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FINANCIAL MONTH-END CLOSING

European shared service centres

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Abstract		
<p>In current globalized business environment companies need to concentrate on their core functions. However, companies have also essential support functions, such as finance. The support functions need to be organized in effective ways. Many large companies have established finance shared service centres (SSC) to support the business needs. One of the critical processes in finance area is month-end closing process. A month-end closing provides a snapshot of all financial activities of a month and aggregates several subprocesses' output into monthly financial reporting.</p> <p>The aim of this thesis was to increase the understanding of the financial SSCs' month-end closing process. In this research, the objective was to develop financial month-end closing process in one corporation's four studied shared service centres, particularly from record-to-report point of view.</p> <p>The chosen methodology was a qualitative case study. The data was collected from multiple sources. The main source was seventeen unstructured and semi structured interviews, as well as diaries of the month-end closing process steps. In addition, quantitative data of four SSCs' journal entries regarding record-to-report process was analyzed and compared.</p> <p>The current state of the month-end closing processes in four studied SSCs were described and discussed. Moreover, the research revealed bottlenecks in the process and shared the identified best practices.</p> <p>As a conclusion, the starting point for the future development in month-end closing, as well as in other financial processes, is well defined shared service strategy. In addition, harmonization and standardization of the processes is essential before preparing the month-end closing for high level automation.</p>		
Keywords		
Shared service centre, month-end closing, process improvement, finance process		

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ABBREVIATIONS

ADI	Applications Desktop Integrator
AP	Accounts Payables
AR	Accounts Receivables
BI	Business Intelligence
CET	Central European Time
FA	Fixed Assets
GL	General Ledger
ERP	Enterprise Resource Planning
HR	Human Resources
IC	Intercompany Balance reporting deadline
IT	Information Technology
MEC	Month-End Closing
RPA	Robotic Process Automation
SLA	Service Level Agreement
SSC	Shared Service Centre
VAT	Value Added Tax
WIP	Work In Progress

1 INTRODUCTION

Introduction chapter consists of five sections. The first section provides background information of the study and basic overview of the facts that have affected the selection of the thesis subject. This case study is about an international company's European shared service centres (SSC) and their month-end closing (MEC) processes. The month-end closing process provides information for management decision making and is a major process for financial shared service centres' together with yearly and quarterly closings. The second section describes the research question, aim and objectives. In addition, it provides general overview of the delimitations that have been made in this qualitative case study research. The process of research method selection is introduced in the third section, as well as data acquisition method and collected material. The next section, fourth one, introduces the theoretical background of the study that consists of shared service centre phenomena, finance processes and process improvement. The last section provides overview of the thesis structure.

1.1 Background of the study

Richter and Brühl (2017, 26) have studied shared service centres' history, their current status and future. According to them, companies need to stay competitive in current globalized business environment. To be able to focus on company's core activities and perform support activities more effectively, more than 75% of Fortune 500 companies have established shared service centres. The purpose of the shared service centres is to provide support services in a flexible and cost effective way. Finance is considered as one of these support functions and its purpose is to provide accurate financial information in a timely manner. In order to provide information to internal and external stakeholders financial close process quality and speed are necessary to constantly review. (Richter & Brühl 2017, 26-38.)

This thesis is a qualitative case study of one company's four European shared service centres and their month-end closing processes. I have worked in one of

these shared service centres for several years both as an accountant and a controller. During those years I have noticed that financial closing is causing peak in the working hours for all finance personnel, so I am familiar with the challenges faced during the closing. All four financial shared service centres that company has in Europe have the same financial closing schedule and tools in use, so they are most probably facing similar issues in the process. In addition, it is possible that during the years after the implementation of tools, these shared service centres have created different practices in order to perform month-end closing under the time and, in many cases, resource pressure. This research intends to reveal month-end closing related practices and challenges in studied company's European shared service centres in order to provide recommendations for the future improvement in this area.

1.2 Research problem, objectives and delimitations

The focus of this study is on one international company's four European financial shared service centres and their month-end closing processes. The European shared service centre organization has operated under the same management only for four years and in that sense is quite young in its nature, although some features of shared services had existed already before that time. As an example, Finnish financial organization had been serving several Finnish group companies already years before common European management. As the set-up of the financial services is also affecting the processes, it is important to understand the case company's shared service organization and status. This study proceeds from overview to details and starts with increasing the understanding of the shared service centre phenomena and how it has been applied in the case company.

The aim of this thesis is to increase the understanding of the financial SSCs' month end closing process.

After analysing the shared service set up, research drills down to main process of the financial reporting, period closing. Finance is a support function and its main purpose is to provide accurate financial information in timely manner for its internal and external stakeholders. The main process, in order to provide this infor-

mation, is the closing process. Year-end closing and quarterly closings are mandatory for companies listed in stock, additionally year-end closing provides statutory reporting. Month-end closing is a similar process between quarters but its output is only used internally. The differences between quarterly and monthly closing are only minor, although quarterly closing involves some additional data compared to monthly closing. Moreover, the year-end closing is the most complex and demanding.

The objective of this thesis is to develop financial month-end closing process in all case corporation's shared service centres in Europe. Closing process involves all financial personnel and brings all subledger processes' information to the general ledger, which is the basis for most of the financial reporting. This research is focusing on month-end closing from record-to-report process view. The research question for this study is:

How to improve month end closing process in Finance Shared Service Centres from Record-to-Report point of view?

And it is supported by sub-questions:

What are the bottlenecks in the process?

What are the best practices?

What actions case corporation should take in order to improve the MEC process on the basis of the identified bottlenecks?

In general, the fact that this research is focusing on month-end closing from record-to-report view means that subledger processes are not studied in detail in this research. Record-to-report process includes subledger processes in a sense, that the subledger information is transferred to the general ledger. In this research the record-to-report process is considered starting from that moment. Anyway, if some findings related to subledgers are revealed during the natural course of interviews they are not left out but included in this report as additional findings instead. Record-to-report process is, more or less, considered as general ledger process. The group reporting is not discussed in this research in detail, as there

is ongoing project about automating data flow from the general ledger to the group reporting tool, Hyperion. Anyway, as general ledger data is a basis for group reporting, the leader of that project was interviewed in order to understand requirements of that project.

1.3 Research method and material

This research was performed as a qualitative case study. According to Ghauri and Gronhaug (2010, 107) the purpose of the qualitative study is to provide in-depth insight into a phenomenon, in addition, case study is defined by Yin (2003, 13) as an empirical inquiry which investigates the phenomenon within its real-life context. As this research is focusing on month-end closing phenomenon in case companies' financial shared service centres (SSC) in Europe, the qualitative case study is considered as a suitable research method in this context. The multiple case study aspect was also considered during the planning phase of the thesis together with the thesis instructor but although company's European shared service organization has four centres, they are operating under the same management in one corporation and thus considered as one case in this study.

The data was gathered by unstructured and semi-structured interviews, diaries, internal documents and data. In unstructured and semi-structured interviews the role of the interviewer is more demanding as only the themes (semi-structured) or topic (unstructured) is known and ready-made questions and response options are missing. On the other hand, use of semi-structured and unstructured interviews allows a skilful interviewer to enrich data by asking subsequent questions ad hoc, when interesting topics rise during the interview. The unstructured interview is also called an in-depth interview and of all interview types it reminds the conversation most of all. (Ghauri & Gronhaug 2010, 126; Hirsjärvi et al. 2010, 208 – 209.)

Due to an international nature of the study all seventeen interviews were held via Skype. Foreign people were interviewed in English and as the researcher was on a study leave at the time, the Finnish people were also interviewed by Skype, but in domestic language. At first, all four SSC directors were interviewed in order to

gain the understanding of the case company's SSC set up and organization. Then, the selected people from head the office and people responsible for the tools in use were interviewed to get the overview of the topic from their angle and possible ongoing improvement projects affecting the research area. As agreed with SSC directors, one accountant and controller per site was asked to fill in a diary including tasks of one month-end closing. These diaries were then gone through and discussed during interviews with controllers and accountants.

Interviewees delivered additional internal documents and data about the topics that came up during the interviews and supported the research. As an example, BI Content Owner Finance provided raw data about journal entries, which was then analysed by the researcher. Additionally, a part of the information is based on the observation as the researcher has worked as a controller and an accountant in case organization's Finnish SSC. According to Yin (2003, 83) use of multiple sources of evidence increases case study's validity and reliability when the same findings can be obtained from different sources.

1.4 Theoretical framework of the study

Theoretical framework of the study consists of introduction of the shared service centre phenomena, financial processes and process improvement methodology.

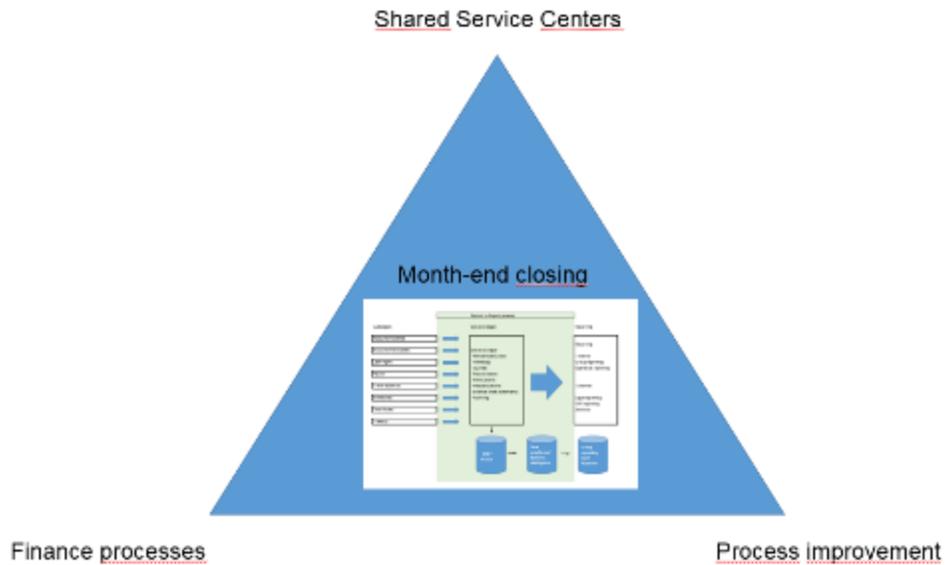


Figure 1. Theoretical framework of the study

Figure 1 describes the theoretical framework affecting the month-end closing process. In order to understand the shared service centre set up, the theory part of the study begins with describing the background and options to adopt shared service centre. The framework for financial process improvement is set by shared service model and therefore it is important to understand, what the possible options are, and later, in empirical part of the study, what kind of set up of shared service model the case company has adopted. The theory part continues by introducing process improvement in general. A lot of information about process improvement is available regarding manufacturing processes, but theory about finance process improvement is scarce. Therefore, the process improvement theory has been included whenever general principles have been considered applicable regarding financial processes. As the empirical part of the research studies financial month-end closing process, the third part of the theory provides theoretical background of financial processes. It begins describing finance processes in general, concentrating then on financial closing process and its features and finally discusses how lean principles could be applied in accounting process.

1.5 Structure of the study

The first chapter introduces the background of the study, research questions and delimitations, research methods and the theoretical framework of the study. In the second chapter the theoretical framework of the study is represented. The theoretical background of the shared service centre phenomena is presented shortly as it sets the foundation for financial processes when finance is organized as SSCs like in case company. Theory continues with general process improvement methodology drilling down to lean principles. The last part of the theory aims to describe the financial processes shortly concentrating on general ledger and period-end process and ways to improve it. In addition, applying lean principals in accounting process is described in the last section of the theory part.

The third chapter is for the empirical study. It begins with the case company presentation and describes the background and motivation of the study. Then research method and material is introduced and statistics about number of GL journals per day is analysed in order to understand the workflow in month-end closing process. Each of the four European shared service centres are introduced and their month-end closing process described one day at a time.

The fourth section discusses and analyses the findings of the empirical study based on the theory. The fifth section summarizes the main findings, gives recommendations for the commissioner and provides suggestions for the future research.

2 THEORETICAL FRAMEWORK

2.1 Shared service centre

Organizations need to streamline their activities and focus on main functions, thus support services need to be organized in a cost effective way. Many international companies have organized their support functions in more or less centralized way by using shared service model. On the other hand, part of these activities can be outsourced or the model can be a mix of make and buy decision. A shared service centre can take care of various services or it can concentrate on

one of the following, IT, finance, HR or law. Depending of the organization's core functions also other services can be included, customer service as an example.

2.1.1 Definition of shared service centre

Schulz and Brenner (2010) made an extensive literature review in order to find out the definition and characteristics of term SSC. Based on their study they defined SSC with following words:

SSC is an organizational concept that consolidates processes within the group in order to reduce redundancies; delivers support processes; has cost cutting as a major driver; that has a clear focus on internal customers; is a separate organizational unit that is aligned with external competitors and is operated like a business (Schulz and Brenner 2010, 217).

Shared service ideology differs from centralizing as main purpose of the centralizing is cost saving, whereas shared service model is focusing on top of cost reduction to provide high quality services to organizations core functions (Lahti & Salminen 2014, 211). Owens (2013, 251) confirms that cost savings are no longer the main intention of the SSC model. The centres of excellence aim to work in close collaboration with business units when delivering value. SLA's should measure good versus poor performance from business partners' perspective, on top of the effectiveness and costs savings. (Owens 2013, 251-253.)

According to PricewaterhouseCoopers (2008, 6) companies are adopting one of the three shared service models. One is the centralized approach where all business-support services are concentrated in one centre. This is the most cost efficient model, but also the most demanding as it requires a full restructuring of supporting activities. The other is centres-of-excellence approach, where specific processes are located based on organizations strongest concentration of experience. For example, the whole group's payables can be managed in Germany while sales and credit functions are concentrated to Sweden. Third option is to provide shared services on a region basis, the regional clusters approach. One SSC can serve the American continent, while other is supporting Europe, or there

can be separate shared service centres to support East, West, South and North European business. (PricewaterhouseCoopers 2008, 6.)

2.1.2 Success factors of shared service centre

Richter and Brühl (2017, 29) in their comprehensive literature review about shared service centres, mention examples of factors that facilitate successful SSCs; strong communication, ability to continuously reorganize processes and development of best practices.

Pricewaterhousecoopers (2011) made a survey about SSCs' maturity and future development. In their survey they analyzed 486 SSCs' answers based on the maturity model they had developed.

The specific performance levels used to allocate an SSC to one of four maturity levels are shown for each evaluation criteria in the figure below:

Evaluation criteria	Phase I: Start-up	Phase II: Growth	Phase III: Expansion	Phase IV: 2nd generation SSC
1. Strategy	<ul style="list-style-type: none"> no SSC-specific targets, strategies, measures or implementation plans set 	<ul style="list-style-type: none"> some SSC-specific targets, strategies, measures or implementation plans set 	<ul style="list-style-type: none"> SSC-specific targets, strategies, measures or implementation plans set 	<ul style="list-style-type: none"> SSC-specific targets, strategies, measures or implementation plans set regular review of implementation and introduction of countermeasures if required
2. Organisation/ governance/ compliance	<ul style="list-style-type: none"> SSC run on cost centre basis with no allocation of SSC costs no SLAs in place unclear process owner and manual controls 	<ul style="list-style-type: none"> SSC run on cost centre basis with fixed allocation of costs some SLAs in place multiple process owners and many automated controls 	<ul style="list-style-type: none"> SSC run on cost centre basis with costs allocated on services provided comprehensive SLAs in place single end-to-end process owner per business unit and many automated controls 	<ul style="list-style-type: none"> SSC run on profit centre basis with services allocated based on market prices comprehensive SLAs in place and regularly adjusted single corporate end-to-end process owner and controls automated wherever possible
3. Continuous improvement	<ul style="list-style-type: none"> no improvements made in relation to costs, quality and time Six Sigma, TQM not deployed 	<ul style="list-style-type: none"> slight improvements made in relation to costs, quality and time Six Sigma, TQM in process of implementation 	<ul style="list-style-type: none"> some improvements made in relation to costs, quality and time Six Sigma, TQM in process of implementation 	<ul style="list-style-type: none"> major improvements made in relation to costs, quality and time Six Sigma, TQM in continuous use
4. Business processes	<ul style="list-style-type: none"> not standardised, harmonised or automated simple mass transactions 	<ul style="list-style-type: none"> mainly standardised and harmonised simple mass transactions and some expert services (centre of expertise) 	<ul style="list-style-type: none"> optimisation and automation of business processes simple mass transactions and expert services (centre of expertise) 	<ul style="list-style-type: none"> optimisation across the organisation total services in terms of holistic processes
5. Customer relations	<ul style="list-style-type: none"> internal clients non standardised structure and management no implementation of customer support tools 	<ul style="list-style-type: none"> mostly internal clients standardised routine processes and transactions ongoing implementation of customer support tools 	<ul style="list-style-type: none"> internal and external customers focus on efficiency and effectiveness within SSC ongoing implementation of customer support tools 	<ul style="list-style-type: none"> mostly external customers focus on contributing value to the whole company implemented and regularly updated customer support tools
6. Performance management (PM)	<ul style="list-style-type: none"> PM tools (BSC, benchmarking) not deployed, used infrequently no ICS (internal control system) implemented no quality/performance targets 	<ul style="list-style-type: none"> PM tools (BSC, benchmarking) being developed ICS implemented quality/performance targets introduced 	<ul style="list-style-type: none"> PM tools (BSC, benchmarking) being implemented ICS in place extensive quality/performance targets defined 	<ul style="list-style-type: none"> PM tools (BSC, benchmarking) in continuous use comprehensive ICS and continuous optimisation continuous adjustment of quality/performance targets
7. Human resources management	<ul style="list-style-type: none"> non standardised structure and management relation of employee development to performance evaluation unsupported no training/advanced training system introduced 	<ul style="list-style-type: none"> combining existing expertise and focus on professional expertise relation of employee development to performance evaluation non-standardised introduction of training/advanced training system 	<ul style="list-style-type: none"> professional expertise and management development relation of employee development to performance evaluation extensively designed comprehensive training and advanced training system 	<ul style="list-style-type: none"> service and leadership culture established relation of employee development to performance evaluation continually reviewed continuous improvement to training and advanced training system
8. Systems and technology	<ul style="list-style-type: none"> multiple systems, no standardisation of ERP platform no workflow systems introduced no IT governance set up 	<ul style="list-style-type: none"> partially standardised ERP platform workflow systems implemented low level of IT governance 	<ul style="list-style-type: none"> standardised ERP platform extensive deployment of workflow systems average level of IT governance 	<ul style="list-style-type: none"> optimised, modular ERP systems organisation-wide workflow systems high level of IT governance

Figure 2. PWC's (2011, 16-17) evaluation criteria to measure SSCs' maturity

Figure 2 describes the model Pricewaterhousecoopers (2011, 16-17) has used in order to analyze optimizing SSC performance. PWC measures SSCs' maturity based on eight evaluation criteria, each of them divided into four phases based on the maturity level, 2nd generation SSC being the highest. Only 13 percent of the studied SSCs' can already be classified as 2nd generation SSCs. Majority of

SSCs have still potential to improve at least one area. The most important findings are presented below:

1. The most mature SSCs' have a **well-defined strategy** on place. The strategy should cover the implementation plan, targets and measures. The best SSCs' regularly review these elements.
2. The second point covers **organization, governance and compliance**. Most SSCs reach the third development stage meaning that they are run like cost centres and costs are allocated based on provided services or fixed prices. Only seven percent reach the most mature phase in which services are priced according to market price, Service Level Agreements (SLA) are in place and processes have end-to-end owners specified and controls are automated.
3. Thirty percent of studied SSCs had **continuous improvement** process in place. However, most of the SSCs are, at least in some extent, utilizing tools (such as Six Sigma, TQM, Lean or Kaizen) in order to improve quality, time or cost in their performance.
4. **Business process improvement** is one of the areas where SSCs have the highest potential for optimization as only 6 percent of respondents had reached the highest level. The high level of process standardization seems to be the most efficient way to save costs and achieve optimized processes. In addition, high level of automation leads to better transparency of data, processes, systems, costs and services.
5. **Customer relations** are based on strong service culture and customer orientation. According to the survey, those SSCs that provide services also to external customers are more motivated to improve their processes and services and reduce costs. With regular customer satisfaction surveys SSCs can gain important information to be used in order to improve service quality. Customer satisfaction surveys can be used both externally and internally.
6. The balanced scorecard was used for **performance management** in most of the studied SSCs in some extent. On the other hand, only 20 percent had a mature program in place. Benchmarking was also used for analyzing performance. With these tools, the gaps and improvement areas can be regularly reviewed and corrective actions implemented.
7. SSCs with standardized **human resource management**, especially employee development plans, reflect high maturity on area of continuous improvement.
8. **Systems and technology** is a criteria where many SSCs consider optimization potential. Standardized ERP systems, electronic workflow and automation enable SSC to reach higher productivity. (Pricewaterhousecoopers 2011, 16-37)

Richter and Brühl (2017, 34) state that companies seek for performance improvement by establishing SSCs. Especially the potential of cutting costs is mentioned as a main motivation driving the organizational change of support functions (Schulz & Brenner 2010, 215; Richter and Brühl 2017, 34). It is unclear, whether

the companies have been able to reach performance and cost saving targets. The research in that area is scarce although some case studies with contradictory findings are available. (Richter & Brühl 2017, 34.)

The SunGard Insight Study from 2013 (in Owens 2013, 252-253) with 485 participants, revealed that people working in SSC were more satisfied with SSC performance than people working in business units served by the SSC. SLA's should define metrics to measure SSC performance and those must be well communicated and followed up. In the study the most mature SSCs' indicate that they have been able to cut the costs and increase efficiency. The visibility was improved, processes automated and best practices adapted in more than half of the studied SSCs. However, lack of standardized processes and latest technology was seen as a downside when implementing SSC. More than 50% of the respondents admit that they should have focused more on those topics in SSC implementation phase. (Owens 2013, 252-253.)

Janssen et al. (2009, 22) studied shared service arrangements in municipal sector and found out that efficiency and customer service level are trade-offs. With fully centralized services benefits of efficiency are gained at the expense of customer satisfaction, whereas partially shared services enable better customer experience but at the expense of efficiency and costs. (Janssen et al. 2009, 22.)

