the company anyway. The lessons learned collections should be done for full-scale and medium size projects with the responsibility of the project manager. It is only optional for 'light projects'.

Stanleigh (2009) suggests that it would be beneficial to conduct the project audit additionally in the middle of the project and that same approach is followed in NSN at some extend. It is advised to collect and document the lessons learned at the end of the project, specifically for PM5 milestone. Further, it has been seen beneficial to collect the lesson learned already at each project milestone. Therefore, the learning can be utilized already in the next phase of each project.

The NSN LL sessions should be carefully planned ahead. Normal meeting preparations should be conducted, such as reserving the meeting time, duration, meeting rooms and facilities. Face-to-face LL session is not mandatory, however it is preferred option if cost management allows that.

Project manager should be prepared for the session by reflecting the potential LL from his or her point of view. Feedback from the project members can be gathered either prior to the LL session, as suggested additionally by Stanleigh (2009). Alternatively, the brainstorming can be done during the workshop. If the feedback is collected prior to the LL workshop the participants have more time to think about possible Lessons and the project manager can save time for the workshop to concentrate on workout of the LL in details. Moreover, the anonymous feedback might be given more openly or freely.

On the other hand, participants need time to collect and return their lessons and the project manager needs time for clustering and pre-prioritization of brainstormed LL prior to workshop. Moreover, there might be a need for either a preparation meeting is needed with participants or a detailed instruction must be given to participants.

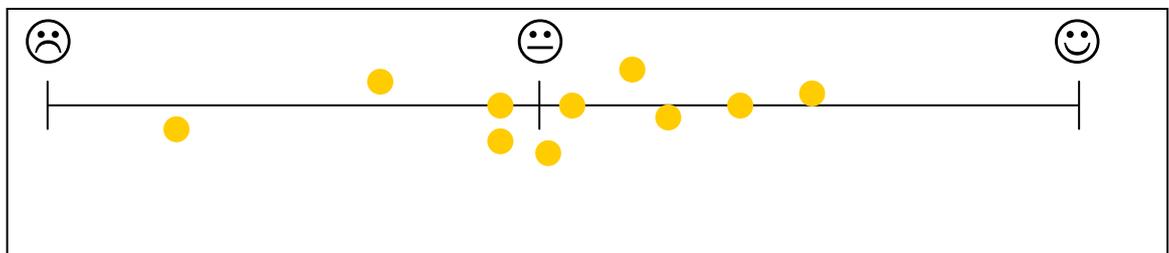
There should be a clear opening of the session where the target and the scope of the workshop are endorsed. The scope should be adjusted with the time reserved with the session. As a result, all the pre-defined points are gone through with sufficient focus. Project manager is responsible to clarify ‘what is a LL, what is not’ as was described previously in this chapter. Each statement which comes from the participants should be discussed, summarized and recorded with a manner which is visible for everyone by using beamer, web camera or with the help of WebEx meeting. The discussion should be conducted by the project manager by asking ‘In your eyes – what went well, what could be improved’. This way the project members feel that they can give their input openly and their opinion matters. At the end of LL sessions the participants should be thanked for their contribution and the project manager needs to tell to the participants what will happen with the collected LL.

### 8.2.1 The content of the HWS lessons learned session

In the beginning of the LL session the LL workshop rules should be defined and written down. This is to ensure that the cultural backgrounds do not impact on the results of the workshop. The participants can be asked to give name to the LL rules to make the atmosphere more informal and open.

Was target of the project clear for each project member? Usually each person has their own personal responsibility in the project that should be clear. In addition to the target, the project members need to indicate if they have understood what needs to be delivered for the milestone and what was expected from each member to gain that milestone. Moreover, team work should be questioned in the LL session; how was the team work and what was the nature of that cooperation within the team? The amount of information sharing and communication should be gone through as general topic in the LL session. It is very important to gather feedback about sufficient amount of information sharing and did that communication happen with right timing.

The general impression can be gone through with 'single-dot exercise' which is conducted with question 'What is your impression/feeling of the project?'. There should be a flipchart containing title and the following ranking from unhappy to neutral and to happy as shown in figure 9.



**Figure x.** Single dot exercise during Lessons Learned

Each participant gets one dot and everybody stands up at the same time and pins his dot on the flipchart. It gives useful information about the project in general. In addition, users can pin their dots to some extent anonymously therefore the feedback can be considered open and honest.

The project management should be able to make decisions at the right time when that is required and those decisions should be clear to everyone. In addition, the change management related to project scope, schedule or budget should be fluent and the cooperation with the project steering should be well managed. Keeping those statements in mind, the project steering and management should be reviewed collectively in the LL

session. A part of the project management is the resource management; there should be enough resources available with suitable role and competence for the project's purposes. The project work should be correctly allocated to the correct resources and the allocation should be efficiently organized.

