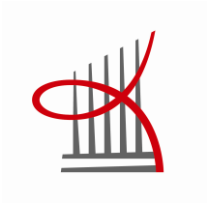

CURRENT STATE ANALYSIS AND PROCESS HARMONIZATION FOR MISCELLANEOUS INVOICING

UPM-Kymmene Oyj

Karoliina Mykkänen

Bachelor's thesis
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ABSTRACT

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The current Miscellaneous Invoicing tool of UPM-Kymmene Oyj is to be replaced by the end of 2015. At the same time the whole invoicing process is under scrutiny since more efficient working methods are continuously targeted by harmonizing the processes inside the company.

The purpose of the thesis was to carry out a pre-feasibility study of the current situation in Miscellaneous Invoicing process. An online questionnaire was conducted among the different user groups of the invoicing tool in order to map their satisfaction level with the current tool and possible improvement suggestions. Furthermore, the thesis was to harmonize the invoicing process and store the tacit knowledge possessed by the team members by creating globally relevant work instructions for the use of the miscellaneous invoicing tool. The work instructions were drawn according to the UPM guidelines and were finally downloaded to UPM Intranet team site of Miscellaneous Invoicing team.

The findings of the questionnaire indicate that the invoicing process itself is workable, but the tool is slow, unreliable and old-fashioned. Therefore, with a modern updated tool the performance and efficiency could be improved. The main development areas were more automated posting procedure, functionality of the archive, implementation of e-invoicing, and training regarding the use of the tool among others.

The appendix 4, open ended answers to the questionnaire, and appendix 5, work instructions, are only delivered to the commissioner of the thesis and are not published.

Key words: process harmonization, quality management, process management, knowledge management, online questionnaire

CONTENTS

ABBREVIATIONS AND TERMS

AP	Accounts Payable team
APAC	Asia Pacific and China
AR	Accounts Receivable team
BC	Business Controller
CAR	Closing and Reporting team
CM	Cash Management team
CRM	Credit Risk Management team
GFPR	Global Finance Processes and Reporting
GL	General Ledger account
GTS	Global Transaction Services
IC	Intercompany
ICR	Intercompany Reconciliation team
KM	Knowledge Management
LCF	Local Country Finance
Misci	Miscellaneous Invoicing
Misci tool	Invoicing Tool Used for Miscellaneous Invoicing
Misci user groups	Sales Request (SR) creators, SR Approvers, Invoice Creators, Main Users, and Business Controllers
PI	Purchase Invoice Handling team
SR	Sales request
SAP	Software for Managing Financial Information in UPM
TEX	Travel Expense claim team
TQM	Total Quality Management
UPM	United Paper Mills

1 INTRODUCTION

Continuous development in every aspect is crucial for all multinational companies in order to stay competitive in the markets. New processes and technologies are implemented in order to ensure the most adequate and cost efficient working methods that are required especially in nowadays' challenging economic situation. Development projects of new technologies and tools are often costly in the planning phase but bear fruit in the long run. On the other hand, by improving the existing processes additional efficiency can also be reached.

Replacement of the current invoicing tool is topical for the Miscellaneous invoicing team (Misci team) of UPM-Kymmene Oyj. The existing tool (Misci tool) is developed in Lotus Notes and because its environment in UPM will be shut down by the end of 2015 a demand for the new tool has aroused. Simultaneously the whole invoicing process is under scrutiny. A development team will be set up in UPM in order to map the alternatives for the new tool and the whole invoicing process. Before this, a profound current situation analysis of the invoicing process is needed. (More detailed information about the company UPM, the Misci team, and the Misci process follows in the next chapter 2.)

In addition, one of the long-term targets for UPM has been harmonization of the processes in a global scope. In a smaller scale this target has been focusing on harmonization of the processes inside the teams as well. In the financial service centre of UPM all the teams have been creating work instructions in order to create global coherent instructions that are easy to follow and ensure that the processes are done similarly by everyone. The aspects of knowledge and quality management are closely related to this subject.

The thesis was created for Miscellaneous invoicing team of UPM and worked as a preliminary research for the development project of miscellaneous invoicing process. The main objective for the thesis was to thoroughly investigate the current situation of miscellaneous invoicing process, define the errors relating to the current invoicing tool as well as the invoicing process. The thesis is to be used as a basis for the current situation analysis which is to build the foundation for the upcoming development project.

Furthermore the thesis was to harmonize the processes inside the team by creating globally relevant work instructions for the use of the current Misci processes. On the other, hand creating the instructions was also means to store tacit knowledge possessed by the employees. The created work instructions can be also used in the orientation process of a new employee. With the help of clear instructions everyone involved in the Misci process is able to perform all the tasks in a similar way which improves efficiency and overall quality of the services provided to the customers. In addition to the harmonization process of the tasks, creating the instructions also assisted in the project of identifying the current challenges in the Misci process.

The research questions for the thesis focused on the issues mentioned above. First of all *What is the current state of the Miscellaneous invoicing process* is to extensively answer to different aspects relating to the current situation of the Misci process including the definition of the program and process errors as well as aspect of process harmonization. The second question *Can tacit knowledge possessed by the employees be stored in the form of work instructions* is examining the creation of the work instructions and takes also the knowledge and quality management in some extent into account.

The current situation of the Miscellaneous invoicing team was explained in detail in order to help in the decision making process relating to development project of miscellaneous invoicing process. The satisfaction and the improvement suggestions relating to the current Misci process were surveyed among the different Misci user groups in order to collect extensive information relating to all Misci user areas. This occurred by conducting an online questionnaire among Misci tool users. In addition the creation of the work instructions enhanced the identification process of the program and process problems.

Based on the current situation, its limitations and existing process errors in the Misci process some development suggestions were drawn. According to the current state analysis and the improvement suggestions the final decision of the implementation of the new tool and process models will be drawn. At the moment the task of the team is to identify the current situation of the Misci process thoroughly. In the end of the year 2013 or in the beginning of 2014 the actual project for launching the new tool will be kicked off.

The part relating to the process harmonization was conducted by creating work instructions for the use of the current Misci tool. These instructions were drawn to be globally relevant for all the Misci users of UPM. All the steps relating to the invoicing process including specific instructions for sales request (SR) creators, sales request approvers, business controllers and Misci team members at different stages are incorporated into the job aids. The exceptions relating to legislation or the way how invoices are handled in different countries were also taken into consideration which forms an important part for the upcoming development project. Finally the completed instructions were uploaded to the team site of UPM's intranet where all the Misci users have access to.

Theory will be examined and tied into practice in the chapters of current state analysis and process harmonization which are to support the decisions to be made relating to the development project. Subjects such as research methodology, electronic invoicing, as well as knowledge and quality management are included in the theory section.

Some limitation related to the thesis occurred by the time frame set for the thesis since the actual project for launching the new tool starts in late 2013 or early 2014. To certain extent the more time is available for identifying the process errors the more thorough investigation of them can be made. For this reason for instance the list of identified process errors can be supplemented by further observations before the project will finally be launched.

2 COMPANY PRESENTATION

2.1 UPM-Kymmene Oyj

UPM-Kymmene Oyj is a global provider of bio and forest based products which strives for sustainable and innovation driven future. The company has production plants in 17 countries and employs approximately 22 000 people worldwide. In 2012 annual sales of UPM totalled EUR 10,4 billion. (UPM Annual report 2012.) UPM was established in 1995 through the merger made by Kymmene Corporation and Repola Ltd, and its subsidiary United Paper Mills (UPM) Ltd (UPM webpage 2013).

The businesses of UPM can be divided in following three groups: energy and pulp, paper, and engineered materials. UPM aims to create value by combining renewable and recyclable materials with high level of expertise and technologies. The new slogan 'The Biofore Company' is designed to describe the future of UPM: bio stands for the usage of renewable materials, future orientation and sustainable solutions and 'fore' is connected to forests and being at the forefront of the development. (UPM webpage 2013.)