Marciniak (2013, 223) concludes that one of the success factors in shared service centres is client satisfaction. Effective performance measurement should be based on KPIs and SLA indicating, on top of efficiency in processes, also customer satisfaction. (Marciniak 2013, 223.)

2.2 Process improvement

2.2.1 Process improvement in general

According to Laamanen (2007,19) a business process can be defined as a group of actions connected to each other, including resources needed to perform them, in order to create goods or services. Zairi (1997, 64) defines a process as an approach for converting inputs into outputs and states that in order for organization

to achieve its goals, all resources need to be used in a reliable, repeatable and consistent way.

Development projects in finance usually aim to implement or improve digitalization and automation in finance processes. Development projects are not limited to implementing new technology but in addition they might enable totally new strategic approach to financial services; work can be reorganized and relocated, outsourced or offshored. Before setting the target for the future state the current situation should be analysed and processes described. (Lahti and Salminen 2014, 219-222.)

Describing processes makes the work more organized and helps people to understand the big picture. It also enables people to make improvements and encourages to self-direction. Process improvement should be seen as an inevitable part of the daily work instead of a one-time project and extra effort. When processes are described and analysed people gain more understanding of the co-workers' efforts and needs and versatility increases. (Laamanen 2007, 23.)

Laamanen (2007, 56) argues that no organization can only operate through core processes (value delivering processes to external customers). Support processes, such as IT (Information technology), HR (Human Resources) or Finance, are needed to support the core processes. Laamanen (2007, 23) suggests that before starting to describe processes, we should stop and ask ourselves; "What do we want to achieve?" One option is to start with the processes where there is the biggest improvement potential. Other option is to analyse which processes are critical based on organization's strategy and success factors. (Laamanen 2007, 83.)

2.2.2 Lean thinking in service processes

Lean is originally philosophy invented by Japanese car industry. It was first introduced in Toyota during 1920s but became a success in 1940s when Taiichi Ohno, working in Toyota management implemented the idea that Sakichi Toyoda had initiated some decades earlier. At the time Toyota suffered from quality and

cost related issues. In addition, customers in Japan were demanding variety of selection which was totally opposite idea to mass production that, for example, Ford was practicing in America. The mass production's focus on producing as many goods as possible had led to issues with quality, waste, inefficient processes and high inventories. Also, ability to meet customers' more demanding needs were missing. Toyota achieved success by implementing lean principles to its production. (Taylor 2009, 206.)

Lean can be called a manufacturing philosophy. Taylor (2009, 207) defines lean as a method to deliver value-added products or services to customers in time (keeping the inventory low) while eliminating operational waste and non-value adding activities.

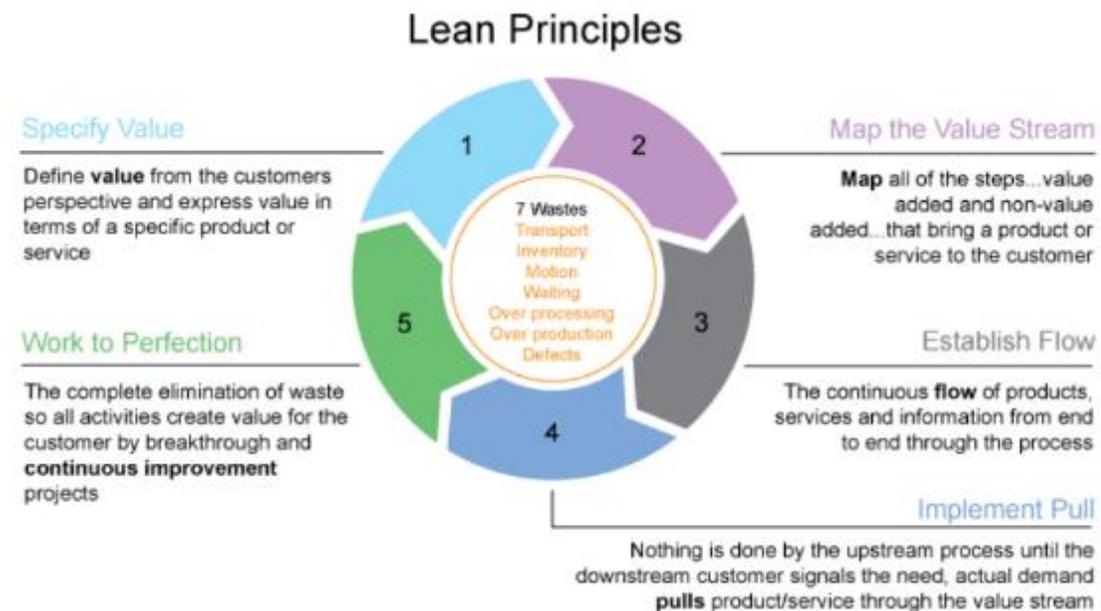


Figure 3. Lean principles (Schume 2013, 2)

Figure 3 demonstrates lean principles. The business value should be the starting point. After defining what a customer wants, all steps in the process should be identified, both value-adding and non-value adding. Customer need creates the pull and all activities that do not create value for the customer should be eliminated. (Schume 2013, 1-2.)

Womack and Jones (1996) introduced lean thinking theoretical framework in 1996. The concepts of value, waste, value stream mapping and 5S are essential principals of lean thinking. (Shang & Low 2014, 33.) Although lean thinking originated from production environment it has lately been implemented also in service industry. Taylor (2009, 206) describes what lean thinking is and how it can be applied in service processes.

Value: The customer needs are the basis of the value. A company that is able to provide its customers services or goods and meets the customer needs in the best possible way, while optimizing the price and costs, has the advantage in market compared to its rivals. With lean practices company can increase the profit by eliminating waste and in that way reduce costs. (Taylor 2009, 207-210.)

Waste: The Japanese term for waste is *Muda*. All activities that do not add value or are unproductive are considered waste. Originally seven sources of manufacturing *muda* was described. They include overproduction, waiting, transportation, over processing, inventory, unnecessary movement and defect items. (Taylor 2009, 207-210.) Liker (2004) enhanced the list with eight type of waste, unused employee creativity. By engaging employees and listening their ideas the potential of their creativity can be used to eliminate the other seven types of waste. (Liker 2004, in Shang & Low 2014, 32)

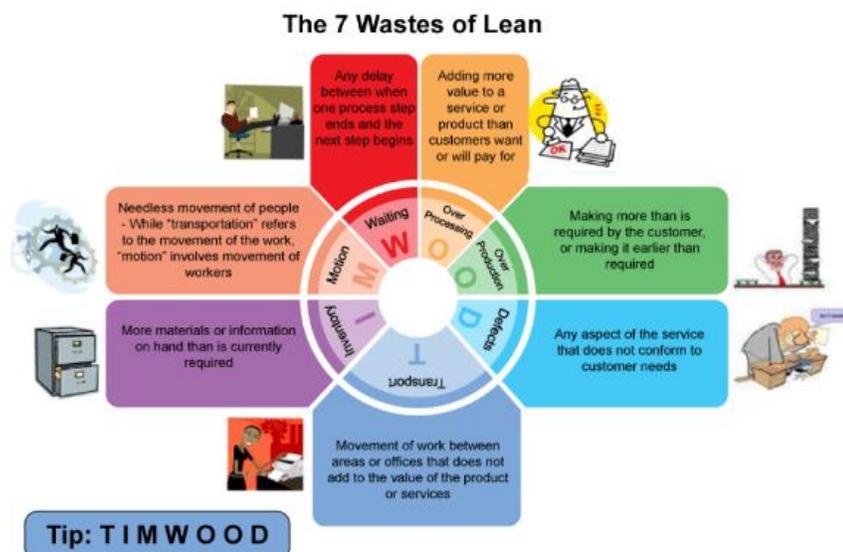


Figure 4. Seven types of waste Schume (2013, 3)

In figure 4 Schume (2013, 3) describes the seven types of waste. A mnemonic to remember the seven types of waste is the word “TIMWOOD” formed from initial letters of each type of waste.

In service industry Taylor (2009, 211-212) has identified six types of waste:

Rework in service organization corresponds the defects in manufacturing process. When the work has to be done again for some reason e.g. imperfection or defectiveness, the employee time is wasted and service might get delayed.

Recheck refers to quality check of the service. However it is important to get the quality level correct from the beginning and too many rechecks should be avoided.

Rejecting service related documents causes delays to process and customer dissatisfaction. As an example Taylor (2009, 212) mentions rejected loan documents and claims.

Reprovision of services due to errors or mistakes has a negative impact on company’s performance.

Reinstall type of waste refers to timing issues. If e.g. service call or delivery is missed, new attempt is needed and resources and time is wasted.

Rebilling due to issues in invoice causes customer dissatisfaction and unproductivity. (Taylor 2009, 211-212.)

Taylor (2009, 212) argues that if these types of waste are not recognized, they can increase company’s cost by 25-30 percent.

Value stream mapping: A tool that is used to eliminate non-value-adding activities is called value stream mapping. The purpose of the value stream mapping is to identify and analyse the activity in order to find out if the activity is necessary, whether it is efficiently performed and if it serves a useful purpose. The current state of the activity should be mapped keeping in mind what is the output of the activity, in other words what is required and expected by customer. The waste in the process should be identified and highlighted while mapping. After mapping all the waste should be analysed in order to find out reasons for rework, waiting

time, huge time spend for accuracy checks or other waste identified. Then the future stage should be defined. These can include structural modification, implementation of new technology such as automation or other activity changes. (Taylor 2009, 213-216.)

5S principal: Sort, set in order, shine, standardize and sustain are the makeover of the service organization. In practice they set the standard for effective, clean and organized working environment in which unnecessary things are removed, all needed equipment has its place, working area is in order, work instructions are available and continuous improvement is present in daily practices. (Taylor 2009, 216-218.)

Applying lean thinking in finance is further discussed in chapter 2.3.5.

2.3 Financial processes

This chapter provides basic understanding about a nature of the financial administration and its processes. As the empirical part of this study focuses on the month-end closing process from general ledger and more specific, record-to-report process point of view, a theory about those is described in order to get the general overview of the process. Finally, the fifth section of this chapter discusses possibilities to adapt lean principles in month-end closing process.

2.3.1 Financial administration

Financial administration can be described as a system which the organization utilizes to gather all company's financial information so that it is able to report its financial performance to internal and external stakeholders. The purpose of the external financial accounting is to provide information to authorities, owners, employers, customers and other cooperation partners and on the other hand fulfill legal requirements of the reporting. Managerial accounting, in turn, as an internal accounting, is focusing on fulfilling managements' reporting requirements and producing confidential analysis for company's management decision making. (Lahti & Salminen 2014, 16.)

2.3.2 Financial processes

Finance, among other functions, faces increasing pressure to cut costs and at the same time increase the performance. Lahti and Salminen (2014, 206) state that in order to be able to meet these requirements the processes need to be effective, non-value adding activities have to be removed and tasks should be prioritized. Furthermore, Dilton-Hill (2013, 25) mentions that there are two broad areas to consider in lean financial management; to fulfil customer needs and cut the waste, which is any activity in the process that is not relevant to meet those needs.

Lahti and Salminen (2014, 206) explain that processes need to be analyzed, described and harmonized from the whole organization point of view. The big picture view has to be taken into account instead of optimizing processes partially. Automatization has to be taken in use to minimize manual and routine work and personnel resources should be allocated to analyze results and variances. Monitoring and measuring processes is an essential part of analyzing process effectiveness and identifying possible future improvement areas. (Lahti & Salminen 2014, 206)

Depending on the organization's overall strategy and segment, the finance can be seen as business or supporting function. Finance itself can be divided to sub-functions and a well-known practice when referring to the finance processes is to use the following classification, which is also familiar in many companies' organization charts. Subledgers, such as, accounts payables, accounts receivables, travel expenses, cash management, fixed assets and payroll are taken care of in individual modules in a same ERP system that the general ledger or they can be integrated from separate systems. Transactions from subledgers are transferred to general ledger (GL) where subledger amounts are reconciled. Accruals and provisions are booked in GL to serve reporting, both internal and external. GL process is also called a Record-to-Report process. (Lahti & Salminen 2014, 16-18.)

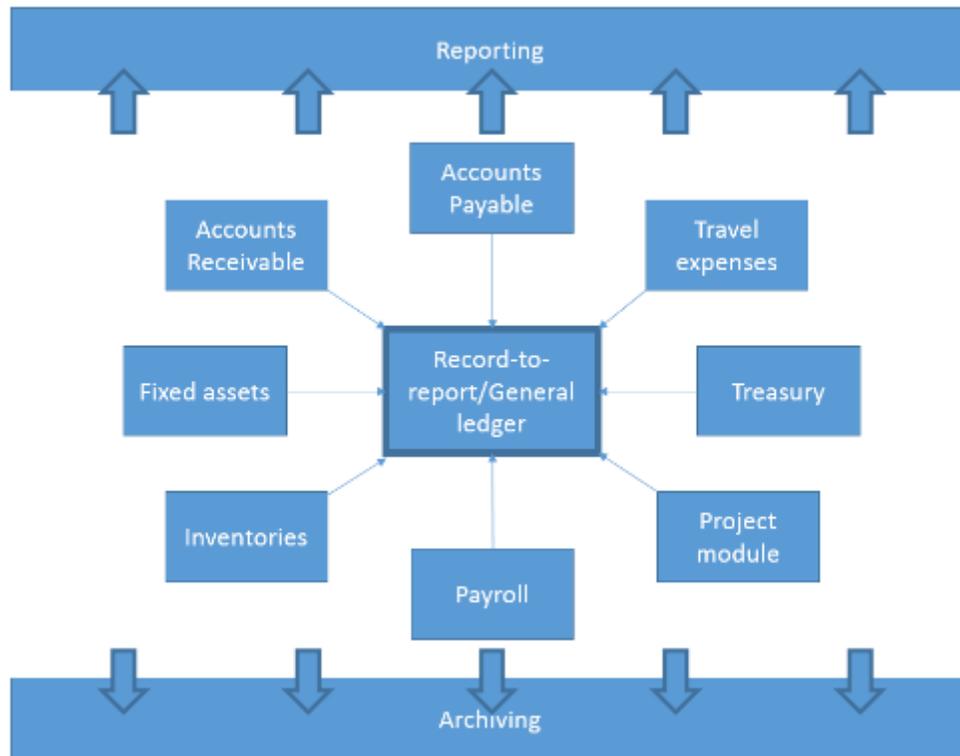


Figure 5. Finance processes adapted from Lahti and Salminen (2014, 19)

Figure 5 explains the connection between subledgers and general ledger. All subledger information is transferred to the general ledger. Subledger and other processes' bookings can be transferred to GL online, once a day or once a month (Lahti & Salminen 2014, 150-152). The general ledger process is called record-to-report process and it provides information for both internal and external reporting. (Lahti and Salminen 2014, 19). Vouchers that are booked directly to GL are called journals. Journals are used to book, for example, following transactions; accruals and their reversal, corrections, allocations and other internal cost bookings, currency revaluations and value added tax payable. (Lahti & Salminen 2014, 150-152.) According to regulations accounting vouchers have to be archived for several years, either in paper or electronic format depending on the country's accounting act.

Reporting is divided between external and internal reporting. Purpose of the external reporting is to fulfill statutory reporting requirements (Lahti and Salminen 2014, 173). According to Lahti and Salminen (2014, 176-177) the internal report-

ing can be divided into three categories. The first one, financial reporting, provides information for the management about actual financial situation of the company. This includes on, top of monthly, quarterly and yearly reporting, a lot of segment, profit, project or customer related analysis and reporting. The second one includes budgeting and estimates and serves future planning purposes. The third category, business intelligence (BI) and analytics, is mainly for the ad-hoc reporting. With BI solutions ad-hoc reporting, that previously may have required a lot of manual work, can be automated. (Lahti & Salminen 2014, 171-182.)

The record-to-report process is a central element of the month-end closing process. In the next chapter it is described in more detail.

2.3.3 Record-to-report process

This chapter discusses about transactions in general ledger and is followed by more detailed chapter about period closing activities.

The basic set up for the financial transactions needs to be defined carefully in the system. Depending on the company's internal and external reporting requirements the chart of accounts and other reporting segments should be set up to serve these purposes. The standardized chart of account and other control set up supports the automation. Chart of account should include all necessary accounts for external and internal reporting but still remain as short as possible. (Lahti & Salminen 2014, 153-154.)

Record-to-report process aggregates all financial transactions from separate subledgers into one place, general ledger. In the general ledger the data is available for reporting purposes after all necessary actions in GL are performed. Some of the transactions that are performed directly in GL are dependent of the subledger transactions. Many of the general ledger journals can only be booked after subledgers are closed for the month and their transactions are visible in GL. In practice it means that in period closing, there is a peak in transaction amounts in the general ledger.

All significant expenses (and income), that are missing after subledger closing, must accrue in GL with manual or automated journal. In many companies the reporting deadline is during 1st to 5th working day, thus forcing company to close its AP early. Thereof, not all payables invoices arrive early enough, and they are missing from the income statement. In many systems it is possible to make automatic accruals about purchase order based receipts, if relevant invoice has not yet arrived. Excel based import tools are common for booking journals and usually it is possible to reverse accruals automatically during the next period when applicable. Currency revaluation is a complex procedure, if the company has a lot of account payables or receivables transactions or bank accounts in different currencies. Advanced accounting systems are able to revalue currency transactions automatically, thus speeding up the closing process. Many accounting systems enable copying or repeating recurring journal entries. Usually internal accounting requires complex allocations between cost or profit centers. A lot of manual work and calculations can be avoided with systems enabling automatic allocations. In practice allocation keys, such as headcount or square metres are entered to the system and used as a basis for monthly automatic allocations. (Lahti & Salminen 2014, 159-160.)

2.3.4 Period closing

The financial close process can be divided into three type of processes. A hard close provides statutory information and is published externally. The hard close is performed quarterly and at the end of the fiscal year and is published for external shareholders use. The soft close describes the process in interim months between the quarterly reporting and is only available for internal use. A soft close is also called month-end closing. In addition, there can be so called virtual close that is more like ad hoc reporting. (Janvrin 2014, 383.)

In group companies monthly reporting schedule is under continuous tightening pressure. Reporting needs to be ready from one to five working days. Basically this means, that subledgers should be closed sometimes even during the last days of the previous month and thereof for example all purchase invoices have not yet arrived and accruals of the essential amounts need to be booked in GL.

(Lahti & Salminen 2014, 159.) Collaboration in an international company with subsidiaries around the world is challenging but around the financial close it is a must. A consistent close schedule helps finance team to achieve the common month-end closing schedule. With the help of the process management tools, it is possible to automate repetitive processes in financial closing and monitor the progress of the process in real time. (Adaptive Insights No date, 17.)

Ventana Research (2014, 5) found out in their research “Keys to a fast, clean close. Fixing the lengthening financial close” that those companies which have been able to shorten their financial close mention most commonly three reasons to their success. The first one is that they monitor and control their closing process frequently in order to improve it. In practice this means having monthly or quarterly reviews of the closing process and going through documented factors that are delaying financial process. The second success factor was mentioned to be a structural change, centralization, in order to improve communication, coordination and simplification. The third step towards the faster, error less and more controlled financial close was optimizing journal entries with simplification, standardization and automation. (Ventana Research 2014, 5.)

Parmenter (2016, 29-45) provides instructions to quick month-end reporting. With his instructions the month-end reporting can be performed even during the first day of the following month. Apparently, this can be achieved by closing the subledgers even days before the end of the calendar month but at the expense of the accuracy, meaning that more accruals and provisions are needed. So, in financial reporting there’s always a trade-off between speed and accuracy. Moreover not all ERP-systems allow, for example, closing the inventories before end of the last calendar day. Parmenter (2016, 33) emphasizes that finance team are not scientists but sculptors instead and no matter how long the GL or any subledger is kept open, the figures are not anyway exact. All the finance team can and should provide is true and fair view of the financial information.

Parmenter (2016, 33-42) mentions good practices regarding the materiality that can be followed although company would not seek to close its subledgers several

days before the end of the calendar month. He proposes making AP accruals before AP cutoff justifying his proposal with the experience of accountants that budget holders hardly ever know their missing invoices better day after the closing of AP than a day before. Additionally he suggests finance team to focus on major adjustments and follow the rule “do not be delayed for the detail”, thus meaning that only material adjustments should be done during period-end and all minor should be postponed to be booked later in less hectic moment, usually at the middle of the month. (Parmenter 2016, 33-42.)

Sarbanes-Oxley law, regulated after financial scandal in USA at the beginning of the 21st century, obligates companies to define internal controls for all processes in which delinquencies might lead to financial losses. These can be classified to preventing and revealing controls or general and process controls. The controls related to financial close process aims to secure “the true and fair view” of the financial reporting. (Lahti & Salminen 2014, 189-199.) Management is responsible of making sure that internal controls are in place (Janvrin 2014, 384).

Balance sheet account reconciliation is an important internal control of securing accuracy of income statement and balance sheet reporting. Some accounting systems support automatic listing of open balance sheet items. If automatic listing is not available then balance sheet account reconciliation needs to be performed manually outside the system. If balance sheet account reconciliation is not performed regularly, there is a risk that costs or income is doubled in case accounting entry has already realized and booked to income statement. In order to cut the workload in month-end closing, it is recommended that preliminary reconciliation should be performed at the end of the month when most of the transactions are already booked for the month. If some issues are found in the final reconciliation, they are easy to point out from couple of last days' data. (Lahti & Salminen 2014, 165, 199.)

Besides balance sheet account reconciliation other control points related to period closing are the subledger closing and reconciliation. When subledgers are closed and accounting data transferred to the general ledger, the balance in the

subledger must match with balance in relevant account/s in the general ledger. This is verified by running report from subledger, for example accounts payables, and comparing its total amount, in this case amount of open payables, to corresponding account in the general ledger. This is a routine procedure and it secures the data accuracy. In case of difference the issue must be clarified until the amount in the subledger report matches with the general ledger account. After reconciliation it is important to close the subledger period, so that no more transactions can be booked for the reconciled period. (Lahti & Salminen 2014, 199.)

