

Expertise and insight for the future

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Optimization of invoice handling at accounts payable

Metropolia University of Applied Sciences

Bachelor's degree (MBA)

International business and logistics

Thesis

26.04.2018



Author(s) Title	Ilya Bezuglov Optimization of invoice handling at accounts payable
Number of Pages Date	35 pages + 2 appendices 26 April 2018
Degree	Bachelor's degree (BBA)
Degree Programme	International business and logistics
Specialisation option	Supply chain management
Instructor	Suvi Moll, Senior Lecturer

This Bachelor's Thesis investigates incoming invoice handling at accounts payable. The case company, BoXshipping AB, presents itself as an international logistics service provider, which operates worldwide. Invoice handling in case company was never optimized with a plan based on accounting theory or leading accounts payable and invoice handling practices. This fact brings an opportunity for the case company to improve the internal accounting operations and create strong background for future development in this field.

The research method, which was used in this thesis, was qualitative case study. Case company's invoice handling was assessed and analysed with the usage of relevant accounting literature review and qualitative research. The literature survey consisted of accounts payable and invoice handling practice topics. Qualitative research included data from semi-structured interviews with company representatives and method of direct participating observation. Semi-structured interviews were held with accounting department and operations department representatives. Direct participating observation was held in case company's operations department where actual invoice handling happens.

This thesis suggests incoming invoice handling optimization plan that will help the case company to overcome current challenges as well as improve internal operational accuracy and efficiency. The plan consists of several steps and aims to eradicate weaknesses of current handling system.

Keywords	accounts payable, invoice handling, optimization

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1 Introduction

This thesis focuses on optimization of current invoice handling process at case company's accounts payable. Topic is relevant as invoice handling in case company was never optimized with a plan based on accounting theory or leading accounts payable and invoice handling practices.

1.1 General importance of topic

Modern business presents itself as a highly competitive and aggressive environment. One of the ways to overcome competitors, be profitable and sustainable is to optimize company's internal operations. One of the most important internal activities tend to be invoicing management, which consist of accounts payable and accounts receivable (Schaeffer, 2004).

Accounts payable as a core part of invoicing processing has always been highly influential on company's workflow, operational sustainability as well as profitability. Importance of efficient accounts payable has increased significantly nowadays due to rise of competition, operational velocity and size (Bragg. 2013).

Invoice processing tends to make up the largest part of the actual work in accounts payable. Optimized invoice handling enables companies to save resources on internal operations. In practice, it means lower operational costs and higher profitability of the company, that could play a key role in the whole enterprise's development and growth (Bragg. 2013).

1.2 Case company background

BoXshipping AB presents itself as international logistics service provider, which operates worldwide. Company has its offices in Sweden (Gothenburg) and Finland (Helsinki). Finnish branch of BoXshipping AB consists of sales and operations teams. (BoXshipping AB. 2018).

BoXshipping AB provides following import and export services for any types of commodities (BoXshipping AB. 2018):

Ocean freight forwarding



- Rail and Road freight forwarding
- · Air freight forwarding
- Project shipments

In details BoXshipping operations could be divided as follows (BoXshipping AB. 2018):

- Full container load (FCL) export sea shipments
- Less than container load (LCL) export sea shipments
- Road export
- Air export
- Rail export
- FCL import sea shipments
- · LCL import sea shipments
- Road import
- Air import
- Rail import
- Project shipments

The company provides all the possible services among the industry of freight forwarding and transportation. BoXshipping assists with documentation needed, give suggestion about suitable Incoterm and route the case requires and seek the best solutions among all the means of transportation. The key objective is to organize shipment in the most efficient way possible, as well as to fulfill customer's need in a safe and easy operations (BoXshipping AB. 2018).

Company has a diversified client portfolio. Finnish branch of BoXshipping AB operates globally though majority of customers are from Finland. Other customers are represented by company's agents from China, India, Eastern Asia, Russia, Middle-East region, Germany and USA. Customer's background tends to be diversified as well: starting from huge corporations and wholesalers to individuals. BoXshipping AB operates via Lognet Global logistics network. This way, majority of shipments are handled in cooperation with agents of this network (Lognet Global. 2018).

1.3 Research problem

BoXshipping AB operates in highly competitive environment. Finnish logistics market experienced huge growth in the beginning of 2000s due to rapid growth of Finnish economy. Global economic crisis diminished the economy of Finland as well as created surplus of logistics companies in the industry (University of Turku. 2015). In order to survive in such environment, BoXshipping should have flawless internal operations as a core support for external growth.

Based on the author's personal experience of being freight forwarder in BoXshipping AB Helsinki export- import operations branch, it can be stated that invoice handling in BoXshipping was never optimized with a plan based on accounting theory or leading accounts payable and invoice handling practices. In this way, there is an opportunity to improve the internal accounting operations and create strong background for future development.

This thesis will take a look on the BoXshipping AB's accounts payable with focus on the invoice handling processing in an effort to provide adequate assessment, analysis and possible optimization plan.

1.4 Research question

The research question has been stated as follows:

"How can the invoice handling in accounts payable be adequately optimized at the case company – BoXshipping AB?"

As a common truth, process optimization means process improvement. In this thesis, optimization responds following sub questions:

- How to handle incoming invoices in less steps or shorter period of time?
- How to handle incoming invoices between departments?
- How to handle incoming invoices with less operational mistakes?

This thesis will answer research question and sub questions by connecting data gathered from qualitative interviews and direct participating observation with literature review. Direct observation was held at the operations department working environment, whereas interviews were held with accounts payable and operations department representatives.

1.5 Research design and structure

Figure 1 illustrates the way this research was conducted. In order to find an answer to research question, a thorough literature review of accounts payable and incoming invoice handling took place. These two main literature topics formed this thesis conceptual framework.

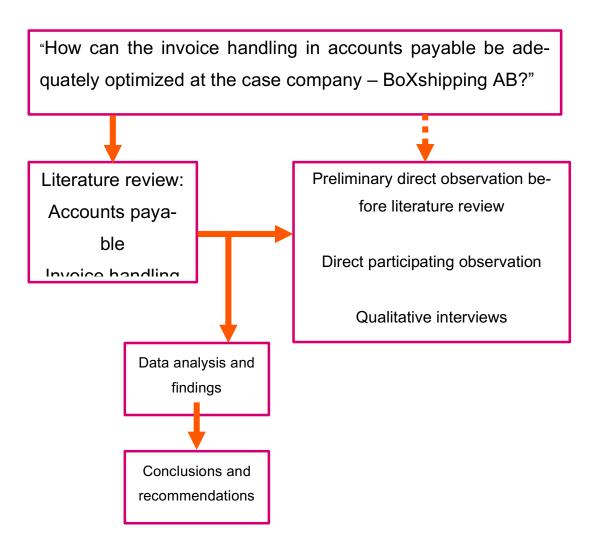


Figure 1. Research design.