2.2 Miscellaneous invoicing team

There are two main financial service centres of UPM which are located in Tampere, Finland and in Shanghai, China. There are Misci teams in both of the locations: the Tampere centre is responsible for creating miscellaneous invoices for Europe and Northern America (Misci team EUROPE) and the Shanghai centre for Asia Pacific and China region (Misci team APAC).

The Misci team in Tampere consists of four members, but the Misci process includes people from different UPM units and therefore the total number of the people handling Misci invoices is changing daily but is usually around 850 (Ketvell 2013). Misci teams are responsible for creating manual UPM intercompany invoices as well as special invoices between the different UPM units and external third party customers. In addition also updating Misci parameters in Lotus notes as well as making the requests for adding bank details to customer master data (CMD) are included in the daily tasks of the team.

The Miscellaneous invoicing teams are part of the Global Transaction Services Organization (GTS). In addition the teams of Accounts Receivables (AR), Accounts Payables (AP), Cash Management (CM), Purchase Invoice handling (PI), Intercompany Reconciliation (ICR), and Travel expense claim (TEX) are included in the GTS organization. The organizational links of Misci team with the other financial teams are illustrated in the figure 1 below. The interdependencies with the other teams are explained in the following section.

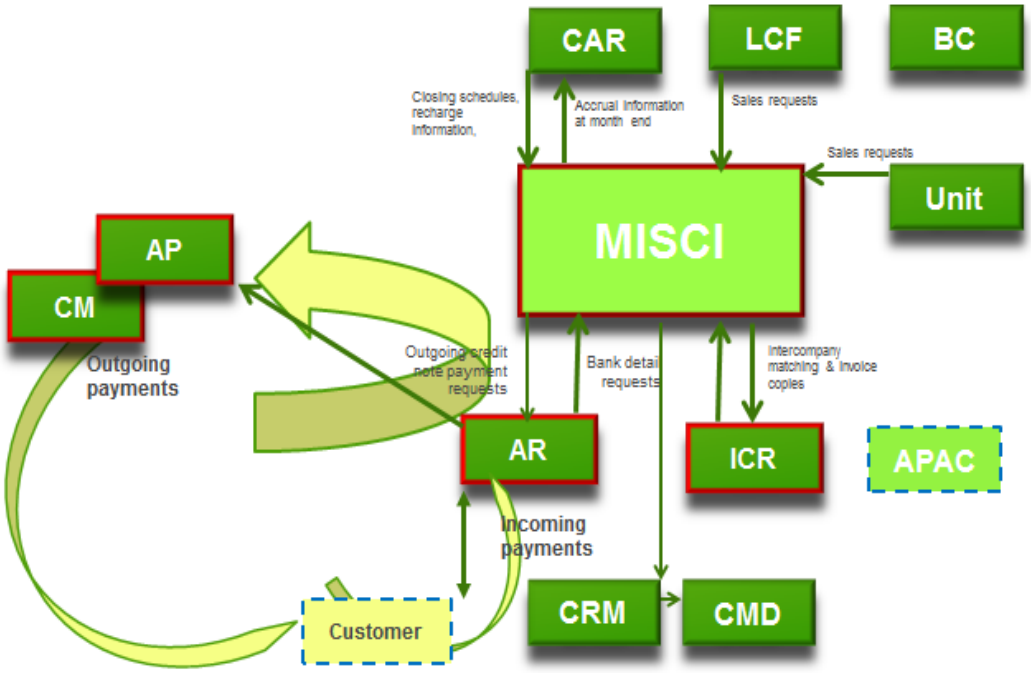

FIGURE 1. Organizational links (UPM intranet, Misci team site 2013)

The sales requests for the Misci invoices derive usually from the representatives of local country finance (LCF) or different units around the Europe and Northern America. The invoices are handled then by Misci team and in case of intercompany charges the invoices are sent for approval of the receiving unit to business controllers (BC). More information specifically about the invoicing process can be found from the chapter 2.3.

The receiving cash flow from the Misci invoices (as well as from all the other invoices) is handled by AR (for external customers) and ICR teams (for intercompany invoices). In case there are Misci credit notes to be paid to the customers, AR also makes the payment request for those after the credit note payment is first approved by representa-

tives of LCF and CRM (Credit risk management team). Finally teams of accounts payable (AP) and cash management (CM) arrange the payment.

Closing schedules at the month ends and recharge information are received from closing and reporting team (CAR). On the other hand Misci team delivers the information of unposted intercompany invoices as accruals to CAR right after the period ends. Meanwhile intercompany reconciliation team (ICR) in Shanghai is working with the intercompany matching and Misci invoice copies are provided them when requested.

Additionally, one of the tasks of Misci team is to make CMD requests for adding bank details or otherwise edit the customer information. After making the request for a new bank account it will be approved by CRM team and finally the information will be created in SAP (software for financial information management) by CMD team.

2.3 Miscellaneous invoicing process

Most of the miscellaneous invoices created by Misci team are created in Misci tool which is established on Lotus Notes and is especially designed for the use of UPM. The tool was launched in 2007 and was primarily designed for recharging small costs between different departments inside the parent company. Currently the Misci invoices of altogether 43 UPM units are handled by the Misci team Europe in the Misci tool.

The invoice volume of Misci invoices represents approximately 1,3% out of all the invoices created in UPM yearly (Mawdsley 2013). All the invoicing information from Misci tool is transferred to SAP UP6, which is a SAP client where the UPM finance system Global Finance Platform is run. The miscellaneous invoices of UPM units that are not using Misci tool are created manually by the AR team and are entered as direct postings into the finance system. In addition to this Misci team is also creating a small volume of invoices in MyOne (invoicing program for former Myllykoski units) and RP1 (internal invoicing program for UPM Raflatacs).

In addition to the Misci tool there is also a separate archive for the miscellaneous invoices. All the invoices completed in Misci tool are archived automatically during the next night to the electronic archive. In order to facilitate the running of reconciliation

lists at month ends another Misci archive (Misci archive 2) was created in November 2012 where all the invoices during 2007-2010 are archived. There is also a separate test environment for Misci tool based in Lotus notes. It is working basically equally to Misci tool but the information is directed to finance test client. The test environment is utilized before different kind of updates or tax codes are implemented in the Misci production side.

Nowadays the scope of the Misci tool has extended as well as the number of created invoices and therefore demand for a new updated tool has emerged. In addition the use of Lotus Notes in UPM is coming to its end, which also pushes more pressure on the creation of the new tool. A work group for developing a new invoicing tool for the Misci team will be set up and consists of representatives of GFPR (Global Finance Processes and Reporting), CAR, LCF and BC (Mawdsley 2013). Initial kick off for the development project of the new tool has been planned to take place in the end of the year 2013 or in the beginning of 2014.

There are different kinds of Misci user roles and the main roles needed for the completion of an intercompany invoice are sales request creator, sales request approver, invoice creator and business controller. Basically the invoicing process in Misci tool proceeds as described in the figure 2 on the next page. In the first phase the sales request creator inputs all the customer information, description of the invoice and posting information of the sales side (AR). Normally SR creators are representatives of LCF or different UPM mills. The SR is sent for approval.

During the second stage the SR approver is able to approve or reject the SR. The information on the SR is checked and if it is correct it is approved. After the approval, in the third phase, the SR is waiting for handling of an invoice creator (Misci team member). The customer number, posting details and other formal settings are checked and input. If the invoice is to a third party customer it is completed, printed, archived and delivered to the customer at this stage. However, if the invoice is an intercompany invoice it is sent to business controller for approval of the receiving unit.