Financial period closing consists of dozens or even hundreds of transactions in short period of time in general ledger and its subledgers. Some of them can be performed in parallel, but many are dependent of each other. Closing schedules are tight and there is no room for mistakes as financial reporting needs to provide “the true and fair view” of company’s financial status. Consequently internal controls and check points in process are important and mandatory when securing data and closing process accuracy.

2.3.5 Lean for accounting

Zarzycka and Michalak (2013, 139) state that principles of lean have lately been extended to support services such as accounting. For analytical purposes they are dividing the term *lean accounting* into two subgroups the first being *accounting for lean* and the second one *lean for accounting*. In their definition *accounting for lean* focuses on product of accounting where the accounting information is adapted to serve information needs of managers in lean enterprises. Moreover, *lean for accounting* is focusing on the actual accounting processes in order to support and improve accounting process and ensure its efficiency with lean methods. (Zarzycka & Michalak 2013, 139.) The empirical part of this study is about financial month-end closing process improvement and consequently this chapter focuses on the latter, *lean for accounting*.

Some literature about lean accounting has been available since 1990s but it is mainly concentrating on *accounting for lean* instead of trying to apply lean princi-

ples to accounting processes. On the other hand, in same decade large companies started to set up shared service centres in order to consolidate basic financial processes. (Zarzycka & Michalak 2013, 139.) By doing that they were seeking cost efficiency and benefits of large scale. Zarzycka and Michalak (2013, 143-144) reviewed in their study academic literature about applying lean methods to accounting processes and their improvement and found out that not many authors had managed to cover those topics. Furthermore, they came to conclusion that, although broad literature about SSC were analyzed, the details about processes were not revealed in those due to companies' privacy policy.

Zarzycka's and Michalak's (2013) case study focused on customer value and elimination of waste (Muda in Japanese) in month-end closing and reporting processes. Those being the two main principles of lean management. They mention that accounting and its processes exist in company in order to create value for the customer. In their study Zarzycka's and Michalak's (2013, 148) identified three types of operations;

- *operations that do not create customer value, so they can and must be eliminated;*
- *operations that do not create customer value, but cannot be eliminated now, so their costs and execution times need to be reduced e.g. due to automation, IT hardware/software;*
- *operations, that create customer value and therefore must be continuously improved to generate more value for customers. (Zarzycka's & Michalak's 2013, 148.)*

In financial closing the primary value for the customer is availability and reliability of the financial information in order to support fast decision making. (Zarzycka and Michalak 2013, 151-152.)

Zarzycka and Michalak (2013, 148) in their research revealed eight types of waste in accounting processes.

Table 1 Types of waste in accounting process (Zarzycka & Michalak 2013, 148)

Main types of waste according to the lean concept	Cases of waste in accounting processes
<i>Muda</i> : defects, errors, flaws	Errors in generated documents. Having to correct invalid entries in registers and files. Misaddressed messages. Outstanding payments. Double payments. Incorrect amounts. Non-balancing entries.
<i>Muda</i> : waiting	Waiting for documents to be entered into the system upstream, for signatures, decisions, decisions on applications, and for the system to carry out an operation (data processing).
<i>Muda</i> : over-processing	Unnecessary or pedantic procedures. Data that are unnecessarily entered, stored and processed again. Duplicated actions and processes. An excessively complicated document distribution system. Printing and distributing of documents that are available online. Too many decision-making levels for a process. Actions that are performed, even though they are not needed to achieve the intended goals.
<i>Muda</i> : unnecessary transport	Unnecessary circulation of documents between departments and institutions. People or teams working together but having to travel long distances (different floors, buildings, towns). Inefficient layout of workstations (communication problems). All movement of people, items or information that does not add value.
<i>Muda</i> : unnecessary motion	Inefficient organization of jobs. Poor ergonomics. Poor layout of workstations, scanners, etc
<i>Muda</i> : overproduction	Too many copies of documents or the printing of unnecessary documents. Redundant documents are produced or distributed to people who do not need them. Procedures are created that nobody needs or uses. Too many copies of documents are generated and stored. Too many reports irrelevant to their users
<i>Muda</i> : inventories	Too many documents being processed concurrently at the same workstation. The storing of unnecessary documents.
<i>Muda</i> : ineffective flows	The necessity to explain, correct, and seek additional information; an accounting system that needs employee support (low automation of processes).

Table 1 describes the identified waste in accounting process. Eight type of muda was pointed out in analysis of accounting processes. They consist of errors that needs to be corrected, different kind of waiting time, over-processing or duplicated actions, unnecessary transport of items or people, unnecessary motion meaning in this context inefficient job distribution, ergonomics or layout, overproduction in accounting, that could be related to too many or unnecessary copies or reports, inventories in a sense that unnecessary documents are stored and the eight one being ineffective flows meaning low level of automation of processes. In month-end closing process the waste was identified to consist of high workload in finance during period's end, complicated work processes that involve a lot of manual work and inefficient communication between participants in the process

(Zarzycka and Michalak 2013, 148.) Parmenter (2016, 10) adds unused employee creativity to the list. Each finance employee should come up with ten new innovations per year.

Zarzycka and Michalak (2013, 151-153) applied successfully lean methods in accounting processes in their research. Furthermore they found out that lower process costs, shorter and less resource dependent process with less errors is possible to achieve, when applying lean principals to accounting process. These improvements were achieved by automating most of the manual processes such as journal entry and account reconciliation, account closing and consolidation processes. Moreover improvements included scheduling account reconciliations to less busy periods and standardization of reports and formats. From customer point of view these actions provided better quality information in shorter time, thus increasing the added value for the customer. (Zarzycka and Michalak 2013, 151-153.)

Fisher (2018) recommends to automate routine work in finance with robotics. During the past year the interest towards robotic process automation (RPA) has increased exponentially. With RPA it is possible to reduce manual work and increase quality and speed of the reporting. As robots can perform tasks 24 hours per day, bottlenecks for example in monthly reporting process can be eliminated and thus increase the work wellbeing and customer satisfaction with automated processes. (In Remes 2018, 14-18.)

Lacity et al. (2016, 3) examined how RPA was deployed in one global financial SSC. By implementing RPA this global SSC was able to automate almost 90 percent of the manual tasks related to month-end closing process thus decreasing the closing schedule from 15 to three days. Considering the results in Lacity et al. (2016, 4) research, it is obvious that with RPA it is possible to achieve faster financial close with increased accuracy and better compliance.

Janvrin and Mascha (2012, 36) studied several softwares, that offer financial close packages. Their research did not reveal one perfect solution that would fit

for all. Nevertheless they recommend to automate financial close as it will reduce the possibility of manual errors and speeds up the process. The job description of future accountant and controller is about to change as instead of programmers, the RPA will be set up and operated by subject matter experts in finance (Lacity et al. 2016, 4).

3 EMPIRICAL STUDY

3.1 Case company overview

The studied company is an international Group operating in industrial technology sector. It is listed in Nasdaq Helsinki and its net sales per year exceeds one billion euro. The head office is located in Helsinki metropolitan area and company employs approximately four thousand employees worldwide. Sales network is covering more than one hundred countries and main operating areas are Europe, North America and Asia. Production sites can be found in approximately thirty countries. In Europe the business is divided into two segments based on product portfolio and customer type. In this presentation these segments are called segment A and B.

3.2 Background and motivation of the study

The financial services, supporting case company's European operations, are organized in four shared service centres. They are located in Germany (DE), Finland (FI), Spain (ES) and Sweden (SE). While SSCs are taking care of the daily routines for most of the European sales units, there is still a controller on site in most of the units supporting the local business management. However, some units have their own finance department e.g. Denmark and Poland which both are manufacturing sites.

Shared service centres in case company are using same IT tools. The enterprise resource planning (ERP) system, Oracle, was implemented during ten years period to all European units. From Oracle, information is collected during night by

data warehousing solution Oracle Business Intelligence (BI). BI is used for internal analyzing purposes. In addition, the group reporting tool is also a member of the Oracle family and is called Hyperion.

Shared service centres operate under the same management. Vice President, Shared Service Europe has been leading European finance organization for four years. In addition, he is leading shared service centre in Germany. Group head office is located in Finland, Helsinki metropolitan area. Group finance is providing guidelines and policies for reporting including group reporting calendar.

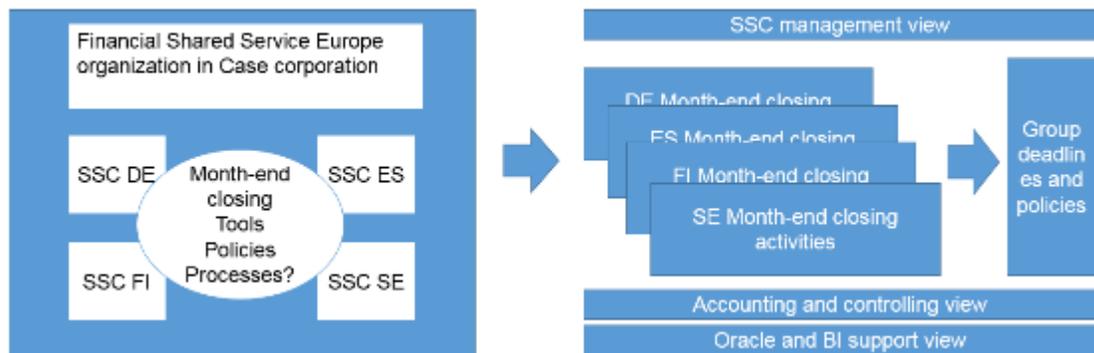


Figure 6. Background of the study and perspectives of the research

Figure 6 describes the background of the study as well as the different approaches used in this research. The left side part of the picture illustrates the shared service centre structure in the studied organization. The aim is to understand, if MEC processes differ in SSCs despite of sharing the same management, tools and policies. The subject will be approached from overview to details and from different angles; management, Oracle and BI tools support function, group policies and general ledger end user/controlling point of view. The purpose is to get different angles to the month-end closing process.

In shared service centres, financial reporting is prepared on a monthly basis. Group reporting accumulates step by step, all finance personnel works during the month, providing, in the end, reporting package for management's use. All financial shared service centres are following the same group reporting calendar. According to the group reporting calendar, the Monthly Reporting (MR) is usually due on the fifth working day during the normal month and in quarterly reporting, the deadline is on the sixth reporting day. The quarterly reporting includes some

additional forms that need to be filled in Hyperion and therefore the extra day is needed. In the year-end closing, there are more days to report but the content of the reporting is more demanding. In this thesis, researcher is focusing on month-end closing activities during the year, not the year-end or quarterly closing, although quarterly closing does not differ a lot from monthly closing. Group reporting schedule is available in appendix 1.

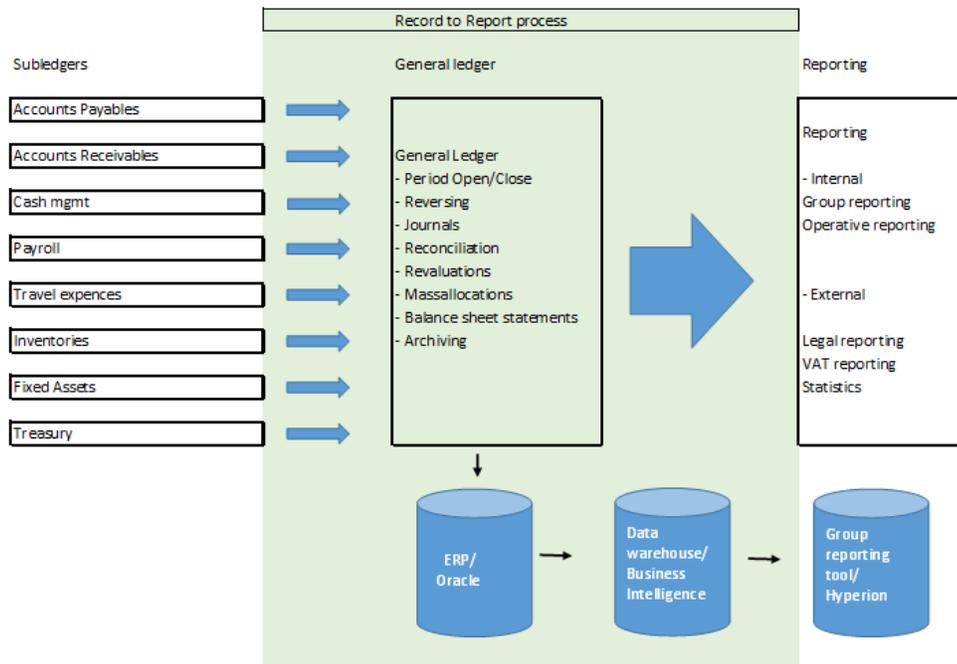


Figure 7. Development project focus area when drilling down to process level

Figure 7 describes the basic elements of the month-end closing process. The focus in this thesis project is in the Record-to-Report process, which is a central element of the month-end closing activities. In the figure, the focus area of the thesis is painted in green. All subledgers' information ends up into general ledger (GL). There are several processes ongoing parallel and all of them more or less depending on each other. As an example, AP provides information for FA about asset costs. Another example is that all subledgers' information needs to be transferred to the general ledger and reconciled as well as subledgers closed before making internal cost allocations either by journal or mass allocation functionality in GL. Furthermore, all GL journals, allocations, revaluations, etc. have to be ready before the income statement and balance sheet can be reported and consolidated in group reporting tool Hyperion.

The selection of the thesis focus area was decided together with Vice President, Shared Service Europe during spring 2017. The fact that there are two important projects ongoing during 2017 in finance area affected the decision. Procure-to-Pay project looking for improvement and automation in accounts payable subledger related process has quite a high-level attention during 2017 and 2018. The other project led by group finance is automating Hyperion reporting. The purpose of that project is to read GL data automatically from Oracle for income statement and balance sheet reporting. Automating Hyperion reporting will have a huge improvement in month-end closing process work load, but in order to automate, the rules and bookings in Oracle GL need to be harmonized and consistent. The outcomes of this research can also be utilized in Hyperion automation project as a background information, although that is not the main intention of the research.

Finance people are working hard during the month end closing and all activities need to be performed in correct order and timing. Subledgers are closed and transactions transferred to GL. This does not always succeed in the first try and Oracle support is also facing peak in the beginning of the month in a number of incidents. After subledgers are closed there are journals and allocations in GL to be booked before data is ready for reporting. Accountants are working to close the subledgers and make accruals and allocations in time so that controllers have time, not only to report the figures but, also to analyze the content of them. In many cases, there is too few time for analyzing and if month-end closing could be streamlined and made more visible, management would benefit of more reliable financial information as there would be more time to analyze the content. In addition, the whole finance department personnel could benefit the outcome by reduced overtime work and stress

3.3 Research method and material

The purpose of this research is to gain a wide understanding of one company's four shared service centres' month-end closing processes and therefore a qualitative case study was selected as a research method. Qualitative methods try to

reveal different aspects of a limited number of observations and are suitable methods for studying e.g. organizations (Ghauri and Gronhaug 2010, 106). The purpose of the qualitative methods is not to proof facts of known issues but instead, find or reveal aspects and facts of the studied subject and deepen the understanding of the real-life phenomenon (Hirsjärvi et al. 2010, 161). Woodside (2010, 1, 6, 16) proposes that the basic principal of the case study is to obtain a deep understanding of processes and other variables affecting the studied phenomena. He also suggests using triangulation in order to gain a rich, deep view of the case. Triangulation means approaching the studied subject from different angles. It can include e.g. observation, interviews and data analysis.

Although the researcher was performing a major part of this study during her study leave, one could say that part of the methods used are based on observation as the researcher has worked in Finnish SSC for twenty years in several positions including controlling as well as accounting. The researcher has also been involved in several Oracle roll-outs and has been acting as Business Intelligence (BI) tool local key user in general ledger area for several years, so tools in use are well known, as well as the challenges faced.

The major part of the empirical data was collected in semi-structured and unstructured interviews. The interviewed people are managers and specialists from SSCs in Europe, head office and Oracle/BI support centre. All the interviews were performed via Skype and recorded, foreign ones in English and domestic ones in Finnish.

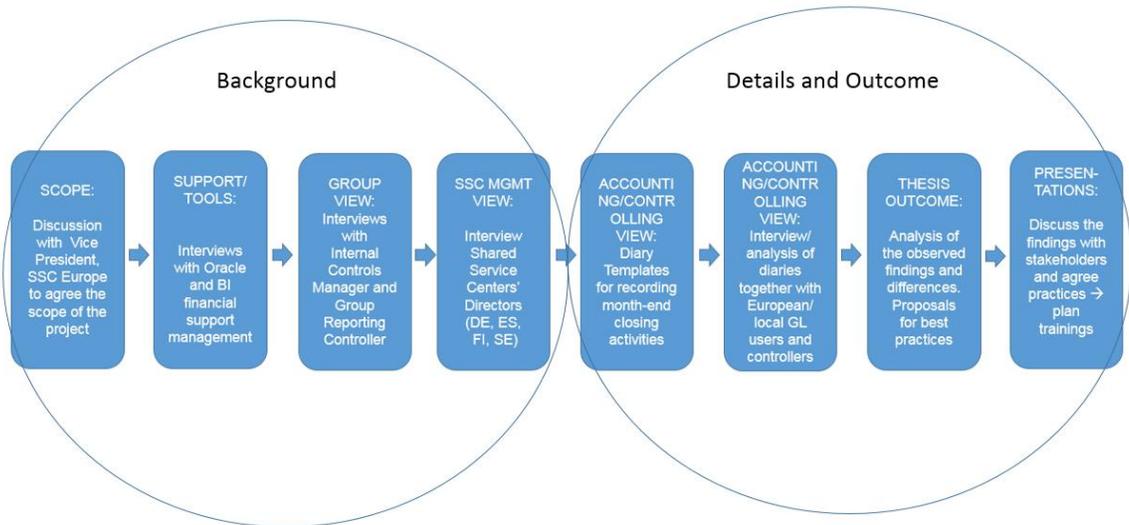


Figure 8. Overview of the thesis interview progress

As can be seen in Figure 8, the data collection begun with gathering the background information. First, the scope was agreed in April 2017 with Vice President Shared Service Europe. The preliminary discussions about the topic had already started in October 2016 and finally, in April 2017, it had found its final form and purpose. In May, the researcher started the data gathering process by interviewing people responsible for the Oracle and BI tools support in the finance area. Then, from the group level, the Internal Controls Manager was interviewed in order to find out what should be taken into consideration during the project related to internal controls. At the end of May, all four shared service managers in Europe were interviewed. They provided background information about their team and challenges their organization has faced. The Group Controller from head office was interviewed as it was important to understand the ongoing developments in Hyperion reporting automation as well as discuss the group perspective to the monthly reporting process and their observations regarding issues.

After the big picture was clear, the project plan was revised and collecting the details could start. The original idea was to make questionnaires for all accountants in SSCs but during the discussions with SSCs' managers it came obvious that also controllers should be involved and it was agreed that one accountant and one controller from each site would be interviewed. For qualitative study, it is typical that, for example, the decisions about data collection methods change and

develop while the research progresses (Kiviniemi 2010, 70.) While the researcher's understanding of these four shared service centres' organizations and practices increased the plan was revised. Based on the discussions with SSC directors, accountants and controllers seemed to have diverse work distribution in different countries, in some countries sharing responsibilities in the record-to-report process. The questionnaires were replaced by interviews so that in-depth understanding of the month-end closing activities could be achieved.

The data collection regarding the month-end closing process details was agreed to start with diaries. As the month-end closing days are usually quite hectic and include a lot of activities the purpose of the diaries was to record all tasks, issues, used reports and programs so that they could be later discussed during interviews. Without recording the activities, many steps might have been missed when only later recalled. One accountant and controller per site was asked to fill in a diary about activities they perform during one month-end closing starting from the last business day of the previous month and continuing till Monthly Reporting day (MR), which is the fifth working day.

The month-end closing studied was agreed to be May 2017 closing, so to say, six days period at the end of May to the beginning of June. Six working days as the last day of the previous month should also be recorded. One challenge regarding the diaries was that in Sweden there were two national holidays during the period and they had planned to perform the activities in uncommon order and speed so that they do not have to spend both national holidays working. In Germany, there was a similar issue as they had one day off during the observed period. However, from a research perspective, it was interesting to see what actions they had taken in order to survive with less time than normally. During June the controllers and accountants were interviewed and diaries were discussed and studied in those interviews. From this research point of view, it is important to understand that all finance SSC personnel are participating MEC activities and month-end closing described in empirical part is only providing part of the process as only two or three participants were interviewed per country.

From July to September all of these seventeen interviews were transcribed. Each interview lasted from one hour to hour and a half. Time spent on transcribing interviews was approximately 150 hours and the outcome included 132 pages of transcribed material.

In order to understand the workload during the month-end closing, BI Content Owner Finance provided, from researchers request, detailed data of general ledger transactions from the year 2016 and May 2017. Researcher summarized 2016 data as a pivot chart to get the overview from a longer period of a number of transactions per calendar day. The data from May 2017 represented the same period when diaries were made and thus gave a good insight into the peak of the workload during analyzed month-end closing. The other analyzed material included internal documents for example organization charts and internal controls documentation.

The following chapter will present the statistics about a number of general ledger journals in 2016 and during May 2017.

3.4 The month-end closing workload in general ledger

The month-end closing schedule is defined in the group reporting calendar updated by the head office. The calendar is available in appendix 1. Monthly reporting day is marked with MR in the group reporting calendar. The deadline for monthly reporting (not quarterly or yearly) is usually during the fifth working day for all units. In general, this means that all units' reports have to be ready and consolidated by the fifth working day and no general ledger (GL) transactions for the previous month are allowed after that deadline.

As the month-end closing is the busiest time of the month for accountants and controllers, the data of the general ledger journals from the year 2016 was analyzed in order to find out the amount of GL transactions booked at the beginning of the month. The data was exported from Business Intelligence tool and covered transactions from all four SSCs'. Subledger transactions were excluded to get the

overview of GL transactions only. The definition of the journal types and data included is available in appendix 2.