Thesis research question was stated early, in order to enable a binding research structure. Direct observation was executed in two phases: before and after literature review.

This was done in order to get author's first impressions with data unaffected by theory. A literature review was required to make the dedicated interviews for relevant interviewees. Accounts payable and invoice handling literature revealed the core ideas and principles of the topic. Due to specification of research topic, case study design has been chosen with a focus on direct observation and qualitative interviews. Collected primary data was analyzed in accordance with theory. As a result, conclusions and implications were presented.

Section 2, the Conceptual Framework, examines the theory of accounts payable as a general topic and invoice handling as a particular one. Versatile references were used to research invoice handling perspectives. Most of the existing invoice handling literature focuses on efficiency of the practices applied, forgetting about its costs to the company. This thesis concentrates on ability to implement practices in real life, hence all kind of strategies were examined.

Section 3, the Method and Material, explores the theory of case study, direct participating observation and qualitative research interview. The case study and direct observation theory basis is the methodology by Gillham (2000). Qualitative interview part refers to studies by Edwards and Holland (2013) as well as by Magnusson and Marecek (2015). Section 3 also provides description of thesis methodology and utilized approach.

Section 4, the Results and Analysis, takes a look on the key findings from the direct observation and interviews. Primary data findings explained invoice processing from accounting department and operations department points of view. In order to answer a thesis question and provide invoice handling optimization plan, current system in use was assessed in detail and analyzed with the usage of SWOT analysis. The key challenges were identified and also analyzed from the theoretical point of view to increase value of the study.

Section 5, the Discussion and Conclusions, presents optimization plan for the case company's incoming invoice handling system. Optimization plan is presented in order to provide answer to the research question in a prompt way within the scope of research results and their analysis, as well as the conceptual framework. Besides, this section provides evaluation of research and provides ideas for future researchers of the studied topic.

2 Conceptual framework

2.1 Accounts payable from invoice handling prospective

Accounts payable could be defined as a division that is responsible for making payments owed by the company to suppliers and other creditors. Generally speaking, accounts payable are dealing with incoming invoices processing, approval and payment. (Tracy. 2018).

Accounts payable main function de-facto is invoice handling as it concerns an actual invoice, which is core of any payment. Invoice presents itself as a commercial document that declares a transaction between a buyer and a seller (Tracy. 2018).

Invoice handling can be presented as following process (Schaeffer. 2007):

- · Receipt of invoice
- Invoice is added to Enterprise Resource Planning (ERP) system
- Invoice check and approval
- Invoice payment

Accounts payable receive invoices directly by email and post or indirectly from other company's departments such as operations and purchasing divisions (Schaeffer. 2004). Invoices can be presented in two forms: paper version and digital version (e-invoice). In a modern business world majority of companies are using e-invoicing, though paper invoices still make up significant share from total of invoices handled (Bragg. 2013).

After the receipt of the invoice, it is added to ERP system. In case invoice was received in a paper form, it should be transferred to an electronic version via scanning (Bragg. 2013). Enterprise resource planning system presents itself as a software program, which creates united database with access to all company's departments. ERP usually consists of several modules. Each module represents versatile functions of the company. A typical ERP software supports cross-functional business processes by connecting core business functions (Parthasarathy. 2007):

- Accounting and Controlling
- Human Resource (HR) Management



- Production and Materials Management
- Project Management
- Quality Management and Plant Maintenance
- Sales and Distribution

When invoice enters ERP, it is added to accounting module. At the same time, invoice is registered to a general ledger account. General ledger account sorts and presents information about invoice in a form of code. This code typically consists of several parts. For instance, code can explain if invoice is operating expense or revenue, to which department is it addressed, for which goods or services is it issued (AccountingCoach. 2018).

After invoice has been added to ERP, it should be approved. Invoice approval tends to be one of the most labor-intensive activities within company's accounting internal operations. Great complexity comes up from a significant amount of matching work, that is required to be done before invoice is settled to be paid (Bragg. 2013).

Nowadays accounts payable specialist use several ways of approving invoices for payment (Bragg. 2013):

- · Three-way match
- · Evaluated receipt settlement
- Assumed receipt also known as Negative assurance

The most popular way of invoice checking is three-way match. Tree-way match concept works on the basis of three documents' similarity: invoice, purchase order (PO) and receiving prove (Bragg. 2013). In order to understand the core of the three-way match concept a better look should be taken on each of the three documents.

Purchase order (PO) is a document, which precisely describes all details of the order, such as price, purchased product's quantity and quality, payment terms and other important shipping information. Delivery documents could be described as a delivery slip, which proves that purchased goods have been received (Schaeffer. 2004).

In order to proceed with invoice payment, information on all three documents should be identical. This way, accounting staff ensures that the purchase has been authorized,

billed amount is correct one and goods have been received. As pointed out by Bragg (2013), even though the process tends to be crystal clear and logical, problems occur constantly as papers often does not match. In many companies, the first-time match of all three documents happens only in approximately 50% of cases. Mistakes or mismatches are revealed by accounting staff on a constant basis. For instance, the most popular problem cases could be presented as follows (Schaeffer. 2007):

- Purchase orders do not contain all required information for matching with invoice or delivery slip
- Purchase order has never been issued
- Invoice's price does not match with one mentioned in purchase order
- Invoice's PO number is missing or is incorrect
- Invoice contains wrong information about the shipment
- Amount of goods received is not equal to amount stated in invoice or PO

As an alternative for a three-way match, companies can implement evaluated receipt settlement method or assumed receipt method.

Evaluated receipt settlement is an accounting system of invoice handling which excludes invoice from the payment process. It works in a way, that accounting department issues payment on a basis of PO and goods delivery slip match. As payment terms and price are stated in purchase order and receipt of commodities is approved, invoice becomes a simple formality without any real value for the process. This way, payment is settled without its presence (Schaeffer. 2007).

Even though evaluated receipt settlement accounting model may seem to be more efficient and less time consuming, comparing to classic three-way method, its implementation in real life demands great resource amount and extremely close internal and external cooperation levels. First of all, evaluated receipt settlement method diminishes processing mistake tolerance almost to zero. In order to get real operational benefit from this model, accounting department should be absolutely sure that the purchase order was issued correctly, PO number is stated on receipt documents and that all documents are provided on time. These simple actions require high class internal cooperation among accounting department, purchasing department and warehousing/goods receipt responsible department. Besides this, company should agree method with its vendors,

so accounting departments cooperate externally. Such type of cooperation requires truly close connections between companies and substantial level of trust (Schaeffer. 2007).