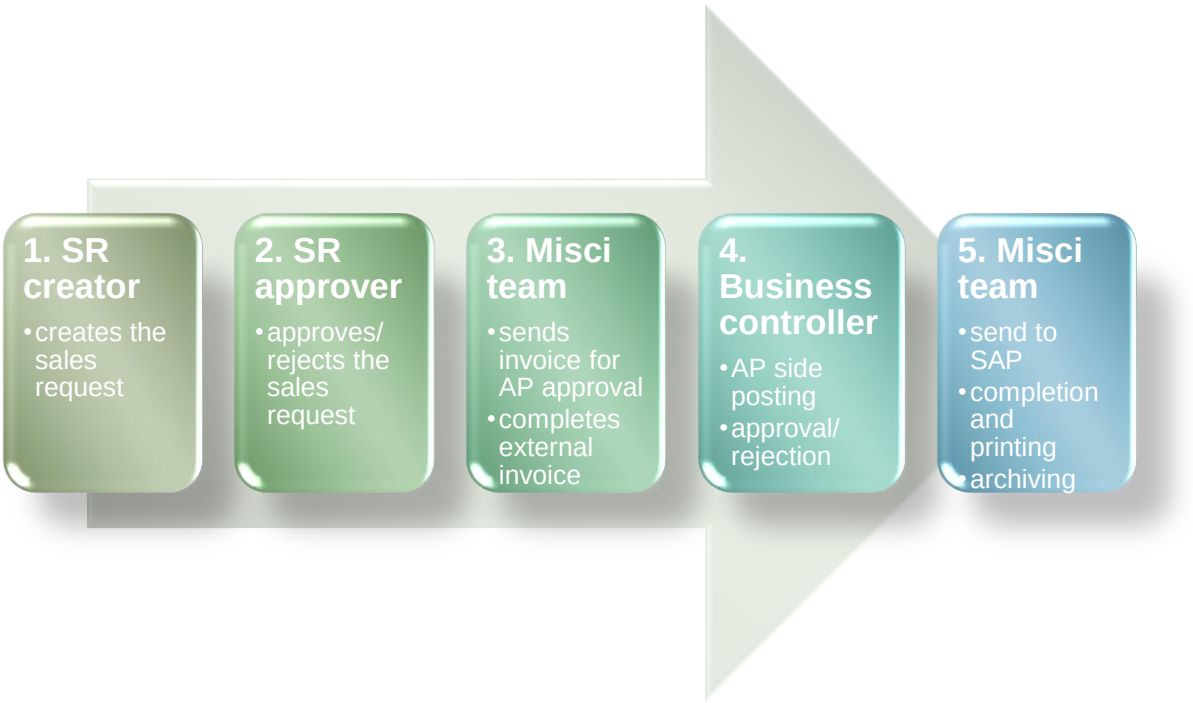

FIGURE 2. Miscellaneous invoicing process in Misci tool

In the fourth phase business controller is either able to approve or reject the invoice. The posting information of purchase side (AP) is input at this point and the possible attachments are checked. After the approval the invoice is to be completed, printed and archived by an invoice creator (Misci team member). After an IC invoice is completed, both its sales (AR) and purchase (AP) side postings are transferred in SAP automatically.

The process flow described above is the most common way how the invoices are created in Misci tool. However, there are exceptions existing and the process is not always as straightforward in practice. In addition to the invoicing process in Misci tool, Misci team is also creating miscellaneous invoices via MyOne and RP1. The number of these created invoices is still relatively low when compared to the invoicing volume of Misci tool. More detailed information about the whole invoicing process in the MISCI tool can be found from the work instructions created for the Misci tool in Appendix 5.

3 METHODOLOGY

3.1 Problem definition

Before the actual project for the development of the Miscellaneous Invoicing processes and the new tool can be launched a proper analysis of the current situation is needed. The schedule for the tool renewal is not yet defined, but pre-work for it has already began. In addition there were no work instructions created for the use of Misci tool and that was to be corrected.

The first research objective focused on creating preliminary current situation analysis of the Misci processes. The research questions were to answer which are the current problems in the invoicing tool and in the whole miscellaneous invoicing process. Furthermore the thesis is to harmonize the processes inside the Misci team, which is done by creating globally relevant work instructions for all the different user groups. Relating to this one of the goals of creating work instructions is also to document the tacit knowledge possessed by the Misci team members.

According to the problem definition the defined research questions for the thesis were as follows:

- What is the current situation of the Misci processes?
- Can tacit knowledge possessed by the employees be stored in the form of work instructions?

3.2 Research design

According to Saunders, Lewis and Thornhill (2009) the choice of research design depends on the nature of the defined research questions. There are basically three different ways to answer the research question: exploratory, descriptive or explanatory. Exploratory research is used to find out “what is happening” or when new insights are sought. Exploratory researches are most often conducted by literature search, expert interviews or group discussions. Ghauri, Grønhaug and Kristianslund (1995) state that exploratory

research design is used when the fundamental problem of the research design is not fully understood and there are numerous alternatives for the outcome.

Descriptive research design, therefore, is useful when the problem of the research question is structured and well understood (Ghauri et al. 1995). Descriptive research is used often as a part of exploratory or explanatory research and it is to accurately describe profile of persons, events or situations. On the other hand, in order to explain causal relationship of problems or situations an explanatory research design is used. (Saunders et al. 2009.)

In order to answer to the first research question of the current state of Misci processes a Miscellaneous Invoicing Process Preliminary Study was conducted to investigate extensively the opinions and experiences faced by the all Misci user groups. The survey consisted of three categories: background information, satisfaction with the tool and improvement suggestions. The questions relating to the improvement suggestions and experienced problems require an exploratory research design and open ended questions, and can therefore be considered as qualitative research because the answers given to the questions cannot be restricted to narrow categories. On the other hand the background information section and part of the satisfaction section were surveyed by using descriptive research design and quantitative approach.

The second research question about the tacit knowledge possessed by the team members requires a descriptive research design because the profile and opinions of the target group were to be surveyed accurately. The research relating to this question was mainly conducted by literature search relating to knowledge and quality management as well as through personal observation while creating the work instructions.

Survey as a research strategy is commonly used in business and management related research for exploratory and descriptive research. Surveys are popular also since they allow collecting high amount of data from large population in an economical way. At the same time, however, there are numerous issues that can go wrong and therefore the research has to be thoroughly planned. The data collected has to be precisely what is needed to answer the specific research questions. In addition in order to maximise response rate, validity and reliability for the research the following issues should be taken into account: careful design of individual questions, clear and pleasing layout, lucid

explanation of the purpose of the questionnaire, pilot testing, and carefully planned execution and administration. (Saunders et al. 2009.)

Survey was selected as research strategy for the first research question since primary data of users' views about the current situation was needed. The purpose was to include all the user groups into the questionnaire in order to get comprehensive picture about the situation and to satisfy all different user groups when the new tool will be developed. The users' ideas for improvement as well as faced disadvantages and advantages of the current tool were surveyed. At the same time the intention was to find out the opinion of all user classes, therefore, not to include only professionals of the field into the target group.

The questionnaire design was planned to answer extensively to the areas relating to the research question. It was conducted as an online questionnaire because it is economic, modern as well as easy to carry out when the size of sample group is relatively big and geographical distances between the respondents are long. There were altogether 13 questions of which four were totally open ended. In addition, few open comment fields related to the actual questions. There were two versions created of the survey; the original one in English and a parallel form in Finnish. The questionnaire was created by Lomake-editori software, which is especially designed for conducting Internet questionnaires. The cover letter introduced the purpose of the study as well as encouraged respondents to give their answer. Several pilot tests of the survey were conducted before finally sending it to the respondents. One factor probably limited the perceived response rate since the response time was restricted because of the tight schedule to 8 days; between 20th and 28th of March 2013. However, in order to get as many responses as possible a reminder message was sent to the respondents during the last days. The questionnaire design can be found in appendix 1.

The sample group for the Misci Process questionnaire consisted of all the different users of Misci processes. All the SR creators, SR approvers, invoice creators, main users and business controllers of certain company codes were selected. The target group company codes were chosen to represent a variety of UPM businesses and the most important geographical regions where the Misci invoices are handled; Northern Europe, Central Europe, Western Europe, UK and USA as well as the APAC region. The table of the UPM companies included in the survey target group can be found from appendix 2.

3.3 Data collection

When the data provided by the secondary data resources is not enough to answer concerned research questions, primary data has to be collected (Ghauri et al. 1995.; Saunders et al. 2009.). On the other hand the process of collecting primary data is often time consuming and requires a lot of effort when compared to the secondary data (Ghauri et al. 2009).