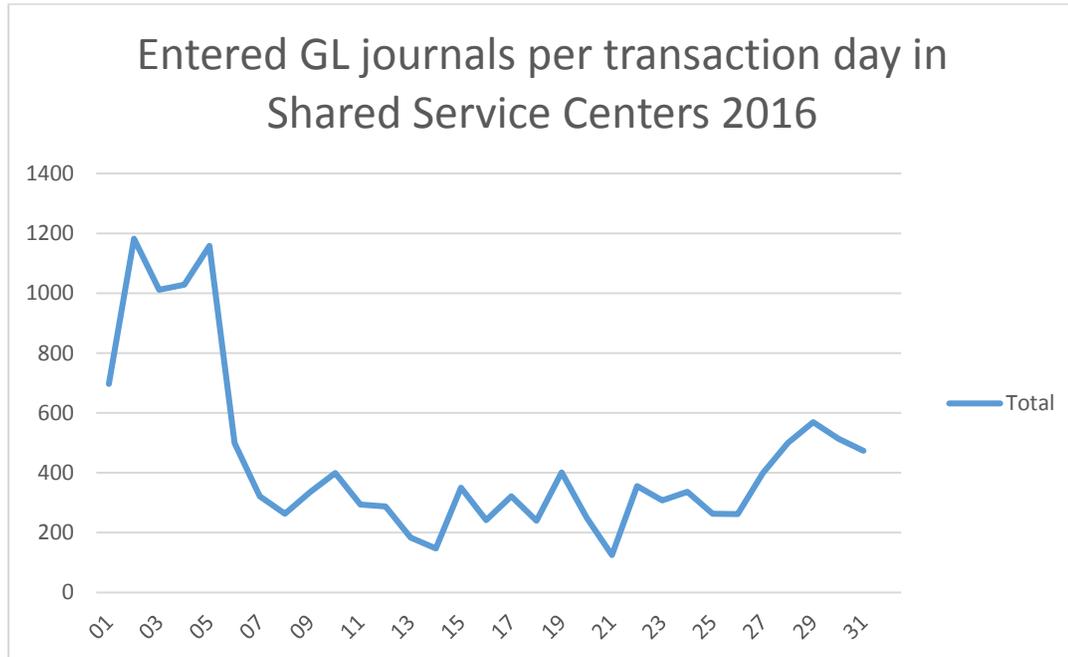


Figure 9. Entered GL journals per transaction day in shared service centres during the year 2016

Figure 9 shows the number of entered GL transactions per calendar day. The data of the total year 2016 was analyzed in order to get the full picture of the fiscal year. As can be seen in the figure, the number of GL transactions is highest at the beginning of the month, when most of the GL transactions for the previous month have to be booked according to the schedule. It is also visible in the figure that when the month-end closing time approaches at the end of the month, the number of booked journals increases already during the last business days. In practice, this means, that accountants and controllers are trying to cut the peak of the workload by booking all possible journals as early as they have needed information available. The figure clearly demonstrates the amount of work being highest at the beginning of the month and thus need for continuously search for new ways to cut the peak.

When taking a closer look at the SSC specific graphs in appendix 1/3, the highest peak in workload for period 1-11/2016 seems to be the second calendar day in Sweden, Spain and Germany. Moreover, in Finland, the highest peak is on the fifth calendar day. It seems that, on average, Finland is facing a peak in a number of journals closer to monthly reporting deadline than the other SSCs.

As the period for diaries that accountants and controllers kept in this research was during the May closing, the May data was also analyzed and graph made of it.

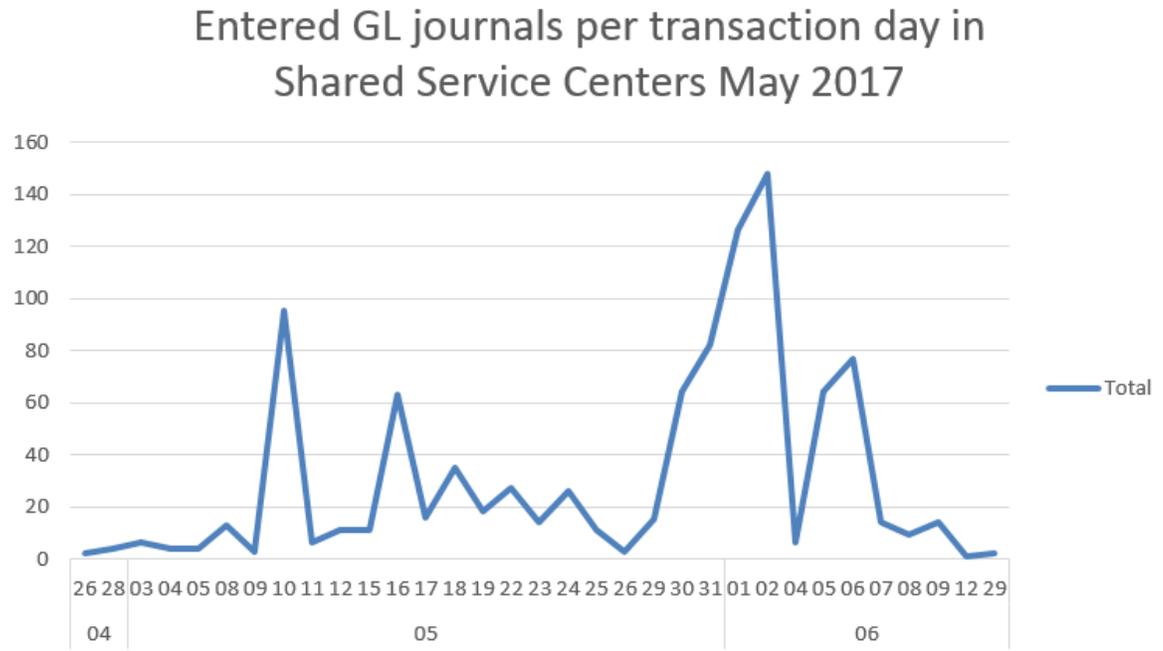


Figure 10. Entered GL journals per transaction day in shared service centres during May 2017

Figure 10 illustrates that month-end closing of the period May 2017 causes a peak in workload during the end of May and beginning of June. This graph presenting one period's transaction amounts makes the fact, that quite big amount of period's GL transactions are booked at the beginning of the next month, more visible than the previous graph of one year's transactions. The details about data included in the graph are available in appendix 2. The monthly reporting day was 7.6.2017, which is the fifth working day in Finland. In Sweden and Germany there were national holidays during that period, in Sweden two days, 5-6.6 and in Germany one, 5.6. Due to these holidays, they had to perform closing activities with exceptional speed and order. These holidays also affect that the peak in the graph is earlier than it usually is as some of the subledgers were closed before regular schedule in those countries (see appendix 2/3). Spanish and Finnish calendar did not include any national holidays during the May reporting period. The third and fourth calendar days were the weekend. On Sunday the fourth, some

journals have been booked according to the graph. At least Swedish controller mentioned working some hours during holidays.

The country-specific graphs of May 2017 period are available in appendix 2/3. Interestingly in Germany's graph, the highest peak in a number of journals is on 10.5. Germany seems to have a high amount of recurring journals and those were submitted on that day. Recurring journals are useful when the same bookings are repeated every month. With Oracle functionality, the bookings are easy and quick to submit monthly after they have once been created. Usually, recurring bookings are not dependent on the other bookings and can be submitted well in advance before the month-end closing period. During the period Germany had 88 recurring journals whereas Finland had 8 and Spain 4. Sweden did not post any recurring journals. The second highest peak in Germany was on 31.5. It seems that some activities were performed earlier than usual as month-end closing period included one national holiday.

In Spain, the highest peak is on day one but day two is almost on the same level. At the end of the month, Spanish graphs show also a small increase in a number of journals. The highest peak of the entered journals in Finland is on 16.5. Finland is using Oracle functionality which automatically reverses specific journals when opening the next accounting period. On 16.5 accountants have opened June period for two legal entities and Oracle has automatically reversed all journals from the previous period that have used journal category "Upo Month End Adjustment". On the 19.5 another accountant has made the same procedure for third legal entity and the small peak is visible there as well. In addition, accountants book specific journals right after opening the next period. This is due to the fact that many of reversed journals are booked on a year-to-date basis and it is important to book new journals right after previous months journals are reversed automatically. If e.g. salary bonuses are not booked in GL, the whole year's bonus costs are missing when making internal invoices related to personnel resources that should be shared between group companies. These journals increase the peak in Finland in the middle of the month. In addition to Finland, it seems that only Sweden is using automatically reversed journals. At the actual

month-end closing period the biggest volume of journals is on the fifth calendar day, however, the second and sixth day are almost on the same level. The Finnish graph differs from other SSCs' graphs as there are no GL transactions for May during 1-11.5. In other SSCs' also some cash transactions are booked with GL journals and thereof transactions are divided more even for the whole period. In Finland, all cash bookings are made in cash management module without GL journals and all GL transactions are booked by GL accountants. At the beginning of the month accountants in Finland are concentrating on closing previous month's period and after that on VAT reporting thus first GL bookings for the month are made only after those tasks have been completed, usually at the middle of the month. In Sweden the highest peak of GL transactions in May period was on the 2.6., additionally, the peak in 31.5 and 1.6 was also on a high level. In May closing period third and fourth of June were weekend and after that Sweden had two national holidays (5-6.6), thus they were speeding the process and peak was earlier than usual.

In the following chapters, shared service centres and their organization are presented. Activities one controller and accountant per country have performed during the month-end closing are discussed and later in chapter four analyzed.

3.5 Shared service centre Finland

3.5.1 Organization and set up SSC Finland

Finnish finance SSC is responsible for five group companies' finance transactions. Four of them are Finnish and one of them is Swedish. Two Finnish companies are manufacturing units and also controlling is taken care of by local SSC. These two entities belong to group segments A and B. Three of the companies are more of an administrative nature including the group's head office. These administrative companies' controlling is taken care of by group controllers working in the head office in Helsinki metropolitan area. The Swedish company is related to group research and development and thus is reported by the controller in head office but accounting, AR, AP and other daily routines are taken care of by Finnish SSC. The following figure provides an overview of Finnish SSC organization.

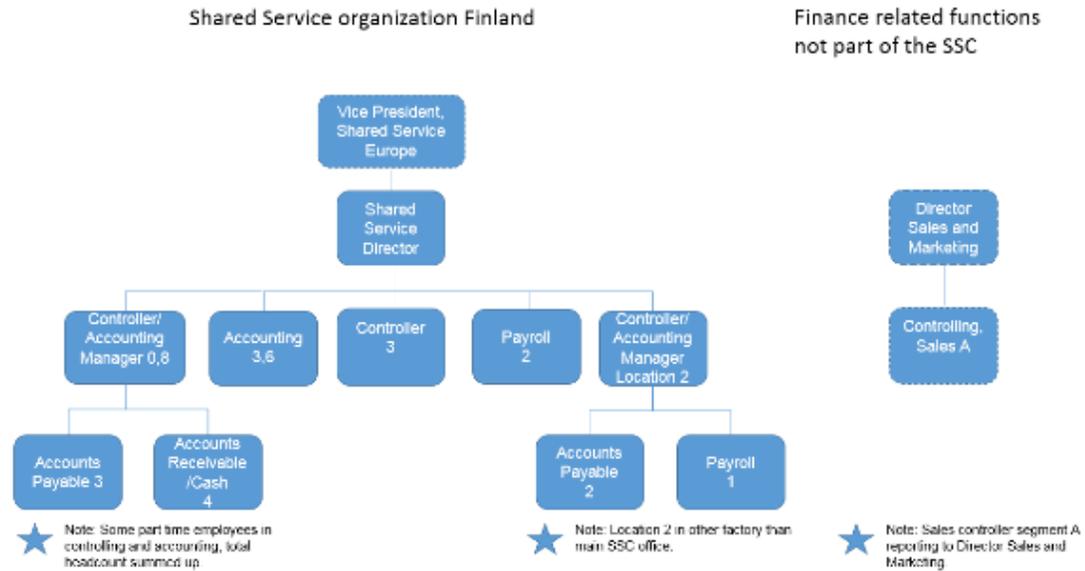


Figure 11. Shared service organization in Finland

Figure 11 illustrates the structure of the SSC organization in Finland. Finnish SSC is located in Southern Finland although some personnel is located in West coast (location 2) of the country where the company used to have quite a huge factory before centralizing most of the production to Southern Finland factory. There are still some manufacturing in location 2 and controller, acting also as superior to the other local finance personnel, is supporting local production management. In addition, two payables and one payroll clerks are working in location 2 although in close co-operation with other SSC personnel. Finance is organized on a team basis, accounting, accounts payables, accounts receivables, payroll and controlling. All teams have monthly meetings to share current issues. Sales controller segment A reports to Director Sales and Marketing but works with close co-operation with other controllers regarding Hyperion reporting.

SSC Director Finland has worked for the company ten years and in the current position for eight years. She follows up resource needs monthly and plans resources on the calendar year and team basis. Resources are on sufficient level but when personnel has unplanned leaves, the rest of the team needs to prioritize tasks.

Internal controls are documented on an excel template and include a link to work instructions. Excel template is useful in case of sick leaves as instructions guide the work. On the other hand, the template is not in active use during the month-end closing as it is not used for a recording that internal controls have been performed or checked. It is more for documenting control points and guiding the work. SSC Director Finland would appreciate automatic control points supported by the system. Currently, Oracle is not supporting internal controls follow-up or force the user to make controls. However, in practice, internal controls are in place and documents stored in the server.

3.5.2 Month-end closing SSC Finland

In Finland Supply Controller operative unit A and Accountant unit A was decided to interview. The Accountant has worked for the company three and a half years and in accountant position two months at the time of the interview. Before that, she worked as a sales unit controller. Her position is temporary. Supply Controller A has worked for the company for six years. He started as a controller for operative company segment B taking care of the supply unit. In the current role, he has worked for four years. So he has experience of both operative entities supply controlling work.

SSC Finland has a quite detailed month-end closing schedule for all five legal entities. The schedule includes timing for AP and AR closing, blue-collar salaries, mass allocations and GL closing. Inventory or FA closing are not mentioned but operative entities FA is closed during the last business day and inventories on day one. Operative entities schedule is earlier than administrative ones. As an example, two operative entities AP is closed second working day at 12:00 and administrative entities third working day at 14:00, 16:00 and third administrative entity by the end of the day. The success of the closing schedule is followed up in monthly meetings and issues discussed.

Before month-end closing

The following month's periods in GL, AR and AP are opened at the middle of the month. The GL opening generates automatic reversal of the journals booked during the previous month with journal category "UPO month-end adjustments". As there are always accruals that must be reversed during next period this Oracle functionality saves a lot of time for an accountant as instead of manually going through each journal and reversing one by one, this functionality reverses special journals automatically. In May there were 17 automatic reversals in legal entity A and total of 29 in Finnish companies. After opening the June period Accountant A books first journals to May period. As an example, salary bonus accruals and insurances are booked on a year-to-date basis and reversed monthly. As the opening of June period reversed April's booking, it was important to book May journal soon after reversal. This is because when AR is invoicing internal resources, in which salary bonus accruals are affecting, the costs need to be booked so that internal invoices include correct amounts.

Only accountants are booking journals in Finnish companies. In operative companies controllers are making excel based automatic upload journals, called ADI journals, regarding the unit under their responsibility but they are not submitting those themselves. Instead, they send ready-made ADI journal template to an accountant who submits the journal to Oracle. Submitting and archiving is centralized to the accountant. Accountant checks that distribution set is valid and submits the journal to Oracle. Before posting it, she makes a pdf copy of the journal and its attachments and attaches journal to Oracle. When the journal is posted the attachment cannot be changed anymore in Oracle. The pdf is also saved to a monthly folder in server. Paper copies are not printed or archived.

The last business day of the month does not include any special activities from Accountant A. Anyway fixed assets are run during the last business day but they are under the responsibility of one of the payroll people. Controller A has some inventory closing related tasks during the last business day. He checks the pending inventory transactions in case of issues. In addition, he checks whether there

are negative balances in inventory and forwards them to planners for investigation.

Day 1

During the first working day Accountant A got instructions to reverse some previous years' accruals. There were closed cost centers involved and some studying of the budgeted costs/cost centers was needed before reversing and booking new corrected accruals for the year. In the afternoon Accountant A tested some incident related to the VAT issue. The request to test came from Oracle support and it was quite urgent.

According to Finnish schedule, the closing of the operative entities AR and AP is on a second working day at 12:00 but in May AR informed accountant that they were ready at 16:00 at first day. They run the closing batches in AR and finally sent "Aging 7 buckets by Account" report for the accountant. Accountant reconciled the report with GL accounts and when it was matching she could proceed. Anyway, when Accountant A tried to close the AR it did not succeed as Oracle gave an error message that some transactions were not finalized. After AR had searched the matter without a solution they agreed to wait till the next day and try again.

During the first day of the month, Controller A concentrates to the inventory closing and reconciliation.

Day 2

In the morning the AR closing succeeded without any issues. The cause for the issue during the previous day was not clear and incident to Oracle support was not made. Reconciliation reports were stored in a server to a special folder for all reconciliation documents.

Accountant A helped AR person with excel formulas. AR is sending intercompany balance sheet confirmation requests but before that, they run a report from AR and modify that in excel. The output is used as a basis of the balance sheet confirmations and also for reporting intercompany balances in group reporting. Balance sheet confirmations require one full day work from AR accountant. Intercompany balances of two operative units are reported to Hyperion centrally by Accountant B.

AP provided report "Payables trial balance" for the Accountant at 11:20. Accountant reconciled figure with GL and tried to close AP. Oracle gave an error message that one invoice is not completed. With "period closing exception report" Accountant A could identify the invoice and she reassigned the issue to AP for resolution. Invoice seemed to be properly handled and as the issue was not clear they decided to run all closing batches again. The AP was finally closed at 14:00. Reconciliation was documented and saved to the server.

After AR and AP were closed Accountant A could run currency revaluations with Oracle. Oracle currency revaluation functionality is very quick and easy to run after it has once been set up. Before taking functionality in use it took several hours to run and modify Oracle reports and valuation was only done quarterly. Nowadays it is run monthly and takes approximately 15 minutes of which 5 minutes to run and post and ten minutes to check. With this functionality, AR and AP currency balances are valued with the last day's currency.

Accountant proceeded with AR maturity reporting and credit loss bookings. She also filled in the maturity report in Hyperion. Then she continued with other bookings that could be done after subledgers were closed. While doing the bookings she marked journal numbers to follow up list to make sure all monthly repeating journals will be booked. She also keeps track of the journals that controllers perform monthly and gives a reminder, if something seems to be missing.

On day 2 Controller A continues with inventory analysis. In addition, he receives information from the organization about some shared costs and prepares ADI

journals accordingly and sends them for Accountant A for uploading. After AP is closed, he can start material cost calculations. Legal entity A has nine operating units and material costs need to be divided between these units. This requires some excel work as the current set up in the warehouse regarding costs of goods sold does not support the unit split.

Day 3

For Accountant A the second and third working days are the busiest. The third one is the critical one as all journals related to costs that will be allocated needs to be booked before running mass allocations. Mass allocations can be run after blue-collar salaries are transferred in GL. The deadline for salaries is at 14:00 and they are transferred to GL with the interface. No ADI journal is needed.

The highest peak of the journals is on day three. Accountant A makes journals and books all journals that four controllers send for her. When payroll informs after 14:00 that they have transferred blue-collar salaries to GL, Accountant A checks list of monthly journals whether any of the repeating journals are missing. Then she sends email to controllers asking if they still have some journals to book before mass allocations can be run. At 15:50 all journals that need to be ready before allocations are booked and Accountant A can run mass allocations. Running the allocations is five-step process and takes approximately 10 minutes with all checking and posting. The first step is actually recurring journals which could be run any time of the month but it is easier to remember to do them together with mass allocations. Four recurring journals and twenty mass allocation journals were created. Running, posting and checking takes approximately ten minutes so the process is a quick way to submit long journals as system calculates the amounts to be booked based on the redefined quite complex allocation rules. Without this functionality, it would probably take half a day from several controllers to calculate the allocated amounts and make bookings. It is important to run allocations on day three as BI needs to be updated during the night so that BI data can be used for analysis and remaining bookings.

Controller A calculates and makes ADI journals related to e.g. electricity, maintenance, one time and material costs. He sends ADI journals for Accountant A for uploading to Oracle. At 15:00 he confirms to Accountant A that all necessary journals have been created and mass allocations can be run.

After mass allocations are ready, supply unit reports can be run from Oracle. Anyway, total of 12 different reports are needed to gather the data for income statement reporting of supply unit A. Four of the reports are run directly from Oracle, seven from BI and one from payroll. Some of the reports can be run already after subledgers are closed and BI updated. As an example, intercompany cost sharing income and costs are taken from BI report after AR and AP are closed and BI updated the night after.

Day 4

In the morning one of the controllers sends ADI journals by email. These journals can only be done after mass allocations are run and BI updated. Accountant A books and archives these 19 journals. Then she updates balance sheet specifications until lunch. By going through and updating balance sheet specifications before reporting deadline, accountant controls that balance sheet accounts contain correct bookings and in case of some issue, there is still time for corrections.

After lunch Accountant A clarifies intercompany netting transactions and makes corresponding bookings to clearing account. All treasury bookings from Twin (Treasury application) need to be in place before final bookings related netting can be done. Treasury bookings are normally transferred via an interface on the second working day and this was the case also this time. Anyway, there were some errors in bookings and headquarters accountant informed that she needs to make some corrective actions. So usually netting bookings can be done after Twin transactions are in GL and AR is closed on day two. AR needs to be closed before final bookings as, for example, some loan related money transactions are booked in AR. When netting account is cleared with the booking, Accountant A can start to report the non-operative unit's income statement and balance sheet

to Hyperion. She runs reports from Oracle and places them to excel template, makes some checks and submits figures to Hyperion. The non-operative unit includes lines below operative profit, e.g. interests and in balance sheet loans and deposits. Thereof it is natural that the accountant takes care of the Hyperion reporting of these items.

During the day four Controller A continues with the supply unit's income statement reporting and analyzing. After he has gathered all reports for the upload excel he submits figures to Hyperion. The output in Hyperion is compared with previous month actual, current month's estimate and budget. Analyzing and investigating discrepancies takes time.

Day 5 (MR)

On day 5 there are still two journals coming from the controller to book. These are corrections to earlier booked ones. One of the controllers had noticed during the reporting that previous bookings included a mistake.