Another alternative to three-way match method of invoice handling is Assumed receipt. Method states that not all invoices shall be checked in a three-way match framework. If invoice is less than a determined amount, it is settled to be paid without checking (Bragg. 2013).

Method of assumed receipt tends to be a controversial replacement for a three-way match. As pointed out by Bragg (2013), assumed receipt increases payment velocity of the company, as well as enables accounting staff to concentrate more resources on checking and approval of "big" invoices. On the other hand, it may be challenging for accounting management to settle correct border amount. For a big company, "small" invoice amount may be considered a 5000 EUR invoice, whereas for other company a 100 EUR invoice would be treated as a valuable one. Also, it should be considered, that constant payment of low value invoices without check may lead to increased financial risk of fraud and significant financial losses (Schaeffer. 2007).

To sum up, three methods could be presented in following comparison table.

Table 1. Comparison of invoice checking and approving methods

Method	Core idea	Advantages	Disadvantages
Three-way	In order to ap-	Clear and logical pro-	Time-consuming;
match	prove invoice,	cess;	
	three documents		Low first-time match rat-
	should match:	Less chances that wrong	ing: invoice, PO and de-
	actual invoice,	invoice would be settled	livery slip rarely match at
	purchase order	to payment;	the first time;
	and delivery slip.		
		Classic model, that al-	Requires significant
		ways could be applied,	amount of paper work;
		as it does not demand	
		any special requirements	
		to accounts payable de-	

		partment, purchasing de-	Requires significant
		partment or receiving de-	number of steps and in-
		partment;	volves versatile person-
			nel before final approval;
Evaluated	Accounting de-	Medium amount of in-	Implementation in real
receipt	partment issues	voice handling time is re-	life demands great re-
settlement	payment on a	quired for PO and deliv-	source amount and ex-
	basis of PO and	ery slip match;	tremely close internal
	delivery slip		and external cooperation
	match, no in-	Less paper work;	levels;
	voice involved.		
		Fast payments;	May not be suitable for all
			suppliers, as requires
			substantial level of trust;
Assumed	If invoice is less	Dramatic decrease of re-	High risk of fraud due to
receipt	than a settled	quired invoice handling	absence of checking;
	amount, it is ap-	time;	
	proved to be		It may be challenging for
	paid without	Minimized amount of pa-	management to settle
	checking.	per work for small sum	correct border line for in-
		invoices required;	voices to be checked or
			not;
		Minimal number of steps	
		before payment;	High risk of financial
		, ,	losses due to absence of
		Significantly fast pay-	checking;
		ments of small sum in-	J.
		voices;	
		,	
		More resources could be	
		focused on challenging	
		and medium/big sum in-	
		voices;	
		13.000,	

2.2 Invoice handling best practices

Significant amount of checking, matching work and wide possibilities for mistakes make invoice handling in accounts payable labor-intensive, though important to consider for any company. It goes without saying that nowadays it is hard to imagine a successful company operating without efficient and properly adjusted invoice handling in accounts payable department. In case correct practices are implemented, company is able to significantly reduce internal operational costs. In a modern business world where companies are forced to gain competitive advantage by any means, optimized internal costs could be a crucial factor of success or failure (Bragg. 2013).

Optimization of invoice handling could be divided into internal and external phases. Internal phase of optimization concerns invoice approvals, documentation and general ledger management, whereas external phase is related to cooperation work with suppliers (Bragg. 2013).

Approving of invoice is one of the main handling functions. Primary goal of the accounting department in this case should be reduced to minimum required steps for approval. Less steps do it take for invoice to be approved and settled for payment, the better and more efficiently accounting department operates. For instance, bad practice would be multiple managers approval required before payment. It is reasonable if only one specialist takes care of invoice's consideration. Another method could be a negative assurance for invoice approvals. With this approval scheme, invoices are automatically paid when due unless during checking process managers find out incorrectness and inform the accounting staff not to issue payment (Bragg. 2013).

Efficient invoice handling assumes that documentation which is involved in the process could be easily approached by company's staff as well. It goes without saying that digitalization of accounts payable is the correct practice for this purpose. Digitalization of invoice means that document is scanned and its digital version is stored at the company's ERP database. As an option, company can also refuse to operate with paper invoices and accept only electronic versions received by email. This reduces number of steps in handling process as well as excludes scanning. After invoice has been scanned or downloaded from email to ERP database, everyone at a company can access it at the system. This way, the process of invoices' checking and approval require less steps, such as

internal emails for invoice verification purposes or physical movements of documents from person to person (Bragg. 2013).

ERP system plays a huge role in any company invoice handling. Nowadays companies use versatile ERP systems in their accounting practice. Variety of software brings an important question to answer – How to choose the most suitable one? Parthasarathy (2007) proposes following criteria that a useful ERP should match:

- Enabling to perform entire essential operations set
- Reduction of process steps and process improvement
- Reduction of operating time required
- Being user-friendly
- Constant development by developers

In this way, ERP system should add value to current operations processes as well as have potential for further development of the system to bring even more value to company.

The last but not least point of focus at internal optimization of invoice handling is general ledger management. First of all, account payable administration should ensure that general ledger includes all possible coding combinations of all possible business operations. This guarantees that all procedures would be coded correctly and no disputes would arise during future audits. Management should also provide standard account code lists to accounts payable staff as well as to employees from other departments, which are involved in the invoice handling processes. This increases staff operational productivity as well as reduces amount of errors made concerning general ledger coding (Bragg. 2013).

The core of external invoice handling optimization strategy is closer cooperation with suppliers, vendors and partner companies. In order to increase cooperation level, company should strengthen information flow. An option to consider would be issuing of a welcome accounting packet to new suppliers and business partners. This packet should include company's up-to-date payment information, such as general accounting information, accounts payable email, payment frequency and a reminder to use correct invoice references (Bragg. 2013).

2.3 Results of literature review

Companies that would like to optimize account payable invoice handling, such as the case company BoXshipping, should make an effort to use the most suitable invoice management practices. In order to achieve it, company has to examine current techniques in use and compare them to the best practices known. It should be considered that some practices may work perfectly in theory, though demand too much of time and resources for implementation in reality. Finding balance between new practices implantation, their real-life efficiency and costs should be a priority for company's management (Schaeffer. 2007).

Management should study possible advantages and disadvantages of new practices implementation. Any invoice handling technique could be beneficial for a company only in case if it is implemented correctly (Schaeffer. 2007). The main purpose of this thesis is to provide adequate possible optimization plan of invoice handling. Thereby all suggestions should be introduced only after it is proved that company is ready to implement them in a right way, thus the chances of failure are low.