Usually projects develop something new and enhance the existing process or system solution. During the LL session the participants should evaluate if the engineering methodology adequate and was there sufficient architectural directive. Especially the new system solutions require tool development and testing and that should be conducted in proper environment, for example in SAP testing environments. Usually, the projects are under pressure to 'cut some corners' to get the product deliverables faster. However, that should be prevented by the project management and they should not in any circumstances support that.

How to collect the LL in a manner that encourages participants to open up and give feedback freely? If the comments were collected in advance, those should be presented in the beginning of the workshop and the participants should be able to add additional comments to the existing ones. Moreover, the gathered feedback should be prioritized with common understanding.

In virtual workshop the group work is done with the help of WebEx and voice conference. For 'taking cards' from the collection, the teams are selecting and putting group-number as remark to whiteboard or PowerPoint presentation in the WebEx session. If the group work is done virtually, the project manager needs to monitor the progress. Further, the project manager needs to step-in to the WebEx and voice conferences of each group and offer assistance.

### 8.3 Lessons Learned from ExpoSe project

The lessons learned for ExpoSe project had to be organized as virtual meeting due to various locations of the participants and some of the project members were externals,

i.e. NSN cannot influence on their travelling. As was stated previously, nothing prevents the LL session to be organized with the help of WebEx and phone conference.

As I was the only project manager at the end of the project, I organized the meeting with the relevant project members. Most of the original project members could not be invited as they had already left the company. Additionally, many members were participating to the project only a brief period of time before changing to other role within the company. As the LL session was not requested by the project management PM5 milestone, the session did not follow the suggested NSN LL process. It was decided to keep it as an informal conversational session, where the remaining participants could freely raise the topics that they felt were worth recording. The 'single dot' method was considered challenging to execute because the participants were not in the same physical location.

### 8.3.1 Roles and responsibilities

The project resources were identified and nominated in the planning phase of the project. The possible loss of resources was not considered nor planned. As stated previously, the business project manager left the company in the middle of the project. The changes in resourcing left the project team members confused about the continuance of the project and the roles and responsibilities were unclear. As my role in the beginning of the project was not as operational as the business project managers was, it was challenging for the other project members to accept me participating to the operational set up of the new processes. During the ExpoSe LL it was suggested that the leadership team would show more visible support throughout the project. In addition, it was identified that the project should be more proactive with the communication to the related teams and stakeholders. With regular and clear communication the project would have indicated that the project is still active and that might have caused more people to actively follow the progress of the project in question.

The project commitment is been studied by Hoegl, Weinkauff and Gemunden (2004, 39) and according to them "the project commitment can be characterized by the acceptance of and the strong belief in the goals and values of the project."

The ExpoSe core team showed commitment and personal passion to the project goals. The willingness to achieve the project goals was shown as overtime and weekend work and sacrifices of personal life. Weinkauff and Gemunden (2004, 39-40) refer that project commitment can be related to person's sense of duty which was identified during the ExpoSe project within some project members and myself. The project's goals become one's own personal goals. This contradicts on Hoegl, Weinkauff and Gemunden's (2004, 40) statement about each team members tendency to focus on their teams or organizations own benefit, instead of project's goals.

### 8.3.2 Clarity of the ExpoSe project scope

On the other hand, Hoegl, Weinkauff and Gemunden's (2004, 38-55) finding related to conflicts of interests was shown in the GDC's daily warehouse operations. These conflicts were described as "unpleasant constraints and difficulties in the development of their module". The project management had to clarify several times which issues were in the project scope and the remaining problems should be fixed in the possible future enhancements or development projects.

The ExpoSe project members came to conclusion that the project scope should have been more clearly communicated to all stake holders from the beginning. Moreover, the project should have clarify the dependencies of the new process steps to the existing outbound process and analyze and decide already before the project scoping which are the issues that the ExpoSe project is going to solve.

### 8.3.3 Meeting efficiency

One of the issues identified as lessons learned was the meeting efficiency. Plenty of meetings were organized however the problem solving quality of those meetings was not sufficient. Further, it was very challenging to find a suitable time for everyone to

participate therefore frequently the meetings were not quorum. On the other hand, if the decisions were reached and communicated, those decisions were not followed through. Myrsiades (2000) has studied the inefficiency of meetings in the business life.

Meetings are needed and when conducted correctly, they are the most efficient way to make collective and to some extent democratic decisions. Alternatively, email chains and phone calls are taking more time than a meeting, where everyone are gathered to same virtual or physical location and decisions are done or information is shared. As Myrsiades (2000) states, the current working environment and organizations are team based. Therefore the meetings are needed to share and receive information. Further, make decisions when the topic in question requires several points of view.