Accountant A makes the final update of the balance sheet specification. Then she starts VAT reporting by running the report "Financial tax report". Usually, it is not yet run during the monthly reporting days but this time purchasing department requested it so that they are able to compare it for Intrastat reporting (import of goods from EU countries) before a key person is leaving on holiday.

In the morning Controller A starts to reconcile all four units' income statements between Hyperion and Oracle. He assigns differences to other controllers for investigation. Many inconsistencies related e.g. to one-time cost bookings in Oracle lines and reporting in Hyperion lines makes reconciliation challenging. Balance sheet reporting is not under Controller A responsibilities but instead, another controller is gathering and submitting the data for whole legal entity excluding non-operative unit's balance sheet. Sometimes the income statement and balance sheet are not reconciled until the evening of the MR day. There are months when investigations of the differences are continued after MEC.

Additional comments

SSC Director Finland is willing to change the closing schedule. It is up to the team to test whether it would be possible to close e.g. the AR and AP on the first day of the month or why not on the last day of the previous month. Anyway, that would generate more work in the following steps as e.g. closing AP earlier would require more GL accruals as not all invoices have arrived before closing the subledger. Nevertheless, currently, the bottleneck in the month-end closing process seems to be blue-collar salaries that are scheduled to be ready on the third working day at 14:00. When salaries are in GL, the next step is to run mass allocations. Only after mass allocations are run, the income statement and balance sheet reporting can start. Thus, in the current situation, it is not worth closing AP or AR earlier as salary bookings are still missing.

3.6 Shared service centre Germany

3.6.1 Organization and set up SSC Germany

SSC Germany is taking care of the German Unit representing, according to Vice President SSC Europe, approximately 50% of the European net sales. The one legal entity is split into 25 reporting units in group reporting and it has sales and warehouses in several European countries. German unit is producing segment B products. Besides this biggest group company in Germany, SSC Germany is supporting some other smaller group companies in Germany. Those companies have their own finance teams and they are not using Oracle as an ERP system. Most of them are related to the latest acquisitions.

Vice President Shared Service Europe has worked in his current position for four years. At the time, the position was new and European Shared Service organization was established at the same time. Earlier he had worked as a Finance Manager in Germany for 18 years.

Vice President is responsible for German Finance SSC and in addition local SSC directors in Spain, Sweden and Finland are reporting to him. Furthermore, BI Finance Content Owner who is located in Finland is also reporting to Vice President. Compared to other SSCs there is the exception that legal counsel and customs are part of SSC in Germany. At the time of the interview, Accounting Manager was on long sick leave and Vice President SSC Europe had 24 direct reports of which 16 working in finance-related tasks in Germany SSC. Controlling in SSC employs four supply controllers and their superior Controlling Manager. Four sales controllers are not part of the SSC organization.

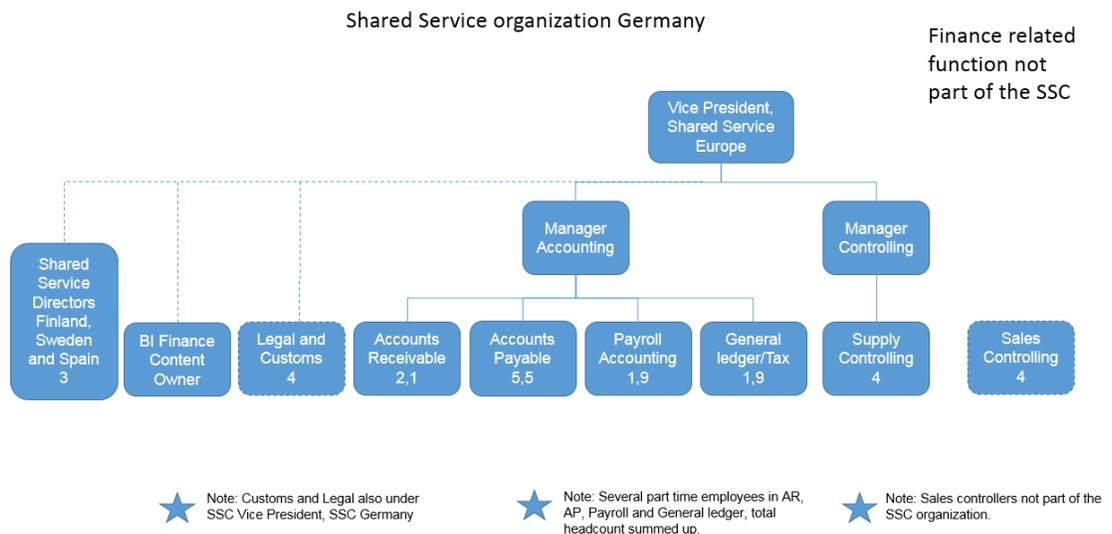


Figure 12. Shared Service organization in Germany

Figure 12 describes the SSC organization in Germany. The finance part of the German organization is split between accounting and supply controlling. Sales controllers are involved in the month-end closing process, although they don't report to Manager Controlling. In accounting, many people are working part-time between 30 and 80 percent workload.

Internal controls documentation is available and it provides information about control points and location of the control evidence as well as people responsible for the task. In addition, it lists action points and the deadline for corrective actions, in case control point has not reached the highest score. However, like in

Finland, it does not provide information at a glance whether control points have been performed monthly, although the link to the folder where evidence can be found is available. Internal controls excel template is more for documenting the control points rather than checking whether they have been performed monthly. According to Accountant Germany, the subledger reconciliations are performed before closing the subledger and documents are stored in the server. In practice, controls are in place.

According to Vice President SSC Europe, resources are on a balanced level regarding the daily readiness but in case of changes, it takes time to stabilize the situation. Also if someone is on sick leave or some other unexpected leave occurs it requires extra hours from the rest of the team. He mentions that these challenges are similar in each of the four shared service centre.

3.6.2 Month-end closing SSC Germany

In Germany, most of the finance people are working overtime during the month-end closing. That is planned and is seen inevitable due to the size of the business. In case of someone being ill or some issues with the tools, people need to work late hours in the evening or during the weekend, in order to catch up on the schedule. Employees are goal-orientated and do their best in such situations. Team members support each other and they have good team spirit. Many employees have worked long in the same process and their experience helps them to solve unexpected issues.

People interviewed from Germany were Accountant, Controlling Manager and one of the supply controllers. The Accountant has worked for the company for 23 years. He is responsible for fixed assets, payments, cash forecast, payment part of the netting and general ledger. Value added tax and taxation are not under his responsibility. The fact that all payments are done only once per month on the 15th day makes it possible that the Accountant is responsible for all payments. Controlling Manager is responsible for four people supply controlling team and has worked four months in his position at the time of the interview. Supply Con-

troller who was interviewed is working part-time and her main responsibility during the month-end closing is to prepare, check and upload group reporting of all 25 reporting units to Hyperion centralized. She has worked for the company for six years and before this position three years as a team manager.

Unlike in other SSCs, in Germany, income statement and balance sheet are technically submitted by one person and they are based on BI data instead of Oracle. In practice source of the BI data is Oracle but it is not up to date online. Instead, BI is updated by night and during the month-end closing at 12:00 Central European Time. The responsibilities of checking the accuracy of the income statement and balance sheet lines are divided between all controllers. As an example, one controller can be responsible for checking cost sharing and administration cost. In addition, sales controllers are checking their sales units group reporting. Until 2017, several controllers were submitting figures to Hyperion reporting. Anyway, there were always discrepancies and from the beginning of 2017, the technical upload of the income statement and balance sheet was centralized under one controller's responsibility.

May closing period was shorter than normally as there was one national holiday included. That was Monday the fifth of June. As there was one day less to report people were working overtime and later in less hectic time they can keep time off.

Before month-end closing

Accountant Germany prepares and sends a month-end closing schedule for all relevant parties approximately one week before month end. The schedule is quite detailed and includes the day and time of the action as well as responsible function and who must be informed. Some of the actions are scheduled in the evening such as closing AR at 1.6.2017 18:00. This is the normal closing time for AR.

Two days before month end Accountant generated recurring bookings in Oracle. Fixed assets are normally closed during the last day of the month. Sometimes new assets are booked a day earlier but the depreciations are run during the last

day. Accountant Germany sends a reminder to AP in the morning at 08:00 to finish booking FA related AP invoices. In Germany, assets are only booked to FA when ready. Work in progress is not handled in FA nor FA related prepayments but instead booked to special GL account with project number. This saves time as not every single invoice needs to be handled in FA. When FA is closed Controller Germany can start preparing FA related group reporting.

During the last day of the month, AP sends a reminder to the organization requesting people to approve invoices in workflow by the first day of the month at 12:00. The remainder includes a template for accruals and if an organization has costs but not yet the invoice, they need to provide information to the accountant by the first day of the month at 16:00.

Last day's activities also include booking salaries by ADI journal according to received excel file. After salaries are booked, one of the controllers runs the first mass allocation. This mass allocation divided specific costs between cost centres. In the evening of the last day, the Accountant opens the next period for all subledgers except FA which is opened automatically when the previous period is closed and inventories which are opened automatically.

Controller Germany starts the validity check of the data two days before month-end closing after sales are uploaded. The pre-checks are necessary as during the actual reporting after GL is closed, there is no time for corrections. Controlling Manager finds these pre-checks very useful and mentions them as a good practice. Controller Germany has huge excel template to gather the income statement information of all 25 units. This file includes mapping of all GL lines corresponding the income statement line in Hyperion. The pre-check is for checking if some mapping is missing or wrong. As an example, sometimes new external sales might lack profit center and without profit center it is impossible to identify which sales unit is in question. Moreover, in the case of a new cost center, the mapping needs to be in place so that cost is reported in the correct income statement line. Also, the bookings in default cost center 999999 need to be corrected as otherwise cost is not included in income statement reports for any unit. The main

check of the BI data is that book result is corresponding with Oracle book result. This secures that BI reports are showing correct data and nothing has gone wrong while reworking the excel file.

Day 1

Controllers are checking bookings and discussing with GL Accountant Germany in case of accruals are needed. Based on the discussion Accountant Germany prepares the ADI journal and submits it to Oracle GL. Controllers are allowed only book ADI journals if they do not change accounts. In other words, they are allowed to change cost centers, profit centers and project numbers but not the actual account. The primary key for reporting unit split regarding costs is cost center. A profit center is no longer used with cost bookings. Profit center defines the reporting unit only with sales and sales related material and freight costs.

Accountant books accruals based on the information and filled in templates from the organization. As an example, customer bonus accrual is received from the sales department. The Accountant uses ADI to submit journals to Oracle. Journals are stored in excel format in server.

The first day of the month at 17:00 is the deadline for intercompany recharge and cost-sharing invoicing. Controllers calculate the amounts to be charged as well as make the actual invoicing.

Before closing accounts receivables AR person checks that there are no pending transactions in the interface. AR closing schedule is in the evening at 18:00. AR sends "AR 7 bucket by account" report for Accountant and he posts AR transactions to GL and reconciles "7 buckets" report to GL trial balance before closing the subledger. Reconciliation documents are stored in a folder located in the server.

Day 2

Normally AP is closed during the second day's evening but as this time the third reporting day is national holiday, the AP was closed at 13:00. AP cannot be closed earlier as group companies can still invoice services during the second day. If other group companies are still sending invoices on the second day the AP needs to be open. Anyway, Accountant Germany does not mind keeping AP open till the end of the second day. That enables AP accountants to book as many external invoices as possible to the correct month. After AP has informed Accountant that they are finished with bookings, Accountant runs closing batches and reports in AP, then reconciling AP reports with GL. So in AP closing Accountant Germany is also working in AP module but in AR the closing batches are run by AR accountant. Purchase orders (PO) period is closed after AP. If the PO is not closed there is a risk that the purchasing department could book services to old periods. After AP is closed, two accounts related to fixed assets are reconciled. As work in progress, FA and prepayments are booked to project number, those two accounts need to be reconciled as there is a risk of miss booking from AP.

Controllers send excel file to Accountant Germany about inventory balances and actual reconciliation and closing of inventories is done by an accountant. Reconciliation is easy to do as controllers fill in the necessary information to excel sheet. Company set up in Oracle includes three company codes. First one is the original and two other ones were set up due to the company acting as a principal unit in several European countries. MEC process includes reversing bookings related to invoicing and inventory bookings between these intracompany transactions. They are related to inventory valuation.

During the second day, cash accounts are booked to GL by AR. This is related to many bank accounts that are not in Apro Banking system and have no daily transactions, as an example bank accounts in India or Dubai. The second day activities also include booking Visa card statements and calculation/reclassification of project costs.

As AR is closed on the first day's evening, Controller Germany can eliminate material and semi-finished goods invoicing to subcontractor from GL by the journal. Items are bought back after re-working and sales need to be eliminated according to IFRS regulations without touching the profit. In addition, she prepares bookings related to customer bonus and cash discounts. Although the cash discount is booked with profit center in AR the information is lost when transferring data to GL. This requires extra work from the controller as the German unit has a remarkable amount of cash discounts and they need to be reported in the corresponding sales unit. Customer bonus bookings correct loyalty program costs from fixed production cost to sales correction line in the income statement.

Day 3

National holiday

Day 4

Accountant Germany is running an income statement and balance sheet from Oracle GL and checking that everything is booked correctly. As an example he checks repair and maintenance account in case invoices related to fixed assets would have been booked to wrong account by mistake. As in Oracle, it is not possible to get listing of open accruals in the balance sheet, the list of balance sheet details needs to be kept manually. The details of balance sheet bookings are updated manually while entering journals to Oracle.

When all journals are entered, usually at the middle of day three, the GL Accountant Germany runs the trial balance report from Oracle and checks that excel summary including balance sheet details reconciles with a trial balance regarding balance sheet accounts. He informs controllers that they can start running mass allocations number two and three. First one divides some costs between sales and supply units and splits shared service costs to units. The second one re-books costs that system has booked to profit centre without cost center to cost

centres, so that cost centre information can be used as a basis for unit reports. As there were one day less to report in this MEC, Accountant Germany finishes GL activities by the fourth day at 10:00 and controllers run mass allocations. Controller Germany runs a trial balance income statement and balance sheet from Oracle so that she can later check that BI data she uses for uploading is corresponding with Oracle information. In addition, she makes a rough quality check on the legal entity level. As an example, material costs and sales development to previous month figures.

At 13:00 Controller Germany can start running reports from BI and exporting them to excel. The daily load of BI starts at 12:00 CET and is usually ready within an hour. Controller Germany checks that book result in her huge excel consisting of BI reports is matching with Oracle trial balance. That is the main check. In addition, she needs to run several reports from BI in order to specify the information that cannot be identified based on the accounting string. As an example cost sharing income and one-time costs are something to check. Mark-up included in cost sharing must be specified per counterparty and shown in separate income statement line. Information about counterparty is not available in Oracle income or cost booking and Controller Germany mentions that it is a real challenge to try to identify the counterparty for reporting. Depreciations require some manual adjustments. Finally, when pivot tables do not show any mismatches the data for all 25 units is ready to be reported. Separate upload file is linked to excel file containing BI reports. After the upload Controller Germany consolidates the data in Hyperion and checks that the outcome of Hyperion reports corresponds with Oracle operating profit. Finally, Controller Germany informs other controllers that data is in and they can start their quality checks related to the income statement. Each of the controllers has their individual tools and practices for checking. Controller Germany proceeds by running an intercompany matching report. Figures do not usually match at first try, as there are always other group companies that have not yet reported their figures. Relevant parties are informed to check and input their figures. Then Controller Germany continues with FA related forms. If other controllers find issues with reporting, they make corrections during reporting day four.

Day 5 (MR)

The BI is uploaded during the night and Controller Germany can re-run all the BI reports she needs for the upload excel. After uploading the income statement again, she informs other controllers and they can check again. If some issues still found on Monthly Reporting day, those are corrected manually. In the afternoon the profit is fixed and preparation of balance sheet can start. Controller Germany prepares and loads balance sheet information together with another controller.

According to Vice President SSC Europe, half a day at the end of the reporting process is reserved for quality check. The internal deadline for income statement and balance sheet forms in Germany is in MR day at 13:00. Then there is still time for quality check and other additional group reporting forms. The responsibilities regarding other forms than income statement and balance sheet are split into several people in finance and controlling.

Additional comments

Although SSC Germany has only one legal entity, it has the most complex reporting structure. It has twenty-five units to report, including value-added tax registration and warehouses in thirteen countries. Splitting one legal entity's bookings to twenty-five income statement and balance sheet requires disciplined working methods.

Accountant Germany is not performing Hyperion reporting. Moreover, he has not felt the need to use BI in his work. He manages with Oracle GL reports. At the time of the interview, he had just requested some invoice payment related report in BI and was planning to use it when ready. Oracle currency revaluation functionality is not used in Germany either. Currency revaluations are booked only at the year-end. According to GL Accountant, the number of the currency invoices (AR & AP) is small and revaluation is easy to calculate and book manually.

The most time-consuming activities for Accountant Germany are calculating and booking accruals as well as reconciliations. Booking errors are usually corrected in the original source, e.g. in AP if possible, thereof the subledger and GL transactions are consistent. The fact that only Accountant Germany is allowed to book journals to GL accounts helps to control the accuracy of the bookings. For years auditors have not suggested any changes to year-end closing figures and only small interest was paid after the latest tax audit.

From Controller Germany point of view, the most time-consuming activities are several technical checks she performs before uploading income statement for all 25 units to Hyperion. However, when checks are performed properly in advance, the final upload process goes smoothly. Other time-consuming activities include all workarounds that need to be performed. Some of them are related to company structure and the need for reporting the principal unit separately for authorities. But the most time-consuming activity is related to lack of counterparty information in cost-sharing income and expense bookings in Oracle, as well as in mark-up included in cost sharing.

3.7 Shared service centre Sweden

3.7.1 Organization and set up SSC Sweden

In Sweden, the shared service centre is located on the East coast of the country, close to Stockholm, together with the segment B factory. In addition, there is also another factory, located on the West coast of the country, producing segment A goods. The Swedish shared service (SSC Sweden) centre is providing services to these two operative/legal companies. In this research, these two legal companies are called Unit Sweden A and Unit Sweden B, corresponding the product segment split.

Besides providing services to Swedish companies, SSC Sweden is taking care of the daily transaction handling of two Norwegian legal entities (Unit Norway A and Unit Norway B). These Norwegian units do not have own production or warehouse but instead, their orders are delivered through Swedish units' warehouses

and thus they are considered sales units. Norwegian sales units A and B have both one local finance resource and customer contact. As an example, account statements and reminders are taken care of by these local resources. In Norwegian Unit A the local resource, accounting manager, is performing the bookkeeping, accounts payables payments and both AR and AP reconciliations. However, the director SSC Sweden is responsible for closing the books and reports monthly figures to the group. The local controller in Norwegian Unit B is responsible for group B reporting. Apart from these local responsibilities, SSC Sweden is performing the daily financial activities, such as, accounts payable and receivables transaction handling for both Norwegian units. Furthermore, the Norwegian units' payroll is outsourced for the external company in Norway. In addition to these two Swedish and two Norwegian legal entities, SSC Sweden is providing services, such as, payroll, tax return and annual books for German group company that is registered and has activities in Sweden.

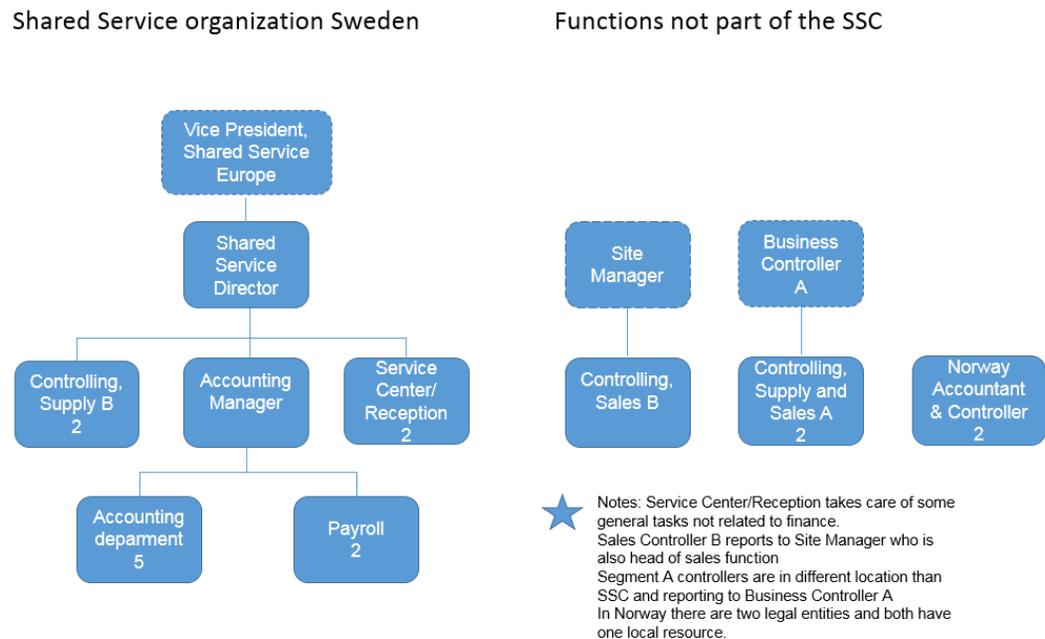


Figure 13. Shared Service organization in Sweden

Figure 13 describes the SSC Swedish organization. Shared service centre Sweden is led by Director SSC Sweden. SSC Sweden organization consists of supply controlling segment B, accounting function and service centre/reception. However, not sales controller segment B nor sales and supply controllers segment A are part of the SSC organization. Sales controller segment B is reporting to site

manager who is also the head of the sales organization of segment B. Segment A controllers are located in the West coast of the Sweden, in segment A factory, and are reporting to supply Nordic business controller of segment A. Despite the remote location of supply and sales controller segment A, SSC director Sweden mentions that there are, more or less, daily contacts via skype or email and co-operation is working well.

The accounting function of the SSC is led by Accounting Manager Sweden. Under her responsibilities, there are finance and payroll. Accounting employs six people and payroll two. Payroll was recently moved to the finance organization based on human resources (HR) department's request. SSC director Sweden mentions that after the change the payroll is organized in a similar way as in other group units. She comments the change: "I would say more or less of their daily work is done with HR regarding the regulations etc. a kind of strange thing because it is not so much finance in the payroll more than generating the file (transferring payroll data to the general ledger)".