As pointed out by Bragg (2013) typical reasons why the theoretically best invoice handling strategies tend to fail during implantation are:

- Lack of planning (wrong budgeting for time, financial and human resources)
- Lack of internal cooperation between departments
- Lack of external cooperation with suppliers

Importance of the company's readiness to implement new techniques or optimize already in use ones plays the biggest role in the reviewed topic of invoice handling. Accounts payable managers may have a great deal of optimization ideas, though without proper communication, planning, preparation and staff dedication to operate correctly, real benefit effect would be close to minimal one Bragg (2013).

3 Method and Material

This thesis presents itself as a problem-solving research, focused on actual issue of assessment, analysis and possible optimization invoice handling processes at the case company BoXshipping AB. In order to achieve this goal, qualitative case study research

was implemented. With the usage of literature review (theory), successful real-life practices and qualitative research (data from semi-structured interviews and method of direct observation) incoming invoice handling was assessed, analysed and possible improvements or optimization schemes were proposed.

3.1 Qualitative research in case study

A case study presents itself as a type of study which examines a subject of research (individual, group, institution, community) to answer specific research question. The key characteristic of case study tends to be its basis on multiple sources of evidence. This is done in order to provide diversified and robust view on the problem. Interviews, documentation and archive materials as well as direct observations are suitable methods for data collection in case study researches (Gillham. 2000).

Qualitative research is method of primary data collection that concentrates on reveal of reasons, opinions as well as underlying facts. Qualitative research in a case study could be done via qualitative interviews as well as direct observations with focus on quality data collection (Swanson, Holton. 2005).

According to Gillham (2000), qualitative research in a case study enables to:

- Investigate subject despite the lack of information available
- Examine subject in detail and get underneath of it
- Investigate the case from the perspective of involved people

3.2 Method of direct observation

Observation could be described as a method of primary data collection, when researcher examine the subject of research (person, group of people, institution, community, setting) by physically observing it. In case researcher is a member of an investigated environment, this kind of research is named participant observation (Gillham. 2000). For instance, author of this thesis works on a permanent basis at the case company, hereby method of participant observation was introduced into research.

Participant method of direct observation could be described as following (Gillham. 2000):

Descriptive



- Subjective
- Emphasis on fact interpretation
- Mainly informal
- Flexible on information collection

As any method of data collection, direct observation has advantages and disadvantages. Concerning advantages, direct observation method enables to obtain data in the most direct way possible. Researcher receives data from observing factual acts and situations. On the other hand, main struggle for the researcher would be keeping the research objective. As there are no direct guidelines, researcher may unconsciously mention only the facts that he wants to see. Besides, it may be challenging to write up data adequately, as it has to be written immediately after observation in order to ensure its accuracy (Gillham. 2000).

As pointed out by Gillham (2000), in order to overcome these challenges, researcher has to keep a journal of observation that is constantly and on-time updated as well as develop an ability to look at the examined subject from the side trying to mention all possible aspects of the case. In order to be efficient, the journal of observation should include following:

- First impressions
- Ideas about the subject
- Things to remember to check later
- Analytical notes

3.3 Qualitative interviews

Qualitative interview presents itself as one of the main tools of primary data collection. Qualitative Interviews could be organized by three categories (Edwards, Holland. 2013.):

- Structured
- Semi-structured
- Unstructured (focused)

Structured interviews are usually based on a questionnaire with a sequence of questions, which are asked in the same order and the same way, with little flexibility available. The

major objective is to obtain comparable data from all subjects of the research. On the other hand, semi-structured interviews could be characterized by increasing levels of flexibility and lack of structure (Edwards, Holland. 2013.).

The main forms of qualitative interviews are semi- and unstructured ones. In a typical semi-structured interview the researcher has a list of questions, but interviewee is flexible to answer them in free order and form. In comparison to structured interviews, semi-structured ones provide much more space for interviewees to respond on their own terms with their own insight of the situation. Generally, in semi-structured type of interview interviewer's interest is to reveal how the interviewee understands the topic under discussion. Unstructured interview gives to interviewee even more flexibility and freedom to express thoughts than semi-structured one. Interviewer has to provide subjects of the dialog, though the importance of the method is to allow the interviewee to talk from their own perspective using their own frame of reference and ideas and meanings that are familiar to them (Edwards, Holland. 2013.). In this thesis, semi-structured interviews were used as the most suitable combination of flexibility and structure.

In order to achieve valuable results at the interview, it is important to make questionnaires in a proper way. During the questionnaires' creation, guidelines by Magnusson and Marecek (2015) were used:

- Interview questions should be clear and understandable. The should exclude any difficult words, foreign languages and jargon.
- Questions should be related directly to the topic of the interview.
- Question should be written in a logical order.
- If it is possible, questions should be phrased as open-ended invitations for further discussion. In this way, interviewees have a chance to develop discussion by adding what they may want to say. It also encourages participants to speak in their own words.
- During the writing of the questionnaire, interviewer should avoid assuming interviewee's answers in advance. For instance, it may be exclude assuming beforehand, in case interviewer and interviewee have common personal background or work environment.
- Any question or request that an interviewer poses inevitably constrains participants' answers to some degree. Interviewer by any means should avoid leading questions, that provide the interviewee with the expected answer. It should be

mentioned that questions which have an obvious socially desirable answer are equivalent to leading questions. As a general rule, quality interview does not have any of these questions.

3.4 Reliability and objectivity

As pointed out by Scholz and Tietje (2002), case study should provide research process information in details with a purpose to increase reliability and objectivity of the work. Also in order to achieve high level of reliability and objectivity following actions could be implemented (Scholz, Tietje. 2002):

- · Research question should be stated plainly
- Study design should be adequately based on research question
- · Primary data should be gathered consistently
- Data should be analyzed in a systematic way

Besides, considering the research process, this thesis provides interviews' results as well as observation journal in appendix section of the research work.

3.5 Research material

The main purpose of direct participating observation was to collect primary data about the invoice handling and related problems in BoXshipping AB Helsinki import and export operational department in actual environment where real invoice handling happens. Helsinki operational department consists of three full time import and export forwarders (including author of this thesis) and one trainee.

This thesis observation data is based on:

- Observation of this thesis author's and colleagues' invoice handling workflow
- Observation of internal communication related to incoming invoice handling, as well as related emails and mails
- Observation of movements of the invoice within company
- Observation of invoicing database available in the company's ERP systems

Direct observation was executed in two phases:



- The idea of phase one was to write up author's first impressions before literature review in order to receive data unaffected by theory.
- Second phase of direct observation was conducted after the literature review.
 Also, it should be mentioned that during second phase author gathered data from company's ERP systems and invoice e-mail's history.