Based on her study, Myrsiades (2000) identified several issues that made the meetings inefficient. One of those findings is that there is neither group participation nor discussion in the meeting. The meetings during the ExpoSe project were held virtually with the help of phone conference and WebEx. The problem especially with virtual meetings is that it very easily the meetings become 'a one man show' where the meeting organizer is talking and there is no interaction. Sometimes the lack of interaction is simply because nobody is listening as they are doing something else, like reading and writing emails at the same time. When the project members are not listening, it is only causing more work, in a sense that then everyone need to double check the presented topics later by email or by phone. Alternatively, they have completely misunderstood the presented topic. The project organization has to limit the number of the meetings and really make the ones that are held count. In addition, the meeting organizer or the conductor should ensure the proper interaction in the meetings by asking opinions and comments from the participants. The meeting topics should be planned to ensure that the topics which are waiting commenting or decision are clearly identified.

. Unplanned meetings were nearly impossible to organize which delayed then the problem solving or decision making. Myrsiades (2000) lists is inviting the wrong people to the meeting which makes the meeting inefficient as often the decisions can not be reached when the relevant persons are not present. In addition, that finding can be identified in the ExpoSe project in some parts despite the fact that even more visible issue in the project was the missing of the relevant people due to their other activities. Again, this can be identified as resourcing related issue as well as meeting prioritization related issue.

Preparing to a meeting is a very important issue that was identified as one of the short comings in the ExpoSe project lessons learned. The participants should have reviewed the meeting agenda and the possible attachments from the meeting invitation before the meeting. Frequently, most of the reserved meeting time was spend on explaining the background of the meeting topics to the participants regardless of the topic in question has been sent to the participants already beforehand. That causes the meeting to prolong and that is inconvenient, especially when the team members are in different time zones. Frequently, it was regarded by the project members that the meeting topic and the goal of the meeting were not clear. That caused the meetings to be only informative and decisions could not be reached as usually only during the meeting participants noticed that they still needed to review something before the decision could be reached. That caused a requirement for a follow up meeting which lead to the amount of meetings to increase. If everyone in the meeting would have been prepared and they would have familiarized themselves to the topic, the decision could have been reached and the meetings would have been more efficient.

I fully agree with Myrsiades (2000) when she emphasizes the group members' role to make the meetings more efficient. The preparation to a meeting, listening and participation is crucial. The meeting organizer as well as the participants should think in advance what they want to achieve with the meeting and they should clearly communicate that to the other participants. There should be interaction and changing opinions during the meeting. Myrsiades (2000) suggested that sometimes the meeting is being sabotaged by the participants just 'telling the boss what the boss wants to hear' however I have to disagree on that.

Myrsiades (2000) lists some good points about the problem solving process. She describes in detailed level how to solve a problem in a meeting. Further, by defining the problem in the meeting without giving a solution proposal in the beginning of the session. In addition, she suggests the participants to give their ideas how to prevent the problem to getting worse. Further, the participants should consider the reasons that are currently preventing the issue to be solved. The focus should be always on the positive, for example on the issues where the mutual agreement is already received. Moreover, the participants should be the one who are figuring out the possible negative aspects of the proposed solution, not only the meeting organizer. The best solutions are coming up

when the meeting participants have the feeling that reached solution was due to the team effort and they had some saying to the matter.

In addition, Myrsiades (2000) states that the tone of the conductor and tone of the meeting should be aligned. I endorse that. Often, when the meeting topic is sensitive, the personal feelings are raising and sometimes there might be quite a lot of emotions within the meeting member. People might be shouting or otherwise over react. The conductor should not get involved to that emotion and she/he should always keep his/her calm. One suggestion would be to propose a ten minute break if the situation requires for it.

Meeting follow up plays important role, however in my opinion it should not be in the key role. If action points are distributed in the meeting, there should not be too many follow up meetings just to go through the action point list. That often happened in the ExpoSe project, we've had a meeting where lots of action points were given to meeting participants and then there are countless of follow up meetings just to check if everyone has indeed done the actions assigned to them. There should be a certain trust that given action points are fulfilled without the numerous follow up meetings.

#### 8.3.4 The permanent benefits of the process change

When listing the ExpoSe LL, the project team pointed out their happiness regarding the successful permanent outbound process change regardless of the resourcing and project scoping related challenges.

Additionally, the project team members felt proud that the process developed and implemented by them, will be taken into use in other locations in the future. To ensure the smooth implementation, the project team has to ensure that the documentation of the new project is up to date. The proper documentation was a pre-condition for achieving the project milestone 5. There will be constant minor changes to the existing processes therefore it is important to keep the documentation updated.