Accounting part of the organization includes accounts payables (AP), accounts receivables (AR), fixed assets (FA) and accounting functions. SSC director Sweden mentions that after taking over Norway they would have needed half resource more on top of the six full-time employees. In addition, one person from AP has been on long sick leave and they have survived with the help of a temporary external consultant. An accountant is responsible for fixed assets, due to the sick leave mentioned she is also currently responsible for outgoing payments and bank account reconciliation. The accountant is also supporting AP with intercompany balances.

Service centre/reception in Sweden is part of the SSC and their main task is to take care of the gate of the area. Three companies are working in the area and visitors, as well as, inbound and outbound trucks are registered in reception. On top of that, they are answering the phone but there are not so many calls to answer as based on the numeric choice the calls are automatically directed to the relevant department. Two ladies working in the reception are also backing up the

finance function and taking care of approximately 25% of the accounts payable (AP) invoices depending on the workload in AP.

On top of the common tools, SSC Sweden is using QlikView for cost centre reporting, costing and accounts receivables information. QlikView is a similar kind of tool than Oracle BI providing data for analysis purposes. Sales controllers are using Oracle BI for analyzing but Supply Controller B and Accounting Manager prefer taking data from QlikView. The accounting team is not using BI at all. QlikView has been in use before Oracle BI and as production continued using it also finance did.

SSC Director states that with current resources they can survive the daily work but also due to sick leaves they have not been able to improve processes as much as they would have wanted to. She mentions some examples of the areas they wish to develop. They had received a reminder in the internal audit about missing internal controls documentation and although they have separate check lists this is clearly an improvement area. She also wishes that they could have one Hyperion upload file for sales and one for supply reporting per legal entity. Currently, there are several.

3.7.2 Month-end closing SSC Sweden

In Swedish SSC the accounting work is split between several people and there is no one single person who would be taking care of the one company's general ledger as an accountant. Journals and bookings are done by several people and therefore it was not easy to decide who to interview. Together with SSC Director Sweden, it was decided to have an interview with Accounting Manager as she has the longest experience and is able to provide the overall picture of finance activities. From controllers, the one with the longest experience in segment B was selected to be interviewed. He has worked for the company for six years.

During the period, May reporting, Sweden had two national holidays and thereof they were speeding the process compared to regular monthly reporting. In practice subledgers, AP and AR were closed already during the first day of the month

instead of the second day morning, as usual. The plan was to have all bookings more or less ready during the second day. The third and fourth calendar day of the month were weekend and the fifth and sixth day were national holidays. The reporting deadline was on the seventh of the June which was the fifth business day in Finland where the head office is located.

Accounting Manager Sweden has worked in the company for 18 years. She is responsible for leading the finance team including AR, AP, FA, GL and payroll. Her team includes seven people. On top of the leading her team Accounting Manager's responsibilities to cover legal reporting and taxes of two Swedish companies, open and closing accounting periods, cash forecasting, reporting non-operative financial figures, checking and consolidating balance sheet and calculations based on intercompany service charges.

Currently, the finance organization does not have a written schedule in use for monthly reporting activities. At some point in the past, they used to have but it has not been updated for a while. According to Accounting Manager people have worked in the organization for a long time and they know the schedule by heart. People working in Swedish finance SSC are also located close to each other in the office and they consider communicating closing progress face-to-face easy. In June 2017, when the interview was held, Sales Controller B was new in his position and although he was located most of the time in the other city, in the sales office, during the month-end closing he was working in the same location as SSC. So communication and co-operation with him were also considered easy during the MEC. Segment A controllers are located on the West coast of the country and communication with them is handled via email or skype.

SSC Sweden does not have internal controls documentation. Instead, each function has their own checklists. As an example, supply controllers have their own reporting schedule including all journals and tasks. They are crossing the excel table while proceeding so that they don't miss any steps. The table includes also instructions when the step can be done. For example, some of the transactions can be done after AR or AP is closed.

Before month-end closing

During the last day of the month, Accounting Manager opens the AP, AR and GL periods in Oracle. Around 25th day she has already booked salaries and vacation liabilities based on excel file from the salary system. Salary system is not integrated with Oracle and they are booked via ADI-journal. After the salaries are booked the template for intercompany service charges can be prepared. Director SSC Sweden mentions that as the most vulnerable and critical task due to its complex nature and fact that it has no backup. In addition, Accounting Manager mentions that internal recharge calculations as the most time-consuming activities for her. At the end of the month, Accounting Manager is also taking care of netting currency bookings related to internal money transactions.

Supply Controller B starts the month-end closing activities during the last days of the previous month by sending some reminders to technical and maintenance departments. Those departments will provide information for allocating working time-based costs with journals. Another task that needs to be done before month-end closing is to prepare internal service invoicing for dispatching and warehousing. Controller's task is to make calculations and AR person is invoicing in Oracle.

Day 1

During the first day, Supply Controller B is closing the inventories. In May 2017 that took half a day and it included checking pending transactions and product costing, reconciling inventory amounts with GL and closing inventory periods. If there are pending transactions that need attention, Supply Controller B contacts the warehouse or production personnel for resolution. Every now and then there are issues that cannot be solved locally and needs to reassign to Oracle support. If that happens, it is a bottleneck in the process as it might take several days to solve the issue. Inventories cannot be closed before pending transactions have been processed. The most time-consuming activity for Supply Controller B during

the first day is to analyze product costing. Check is done in order to secure that none of the products have the wrong product cost.

Accounting Manager prints the last day's bank account statements from online bank and currency specifications from intranet for reporting use. The currency revaluation functionality in Oracle is not used for revaluing AR and AP balances. The balances are only revalued at the year end and Oracle functionality is not used. In May closing AR and AP were exceptionally closed during the first working day. Anyway, this is discussed in Day 2 chapter as that is the ordinary place for the closing.

An accountant is preparing fixed asset reporting already before month-end closing. During the first day, she finalizes all transactions in FA, runs depreciations and reconciles them to GL. During the closing, she is supporting with AP inter-company balance statements. Bank account reconciliation is under her responsibility.

During the first business day, Supply Controller B is making a preliminary check of the income statement. The focus is on material cost related accounts such as stock taking or scrapping. As the AP was closed during the first day of the month this time, Supply Controller B could accrue electricity and heating costs already on day one. Normally that is done on the second day after the bookings from AP are visible in GL. He could also make other journals covering corrections, allocations and accruals. Most of the journals related to MEC are processed by controllers. Supply Controller B makes the ADI journal and submits the journal to GL. He prints the journal on paper, signs it and delivers to Accounting Manager for archiving. GL journals are archived in binders. As Supply and Sales Controllers Unit A are located on West coast they are archiving journals that they book locally. Auditors usually visit only shared service center and thus journals made by Controllers Unit A need to be faxed or scanned and emailed for auditing.

Day 2

The AR and AP were exceptionally closed during the first day in May 2017 reporting period. Usually, they are closed in the morning on the second working day. AR and AP people are only expected to perform daily tasks and the actual closing is taken care by Accounting Manager. She runs the reports and batches in AP and AR and if no errors occur then she closes subledgers. If batches have some errors or unprocessed transactions she contacts AP or AR and they investigate the root cause in subledger and make corrections. Then Accounting Manager can continue with closing. The actual reconciliation against relevant general ledger account is done a couple of days later. Sometimes there are differences and the reason for those is unclear. Usually, the figures match latest during the next period closing (a month later) and reasons for differences have not been studied in detail. Accounting Manager performs the closing activities for both Swedish legal entities. Norwegian Units' AR and AP are usually closed later than Swedish ones and are closed by Director SSC Sweden.

One issue was faced due to the fact that AR was closed one day earlier than usual. For some reason, the last business day's AR invoices were booked to the following month. The root cause was not clear but it was discussed during the interview that reason could be some batches that are scheduled for the night and their order. Maybe some of them were not finished before closing.

During the second day morning, Supply Controller B forgot to fill in the diary till noon and he could not recall exactly what he did. This is totally understandable as sometimes it might happen that something unexpected and urgent matter needs ones attention during the MEC and it is difficult to remember afterwards what it was. In the afternoon Supply Controller B has a meeting with the plant manager. The purpose of the meeting is to go through production costs and analyze possible gaps, errors or differences. The tools used for analysis are QlikView and Oracle. BI could also be used for analysis purposes but QlikView has shorter response time and is considered smoother to use. Discussion with plant manager gives valuable information for management comments as well. After the meeting,

some adjustment journals were prepared. Adjustments are usually related to cost center adjustments.

Day 3

The third reporting day was a national holiday in Sweden but Supply Controller B worked a couple of hours from home. Usually, after all other bookings are ready two different kinds of distributions need to be calculated and booked. The first one is about distributing project and maintenance department costs and the second one is about allocating common costs, such as office material, with fixed allocation keys to different departments. These allocations are based on Oracle or QlikView information and are calculated in Excel. Journals are booked with ADI and no mass allocation functionality in Oracle is used. A couple of years ago mass allocations were used for splitting some sales but after segment A and B of the business were divided into two separate legal entities there was no need for such allocations anymore. Supply Controller B also mentions that when segment A and B were in the same legal entity there were common costs that were divided for these two segments based on profit center and product application. He mentions that those allocations were tricky and current allocations are quite simple compared to earlier ones.

Accounting Manager created an intercompany specification of accounts receivables in excel for controllers to use in group reporting. The actual intercompany balance confirmations per company are created and sent to other group units by AR accountant. From QlikView Accounting Manager could get cost information for reporting non-operative unit's personnel costs.

Day 4

During the fourth reporting day, Supply Controller B did not work. The day was also a national holiday in Sweden. Usually, the upload files are prepared on day three and four and loaded to Hyperion. Before starting the preparation of the load

files finance is waiting that BI or QlikView are updated and they can use fresh information for checking. Accounting Manager was working with non-operative unit's reporting during the fourth reporting day as well as preparing additional forms for Hyperion reporting such as accounts receivables maturity report.

Day 5 (MR)

The last reporting day started with the final check of the income statement by Supply Controller B. Some adjustment journals were still needed and then Supply Controller B could start collecting supply unit's upload file together. The data for supply income statement upload file consists of three different Oracle reports. It takes approximately 15 minutes to run the reports and prepare the file. All the preparations are the time-consuming part. Before lunch, the income statement and balance sheet of supply unit B were loaded to Hyperion. Sales Controller B is uploading sales unit's figures and Accounting Manager is uploading non-operative unit's figures consisting of financial lines below operating profit. Three people are involved in Unit Sweden B Hyperion reporting. In the end, the Accounting Manager reconciles the total legal entity figures reported in the group reporting tool Hyperion with Oracle income statement and balance sheet. Supply Controller B mentions that sometimes Accounting Manager needs to wait for him to finish all bookings. While discussing the matter we came to the conclusion that some of the journals, that are not supply unit specific but instead related to a whole legal entity, could be booked by Accounting Manager. That could speed up the process on day five.

After the income statement and balance sheet were uploaded to Hyperion Supply Controller B had a meeting with the production manager regarding reporting the production headcount. After lunch, the rest of the Hyperion appendices were filled in. The sixth day morning is for preparing management comments.

Closing process of Norwegian Units or Unit Sweden A were not discussed in this paper detailed. Shared Service Director is closing both Norwegian Unit A and B

subledgers and is performing Hyperion reporting for Norwegian Unit A. Local resource in Norway is performing Norwegian Unit B Hyperion reporting. Although SSC Sweden is taking care of daily transactions of Unit Sweden A and e.g. closing AR and AP, sales and supply controllers Unit Sweden A are performing group reporting for that legal entity.

Additional comments

As there were these two national holidays the closing schedule in this period was exceptional. Usually, AP and AR are closed during the second day morning but this month they were closed already on day one, thus many of the supply unit's journals could be booked already on day one. So that was critical in order to succeed with less working days in the reporting period. The inventories did not have any issues this month so that went fine as well. Usually, the first four days are needed to make sure that everything is ready for upload. Uploading the income statement and balance sheet is usually done on day four. Then there is still time for quality check and analysis. All three interviewed people confirm that during normal month-end closing they don't need to work overtime if no issues with Oracle or other tools performance.

3.8 Shared service centre Spain

3.8.1 Organization and set up SSC Spain

Financial shared service centre in Spain is led by financial manager and it employs nine people. One of them is located in Portugal and is responsible for Portuguese Sales unit reporting. SSC Manager Spain has worked for the company for ten years and in the current position since 2016. Before the current role, she was responsible for accounting and controlling. Gradually she has gained more responsibilities. Due to the financial crisis in Spain, there were no new recruitments allowed after some finance people left the company and those tasks have been divided into existing personnel.

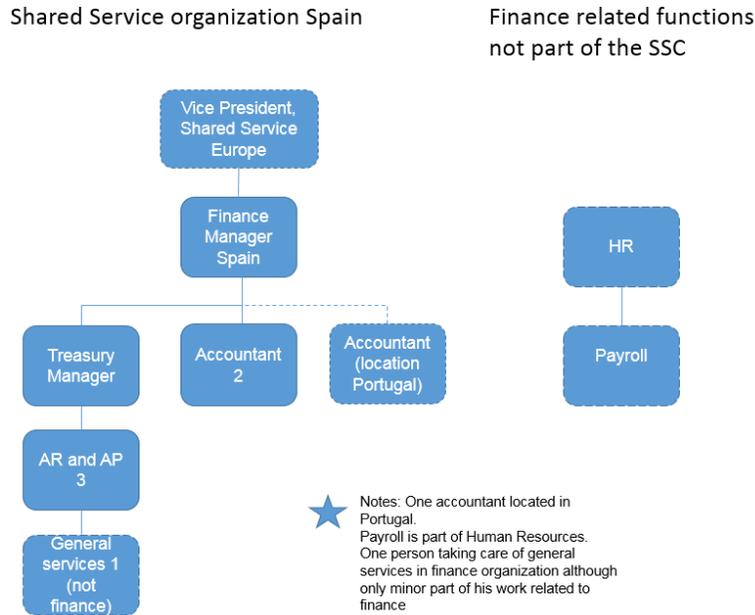


Figure 14. Shared Service organization in Spain

Figure 14 describes the Spanish SSC organization. Finance manager is leading the SSC. Treasury Manager is in charge of AR and AP team. General services person is also part of the SSC organization although only a minor part of his work is related to finance (filing invoices) and most of his work covers running errands for the customer service department. A total number of employees is ten. Human resources (HR) department is not part of the SSC organization and outsourced payroll is in HR organization. However, SSC Manager Spain thinks that it might not be a bad idea to include payroll in finance but in that case, more resources would be needed. She mentions that communication directly to external payroll is not allowed but instead HR should be contacted in case of some issues, e.g. differences, with payroll data. Communication through HR is sometimes found time consuming and ineffective. In Spain, there is no controller position at all. The Hyperion reporting and costing tasks, which are usually considered as controller's work, are divided between finance manager, accountant and local Portuguese resource.

3.8.2 Month-end closing SSC Spain

Spain has a written month-end closing schedule. The schedule includes all activities performed each day. The schedule is general in its nature and does not include the exact timing of the tasks. Internal controls file includes all activities regarding month-end closing and is quite detailed. Each month has own file and it has two sheets. The first sheet is for the activities and their recording (e.g. done by, the timing of the activity) and the other sheet is for subledger reconciliations and documentation. Internal controls excel spreadsheet is in active use. Subledgers are reconciled with GL by the person responsible for the subledger in question. Anyway, Finance Manager always checks from internal controls template that all subledgers are reconciled. In Spain Financial Manager and Accountant were interviewed.

Before month-end closing

The payroll file is received from outsourced payroll. It is uploaded to GL with ADI and reconciled with the payment. The task is performed by Financial Manager due to the sensitive nature of the information. Sometimes there are little differences usually due to advanced payments. Travel expenses are received from local travel expense tool and booked with ADI.

Internal recharge costs are calculated and invoiced during the last working day of the month. Approximately thirty people's costs are recharged to other group units. According to Finance Manager Spain internal invoicing of recharge costs is "the worst task of month-end closing in Spain". Resources that are recharged are shared and the costs of each person are further divided and invoiced to several group units. This requires massive calculations of detailed costs such as personnel, travel, allowances, communication and other costs. It takes almost a whole day for the Finance Manager to make calculations before invoicing. The actual invoicing is done by AR person. Travel expenses must be booked to GL before invoicing but many times there is lack of information about travel expenses as the external service provider has not sent the information and Spanish finance department might need to call several times before receiving it. Sometimes accrual

or same amount than a previous month has been invoiced due to missing information but that causes extra work later when the difference between accrual and real costs has to be calculated and invoiced. So it is preferred to invoice actual figures. Recharge costs include also warehouse services provided to Germany Unit which has inventories in Spain.

Accountant Spain performs fixed asset accounting during the last working day of the month and reconciles the figures with GL. After the production was closed the fixed asset accounting has fewer transactions and usually, there are no issues in the FA process. As Accountant Spain is also BI key user, he is preparing MEC by analyzing expenses and net sales. Last day activities also include opening the next month's GL, AR and AP periods.

Day 1

The accounts receivable subledger is always closed during the first working day in Spain. According to Finance Manager Spain, this schedule is mandatory for them. It is essential that all internal recharge invoices have been invoiced during the last business day so that it is possible to close AR during the first day. The AR figures are always matching with GL and there have never been reconciliation differences. Sometimes Oracle advises to finish the unprocessed transaction and when finalized no issues with closing or reconciling. Treasury Manager is performing the closing tasks in AR and reconciling the balance with GL. Reconciliation is documented in internal controls file. Financial Manager checks from the internal controls document, that AR is reconciled before she closes the subledger in GL. After AR is closed and sales corrections booked the net sales can be reported to Hyperion latest on day two morning.

Net sales reporting is done by Accountant Spain and usually uploaded to Hyperion but in May reporting entered manually as there was a change in structure and it has not yet been updated to excel upload file. Accountant Spain closes inventories during the first working day. On top of the Spanish inventory, he is also

supporting the closing of German inventory in Spain. There is usually some difference in inventories compared to GL. At the end of the year, these differences are corrected in GL by the journal.

Finance Manager starts analyzing added value after AR is closed and total sales and sales corrections are recognized. The analysis is done with BI and is normally done during the first or second working day.

Day 2

AP is closed at the end of day two. Accountant Spain mentions that people in the organization are assigning the invoices to finance very late and that causes a peak in AP during the first two days of the month. AP person is running the closing batches in AP and is responsible for reconciling the balance with GL but actual subledger closing is done either by Accountant or Finance Manager. Before closing the Financial Manager checks the internal controls file. One of the AP accountants books accruals (freight, rebates or bonus) or taxes to GL with manual journals. Anyway, Accountant 2 is responsible for accruals, provisions and taxes and they are mostly booked on day two. After closing AP, accountants reconcile different statements and intercompany balances.

Employee bonus accruals are booked to GL after the information is received from HR. Accountant Spain is running trial balance reports for checking different costs, looks for possible accounting mistakes and makes corrections accordingly.

Day 3

Some of the bank account transactions are booked to GL by manual journals during the month. ADI journals are mainly used during the month-end closing process. Automatically reversing journals are not in use nor mass allocation functionality in Oracle. There is only one allocation related to splitting administration costs between sales and supply units and it is booked by ADI in the day three morning. After the allocation is booked by ADI, trial balance by cost centre and profit is run

in order to assure that all allocations are in place. Oracle currency revaluation is not used as there are not that much currency transactions. GL journals are stored electronically in the folder and later printed, signed and stored in binders.

Day three includes reconciling several GL accounts balances before reporting. Normally the figures are loaded to Hyperion by the midday or latest in the afternoon day three. Sometimes, if there are a lot of issues in reporting, at least the income statement is available in Hyperion during day four. On the other hand, Accountant Spain mentions that there are months when group reporting could be started on day two afternoon. Oracle income statement and balance sheet are the basis of the reporting. Also, trial balance, intercompany balances and net sales reports are run, copied and pasted to upload a file. Some manual input is also needed as for example inventory balance split between raw materials, semi-finished goods and finished goods is not available in Oracle. In addition, some adjustments between sales and supply unit are done in upload file manually and those are not booked to GL. They are not affecting the company level figures. After upload further analysis by e.g. income statement line is done with BI. BI is considered a very useful tool for analyzing by both Finance Manager and Accountant.

Day 4

During day four the additional Hyperion forms are manually fulfilled. Analysis between actual and budget or estimate continue. Accountant Spain mentions that running reports from Oracle during the MEC takes more time than in the middle of the month. As an example running trial balance takes one minute during the month and in month-end closing time, it might take ten minutes.

Day 5

During the fifth working day, the data is consolidated in Hyperion and entity check file is run. Possible differences in entity check are investigated and eliminated

and finally “process control” is submitted to lock the figures and finalize the reporting.

Additional comments

Several years ago month-end closing in Spain was requiring long days from finance personnel, even 11 hours per day. Since then Oracle performance has improved a lot and BI is a big help in analyzing figures. Nowadays people might work maybe one hour more than usual during the closing but not always. The year-end closing schedule and communication is planned very carefully as it requires many additional tasks compared to month-end closing.

As the team is small resources are critical during the month-end closing. If key employees are sick or there is some other unexpected absence, the closing is difficult and requires longer days for the rest of the team.

4 DISCUSSION AND ANALYSIS

In this section, the outcome of the research is discussed and further analyzed. At first, the case company’s shared service centre development stage is reflected based on the theory. Moreover, differences in record-to-report practices and month-end closing processes in studied SSCs are analyzed. The month-end closing schedules are compared. Then subledger closing and reconciliation are studied in detail. Finally, record-to-report practices are discussed and analyzed.

4.1 Analysis of shared service centres in case company

The shared service centre in case the company is quite young as it has existed under the same management only for four years. In addition to four European SSCs, the company has local finance departments in several countries. Usually, these finance departments are located in manufacturing sites. Sales units are supported by SSCs and daily operations run more or less by SSCs. As an example, Swedish SSC is keeping inventory for two Norwegian sales units and handling all daily transaction processing.