Concerning the interview part of primary data collection, its main purpose was to receive data about the processes that were unable for direct observation due to location difference between accounting and operational departments. Second interview's aim was to get another operational department representative's opinion of the topic. It was considered to hold only the interview only with one representative due to lack of professional experience of trainee and another freight forwarder, who started her work at the company in February 2018.

In this way, two interviews were conducted:

- With accounting department representative (Interviewee 1)
- With Helsinki branch operations department representative (Interviewee 2)

Interviewee 1 presents herself as a chief finance manager of the accounting department. She holds more than fifteen years of experience in the field of finance, accounting and ERP systems. Her current position includes managing case company's accounting department and its development.

Interviewee 2 is the import and export operations representative from BoXshipping AB Helsinki branch. She has more than 20 years of experience in the field of freight forwarding and 1,5 years of work at BoXshipping Ab. At the moment, her position includes working with less than container load import and export, air import and export, road import.

Table 2 presents themes and dates of interviews:

Table 2. Interviews' dates and topics

Person and position	Date	Topic

Interviewee 1, Chief fi-	9.02.2018	Invoice handling at ac-
nance manager		counts payable in BoX-
		shipping AB
Interviewee 2, Freight for-	19.02.2018	Invoice handling at opera-
warder		tional department in BoX-
		shipping AB

In order to receive maximum benefit, each interview was tailored depending on the interviewee. Before the actual interviews, interviewees were provided with information about the topic and aim of the interview by email. Interviews started with an introduction of the topic to the interviewee in order to ensure that they understand the subject of the research. All interviews were done in according to recommendations by Magnusson and Marecek (2015). Interview with the accounting representative was conducted via Skype, whereas interview with operations department representative was hold in person. The language of in the first interview was English, while second interview was in Finnish. The duration of each interview was approximately half an hour.

4 Results and analysis

This thesis section shows the major findings from the direct observation at the case company's working environment as well as from research interviews. Section also presents analysis of this data. The data source could be found in Appendix 1 and Appendix 2.

4.1 Observation results

The results of direct observation could be divided into two parts: invoice handling process description at BoXshipping AB Helsinki operational department and problems noticed during observation.

Invoice handling process at BoXshipping AB Helsinki import and export operational department from the perspective of direct observation presents itself as following:

- Operations department receives the invoice as a paper version by post or as electronic copy (e-invoice) to operational email "finland@box-shipping.com"
- Operations staff verifies if invoice belongs to BoXshipping AB. In case it does,
 billed sum is checked with purchasing price. Purchasing documents could be

found either at email archive or in general workspace database by purchase order number. Also, operations staff should have the proof of service being performed. In majority of cases, it goes without saying as purchased service is usually performed immediately after purchase. For instance, if case company orders customs clearance service from partner company Nurminen logistics, customs clearance is done within the day time of purchase. If price is correct and there is proof that service has been performed, invoice could be scanned.

- Paper invoice is scanned to accounting department internal email, which is located in Gothenburg, Sweden. In case of e-invoice, it is printed out and then scanned. In some cases, general ledger coding is marked on invoice beforehand, though this practice is not followed on constant basis.
- After the invoice has been forwarded to the accounting department, it is physically matched to the case it belongs to.
- Operations department waits for invoice to become available for coding and approval in Visma.
- When invoice is available for approval, it is approved and coded.
- General ledger code is also written on the invoice as a proof of being checked and approved, as well as for easy check in future audits.

Visma and nTrax are business software systems that are used in case company. Visma is BoXshipping's accounting program in use, whereas nTrax presents itself as a cloud ERP for shipment's, invoices' and customs' data storage. When a new shipment data is entered to nTrax, it should be marked as a ready for transfer to Visma. This stage is important, as shipment's nTrax number is added to Visma's general ledger account and used during coding. Visma's general ledger coding is done in the following way: account – profit center – case number – operation code.

4.2 Challenges

Even though, during the direct participating observation it was mentioned that invoice handling at operations branch performs relatively smoothly, following challenges were figured out.

Significant number of incoming invoices are paper ones. On average, BoXshipping AB receives about 675 purchase invoices per month, from which up to 67 (10%) are paper invoices. It should be mentioned, that usually paper invoices come from main partners

of the case company, such as Nurminen Logistics, Koski Logistics and Kuljetus Laaksonen. Table 3 presents situation with invoices in BoXshipping AB for the period of January – March 2018:

Table 3. Invoices and paper invoices in BoXshipping AB.

	Num	ber of invoices	Paper invoices	Paper invoices' share
January		750	70	9%
February		650	60	9%
March		625	70	11%
Total		2025	200	10%
Average property and a second contract the sec	per	675	67	10%

Case company does not have a separate email for incoming purchase invoices. This leads to situations, when the invoice could be missed or email containing it may be accidentally archived before invoice was handled.

There is no existing time framework for operations and accounting departments. This means that invoice may stay at freight forwarder's approval stage for a significant period of time (up to few days), as well as may not be uploaded to Visma for approval for a long period of time as well. Depending on the workflow, in some cases operations staff has to write reminding emails to accounts payable department asking to upload invoice for approval. On average one invoice processing could last for a few days or even week time. Long lasting invoice handling also results in receipt of payment reminders from other companies as invoice can be overdue. Table 4 presents amount of payment reminders received in first quarter of 2018:

Table 4. Payment reminders amount per month.

	Payment	reminders	per
	month		
January	6		
February	5		
March	7		
Total	18)	

Average per month	6
	1

Technical issues are one of the most often observed challenges. Problems are mainly related to the scanner which operations staff use to send invoices to accounts payable department. Occasionally, scanning machine does not work at all, though at times it does not send scanned invoice copies to accounts payable email. On the other hand, in rare cases (once per month at most), either operations department or accounts payable emails are not working due to server problems. This disrupts the whole invoice handling workflow. The table below presents amount of scanner technical inconveniences happened in during the period of January – March 2018:

Table 5. Scanner technical issues.

Month	Number of issues
January	10
February	4
March	6

Invoice handling process at operations department is absolutely manual. This requires a great deal of resources to handle single invoice.

Occasionally operations staff forgets to transfer nTrax case data to Visma, preventing the invoice to be approved as soon as it is available.

Few challenges related to general ledger coding of incoming invoices exist in handling process as well. For instance, general ledger coding could be done in a wrong way. In this case, operations staff has to write email to accounts payable department and request the change to be done though admin access. It should be mentioned, that this kind of mistakes happen as a typo during manual invoice coding process. The table 6 presents number of wrong-coded invoices in during the period of January – March 2018:

Table 6. Wrong-coded invoices.