## 9 FUTURE OUTBOUND ENHANCEMENTS

The outbound enhancement for HWS is not over despite the fact that the Supply Chain Optimization related projects and ExpoSe project are over. One of the Hardware Service's goals is to enhance the automation at any phase of the outbound process. As a result, presumably the next projects are related to automation expansion.

As previously discussed in the chapter 7.2, innovation is one of the NSN's core values therefore the enhancement of the existing processes must be continuous. The driver of inventing something new cannot solely be the financial or efficiency related benefits. Further, the quality of working life must be considered. Finding new and improved ways of working by improving the existing processes will help the employees to remain in the current positions longer.

## 10 CONCLUSIONS

The objective of this Master Thesis work was to describe and analyze the outbound logistics process enhancement projects executed in Nokia-Siemens Networks Global Distribution Center after the Nokia and Siemens merger in 2007. The operations of the combined companies started during year 2008 and outbound performance dropped after the first half of 2008 despite the fact that the outbound logistics processes remained the same as before merger.

The reasons that caused the poor performance were mainly related to the tight schedule of the integration projects. Moreover, resourcing related issues were not considered or planned.

Several performance improvement projects were established to get the performance back on the desired level. Those short-term projects were considered to be successful as the set goals were received on time. The selected “pacesetting” leadership style (Goleman 20008, 86) was suitable for the short-term project because of its goal to perform “better and faster” and achieve “quick wins”. When management chooses to utilize the pacesetting style, they are taking a conscious risk as that style is very demanding to the project members due to its demanding nature. In the recovery project the downsides and poor performers were acknowledged. However, the aim was to improve the performance during short time. Hence, the long term improvements were postponed to the future projects.

The issues that were identified in previous projects and in the day-to-day operations were decided to be scoped under Export shelf Enhancement, ExpoSe, project. The scope of ExpoSe project was to improve the outbound process from GDC through system and process related automation and efficiency. The GDC outbound logistics required several manual interference points, such as system packing and export document creation.

The ExpoSe project followed the pre-defined NSN project milestone set up and the project fulfilled the milestone specific requirements until the planned PM3 schedule. The project resources were not allocated clearly enough.

The project team is the group of persons responsible for planning and executing the project. It consists of a project manager and a variable number of project team members, who are expected to deliver and fulfil their tasks according to the project schedule.

Project manager is responsible for ensuring that the project team completes the project. The project manager's tasks include communication, status reporting, risk management, escalation of issues and making sure the project is delivered on schedule and within scope.

International project work requires cultural awareness and acceptance of different cultural aspects. The communication between multicultural team members is crucial element for successful team work and project (Anawati et al. 2006, 45.) The people with different backgrounds are bringing their cultural perspective into the communication and that might unintentionally conflict with the other members of the project team. The acknowledgment and acceptance of cultural differences leads to awareness how to communicate correctly with people cultural backgrounds makes the project more fluent.

The cultural aspects of Finns and Dutch were reviewed with Hofstede (1967-2009), five Cultural Dimensions. The cultural dimensions for Finland and the Netherlands are similar to an extent, despite the fact that during ExpoSe project differences with the attitudes were discovered. In addition to national or regional culture, there might be corporate culture that has to be considered during the project work. Corporate culture can be described as combination of particular strategies, style, systems and environment as well as shared values within an organization which contribute to its individuality. (Marketing Information Centre, 2007.) In the GDC outbound related projects, the meaning of the corporate culture is emphasized as the project members within NSN are expected to handle the project work to some extent similarly. The used terms and ways of working should be similar to all of the NSN employees who are a part of the projects.

Most of the project work in NSN or HWS takes place with virtual teams due to cost savings and because people are located in different countries and time zones. Virtual team work involves managing the project and team members at a distance by using technology for the communication. The importance of correct kind of communication is emphasized with virtual teams. The interpretation of given message depends highly on the used communication method and the personality that the communication method can provide (Rayner 1997.) The ExpoSe project team was considered as virtual team as the project members were not permanently on site and the communication was done by phones, e-mails and occasional virtual meetings. The lack of regular and organized meetings caused challenges with communication within ExpoSe project team.

Lessons learned session should be organized to gather feedback about overall project work, deliverables and the given project schedule from the project participants. Lessons learned can be conducted as project audit that reveals the issues and challenges during the project execution (Stanleigh 2009). Further, it can be organized once the project is over. The feedback can be gathered anonymously or separate lesson learned session can be organized. The well documented lessons learned are beneficial for the future projects to avoid overdoing the same mistakes. Alternatively, they can repeat the actions which proved to be successful as it is expected that project managers who work on similar kinds of projects will run into same obstacles.

During the ExpoSe lessons learned challenges related to roles and responsibilities, meeting efficiency and project scope clarity were raised and recorded. Moreover, positive feedback was given as the ExpoSe project managed to fulfil the pre-defined project scope and the benefits were achieved.

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