The data collected for the thesis consisted of both primary and secondary data. One of the main sources of acquiring primary data was the Misci process questionnaire. The data derived from the survey was used to contribute comprehensive picture of all the experienced problems that the users had faced while handing Misci invoices. In addition primary data was utilized in the creation process of the work instructions since the utilized information was basically based on own observations and experience, and was further developed by the comments of the other team members. Furthermore, a common template existed for the whole team to collect the faced problems relating to the Misci processes.

Secondary data from relevant sources was utilized in order to support the research questions and the decisions to be made regarding the upcoming development project. The theoretical frame of reference is tied together with the practical part especially in the chapters 4 and 5. Library, electronic databases and journals in the Internet were the main sources for finding secondary data. In addition the UPM Annual report 2012 as well as website and Intranet were utilized widely.

3.4 Validity threats

One of the possible validity threats for the survey was the time frame set for the thesis. Since the project for developing the tool was postponed there will still be a lot of time to complete the list of perceived problems in the whole process and the invoicing tool. On the other hand, however, this paper is a great starting point to kick off the current situation analysis and will most probably raise discussion about the improvement suggestions relating to the process development.

On the other hand in the questionnaire design, in the sixth question, where Likert-scale from totally disagree to totally agree was used to map the opinions of the respondents there was no option to choose neutrally “no opinion”. To some extent this may have resulted in more “somewhat agree” responses which has an effect on the final result. However, the question design was decided to be so that the respondents had to choose whether to basically agree or disagree with the statement.

4 CURRENT STATE ANALYSIS OF MISCI PROCESS

The current state analysis of the Miscellaneous Invoicing process is to investigate the issues relating to the future development of the invoicing process by taking different aspects into consideration. The chapter handles subjects such as possibilities of electronic invoicing, the survey results from the Miscellaneous Invoicing Process Preliminary Study as well as existing problems within the invoicing process and the tool. Theory is tied together with the practical part in order to support the suggested improvement ideas in practice.

The starting point for replacing the current invoicing tool was the fact that Lotus Notes will be shut down by UPM in the near future. In order to get more specific first-hand information on the topic the IT Manager of Collaboration and Productivity Applications of UPM, Michal Mytnik, was contacted for this paper. He confirmed that since Lotus Notes environment will be shut down, the current invoicing tool has to be replaced before the end of 2015. He also stated that there had been an idea to converge all the different invoicing systems of UPM to one, but the project has now been stopped. Since the schedule for the tool renewal is not yet agreed the current Misci tool has to be maintained even though major development for it will not be done. (Mytnik 2013)

4.1 The role of electronic invoices for Misci process

One of the drawbacks of the current invoicing tool is that there is no possibility to send e-invoices via Misci tool. Many of the customers have already transferred in e-invoicing but since the technology of the tool does not support electronic delivery option invoices are still sent in traditional way. Therefore, all the invoices created in the tool are sent to the customers manually; either by separately sending them by e-mail or, as still in most of the cases, by traditional mail.

On the other hand, the information of the customers' electronic invoicing addresses has already been stored to the CMD in SAP and could therefore be utilized in the future. The problem at this stage is, however, that the function for sending e-invoices is not available in the current Misci tool. Even though the amount of Misci invoices is minor

on a corporate level, implementing electronic Misci invoicing would further reaching the paperless office and also help being at the forefront of the development as mentioned in the company slogan.

4.1.1 E-invoicing

After implementing euro as a common currency in Europe in 2002, EU governments, the European Commission and the European Central Bank focused on integration of the euro payment market Single Euro Payments Area (SEPA). One of the targets of SEPA programme was to increase the number of electronic payment instruments. SEPA consists of 27 EU member states as well as Iceland, Norway, Liechtenstein, Switzerland and Monaco. Within these countries electronic euro payments can be made under the same basic rights and obligations. (European Payments Council. Shortcut to SEPA 2012.)

A strict definition for an electronic invoice is that it is issued, delivered and processed electronically. The whole end-to-end process must be digital from the point when the document is created as well as received, handled and archived by the recipient. As a statistical reference the annual invoice volume globally is estimated to be approximately 350 billion of which most are still issued in paper. (Lehtonen 2012.)

Ingo Schlegel (2011) writes in her article that E-invoicing is adopted on a relative low level and the adoption rates differ between EU Member states. Businesses often struggle with fulfilling the general requirements set for an e-invoice especially in cross border transactions. Changes to these requirements have been introduced by the Council Directive 2010/45/EU which is to solve the problems experienced by the businesses. The directive has been active since January 2013 and in particular its establishment of the "Principle of Equal Treatment" is to remove the existing barriers to e-invoicing and make the treatment similar to paper invoices. Furthermore, the European Commission aims that e-invoicing becomes the predominant payment method in Europe by 2020. (European Commission 2010.)

According to the new invoicing regulations drawn up by the Council Directive 2010/45/EU a deadline has been set for the delivery of the invoices. Basically it means

that an invoice has to reach the customer latest by the mid of next month from the date of the supply. The deadline is obligatory as far as community trade of goods or services according to the principal rule are concerned. Concerning this the whole miscellaneous invoicing process (SR creation, SR approval, invoice handling as well as delivery of the invoice) of the supplies occurred in the end of months should be completed in two weeks of time. According to postal company Itella delivering for instance a normal priority letter from Finland to Germany takes approximately 3-4 days (Itella 2013).

There are numerous reasons why companies adopt e-invoices. For instance external pressure caused by suppliers or customers, or alternatively internal pressure on decreasing costs may be the reasons behind choosing e-invoicing. One of the current trends to speed up adaptation of e-invoicing is to charge additional fees for sending paper invoices to the customers. (Lehtonen 2012.) The European Commission states in its article "Reaping the benefits of electronic invoicing for Europe" that most of the economic benefits gained from e-invoicing do not derive from costs saved in printing and posting costs, but in the possibility of fully automating the process from order to payment between trading partners. Furthermore, administrative costs can be reduced by applying equal VAT rules on electronic invoices.

Another aspect to the e-invoicing adoption is provided by environmental reasons: Hellgren and Tenhonen (2010) state that the carbon footprint of an E-invoice is approximately only one fourth of the paper invoice for both outgoing and incoming invoices. This is because manufacturing the paper, workload, delivery and archiving processes result in significantly bigger CO_2 emissions. The environmental impact is huge as well since e-invoicing could save 1 million ton of CO_2 emissions per one year for the EU as far as paper consumption and delivery costs are concerned (Lehtonen 2012).

The Finnish State Treasury has estimated that the costs of receiving a paper invoice to a company vary between 30€-50€. By semi-automating the process the costs can be lowered to 10€ per invoice or even to 1€-2€ per invoice by fully automating the process. According to this a realistic saving objective would be 1% - 2% of the organisations whole turnover when electronic and automated invoice process is implemented. (Lehtonen 2012.) It has to be remembered, though, that the above mentioned possible advantages gained by implementing e-invoicing on a corporate level are most importantly illustrative and are to describe what could be reached in the best case scenario.

4.1.2 Future prospects of implementing miscellaneous e-invoices

In addition to the modernization of the processes, e-invoicing relates closely to the cost efficiency and enables employees to save time and focus on other relevant tasks. Manually sending the invoices creates excess costs since the process is time consuming and also paper and delivery of the invoice are required. At the moment some of the Misci customers are accepting only electronic invoices sent to the operating partners or as PDF files sent to e-mails. Additionally the number of these customers is increasing consistently.

On the other hand, on a global level there are approximately 350 billion paper invoices delivered annually. Hypothetically speaking if all of these invoices were delivered electronically, the demand of paper would naturally decrease to some extent. In this case it would affect somehow to UPM's business as well, since UPM is the fourth biggest fine paper manufacturer in the world (UPM Annual report 2012). However, because of the global trend in the future, adoption of the e-invoices cannot be avoided. Additionally e-invoices are already required or at least a suggested form of receiving an invoice from customer in other UPM's operations.