	Number of in-	Wrong-coded in-	Wrong-coded invoic-
	voices	voices amount	es' share
January	750	15	2,0%
February	650	10	1,5%
March	625	11	1,8%
Total	2025	36	1,8%
Average per	675	12	1,8%
month			

It should be also mentioned that BoXshipping's invoice handling efficiency is highly affected by invoice volumes. For instance, during the busiest time of the year - summer time, amount of problems related to invoice handling is higher than in any other time of year.

4.3 Interview results

The first interview with case company's chief financial manager has provided the detailed description of invoice handling steps after invoice has been scanned to accounting department:

- The invoice is automatic interpreted in a program called Interpret.
- In next step, accounts payable staff makes sure the program has interpreted all information correct in a program called Verify.
- Then the invoice is transferred to Visma Business by a program called Transfer and becomes also visible for coding and approval in Visma DCE.
- When the invoice is coded and approved in Visma DCE the coding automatically transfers to Visma Business.
- After accounting staff has updated the invoice into Visma Business the cost is visible in nTrax and is also approved for settlement.
- All domestic invoices are settled based on due date. Accounting staff send files
 to bank several times per week. The foreign invoices are settled either on due
 date or after dialogue with the supplier.

Besides the invoice handling steps description, interview provided the following information:

- Process of invoice handling at accounts payable department is mostly automatized, though some steps require manual check or data input. Before, all invoice handling process was done manually.
- Coding of the invoices tends to be the most time-consuming part of the workflow.
- Accounts payable department check only if the invoice was correctly transferred, though invoice itself is not checked (negative assurance in use).

Concerning invoice handling process problems, the first interviewee mentioned the following:

- Visma DCE which is used for coding supplier invoices could be developed. Automatic invoice coding was suggested as a suitable idea, that can improve the workflow significantly. In the spring of 2018, accounts payable department plans to make an attempt to introduce automatic coding if this function appears in new planned software update.
- Case company's ERP program nTrax data about shipments is not transferred automatically. Occasionally operational staff forgets to mark shipment cases for transfer, which prevents invoices from coding and slows the approval process down.
- The interpret could be more correct and easier system for automatic coding.

The second interview with case company's Helsinki branch import and export operations department representative has provided the following results:

- It was mentioned, that even though invoice handling runs relatively smoothly inside the department, the process is highly dependable on personal skills and work volume.
- The most time-consuming part was named invoice checking and approval process.
- Accounting software and ERP system in use were named as user-friendly and efficient ones.
- Idea of separate invoice email was approved as a suitable and beneficial one.

4.4 Key findings and analysis

To begin with, based on the interviews and direct observation, the whole process of invoice handling at BoXshipping Ab could be presented as follows:

- 1. Operations department receives the invoice as a paper version by post or as electronic copy (e-invoice) to operational email "finland@box-shipping.com"
- Operations staff verifies if invoice belongs to BoXshipping AB. In case it does, billed sum is checked with purchasing price. Also, operations staff should check if the service was performed. If price is verified and service was performed, invoice is approved to be scanned.
- 3. Paper invoice is scanned to accounting department, which is located in Gothenburg, Sweden. In case of e-invoice, it is printed out and then scanned. In some cases, general ledger coding is marked on invoice before scanning and coding, though this practice is not followed on constant basis by staff.
- 4. After the invoice has been forwarded to the accounting department, it is physically matched to the case it belongs to.
- 5. When the invoice is received by accounting department in Sweden, it is automatically interpreted in a program called *Interpret*.
- After this, accounting staff makes sure the program has interpreted all information correctly. Information such as supplier, invoice date, due date, invoice/credit note, currency, VAT and invoice amount is checked manually in a program called *Ver-ify*.
- 7. After that the invoice is transferred to *Visma Business* by a program called *Transfer*. At this stage, invoice becomes also visible for the operational department. Task of operational department is complete general ledger coding and approve invoice in *Visma DCE*.
- 8. The invoice is coded by staff at import- or export operational department to correct account number, profit center, assignment and cost code. The same person is also approving the invoice. If an administrative invoice, the invoice is coded by staff at accounting and approved by office manager. General ledger coding is also physically marked on the invoice.
- 9. When the invoice is coded and approved in *Visma DCE* the coding automatic transfers to *Visma Business*.
- 10. After accounting staff has added the invoice in *Visma Business* the cost is visible in *nTrax* and the invoice is also approved for settlement.

11. All domestic invoices are settled based on due date and accounting sends files to bank several times per week. The foreign invoices are settled either on due date or after dialogue with the supplier.

Summarizing key points, process could be presented as a following table:

Table 7. Current invoice handling process.

Step 1. Invoice is received by operations department.		
Step 2. Invoice is checked by operations department.		
Step 3. Invoice is scanned to accounting department.		
Step 4. Invoice is interpreted and verified by accounting department.		
Step 5. Invoice is added to Visma DCE accounting system for ledger coding and ap-		
proval by operations department.		
Step 6. Invoice is approved and transferred automatically to Visma business and nTrax		
ERP system.		
Step 7. Invoice is settled to be paid by accounting department.		

Current processing method tends to have intricate information and responsibility flow: Operations department -> Accounting department -> Operations department -> Accounting department -> Payment.

Summarizing results of both interviews and direct observation, key findings of the research could be represented in a form of SWOT analysis.

Table 8. SWOT analysis.

Strengths:	Weaknesses:

Overall well-designed and smoothly run-	Usage of old-fashioned invoice receipt
ning invoice handling model;	techniques, such as paper invoices and
	absence of separate email for invoices;
Negative assurance method in use;	
	Technical issues (minor software inaccu-
User-friendly and generally efficient ac-	racies and incorrect work of involved into
counting software and ERP;	the process machinery);
Well-designed general ledger account;	Manual labor;
	High dependency on workflow and per-
	sonal abilities of employees;
	Intricate information and responsibility
	flow;
Opportunities:	Threats:
Opportunity to fasten the workflow by au-	Threat of stagnation in case no new ideas
tomatization of invoice coding;	are introduced;

In this way, it can be concluded that in general invoice handling model at BoXshipping AB presents itself as a solid one. Though in order improve internal accounting, case company should overcome its invoice handling key challenges.

In order to get a full analytical picture of BoXshipping's invoice handling system, its weaknesses were analyzed from the theoretical point of view.

As pointed out by Bragg (2013), invoice handling presents itself as a complex structure, where techniques are interconnected. In order to finish in a proper way, process should start duly. It goes without saying that receipt of paper invoices takes significantly greater amount of time in comparison to e-invoice. Absence of separate email for incoming e-invoices complicates process and demands more resources to approach an invoice. According to Schaeffer (2007), efficient invoice handling should be focused on efficient management of resources involved into the process.