According to PWC (2011, 16-17) the most mature SSCs' have well-defined strategy, targets and measures in place and they are regularly reviewed. The case company has Service Level Agreements (SLA) in place but they lack KPI's. SLA's are reviewed yearly with the customer but they have been quite light and purpose is to update them by the end of 2017. According to the Internal Controls Manager, lack of KPIs has been one of the findings in internal auditing. Those are planned to be included in new SLAs. Updating SLAs and KPIs is a good improvement but the basis for the most mature SSC should be well defined and communicated strategy.

The company itself has its business strategy written and in place but as SSC is serving several internal customers and legal entities, it should define how it is supporting operations in order to reach the strategic targets set by the management. Thereof the starting point should be in analyzing whether current SSC model is supporting business in a best possible way and further what is the future model of SSC that best supports business strategy (Deloitte 2011, 8, 13).

The development of the financial processes and, in this case, the record-to-report process should start from defining SSC strategy. All starts from the company's strategy and how it can be linked to SSC activities. The ways to support the company's strategy in SSC should be analyzed and defined. The company-level strategy should be divided into more specific proportions and define the activities SSC can do in order to support the company's strategy at present, in the short term and in five years period. The message from the management has been that outsourcing is not seen as an option for the company when organizing finance support services, instead services and processes should be developed further by SSCs.

Company's shared service centres differ by their size and functions included. The following table illustrates these differences.

Table 2. A number of legal entities, reporting units, and personnel in SSCs.

In May 2017				
	Germany	Finland	Spain	Sweden
Number of legal entities	1	5	2	4
Number of reporting units	25	16	4	9
Number of personnel in SSC	29	22	9	13
Number of personnel in SSC included above but not finance	5	0	1	0
Number of personnel not in SSC but related to finance activities	4	1	0	5

Table 2 describes the size of the four studied SSCs. While in Germany one legal entity is split to 25 reporting units, Spain has two legal entities and four reporting units. In Finland 5 legal entities are split to 16 reporting units and Swedish 4 legal entities to 9 reporting units. The number of personnel varies from Spanish 9 to German 29. Whether controllers are part of SSC organization differs per country and in Spain, no controller position exists at all. In some countries, SSC may include other than finance personnel, such as legal in Germany. As the size and set up of SSCs differs, it is evident, that the SSCs are not fully comparable.

All European SSCs' have same ERP system Oracle, BI and Hyperion in use. Oracle was implemented in approximately ten years period to all units starting from central Europe. During this study, it became obvious that SSCs' have found different practices to manage the financial closing. According to Senior Concept Owner, Finance Business Solutions Centre, Oracle was implemented based on theory and no internal audit has been performed ever since. According to Owens (2013, 257) and Borman (2012, 20), the success of the SSC is dependent on the technology in use. Owens (2013, 257) adds, that without standardizing processes first, the technology cannot support process improvement. Although, before starting to implement Oracle approximately ten years ago in the first unit, the processes were discussed and analyzed in several workshops, it seems that requirements and practices have changed ever since. Schume (2013, 3) emphasizes the importance of continuous improvement. He states that after the first lean improvement cycle the process usually still have waste left. This waste is many times related to the low level of automation, missing key performance indicators (KPI) and targets.

4.2 Analysis of the month-end closing process in SSCs

4.2.1 Month-end closing schedule

Group reporting calendar provides a common schedule for all SSCs. The monthly reporting (MR) deadline is usually on the fifth working day and quarterly on the sixth working day, which is the final deadline for units to submit their group reporting. The other remarkable deadline in reporting is intercompany items deadline the day before MR day, marked in reporting calendar with IC (see appendix 1).

The group reporting calendar sets the frame for the schedule but each unit has its own internal schedules or practices regarding closing activities and ways to communicate them inside the unit. Starting from the period opening, other units than Finland seem to open the next GL period during the last day of the previous month. According to Accounting Manager Sweden, they don't want to open the period too early as they feel there is a risk of booking current months journals for the next period as Oracle suggests the latest open period when entering manual journals. In Finland, the period is opened at the middle of the month and there is no risk for miss entries for the wrong period as all bookings are made with ADI upload and no manual entries are needed.

Table 3 Month-end closing schedule and workload in studied SSCs

In May 2017				
	Germany	Finland	Spain	Sweden
Written closing schedule in use	Yes, very detailed	Yes, detailed	Yes, general	No
Overtime during MEC (if no issues with system)	Yes	Yes	No	No

Table 3 illustrates that local MEC schedules differ significantly. Germany seems to have the most detailed month-end closing schedule with a longest task list with assigned responsibilities. It is prepared and distributed monthly for all stakeholders also outside the finance department. Some of the deadlines are after the regular working hours, e.g. closing AR in May was scheduled to 1.6. at 6 pm CET. It is generally acknowledged among German finance team that during the closing the days are long. Finland has a detailed schedule with timing as well but it is not

distributed monthly as it usually does not vary between months. In case of some need to keep e.g. AP open longer in some month, it is communicated informally. Finnish schedule includes timing of the all five legal entities subledger closings, payroll, GL mass allocations and GL closing. The success of the closing timing is followed up in monthly meetings. According to Drucker (in Zubizaretta 2013, 43), the process cannot be improved unless measurement and visibility are in place and its performance is frequently monitored. Spanish schedule is not that formal. The activities are listed per day and no exact timing for the activities are scheduled nor responsibilities listed. Spain is the smallest of SSCs and activities are performed in flexible way. As an example, it can be either the Accountant or SSC Director who performs AR and AP subledger closing activities in GL depending on the workload. Sweden does not have a written schedule in use. According to Director SSC, Sweden finance personnel have worked for the company so many years that they know by heart what to do and when. She admits that in the case of new personnel the written schedule would be useful.

Lahti and Salminen (2008, 146) and Kelso (2011, 18) suggest establishing a closing schedule with clear responsibilities. Moreover, they recommend to follow up regularly how it has been realized. The calendar should include cut off times for subledgers and GL. In addition, Kelso (2011, 19) suggests holding meetings after the closing. The experience of people involved in the closing process should be utilized to spread the knowledge of issue handling and best practices during the closing. Issues should be documented and shared for the other participants for learning. Finland mentions having discussions about issues in closing regularly. However, they don't make detailed documentation about issues in SSC. Regarding all issues that have been escalated to support by logging incident, the history of the issues is available. Unfortunately, not all incidents are reported by using the incident management tool. As an example, in studied MEC, in Finland AR could not be closed on day one but no incident was created as closing succeeded next day. Moreover, Sweden mentions that sometimes they wait for next month-end closing if subledger values do not reconcile. Usually, subledger reconciles at least next month. Without submitting incident the root cause will never be clarified. KPI's corresponding the local closing process success and indicating

performance level should be reviewed in the regular meeting (Kelso 2011, 20-21). In Finland unofficial KPI's have been the closing schedule or delay in it. However, it would be beneficial to have an official common closing process KPI's for all SSCs in use.

Based on the interviews it is visible, that the more complex and larger the SSC is, the more time is needed for MEC activities. Both Finland and Germany report having to work long days in MEC. In Germany, part of the MEC activities is even scheduled after the regular working hours. In Spain, people might work maybe one hour more than regular working hours during month-end closing. Accountant Spain mentions that the three first days are a quite busy time for him. He considers the third working day as a deadline for Hyperion reporting and maybe one or two times a year he needs to work late in the evening to finish the income statement and balance sheet uploads during the third day. Usually, regular working hours are enough. Naturally, the issues with Oracle or national holidays during the closing period might cause the need for the late hours. In May 2017 month-end reporting, Sweden had two days less time for reporting. By speeding up the process they succeeded the closing almost without working overtime, except controller working couple of hours during a national holiday. Germany had one day less to report. With very detailed scheduling and long days, they managed the closing without working on a national holiday.

In order to understand the progress of the closing from the record-to-record point of view, the completion percentage of journals during the period January to November 2016 in each SSC was analyzed. Figures are based on data described in appendix 2 and only 1-11 2016 figures are included. December period is year-end closing and reporting period is longer, thus it was limited outside of the analysis. In periods 1-11 2016 the quarterly reporting is usually due on the sixth reporting day and monthly reporting on the fifth working day. Please note that table 4 describes the average completion percentage per calendar day, not the working day.

At first, percentages were calculated monthly for each SSC and each day. Then, the average completion percentage for calendar days 1, 3 and 5 were calculated for each shared service centre based on monthly figures. For Finland table 4 is divided into two columns in order to show operative units and administrative units separately. Finland has three administrative legal entities, which other SSCs do not have. Therefore the split was made so that Finnish operative entities completion percentages are comparable with other countries percentages. In addition one of the administrative companies have special process regarding mass allocations related to invoicing and bookings are done very late for the previous month. They are not many but run after the actual closing, thus affecting the percentage in the table.

Table 4. Average completion percentage of GL journals per calendar day during period 1-11 2016

Average completion percentage of GL journals per calendar day, period 1-11 2016					
Calendar day	SSC Finland (Operative)	SSC Finland (Administrative)	SSC Germany	SSC Spain	SSC Sweden
01	49%	25%	70%	70%	63%
03	65%	41%	87%	91%	80%
05	89%	62%	96%	99%	90%
Total Number	2253	1241	3687	1452	3254

Table 4 shows the average completion percentage of GL journals per calendar day. At the first day of the month in Finnish operative units, less than half of the journals are booked while in Sweden 63% and in Germany and Spain 70%. Part of this difference is explained by the fact that in Finland all cash transactions are booked via cash management module whereas in other countries cash transactions are booked during the month with GL journals if they are not related to accounts receivables. So to say, in other countries daily transactions include cash bookings and those are usually mostly booked by the end of the month or latest on day one next month. Finnish administrative companies have the lowest completion percentage on day one, only 25%. Administrative companies have fewer journals than operative units so that is not an issue on day one. Those three administrative companies have together total 1242 journals during the period whereas smallest SSC, the Spanish one, has 1452 journals. In addition, administrative companies' subledgers, AR and AP, are closed later than operative units' subledgers, during reporting day two afternoon or even end of reporting day three.

In the third calendar day, Spain seems to have the highest completion percentage of GL transactions, 91%. Whereas completion percentage in other SSCs is; Germany 87%, Sweden 80%, Finland operative units 65% and administrative only 41%. The third calendar day is not always third working day but Accountant Spain mentioned that third working day in Spain is an internal deadline for submitting income statement and balance sheet to Hyperion. In practice, it means that all GL bookings need to be ready before that. The high percentage for Spain in fifth calendar day (99%) supports that statement, as fifth calendar day can be third, fourth or fifth reporting day depending on the placement of the weekend in the calendar.

Germany has the second highest percentage on the fifth calendar day 96%. Furthermore, Swedish completion percentage is 90%, Finland operative units 89%, and administrative companies only 62% on average. As Finland has five legal entities and same personnel is taking care of several entities subledger closings, the closings need to be performed step by step one entity at the time and thus operative entities are closed earlier than administrative ones. Consequently, also final bookings and other GL activities are performed later in administrative entities. Anyway, when analyzing table 4, it is obvious that in Finland GL transactions are completed quite late compared to the other SSCs. According to Director SSC Finland, controllers have to work late hours many times during the fourth and the fifth working days and the general feeling is that there is too few time left for analyzing the figures before final deadline MR day.

The main identified bottleneck in Finnish process was the waiting time. Blue collar salaries for the previous month are ready only at the third reporting day at 2 pm. That is the final input before the accountant can run mass allocations. Only after that, controllers can run a full income statement. According to Parmenter (2016, 33-42), the finance should set rules what is a major adjustment from that specific company's perspective and in addition ban all late changes during clos-

ing unless they are affecting the true and fair view. It is recommended that Finland should review if salaries could be accrued instead of waiting for the payroll bookings.

Group Controller from the head office was interviewed regarding the ongoing project relating to automating group reporting. The plan is to map Oracle accounting distributions to relevant group reporting lines in Hyperion and load data from Oracle to Hyperion during the monthly reporting. So far the findings have been that the use of accounts, cost centres, profit centres and other distribution dimensions is not fully consistent among group units. In addition, the Oracle bookkeeping data is not always usable as such and units are making an adjustment either manually or based on additional data from other sources than Oracle. Owens (2013, 257) recommends to standardize and harmonize practices before involving technology to process improvement. Bragg (2009, 290) suggest adopting a common chart of accounts for all group companies, Lahti and Salminen (2008, 146) add that it should be kept as short as possible. Although in the studied company the chart of account is harmonized it includes approximately 2000 accounts and common guidance of its use is inadequate. Moreover, the use of other distribution dimensions is not harmonized.

The automation requires standardized accounting data as well as processes. Currently, if we look at the progress of the month-end closing from table 4 it differs by the unit. As an example, the aim in the automation project is to load intercompany balances to Hyperion the night before the intercompany balance deadline (IC date). Currently, units should report their intercompany balances during IC day, which is one day before than the actual reporting day (MR). However, it is common that group controllers need to ask units to submit figures after the deadline as they are missing. By the end of the MR day, they are usually in place but many times they are still reconciled by group controllers during the evening of the MR day.

One of the findings during this study was, that common deadline for intercompany invoicing is quite late, on the second working day, which leads to the fact

that AP or AR subledgers cannot be closed earlier. When the intercompany balance sheet confirmation process can only start after closing these subledgers, the possible gaps and issues are identified quite late compared to the deadline of reporting intercompany balances (IC). The whole month-end closing process would benefit if the group would ban late intercompany invoicing. The good practice would be to set the common deadline for intercompany invoicing to e.g. last business day of the month.

The new automated process would require units to have intercompany balances available in Oracle GL before IC day. Group Reporting Controller describes that instead of starting to run the reports and the manual process of reporting intercompany balances on IC day, the units would have figures automatically ready in Hyperion in the morning on IC day. Thus, all they need to do is to check balances. Anyway, this will require that the intercompany balances are confirmed and discrepancies solved the latest on a third working day, which currently is challenging due to late invoicing schedule. The similar harmonization of the process schedule is required when automating the submission of other income statement and balance sheet figures.

4.2.2 Closing and reconciliation of subledgers

Reconciling the subledgers is an important part of the month-end closing and record-to-report process. Practices related to subledger closing differed in studied SSCs. Internal Controls Manager from head office was interviewed and she emphasized that four eye principal should be followed in month-end closing related process controls.

In Spain, subledgers are closed and reconciled with GL by the person responsible for the subledger in question. In addition, the same person documents amounts of subledger and GL to internal controls excel, as well as the date when reconciled. Document covers account payables, account receivables, inventories and fixed assets. After subledgers are reconciled either Accountant Spain or Finance Manager Spain checks from internal controls excel that reconciliation is performed and closes the subledger. The four-eye-principal is fulfilled. Internal

controls excel includes information where more detailed documents about reconciliation are stored. In internal controls excel, provided by Finance Manager Spain, it is visible that inventories had a couple of thousand euros difference at the time. According to notes, it was meant to be corrected in next closing. Finance Manager mentions, that inventories have usually some difference, however, as production is now closed down it is assumed that differences will be smaller or not exist in the future.

Sweden has no internal controls documentation in place. They have received a reminder about that in internal audit. However, they have individual checklists of month-end closing activities in use. Kelso (2011, 19-20) recommends requiring a checklist of each general ledger journal entry including information whether it has been posted as expected. Accounting Manager Sweden runs the closing reports and batches in AR and AP for two Swedish entities and closes subledgers. AR and AP personnel is only taking care of daily transactions and Accounting Manager is responsible for the actual closing activities in these subledgers. If issues arise, she contacts subledger personnel for correction. In Sweden, AR and AP balances are not reconciled before closing, instead, they are checked a couple of days later. This could lead to a situation where late changes need to be booked if issues would arise in reconciliation.

In Germany internal controls documentation is not in active use during month-end closing. It lists the control points and their status. What is good about the document is, that it includes column describing actions to improve the control. However, in practice reconciliations are in place and documents stored in the server.

In Finland accountant reconciles AR and AP balances before closing subledgers. However, inventories are reconciled and closed by the controller. In addition, FA is closed and reconciled by the person responsible of FA, although the documentation is stored in the server in the same folder as AR and AP. In the folder, it is easy for the accountant to check the reconciliation. In practice, all subledgers are reconciled but the four-eye principle is not in use in all cases. Internal controls documentation is available but it is not used during the month-end closing for

documenting the controls. However it is extremely useful, in case of e.g. unexpected sick leave, as in addition to listing controls, it includes a link to very detailed work instructions.

Most of the SSCs run depreciations during the last working day. In Sweden, they are run during the first working day. Bragg (2009, 283-284) recommends running depreciations a few days earlier before the month end. He mentions that in many companies this is one of the last steps in the closing process regarding subledgers as for recording accurately new assets depreciations the accounts payables should be closed and FA updated accordingly after that. However, it does not affect the true and fair view of the company's financial situation, if possibly day or two transactions are missing. (Bragg 2009, 283-284.) This recommended practice has already been implemented in SSCs.

In Germany, the work in progress (WIP) fixed assets are not handled in the FA module but instead, they are booked to GL and followed up with project number. When the work in progress asset is finalized, all invoices received and the asset is taken in use the total sum of the asset is booked to FA module and depreciations can start. Thereof, not all single accounts payables invoices related to FA need to be handled in FA module. This saves time but naturally, WIP assets booked with project numbers need to be monitored in GL to prevent miss bookings. As the main focus was not in FA in this research, FA activities were only discussed if they were under Accountants responsibility, thus all SSCs detailed activities in this area were not studied. Consequently, the practice that Germany has is worth considering also in other SSCs if not already in use.

Inventory closing seems to require a lot of time from controllers. In Finland, Spain and Sweden inventories are closed during the first reporting day. In Finland controller is reconciling the inventory balance with GL before he closes it. In Spain inventory related tasks were decreasing at the time of the interview due to closing down the production in Spain, however, inventory still remains. In addition, Accountant Spain is still supporting the closing of the German unit's Spanish inven-

tory. In Germany one and half days is scheduled for closing inventories. Accountant Germany reconciles inventories based on the information from controllers after they have closed it. Germany has the highest amount of inventories and they are located in several European countries. Thus, it is understandable that inventory closing requires time and recourses. It would be interesting to see whether inventory closing and reconciliation could be automated at least to some level. The analysis and e.g. follow up of obsolete items would still remain in controllers task list but maybe more time could be allocated to those activities. At the moment the controllers have knowledge and time to perform the closing. The inventory closing might be the bottleneck in the process in case of issues in closing. According to Controller Supply Sweden, the incident solving might take a couple of days from Oracle support. Anyway, in the hypothetical situation, if AR and AP would be closed earlier than currently, let's say on day one at 13:00, it might be that controllers would not benefit that change as they are still engaged with inventory closing tasks.

Both Finland and Sweden had issues in May closing regarding AR subledger. In Sweden, AR was closed on day one instead of the morning of the second working day as usual. Sweden had two days less in this reporting period as they had two national holidays at the beginning of June. Later it was noticed that AR invoices dated 31.5.17 were booked to June period on day two. The root cause is not clear but it might have something to do with the schedule of the auto-invoicing batches running in the background and by night. The additional manual journal was needed to correct May invoicing. In Finland, AR is usually closed on the second working day by 12:00. In May AR got all transactions handled by 16:00 on day one and after they had run closing activities and reports in AR, they emailed "aging seven buckets report" for GL Accountant and asked her to perform the closing. GL accountant tried but got an error message from Oracle saying that some transactions were incomplete. GL accountant contacted AR and they tried to solve the issue without succeeding. As they were ahead of the schedule they decided to try again in the following day. In the next morning closing succeeded at first try. The root cause of the issue was not clarified and no incident was addressed to finance business solutions centre. Senior Concept Owner, Finance

Business Solutions Centre advises to make an incident of all issues. Otherwise, the root cause will not be identified and the problem may repeat.

Germany and Spain did not have any issues regarding AR closing in May period. Both of them closed the AR on day one, Germany at 18:00 in the evening and Spain in the afternoon. In Spain, last intercompany invoices are invoiced on the last working day so that they are able to close AR on day one. In Germany, the deadline for intercompany invoicing is at 17:00 on day one but before closing AR, they check auto invoice interface to ensure that there are no pending transactions and closing AR is possible.

In Sweden, AP was closed exceptionally during day one in May 2017 period. Usually, AP is closed on second day morning. This time no issues arose. In Finland, AP person had run closing batches and reports before noon as usual. She sent AP trial balance report for GL account for reconciliation. After reconciling GL Accountant Finland tried to close the AP but got an error message that one invoice is not completed. She contacted AP for resolution but invoice seemed fine. They decided to run all closing batches again and at 14:00 reconciling and closing subledger succeeded. The issue with one invoice delayed the process for two hours. In Germany, GL Accountant performs the closing activities in AP and reconciles with GL before closing subledger. This time AP balance did not reconcile with GL. The issue was missing intercompany code in AP trial balance report. Oracle support could fix the report and after that balances reconciled. Finland has had similar issues and they are related to the fact that AP trial balance report does not pick up new intercompany codes automatically to the report but Oracle support needs to add them manually. The issue is not big but it causes waiting time in the process once and a while. In Spain, AP was closed at the end of day two.

Table 5 Summary of the controls related to the subledger closing

In May 2017	Germany	Finland	Spain	Sweden
Internal controls matrix in use	Yes	Yes	Yes	No
Subledgers reconciled before closing	Yes	Yes	Yes	No
Four eye principal in place with all subledgers closing	Yes	No	Yes	No

Table 5 visualizes the differences in process controls related to subledger closing. To sum up, reconciliation of process controls differs in shared service centres. The system, Oracle, does not support process control nor store the control evidence. As during the closing process there is no extra time for controls, it is recommended that controls should not delay the process but instead, they should support it. PricewaterhouseCoopers (2013, 3) suggests automating accounting processes. With automation, it is possible to standardize workflows and secure consistent reports and analyses. Moreover, data checks and financial controls cannot be neglected when system enforces to perform the controls. However, before automation, workflows and processes need to be optimized. Otherwise, there is a risk of even more inefficient activities and delays. Vieruaho (2017) states that manual controls include the risk of mistakes. With robotics, it is possible to perform reconciliations and controls, add functionalities to support the current accounting system and ensure audit trail in a more reliable way (Vieruaho 2017). The good practice would be to have system based process controls that would support the closing process by being easy to use and required by the system before proceeding to the next step.