Electronic invoicing covers also electronic archiving which would also have a positive effect on cost-efficiency. Currently the Misci invoices are archived in electronic archive, as well as in paper archive since the reliability of the electronic Misci archive has not been the best recently. The paper archive requires a lot of resources in the forms of organizing the papers, archiving them, maintaining the archive and the space needed for storing the folders. In addition searching an old invoice from paper archive requires a lot of work when compared to the option that it is searched from an electronic archive. The main problem with the current Misci electronic archive has been its reliability. It should be working so that no additional copies were needed in the paper archive.

Sometimes Misci process has been accused for its complexity and slowness. The creation of an external invoice consists of SR creation, SR approval, invoice handling and delivery of the invoice. Because of the new regulations Council Directive set by European Commission the invoices should reach the customer by the mid of next month from the supply of the goods or service. In the current process model sending the invoice by mail takes a lot of time. By implementing e-invoicing the delivery time could

be easily shortened to seconds and therefore it would be easier to meet the new requirements of invoice delivery set by European Commission.

The Clean Run campaign of UPM focuses on environmental performance. The campaign was launched in 2011 at pulp and paper mill sites and is to be launched in other businesses during 2013. The campaign is to further improve the environmental performance of UPM by encouraging employees to report and react to environmental issues. (UPM Annual Report 2012.) Transferring from traditional paper invoices to e-invoices would have also an environmental effect. As stated before the carbon footprint of an e-invoice is only one third of a paper invoice when the whole end-to-end invoicing process is electronic. Probably before targeting for implementation of totally electronic invoicing process, the possibility to send invoices electronically to invoicing operating partners should be investigated. Implementing the electronic invoice delivery option for Misci processes would also contribute the Clean Run campaign.

4.2 Questionnaire analysis

A Miscellaneous Invoicing Process Preliminary Study was conducted to the different user groups of the Misci processes. The general picture and the most significant findings of the survey are handled in this part of the report. There were altogether 127 responses to the survey. However, some of the questions included multi response fields where the number of total responses is higher.

The analysis of the respondents' open ended answers of the faced problems (questions 11. and 12.) is included in the chapter 4.4 where all the experienced problems in the Misci process are taken into consideration. The questionnaire design can be found from appendix 1 and detailed information relating to each question can be found from the appendix 3.

According to Saunders et al. (2009) the quantitative data given by the questionnaire results is not meaningful before it is analysed and transformed in understandable form. There are different kinds of graphs, charts and statistical tools which can be utilized in the analysing process. Quantitative data can be divided in two groups: categorical and numerical. The values of categorical data cannot be measured numerically but can be classified into sets or describe the variable. Numerical data is more precise and can be measured numerically. For different kind of data a right kind of observational chart has to be chosen.

The final quantitative questionnaire data relating to the background information and partly also to the tool satisfaction were analysed with statistical interface tool named Tixel which is a supplementary used in Excel. Tixel is used for analysing and reporting of statistical data and is easy to use as a menu structured tool (Manninen & Hakanen). The data was first exported from the questionnaire tool Lomake-editori to Excel, after which the data was categorized into named classes according to the questionnaire questions and as instructed by Manninen and Hakanen. One dimensional distribution was used to draw observational bar charts and pie charts of the questionnaire data.

4.2.1 Background information

The background information part of the questionnaire investigated which Misci user rights the respondents have, how many SRs they are handling in one month, how long they have been requesting the Misci invoices and for which UPM companies they handle the invoices. This part of the questionnaire was to produce descriptive answers to quantitative part of the questionnaire. The background information was mainly used to describe the respondents, sort the data and to eliminate unnecessary answers.

All the different user groups were pretty well represented in the final respondent group as seen in the figure 3 below. The most significant user groups were SR creators (39 %), business controllers (39 %), and SR approvers (37 %) which also represent well their portion of all Misci users. Furthermore, two persons had responded that they do not have any rights and their responses were removed when the other questions were analysed.

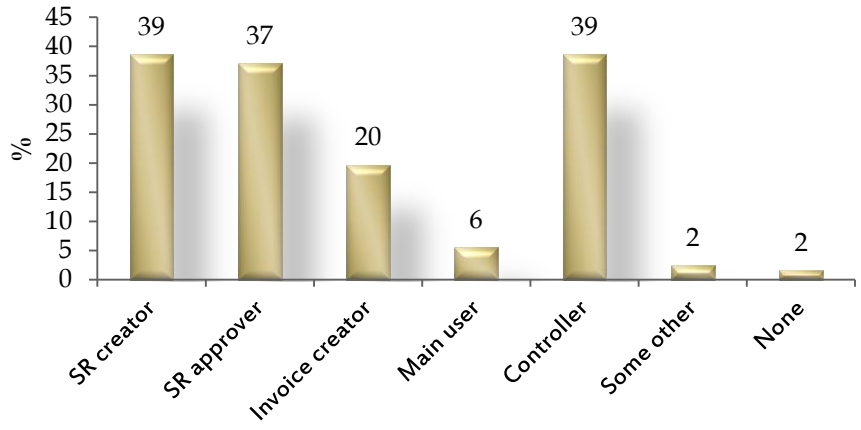

FIGURE 3. Which MISCI user rights you have? n=127

Total of 49 % of the respondents were handling approximately few invoices per month, 29% responded that they are creating several invoices and 10% were creating many invoices. A bit surprisingly there were also 12% of the respondents that informed that their amount of handled invoices is “none” per month. According to the comments some of these had formerly been creating Misci invoices, but not anymore. Some were creating invoices pretty rarely or never. Those additional four that had commented that are never handling Misci invoices were ignored from the respondent group when following questions were analysed.

Most of the respondents, 51%, replied that they have been handling Misci invoices over three years, whereas only 14% had been handling the invoices for less than one year. The geographical distribution of the respondents corresponded pretty much to the original sample group. The company codes were grouped as categorical data according to the main geographical regions. As seen in the figure 4 below Northern Europe represented the most significant part of the respondents with 50% of the total, it was followed by Central Europe (CE, 22%), UK and Northern America (UKNA, 13%) and Western Europe (WE, 12%). Asia Pacific and China –region (APAC) was represented only by 2 persons, however, both of them replied that are creating over 30 invoices per month. Few responses to this question could not be categorized.

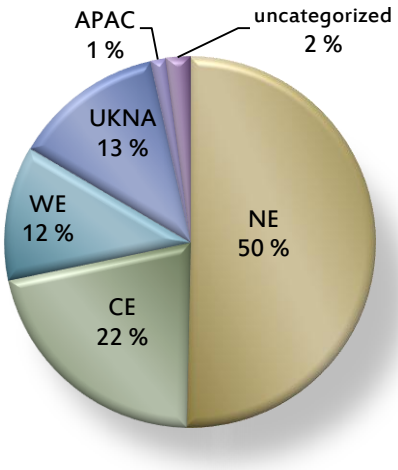

FIGURE 4. For which company codes you handle the Misci invoices? n=121

4.2.2 Satisfaction with the Misci processes

In this section the respondents were able to state whether they have had problems while working with the Misci tool, which things are working well and also which things are working badly in the Misci process. In addition the sixth question included different kind of statements of the Misci process where the respondents had to choose the option which best corresponds to their opinion. Furthermore, a lot of comments regarding the issue were given and those are handled as part of the analysis.

As seen in the figure 5 below great majority (79%) of the respondents had faced problems while working with the Misci tool. On the other hand 21% of the respondents state that have never faced problems.

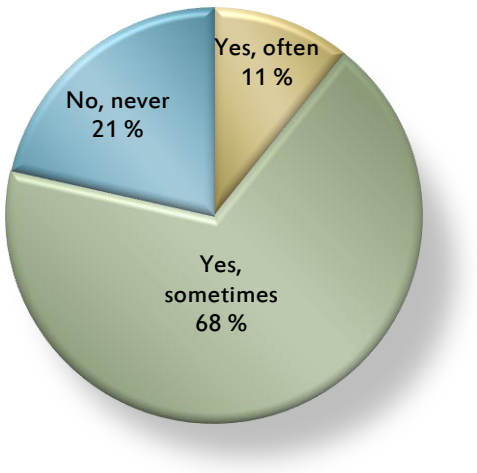

FIGURE 5. Have you experienced problems while working with the Misci tool? n=121

In the sixth question the respondents answered to nine statements according to Likert-scale totally agree (4), somewhat agree (3), somewhat disagree (2), and totally disagree (1). The mean values given to the statements differed between 2,5 and 3,1. The figure 6 on the next page illustrates the six statements which received the highest and the lowest scores.