Moving on to the technical issues, they could be divided into minor software inaccuracies and incorrect work of involved machinery. Even though, minor software inaccuracies could become a significant problem combined together, they tend to be normal and acceptable for the processing, if company is sure that software developer constantly works on their elimination (Parthasarathy. 2007). Incorrect work of involved machinery presents itself as a greater challenge. Machines have a tendency to break, so the only option is to analyze if the usage of the machine could be removed from the invoice handling process (Schaeffer. 2007).

Significant amount of manual work negatively affects accounts payable in general and invoice handling in particular (Bragg. 2013). As pointed out by Schaeffer (2007) manual work leads to increased chance of a human factor errors. In case of BoXshipping's invoice handling system, it would be wrong ledger account coding, absence of timeframes resulting in delays and payment reminders as well as systems general dependability on staff's operational velocity and capability.

All in all, the core problem could be formulated as: greater number of steps involved in the invoice handling process means that efficiency of the system will depend on various barely controllable factors, such as workflow, number of incoming invoices, personal operational capability of staff and work correctness of involved machinery.

5 Discussion and conclusion

This section provides a summary of research's results in a form of recommendations, managerial implications and future considerations. Section also includes evaluation of the research process.

5.1 Recommendations

The content of this subsection includes recommendations for the case company. The guidelines were formulated with the basis on direct observation and interview results as well as literature analysis.

This thesis will propose two-phase optimization strategy, that is tailored for the existing invoice handling system weaknesses. It should be mentioned, that radical changes of the system were not proposed or considered as they would demand significant amount

of financial resources. This would not be tolerated or considered as possible by company's management. The core of the thesis is to provide adequate optimization strategy with real life value and possibility for implementation.

The first step of BoXshipping's invoice optimization plan should be refusal to work with paper invoices. A separate email for invoicing purposes should be created. For example, it could be "invoices@box-shipping.com". Absolute digitalization of invoice receipt system enables company to introduce other improvements. In order to exclude incoming paper invoices from business practice, company should contact all business partners or suppliers and inform them about the new accounts payable policy. This could be done in a form of information electronic newsletter.

The second part of invoice handling optimization plan targets introduction of the following practices:

- · Optimization of required process steps
- Timeframe
- Increase of handling speed and decrease of waiting time
- Optimization of manual work required

Also aim is to keep in practice negative assurance method of invoice approval.

In order to implement above mentioned techniques, case company's invoice handling system should exclude physical scanning of the invoice from operations department to accounts payable branch. Instead of scanning the process should be run like this:

- 1. Invoice is received to incoming invoice email "invoices@box-shipping.com"
- 2. Upper manager settles a limited amount of time for operations department staff to check the invoice. For instance, it can be 12 hours since the invoice arrival.
- After the invoice check and approval to be paid, operations department staff sends an email to the accounts payable internal email. At the moment, it is the already existing email to which invoices are scanned.
- 4. In the email's text operations department staff should include only general ledger coding (account number, profit center, assignment number and operation code). In the header of the email should be included invoice number and assignment number for easier future search in case it is required.



5. When accounting department receives invoice, they automatically assume that it is correct and follow the process as it is right now. Though as they have the ledger coding, it is possible for them to copy it from email and place it at Visma DCE. In this way, operations department is no more involved in the process. Also, upper management can settle time framework for the accounting department concerning invoice processing. For instance, it can be 12 hours since invoice arrival from operations team. In this way, total processing time of one invoice will not exceed 24 hours.

Summarizing key points, process could be presented as a following table:

Table 9. Proposed invoice handling process.

Step 1. Invoice is received by e-mail.
Step 2. Invoice is checked within settled timeline.
Step 3. Invoice and ledger coding are sent by e-mail to accounting department.
Step 4. Invoice is interpreted, verified, coded and approved by accounting department
in Visma DCE. Invoice is automatically transferred to Visma Business and nTrax ERP.
Step 5. Invoice is settled to be paid by accounting department.

With this system, invoice processing has straight-forward information and responsibility flow: Operations department -> Accounting department -> Payment.

Concerning the reasonability of the proposed system, it has several supporting facts:

- New system excludes problem-causing scanning step from the invoice handling.
 In practice, it means that company's invoice processing will not be depended on unpredictable machine.
- New process simplifies information and responsibility flow as well as makes it straight-forward. First of all, operations department deals with invoice, then accounting team completes its part and proceeds with the payment (Operations

- department -> Accounting department -> Payment). In this way, there is no reverse information and responsibility flow as it currently happens (Operations department -> Accounting department -> Operations department -> Accounting department -> Payment).
- Introduction of approval time deadline provides clear time framework for invoice processing. Processing time framework excludes possibility that invoice stays unprocessed at any stage. This eliminates situation, when invoice processing time exceeds more than one day (12 hours for operations team and 12 hours for accounting team). This minimizes possibility of invoice late payment and should decrease payment reminders' amount almost to zero.
- Amount of typo mistakes should be decreased as invoice coding would be done by copying already prepared ledger account code from e-mail. Currently, typo mistakes happen when freight forwarder in a rush manually types ledger account coding in Visma DCE. Introduction of copying system should decrease amount of typo mistakes. With a new system, total percentage of wrong-coded invoices should be about 0,5 to 1%, with a current ratio being 1,8%. Total percentage of wrong-coded invoices could not drop to zero, as there is always a chance that typo will occur during ledger coding typing in e-mail.
- The whole process could be better supervised by upper management. First of all, uncontrollable steps, such as scanning, are eliminated. Secondly, it can be easily and clearly supervised, when invoice was received and when it was proceeded by operational and accounting departments.

To conclude, new system increases velocity and efficiency of the incoming invoice handling process due to decrease of required steps from seven to five, introduction of time framework and straight-forwarded work flow. New system deals with all current system's weaknesses:

Table 10. Weaknesses and solutions.

Current system weaknesses	New system solutions
Usage of old-fashioned invoice receipt	Separate e-mail for invoices, digitalization
techniques, such as paper invoices and	of accounts payable;
absence of separate e-mail for invoices	

Technical issues	Elimination of scanning from invoice han-
	dling processing;
Manual labor	Elimination of manual scanning;
High dependency on workflow and per-	Processing time framework, possibilities
sonal abilities of employees;	for better supervising;
Intricate information and responsibility	Straight-forwarded work flow;
flow;	

It should be mentioned that due to current impossibility of automatic ledger coding, amount of manual work could not be decreased significantly.

Besides the main optimization plan, accounting and operations departments may provide feedback to software provides, pointing out problems and possible solutions. This could help to improve software in use and eliminate minor inaccuracies.

5.2 Future considerations

Within this thesis scope, the area of ERP systems and accounting software tended to be too large for further detailed research. Though, being a substantial part of accounts payable and particularly of invoice handling, this topic requires a separate examination.

This thesis has provided basic understanding of core principals of ERP and accounting software in invoice handling area, though further detailed study of the theme and its importance should be held.