4.2.3 Record-to-report practices

In this chapter, the GL part of the record-to-report process is analyzed and differences in four studied SSCs discussed. Following table gathers the main practices in the GL area in studied SSCs.

Table 6. Record-to-Report practices in four studied SSCs

In May 2017				
	Germany	Finland	Spain	Sweden
Other than GL accountants posting journals	Yes, controllers but only allowed to change cost center	No	Yes	Yes
Automatically reversing journals in use	Yes	Yes	No	Yes
Recurring journals	Yes	Yes	Yes	No
Mass-allocations	Yes	Yes	No	No
Currency revaluation with Oracle	No	Yes	No	No
Documents archived electronically	Yes, and in paper	Yes	Yes, and in paper	No
Reported group figures based on	BI	Oracle and BI	Oracle+manual input	Oracle and Qlick view
Accountants utilizing BI	No	Yes	Yes	No, but Qlick View in use

Table 6 visualizes the differences in the main GL practices. At the very beginning of this research, it became clear that work distribution in the GL area differed by country. While in Finland only accountants are submitting journals to GL, in Sweden, Germany and Spain several people are working with GL journals in Oracle. Depending on the country, controllers, SSC Directors and sometimes AP or AR accountants are also posting journals to GL. Bragg (2013, 290-291) claims that problems may occur if several people are allowed to make journal entries. Bragg suggests that journal entries should be limited to general ledger accountant's responsibility. That way information is verified beforehand and duplicates or miss bookings prevented. Bragg (2013, 290-291) adds that in case several accountants are making bookings, it should be clearly clarified which journals are on each accountants' responsibility.

It is difficult to say, what the best work distribution between accountants and controllers is. As people's competence and expertise differ, the work distribution that is perfect for one studied SSC may not work for the other. Nevertheless, various ways to distribute responsibilities between accountants and controllers, presented in this paper, can guide SSC directors further to test and implement new

ways to work and share responsibilities. However, the responsibilities should be very clear and one person, no matter if it is an accountant (Finland, Germany) or accounting manager (Sweden), should take the responsibility of the balance sheet reconciliation and thereof the general ledger as such.

Oracle does not provide a list of open positions in the balance sheet but instead, balance sheet reconciliation needs to be maintained manually in excel. No matter if reconciliation is made simultaneously when booking the accruals and provisions or once when all journals are booked, it is a good practice to have detailed balance sheet specification ready before reporting is finalized. This ensures, that no "old" accruals or provisions exist in the balance sheet and all needed bookings are in the correct place (Bragg 2009, 283). Bragg (2013, 337) proposes to eliminate small-balance accounts. Especially balance sheet accounts should be reviewed regularly and accounts with small balances merged into larger accounts. Accountant needs to keep track of all asset and liability accounts records and when there are fewer accounts, it will be easier to record detailed bookings.

Oracle offers several functionalities to support the GL work; ADI journal upload, recurring journals, mass allocations, automatically reversing journals and currency revaluations. Recurring journals are useful when the same values need to be booked every month. When using mass allocations, the system calculates bookings with predefined allocation keys and creates journals. Once they have been built, it is easy to submit them monthly. Another useful and easy to adapt functionality is automatically reversal journals. (Lahti & Salminen 2014, 146.) In many case, accruals are made when invoices arrive late or year-to-date accruals need to be recalculated every month. In these cases automatically reversal journals save time for an accountant as he does not need to reverse journals manually. Functionality is easy to apply as only correct journal category needs to be selected and reversal period defined. When the following period is opened, Oracle reverses journals automatically. Based on the data it seems that only Finland and Sweden have adapted this functionality. Nevertheless, it is worth other units to consider as well.

The practices differ most in currency revaluation. Oracle provides easy to use revaluation which automatically revaluates bank accounts, accounts payable, accounts receivables and other needed balance accounts. Only Finland has adapted the use of Oracle currency revaluation and does it monthly. Other SSCs report that they either revalue balances quarterly or only at year-end closing. The differences related to currency valuations in intercompany reconciliation in Hyperion reporting would disappear if each unit would revalue their intercompany balances monthly. Lahti and Salminen (2014, 159-160) recommend using automatic revaluation functionality to speed up the closing process.

In Finland, journals are only archived in electronic format, in Sweden only in paper and in Spain and Germany, both ways are in use. Local laws may limit the form of archived journals. If archiving in paper format is not required by law, it is recommended to archive journals in electronic format. Zarzycka and Michalak (2013, 148) mention over-processing as one of the typical type of waste in financial processes. In this case, if electronic format is enough, printing the paper copy is over-processing according to lean principles. As some units act in several locations, it would be easier to work with the documents, when they are archived electronically. As an example, Sweden mentions, that sometimes they need to scan and send documents by email from their West coast location to East coast office, where auditors usually visit. According to Taylor (2009, 207-210, unnecessary movement of documents can be considered as waste in lean philosophy, as it does not create extra value and thus should be eliminated.

Interestingly, none of the studied SSCs base their monthly group reporting purely to Oracle data. In Finland Supply Controller mentions, that he needs twelve different reports for reporting supply unit's income statement in Hyperion; four from Oracle, seven from BI and one from payroll. Each controller reports his/her unit's income statement but the balance sheet is reported centralized by one of the controllers. In Spain, most of the information is coming from Oracle reports but some adjustments are made manually. Swedish SSC has basically the same approach than Spain, Oracle plus some manual adjustments, but some financial information is also fetched from Qlick View during the month-end closing. According

to Supply Controller Sweden BI and Qlick View basically contain the same financial data but Qlick View has better response time, thus it is preferred in Sweden although it exists mainly for production reporting use. In Sweden, each controller reports both income statement and balance sheet of his/her unit. Germany has a totally different approach to Hyperion reporting than other studied SSCs. The practices were changed a couple of years ago to centralized model where one of the controllers technically reports all 25 reporting units' income statements at once and data is fetched from BI instead of the original source, Oracle. The change was made due to discrepancies in reporting when several controllers were involved in submitting income statement reports to Hyperion.

In all SSCs the reporting process has room for improvement. The German process is vulnerable as it is based on BI data and that is not up to date in hectic reporting time. BI is updated twice a day, at night time and at 12 am CET. Therefore Controller Germany tries to point all possible issues beforehand with several pre-checks. As Germany is one of the biggest, if not biggest, unit the amount of transactions in GL is huge and in practice, it is mandatory to have pre-checks to prevent possible issues with data quality at a late stage of the reporting process. On the other hand, Taylor (2009, 211-212) recommends avoiding too much re-processing as that can be considered one type of waste according to lean principles. What the other SSCs should learn from Germany is, that they intend to book all corrections to Oracle and avoid manual adjustments. In that way, the figures are easier to further analyze and use in a more detailed way for everyone in BI as one set of numbers. When further considering the Hyperion automation project, units that currently make manual adjustments outside Oracle will need to reconsider their way of working as only bookings and figures in Oracle can flow automatically to Hyperion.

5 SUMMARY AND CONCLUSIONS

In this chapter the main findings are summarized and the recommendations for the commissioner provided. The third part of the chapter proposes themes and

topics for the future research and the last part discusses the reliability and validity of the research.

5.1 Summary of the Main Findings

This chapter summarizes the main findings regarding the month-end closing process in four studied European shared service centres, answering to the research question “How to improve the month-end closing process in the Finance Shared Service Centres from Record-to-Report point of view?”

The research question was approached first from a high level, by interviewing the shared service directors and specialists such as Group Controller, Internal Controls Manager and Oracle/BI support. When the understanding of SSCs operational environment and background was gained the research moved on to the details of each SSC month-end closing activities. Analyzing and comparing the results from the interviews, analyzed data, diaries and the sub questions, “What are the bottlenecks in the process?” and “What are the best practices?” guided the research towards the recommendations to improve the month-end closing process.

The theory suggests to standardize and harmonize the financial processes. In addition, several authors suggest utilizing modern technology, such as RPA to automate manual work. This research has described the current state of the month-end closing process from the record-to-report point of view in four studied shared service centres. The analysis shows that the closing process causes a peak in a workload. The studied SSCs have found different ways to deal with the closing process.

Table 7. Summary of identified bottlenecks and recommended best practices

	Bottlenecks	Best practices
Month-end closing schedule	High level group reporting calendar	Include intercompany invoicing deadline to group reporting calendar
	Local reporting calendar not available in all units	Publish and communicate reporting calendar
	Lack of KPIs related to closing process	Define KPI's to follow up month-end closing performance
	Waiting time in the process	"Do not be delayd for a detail"
Closing and reconciliation of subledgers	Four eye principal not always in use	Reorganize work distribution to ensure four eye principal
	Process controls in subledger closing are not supported by the system	Consider adapting new tecnology to support closing process, automate controls and secure audit trail
	Issues not submitted to incident handling	Submit incident and establish a follow up to monitor incident handling
Record-to-Report practices	High workload during the month-end closing	Consider different ways to divide workload
	All Oracle functionalities not used effectively	Provide training to ensure people are aware of all possibilities
	Documents archived in several format	Electronic archiving
	No time for quality check	Reserve half a day for quality check
	Manual adjustments in Hyperion reporting	Book all transactions to GL to support automation

Table 7 illustrates the main identified bottlenecks and recommends best practices. It is divided into three categories covering, month-end closing schedule, subledger reconciliation and closing, as well as report-to-record practices.

The group reporting schedule includes monthly reporting and intercompany balance deadlines. During this research it was found, that speeding up the process would require closing the subledgers earlier. However, it is not possible without setting the earlier deadline for intercompany invoicing. Currently, the official closing calendar is not communicating a common deadline for intercompany invoicing, but the unofficial deadline is during the second working day. The recommendation is to include it in the group reporting calendar and to set a deadline e.g. to the end of the previous month. This change will ensure, that discrepancies are

solved early enough, and that during the intercompany balance deadline, no late adjustments are needed.

Regarding a local closing schedule, the practices differed a lot. However, the studied theory suggested to publish the closing calendar with clear responsibilities and to monitor the performance on a regular basis, thus it is recommended to define common KPI's to follow up closing the processes' success.

The third recommendation regarding the closing process is to consider the materiality of bookings versus the speed of the process. As an example, in Finland, the blue-collar salaries are the last step in the process before running the mass allocations. Only after that, the income statements can be run and controllers proceed with reporting. In this example, it is worth considering whether salaries could be accrued if it does not affect "the true and fair view" of reporting.

When analyzing the closing and reconciliation of subledgers, it was identified that process is mainly manual and a four-eye principal was not always in place in all units and subledgers. The studied theory suggests to adapt modern technology and automate manual controls. That way the risk of manual errors disappear and both accuracy and compliance increases.

The other finding related to the closing process was, that incidents were not always submitted to Oracle support. In a couple of cases, the users waited for the next day and then closing was successful. If the incident is not reported, the root cause will stay unclear and possibly delay the process in the future as well.

It is evident from the data that the month-end closing causes a peak in workload. It could be concluded that work distribution regarding general ledger entries is worth considering. Whereas in some units the entries are centralized to one Accountant, in others several people are submitting journals. However, no matter who does the practical work, one person should be responsible for the balance sheet reconciliation to secure the data accuracy on the overall level.

It appears that all units are not utilizing a full range of Oracle standard functionalities. Automatically reversed journals, mass allocations, recurring journals and currency revaluations are useful functionalities, that are easy to adapt and will speed up the process when applied. It is recommended to provide training for the staff to ensure that they have sufficient knowledge about these features in Oracle.

One of the waste findings according to Lean principles was the unnecessary storing of documents. If archiving of papers is not mandatory based on local law. It is suggested to archive journals in electronic format only. The lean methodology considers storing documents in several formats as over-processing.

As the customer value in month-end closing is the reliability of the financial data, it is important to spend some time on quality check before submitting final figures to group reporting. As it appears that some of the studied SSCs feel that they don't have enough time for quality check, it is recommended to schedule half a day at the end of the MR day, to focus on analyzing the figures.

When writing this summary in spring 2019, the Oracle to Hyperion reporting automation project, mentioned at the beginning of this study, has only taken its first steps. It could be concluded, that the studied theory suggests to harmonize and standardize data and processes before starting to automate and implement modern technology to support the process development. The main issues in Oracle to Hyperion reporting have been the differences in local booking practices, utilization of the chart of accounts and other distribution fields, as well as manual adjustments outside Oracle GL. As only the bookings made into GL can flow automatically to Hyperion, it is mandatory to book all transactions to GL, thus recommended based on the findings.

5.2 Implications for the Commissioner

The aim of this thesis was to increase the understanding of the financial shared service centres' month-end closing process, especially from the record-to-report point of view. To be able to understand the environment of the finance and its

processes, it was seen inevitable to include shared service phenomenon to the theory part of this research. The research shows that in the studied company, the financial shared service centre maturity level is only on start-up level based on PWC's (2011, 16-17) evaluation criteria. The lack of shared service strategy was one of the findings related to the shared service centre maturity. As the shared service centre strategy sets the frame for all financial processes, it is recommended to have a written and communicated strategy as a basis for the future process improvement.

The objective of this thesis was to develop a financial month-end closing process in studied shared service centres in Europe. Based on the research the high-level recommendation for the commissioner is; to standardize the processes and focus on business process improvement in the financial month-end closing, as well as in other financial processes. According to PWC (2011, 16-37) business process optimization is an area where most of the SSCs have room for improvement.

During this study, it was found that the shared service centres have extremely competent and committed personnel. In this research, these experts openly shared their practices and were willing to hear, if their colleagues in another country, had identified better ways to manage the closing process. As process improvement should not be a one-time effort, but continuous improvement, it is recommended to establish a network and encourage finance people to share their knowledge also in the future, in a more structured way.

5.3 Suggestions for the Further Research and Development

This study has focused on the month-end closing process and its improvement in the shared service centres. The Lean-principles suggest, that each process improvement should start from defining customer value (Paterson 2014, 8). In this research, the customer value was not studied in detail. Instead, it was expected to be accurate financial reporting in a timely manner as mentioned by several researchers (Zarzycka and Michalak 2013, 151-152; Lahti & Salminen 2014, 211).

This research increased the understanding of the month-end closing process and provided suggestions for practical improvements in the record-to-report area. However, as the assumed customer value - accurate financial reporting in a timely manner - is quite a high-level definition, the future research could focus on that area. According to Pricewaterhousecoopers (2011, 29-31), 90 percent of the shared service centres use customer satisfaction surveys regularly to gather information for improving the quality of the services as well as to strengthen customer orientation. The research could be extended to cover, not only the management reporting area but, the whole finance shared service centre and its customer satisfaction. The identified customer segments and value they expect to receive could then be later utilized also for prioritizing the tasks during the high workload, e.g. month-end closing.

5.4 Validity and reliability of the Study

The research question was approached from several angles in order to gain a deeper understanding of the studied phenomenon; the month-end closing. Unstructured interviews with Directors were used as a basis for designing the research process, selecting the methods and people to interview. The study proceeded from overview to details and in-depth, as well as semi-structured interviews were used to gather the data. In addition, Accountants and Controllers, one from each SSC filled in a diary of one month-end closing. Diaries were then walked through together with the interviewee step by step, allowing additional questions to be raised. According to Saunders et al. (2009, 323), it is important to consider the strategy and methods used for the study. They suggest using multiple interviewing technics when undertaking the research project.

In total, seventeen interviews were held during the study. Based on the interviews the findings were confirmed by several interviewees. However, qualitative study typically includes the personal interpretation of the collected data (Saunders et al. 2009, 484) and thereof might lead to somewhat different emphasis of the findings if the study would be repeated by another researcher. As I have worked in the company's Finnish shared service center, the observation can be seen as one of the used methods and it has allowed me to utilize my professional experience in

this study. Furthermore, the analyzed statistics about a number of daily transactions support the findings.

Saunders et al. (2009, 158) mention that generalizability is sometimes referred to as external validity. The purpose of this study was not to provide a theory, that could be generalized to the whole SSC industry but instead, this case study revealed in-depth insight to the month-end closing activities and challenges in studied SSCs. Considering the extent of the study, as well as, multiple sources of evidence, the validity and reliability of this study should not be denied.

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GROUP REPORTING CALENDAR 2017

Monthly reporting day marked with MR.

Group Reporting Calendar 2017
15.12.2016

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
January				NA	IC	MR			AC	B	IC	MR				W1NE				W2				B									
February	E	NA			IC	MR	E						P							W2													
March	NA				IC	MR	E			W1	MR		W1NE							W2	B	AGM											
April				NA		IC				W1	MR																						
May	AC	B	P	NA		IC		W1	MR	E		P1	B																				
June	NA				IC	MR					W1	B	B																				
July				NA		IC				W1	MR																						
August						IC					IC																						
September			NA	NA	B	B	MR				W1	E	E																				
October					IC	IC																											
November		NA			IC	MR							E	W1NE																			
December				NA		IC	MR				W1		B																				

IC Intercompany items for monthly reporting *
MR Monthly reporting *
YE Year-end closing *
P1 Forecast reporting (P1, P2) *
AP Final Annual Plan reporting *
NA Net sales actual reporting *
NE Net sales estimate reporting *
W1 Weekly net sales (W1, W2, W3, W4) reporting *

P Weekend / public holiday (in Finland)
E Publishing day
B E-Con meeting
AC Board meeting
AGM Audit Committee meeting
AGM Annual general meeting

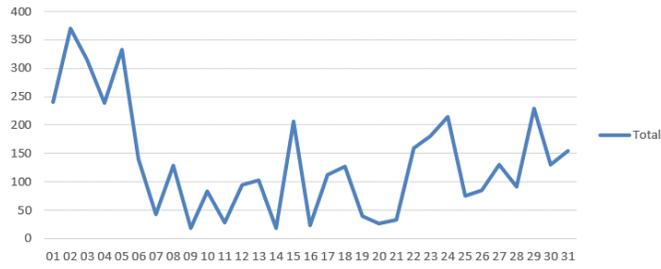
P1 Forecast reporting:
 P1: Full year forecast including monthly split for May-Dec
 P2: Full year forecast including monthly split for Sep-Dec
Management comments:
 Segment comments are due by 12:00 EET second working day after the monthly reporting

* Hypertion reporting deadline including data validation by 21:00 EET

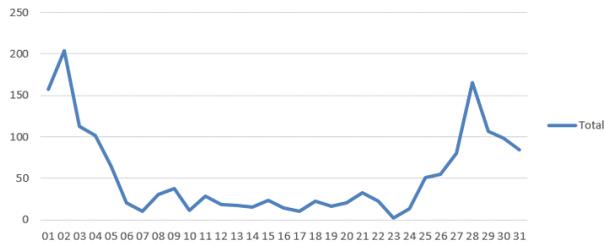
NUMBER OF ENTERED GL JOURNALS PER DAY

Number of entered GL journals during 2016 1-11 periods per day in SSCs.

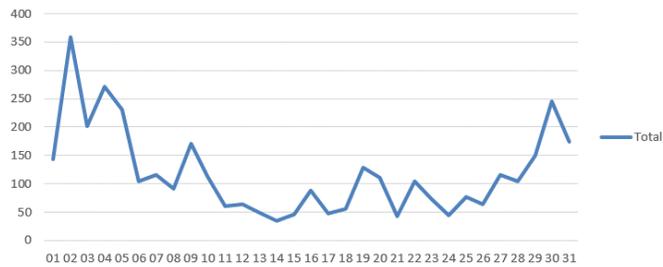
Entered GL journals per transaction day in SSC
Germany 2016



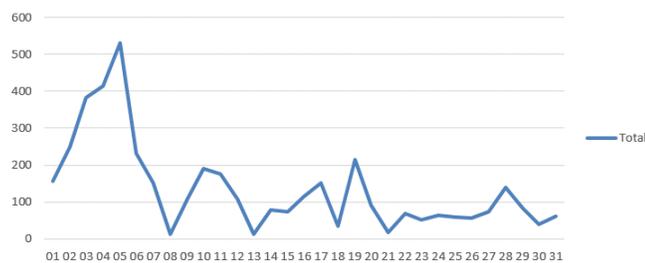
Entered GL journals per transaction day in SSC
Spain (+PT) 2016



Entered GL journals per transaction day in SSC
Sweden (+NO) 2016

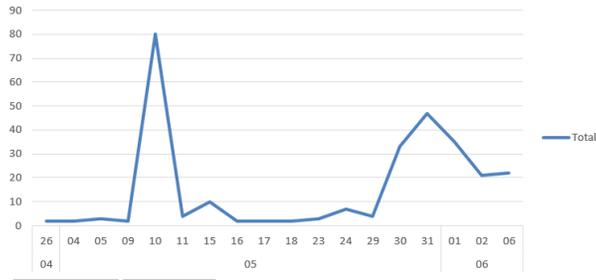


Entered GL journals per transaction day in SSC
Finland 2016

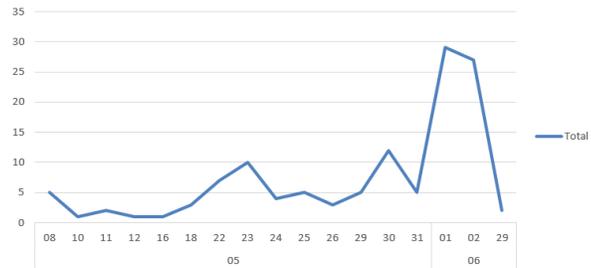


Number of entered GL journals in May 2017 period per day in SSCs.

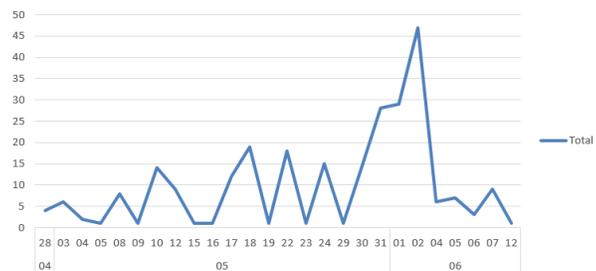
Entered GL journals per transaction day in SSC Germany May 2017



Entered GL journals per transaction day in SSC Spain incl. Portugal May 2017



Entered GL journals per transaction day in SSC Sweden incl. Norway May 2017



Entered GL journals per transaction day in SSC Finland May 2017