The best score was given to the statement "Misci invoicing fulfils legal requirements" with the average of 3,1. It was also the statement which got most of "totally agree" responses. The statements "Misci tool is easy to use" and "Implementing e-invoicing is crucial for Misci invoices" received the second best mean value with 3,0. On the other hand, the lowest average value was given to the statement "There are enough instructions for the use of Misci tool", totally 47% of the respondents disagreed with the statement. Mostly "totally disagree" options were directed to the statement "There is no need for additional training for the use of Misci tool", while 10% of the respondents stated so. Together with the statement "The problems relating to Misci tool are easy to solve" these two received the second lowest average mean values of 2,6.

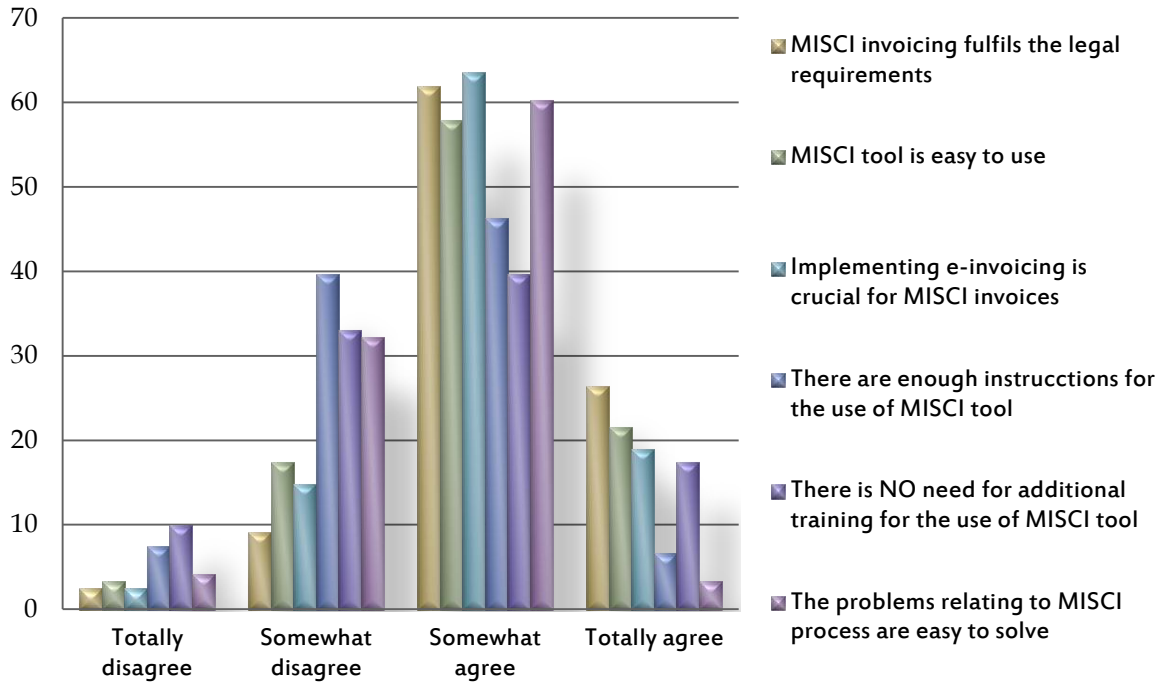

FIGURE 6. Choose the option which best corresponds to your opinion.

Comments given to these statements included among others that refresher training would be appreciated and many said that have not seen any instructions relating to the use of Misci tool. It was also mentioned that with several years of experience Misci tool is easy to use but for a beginner it is not. In addition electronic invoices should be provided to the customers since those are also required from the suppliers by UPM. The problem solving divided the opinions of the respondents. It was stated that the problems are relatively easy to solve if one knows the right contact persons. Few mentioned as well that Misci team is usually contacted of the problems and it helps in solving them.

Furthermore, the respondents had to choose which factors are working well and are not working well in the Misci process. In these questions they were able to choose none or as many options as they wished. The outcome of these questions is illustrated in the figure 7 on the next page. These were multi response fields, which is the reason why the percentage figures are taken into the consideration. The most positive feedback was given to E-mail notifications, AP approval and a bit surprisingly to attachments. In contrast, the worst scores were directed to clarity of error messages, archiving of the invoices, posting issues and process flow.

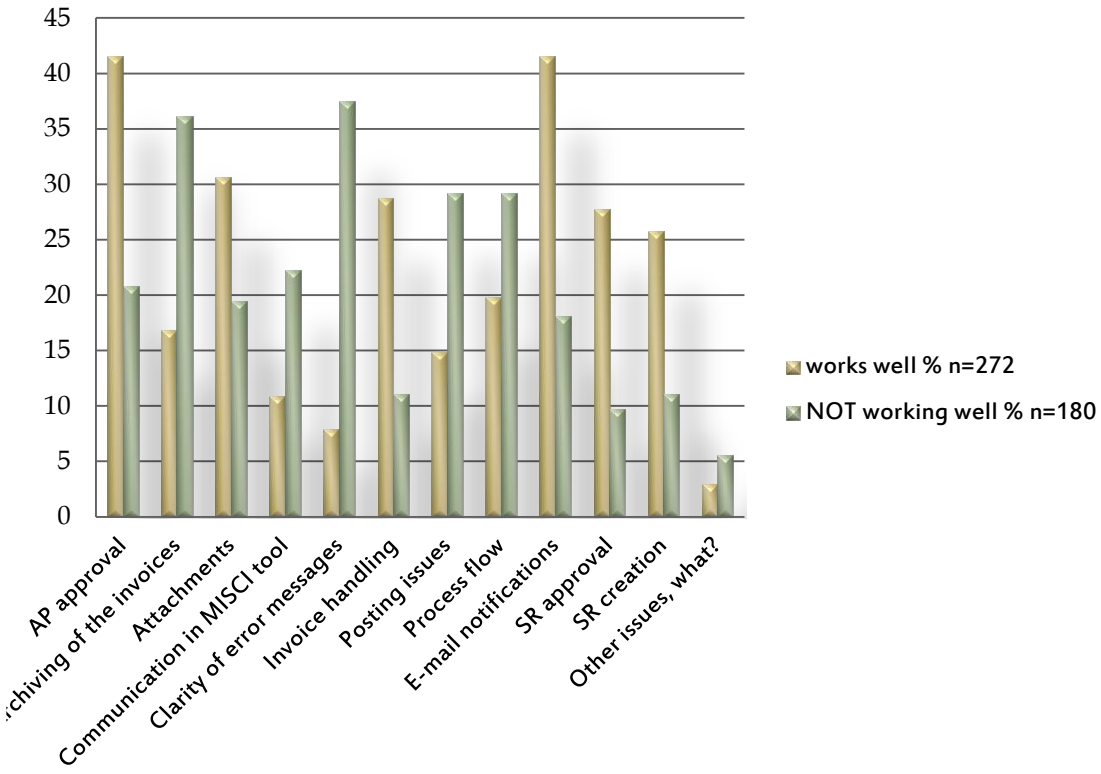

FIGURE 7. Which things are working/are NOT working well in the Misci process?

There were many comments given that the current tool is slow, old-fashioned and not very user-friendly, and would need to be updated. Many had also faced different kinds of problems while working with the Misci archive. The main concern of the AP approvers seemed to be that even for the recurring entries all the posting information has to be typed from scratch every time. In addition there had been also some problems with the availability of the attachments and the fact that all the GL accounts/cost centres are not automatically available in Misci. At the same time it was commented often that everything has worked well within the part of the process that the respondent in question was responsible of. All of the encountered problems are handled in more detail in the following section 4.4.