5.3 Evaluation of research process

The study succeeded in provide adequate assessment, analysis and possible optimization plan of invoice handling in case company's accounts payable.

All steps of this thesis research are supported by appropriate theoretical material. In order to achieve high level of reliability and objectivity of the research, scheme by Scholz and Tietje (2002) was implemented:

- Research question was stated plainly
- Study design was adequately based on research question
- Primary data was gathered consistently



Data was analyzed in a systematic way

Primary data was gathered on the basis of multiple sources of evidence (direct participating observation and qualitative interviews). In accordance with Gillham (2000) this approach provides diversified and robust view on the problem. The questionnaires were completed and in accordance with questionnaire guidelines by Magnusson and Marecek (2015). Besides, considering the research process, this thesis provides interviews' results as well as observation journal in appendix section of the research work.

The researcher is employed by the company on the permanent basis since December 2016. Starting as an intern, author of this research has gathered basic experience in the field of freight forwarding, logistics and accounting. After half year of internship, researcher continued his working relations with BoXshipping AB as a freight forwarder. In this way, author has almost 1,5 years of experience of work environment this thesis explores.

The case study method was applied to this research. It should be mentioned that a method of an action research where optimization strategies could be tested in real life environment could be applied. Though due to time constraints as well as relatively small size of the company, making it hard to conduct tests, this method was declined. Hereby possibility of action research should be taken into consideration by the next researchers of this particular topic.

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Appendix 1. Interviews

Interview with accounting department representative (Interviewee 1)

- Could you please describe in details the whole process of invoice handling, after it was scanned to you from us?
 - a.
 - Step 1. The invoices are automatic interpreted in a program called *Interpret*
 - Step 2. In next step, we make sure the program has interpreted all information correctly, such as supplier name, invoice date, due date, invoice/credit note, currency, VAT and invoice amount in a program called *Verify*.
 - Step 3. After that the invoices are transferred to *Visma Business* (our accounting program) by a program called *Transfer* and are also visible for the users to code and approve them in *Visma DCE*.
 - Step 4. The invoices are coded by staff at import- or export department to correct account number, profit center, cost code and consignment. The same person is also approving the invoice. If an administrative invoice, the invoice is coded by staff at accounting and approved by office manager.
 - Step 5. When the invoice is coded and approved in *Visma DCE* the coding automatic transfers to *Visma Business*
 - Step 6. After we have updated to invoice in *Visma Business* the cost is visible in nTrax and is also approved for settlement.
 - Step 7. All domestic invoices are settled based on due date and we send files to our bank several times per week. Foreign invoices are settled either on due date or after dialogue with the supplier and if we have any open invoices in our accounts receivable we often deduct those after agreement with the supplier.
- 2. If you input information from invoice to Visma manually, do you find this process challenging or consuming too much time?
 - a. Second step is in a way the one, which takes less time to process. Step4 is the most time-consuming step.
- 3. Could you please give approximate amount of time needed to handle one invoice after you receive it?



- a. It is hard to count, as proceeding time is mainly based on amount of work.
 We try to proceed invoices as soon as we receive them, though sometimes it can take a while.
- 4. Are you checking incoming invoices to be similar with purchase orders?
 - a. No, invoices are checked by operations department. As it was mentioned earlier, we check only correctness of invoice interpretation into Visma.
- 5. Which step in invoice handling after it was scanned to you takes up biggest amount of time or demands greatest effort?
 - a. Approval of invoices by operations department.
- 6. Please describe and rate your experience of using Visma and Ntrax. Are you satisfied with these systems?
 - a. Visma Business, our accounting program is a good system. Visma DCE which is used for coding supplier invoices is OK, but it can be developed more. For example, absence of automatic invoice coding is the biggest struggle to be mentioned.
- 7. What do you believe can be optimized in current incoming invoice handling processing?
 - a. Automatic coding of supplier invoices. We will found out if this can be done in any way after we have updated *Visma Business* and *Visma DCE* later this spring.
- 8. Which problems do you see in current invoice handling system?
 - a. Currently used invoice handling system helps to operate without significant challenges, though there should be done some greater changes in order to improve it. The biggest problem at the moment is our inability to improve it significantly.
- If you have other experience of invoice handling (from previous job for instance), please share it.
 - Earlier this was all done manually, and the system we have today is much more efficient.



- 10. Please rate current incoming invoice handling system and mention its main strong and weak sides.
 - a. In general, current system is a good one. Main strong side would be operational sustainability and the fact that it is in use for a few years already. As the weakest side, it could be mentioned that at the moment it cannot be developed from technical point of view.

Interview with Helsinki branch operations department representative (Interviewee 2)

- 1. Please give your opinion about the current invoice handling system?
 - a. In my opinion, current system provides enough time to check the invoice and to approve it. Also invoice handling goes relatively fast. I would say, that the whole system is balanced and would rate it with a good grade. On the other hand, current invoice processing depends a lot on personal abilities of fast invoice handling. I would call it the biggest weakness.
- 2. What is the most time consuming in the process?
 - a. Waiting for the invoice to be added for approval in Visma. It can take few days until invoice is at place.
- 3. What do you think about invoice check?
 - a. Our purchase orders are in order in our database, they are clearly stated, so there are no problems with invoice checking before scanning it to accounting department.
- 4. Please provide your opinion about our accounting system Visma.
 - a. Visma is an easy to use system. It is enough if it is shown once how to use it.
- 5. What do you think about separate email for invoices?
 - a. It is definitely a very good idea. Current absence of separate email can lead to possible problems. Especially this idea will help in our busy periods, when amount of e-mails and incoming invoices is huge.



- 6. Could you please share other experience of invoice handling from your previous work places?
 - a. Our current system is better than my previous experiences. Visma is user-friendly, invoice checking is simple and process in general is clear.

Appendix 2 - Observational journal

First impressions:

- Invoice handling works relatively smoothly
- Sometimes too much waiting time before invoice is available for check and approval
- We still receive lots of paper invoices
- Sometimes not correct general accounts coding extra emails to Sweden to change
- Problems with scanner
- Sometimes we receive payment reminders from other companies
- · Efficiency is highly affected by work volumes

Things to remember to check later:

- Too many steps?
- Timelines?
- Workflow? Is it direct?

Results of direct observation after literature review:

- We use three-way match
- Manual checks and approvals
- No separate email for e-invoices

Personal notes:

- The most time consuming is invoice approval. Also, it can take long time before invoice is added to be processed.
- Visma is user-friendly.
- Invoice checking is fast and easy, purchase prices are agreed beforehand and are easily found in company's database.
- Amount of processing steps is definitely too big. Process does not seem to be stream-lined.