4.2.3 Improvement suggestions

The improvement suggestions part of the survey consisted of five questions, of which three were open ended questions about the process and the last question was a free comment field relating to the invoicing process or the survey itself. Only the first two of these questions are handled at this section.

When the need for improvement relating to the Misci process was investigated, the result was as illustrated in the figure 8 below. Altogether 35% of the respondents claimed that “yes” there is a need for improvement. The majority of 48% replied that “probably yes” and only 17% of the respondents replied “no”.

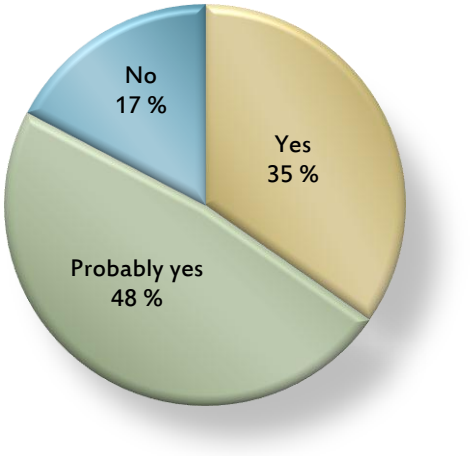

FIGURE 8. Is there need for improvement relating to the Misci processes? n=121

In the next phase the respondents were asked whether some of the Misci invoices handled by them could be processed in some other way. By a rough estimation about 15% of the respondents replied that some of their invoices could be handled in other way. The response range was pretty diverse since different tools, issues relating to invoicing periods and different kinds of procedures for IC invoices were suggested.

Among others it was mentioned that no invoices under 2000€ should be created in Misci and that packaging material invoices should not be processed in Misci at all. Also the possibility of sending invoices electronically to the customer was highlighted. Some of the respondents commented that the invoices created by them should be created in FOR-IT (another invoicing system for wood sourcing) but it is not yet possible. Furthermore, currently it is not possible to clear customer accounts just by making a posting and a Misci invoice is required for this purpose. The requestor of these clearings suggested investigating the possibility of creating just a posting instead of Misci invoice.

About the intercompany invoices many were suggesting recurring journals to take place and to be done as direct postings by Misci team. It was also stated that even more of the recurring AP approvals could be done centralised by some others than business control-

lers (as has been done already for some of the invoices, since SR and AP approval is done centralised in Shanghai for some of the invoices). Generally the process should be more automatic, probably in means of more extensive GL account and tax code mappings between the sales and purchase side.

4.3 Challenges in Miscellaneous Invoicing

The problems that exist currently in the Miscellaneous invoicing process as well as in the invoicing tool are investigated in this section. All the problems faced by the Misci team members as well as problems found out by the other Misci users through the conducted survey are taken into consideration. The experienced problems should be acknowledged when the project for the development of the new tool is implemented. Especially, most of the problems in the Misci tool are causing extra work for its users, which naturally decreases the overall efficiency and burdens many persons involved in the process. At the same time the process comes more complex and increases the inflexibility.

The basic assumption that raw data is not meaningful before it is analysed by utilising proper tools applies to both qualitative as well as quantitative data analyses. However, the data analysing methods are far different from each other because of the different types of the data. Open ended questions in online questionnaires are data which requires qualitative analysis. The analysis of qualitative is a demanding process and since because of the diverse nature of qualitative data there is no standardized process to analyse it. However, three main types of grouping processes exist: summarising, categorization and structuring. Each of these can be used on their own or in combination to support the interpretation of data. (Saunders et al. 2009)

The analysing process of the open ended answers of the questionnaires turned out pretty challenging because of the number of open ended questions and sample group size. (All the open ended answers can be found from the appendix 4. The most important function of the open ended questions in the questionnaire was to ultimately map the faced problems experienced by the different user groups in the Misci process.

In order to analyse the data the main method used was categorization. Two main categories were set as problems in the invoicing process and problems in the invoicing tool. Different stages in the invoicing process divided the categories further to four subcategories: SR handling, invoice handling, AP approval and other issues. All the open ended answers were finally categorized separately by allocating the aroused issues to above mentioned subcategories. In the following sections the faced problems in the process and in the invoicing tool are explained in detail and categorized by the different stages of the invoicing process.

4.3.1 Misci tool program errors

Sales request handling

In the sales request creation phase there are some issues to be improved. First of all it should be possible to input more information to the invoice already in the SR creation phase. For instance payment term, our reference, the reason for non VAT and comments to the invoice creator could be all input already at this point. Additionally the customer information could be searched from SAP already at this point. The possible confusion with the addresses or customer's VAT registration number could be recognised already by the SR creator at this stage. At the moment all these questions arise not until in the invoice creation phase and often confirmation or further questions have to be asked from the SR creator.

Another minor point in SR creation is that because for German invoices the delivery date is a required field it should be a required field also already in the SR creation phase. Currently if it is not mentioned elsewhere in the invoice it has to be asked separately from the SR creator, which causes delay to the invoicing process.

After the SR is approved and it is waiting for invoice creator's handling there is no possibility to reject the invoice and therefore send it back to SR creator for editing. In these cases when there is for instance wrong price the whole document has to be deleted and a new one has to be created from scratch by the SR creator. The process would work more fluently if there was option to reject the document and it would return to the SR creator.

According to the comments given to the questionnaire many of the SR creators find inputting posting information on the SR difficult. Relating to this it was also stated that for instance VAT codes should be input by LCF experts or Misci team members. Also even though there were multiple lines to be posted similarly all the lines have to be added separately because there is no option to copy and paste. On the other hand the function to copy an old invoice as a template for a new invoice was said to be useful, anyway also the invoice header should be copied automatically by the function.

In the survey it was also stated few times that it is unnecessary that there are different windows for editing fields; instead all the information could be input in one view only. Adding the attachments is also slow since all of them have to be added separately and there are unnecessary steps relating this point as well. Furthermore the SR creator does not know to whom the IC invoice has been sent for AP approval which makes the communication more difficult. SR approvers claimed that they are not always receiving the e-mail notifications about the invoices that are waiting for approval. This of course can make the invoicing process much longer.

Invoice handling

Basically one of the same problems as described above exists after the AP approval. After the invoice has been AP approved the only option for invoice creator is to send the invoice to SAP. In contrast there should be possibility to reject or delete the invoice. Now there are bunch of incorrect AP approved invoices hanging in Misci, because of their faultiness those cannot be sent to SAP. On the other hand those cannot be deleted either. If these invoices were sent to SAP a corrective document in addition to the right document should be created which again creates excess work.

Currently all the attachments that are added to the invoice in the SR creation phase have to be reattached to the invoice by invoice creator before sending the invoice for AP approval. The attachments on the invoice are divided to internal and external attachments, but neither of these is visible automatically for the AP approvers. The process should, however, function in that way that all the external attachments would be seen by the controllers without reattaching them. Now as these are reattached it creates extra work as well as makes the document size bigger and therefore requires more space in the electronic archive.

There are cases when certain tax codes do not work in the right way in Misci tool. In these cases wrong tax codes has to be used and those are then afterwards corrected manually to SAP UP6 by CAR. These occasions include for instance tax codes used in EU reverse charge invoices: for example FO (EU service purchases, 24% reverse charge) cannot be used in Misci in the sales invoice, because it is calculating the tax incorrectly. In this kind of situations creating a credit note is complicated. The tool should work here so that all the tax codes could be used correctly and no additional manual corrections were needed.

After the invoice is sent to SAP there are two different versions of the invoice to be printed. The other one is with the text "archive copy" in it and the second one is customer version without the text. After the invoice is completed there is only the possibility to get invoice copies with "archive copy" text. For German and Austrian UPM companies the text is placed so that it is above the invoice header. Because of this double copies for these companies are taken to the paper archive in order to confirm the availability of customer copy versions in the future. For all the other companies, however, the invoice template is created so that the "archive copy text" is below the invoice header. Therefore, if customer copies are needed they can be edited easily from the archive copy versions as well. This is why the German and Austrian invoices should also be created according to the same template as other invoices. Yet again time, effort and archiving space could be saved.

When the customer information is searched from SAP, Misci tool is not able to read the field of "other city". This field is needed if there is a different sending address for the customer. At the moment the field has to be checked separately from SAP in order to get it correctly to the invoice.

Misci team members are able to handle the same SR at the same time. In these occasions double invoices are created sometimes. Even though some corrections have been made to this it is not working properly at the moment.

AP approval

After the AP approval Misci team is not able to see the AP posting before the invoice is sent to SAP. Recently some problems have aroused relating to incorrect AP postings in

the monthly charged IC invoices. There have been problems for instance with wrong GL accounts or wrong VAT codes used in the invoices. If Misci team was be able to see the AP posting before transferring the invoice to SAP these problems would diminish. In case of incorrect tax code invoice creator should be able to reject the invoice and send it, therefore, back to the AP approver. On the other hand this kind of procedure would, however, mean more work and responsibility for the Misci team.

In the survey many of the business controllers were stating that all the information of GL accounts, cost centers and tax codes in Misci parameters should be synchronized to the information in SAP. Currently all the information is separately added in Misci parameters by Misci team members when requested. As a drawback of this also all the outdated information stays in Misci parameters because those are not removed automatically. Business controllers mentioned that this again makes the invoicing process longer, because they have to wait for the cost elements to be activated. Furthermore time difference is also a problem for Northern American companies regarding this issue since they have to wait till the next day to get the information activated.

One of the main problems mentioned in the survey by the BCs was that even for the recurring invoices all the AP posting lines have to be added separately from scratch each time. The process is above all time consuming but also frustrating. They wished that the GL account assignment would be automatic: there could be for instance more extensive mappings between the GL accounts and VAT codes used in the sales side to correspond certain GL accounts and tax codes in the purchase side. In addition a copy paste function for the posting lines would be appreciated. Also it was mentioned that currently it is not possible to save the AP posting before completing it. Sometimes it happens that the posting information for many line items is input, but cost center for the last line item is not in Misci. In these cases they have to wait for activating the cost element and after it start fill in again all the information for the posting lines.

It was also stated by some BCs that sometimes there is no enough information of the invoice and postings cannot be done because of this. Furthermore every now and then the attachments are totally missing or cannot be opened. Some were also claiming that BCs are not VAT experts and therefore the VAT codes should already be input to the invoice before the AP approval.

About the view of Misci tool to the business controllers it was mentioned that all the invoices sent for AP approval to certain person should be visible under one folder. In this view there could be already the basic information of the invoice as there is in Rondo for instance. Currently the invoices are under the different company codes and for persons that are handling many company codes this is unclear and makes the checking more complicated.

Other issues

At the moment the length of a Misci invoice is limited to one page. This is why only 15 rows is reserved for the texts in the invoice header and in the line items. For longer invoices two separate Misci documents have to be created. In the future there should be possibility to create several pages to Misci invoices. In addition there is now no possibility to preview the print out of the invoice before sending the invoice to SAP. If there are too many line items in the invoice the text goes above the footer and a correction invoice plus a new edited invoice have to be created.

In the open comments of the questionnaire numerically most of the complaints were directed to the functioning of the electronic Misci archive. Many were claiming that they are not able to find the invoices from the archive, sometimes the archive does not even open up and that it is working really slowly. It was also mentioned that it is not reliable since invoices get sometimes totally lost. According to the respondents the search function could be more diverse which would help in finding the right invoices. Furthermore, all the found invoices have to be opened separately since no information of the invoice content is informed in the listing. In addition the SR creators are able to see only the invoices that are created by them which make the situation bit difficult. The info user right that is meant for the electronic archive should be divided to different company codes so that all the SR creators, CAR and CRM personnel could apply the info user right only for certain company codes. At the moment the info user right covers all the archived invoices, which is the reason why it has been granted only to very few persons.

The communication inside the Misci tool did not receive the best score in the survey. Even though comments can be written inside the tool it has mainly been used in case of rejecting the invoice when a comment is requested. Otherwise the respondents said that they are mainly using e-mail as a mean of communication. In Misci there is no com-

ment field that would be automatically visible for all the users (as there is in Rondo for instance). A pop-up window for short comments is something that has been wished a lot by the Misci tool users. In addition the tool could be sending reminder messages for instance on a weekly basis of the invoices that are waiting for approval. Many of the SR creators mentioned that they receive notifications only when an invoice is rejected, but it would be nice to receive also a notification when an invoice has been completed. Furthermore the tool itself does not offer any help for the users, the know-how just has to be possessed by the user. Another point of the lack in communication is that there is no e-mail groups set up for different Misci user groups. For this reason also sending the information to the needed users is complicated.

To some extent the whole functionality of the invoicing process in the tool got impugned by the survey respondents. It was stated that that the process is not fluent or reliable and it might take two weeks to complete an invoice since there are so many steps in the process and also therefore it is hard to identify the bottlenecks in it. Invoices get lost sometimes and the electronic archive is not reliable, which is also the reason why all of the invoices are archived in paper folders as well. In addition the tool is working really slowly sometimes and especially during the peak periods. The program gets totally stuck sometimes, however, not anymore that often as before. As a conclusion it was stated that the program is not very user friendly, it is slow, unreliable and with a modern updated tool the performance could be improved.

4.3.2 Misci process errors

At the same time when the new miscellaneous invoicing tool will be replaced a closer look is needed to the whole miscellaneous invoicing process. The aroused issues relating to this section include the observations made by the Misci team members as well as the issues that came up as a result of the questionnaire. Somehow in many cases, however, the problems relating to the tool and the process go hand in hand and are dependent on each other.

SR handling

In the current invoicing process tracing a SR/invoice is pretty difficult and basically only the Misci team members are able to say at which stage the invoice is. As a solution

to this problem, a document number or other kind of identification number could be assigned to the invoice already in the SR creation phase. In addition there should be a search field in the tool where the phase of the document could be traced. At the moment all the different folders have to be checked whether the invoice is there and in most of the cases only the customer name and creation date can be used for the identification.

Invoice Handling

For Misci team members there are numerous company codes, including different procedures and legislation, as well as exceptions and special cases that should be known while creating Misci invoices. At least to some extent some of the procedures could probably be further harmonized so that there would not be as many exceptions to remember. As an example of this the reasons for non VAT are different by company codes and even though there were the same reasons those are formulated differently.

Another step to improve in the process would be to facilitate the identification of right SR approver/AP approver for an invoice. Currently there are long lists of approvers, without their titles or any additional information. One cannot see directly whether the person is in the office or not, and this has to be checked separately from Lync. For this reason synchronizing the tool to status information of Lync would be beneficial. Probably separate instructions of the relevant approvers should be created. In addition there are people in the lists that have not been using the Misci tool in years but their user rights have never been removed. This is something that actually should be taken care of by their superiors. As a by-product of the questionnaire a list of 15 persons whose user rights in Misci tool could be removed was collected.

Another point relating to the user rights is that there have been some rare cases where the users have had both SR creator and SR approver rights for certain companies. On the other hand more often occurs that the same person has been approving both the AR and AP side for two different company codes. Just for auditing purposes there should be different approvers for these cases so that not only one person is responsible for the creation of an invoice.

Business Controllers

Some of the recurring monthly IC invoices are already approved outside the BC team, for instance the AR and AP approval for internal service charge invoices is handled cen-

tralised in Shanghai. This kind of procedure could be widened to some other recurring invoices as well and therefore the workload of BC team could be decreased.

Other issues

Currently the document types for Miscellaneous invoices consists altogether of four different combinations of letters; CO, JO, CN, JN. Only 11 out of 43 company codes have all these four document types in use. These company codes include 1017, 1020, 1121, 1122, 1123, 1124, 1125, 2015, 2016, 3507, and 3513. All the other company codes have only the document types CO (for sales invoices) and JO (for purchase invoices) in use and they do not have separate document type for credit notes CN (for sales credit notes) and JN (for purchase credit notes). Now it has actually already been decided that all the company codes should be using all four document types since it is the company policy and helps in statistical interpretation.

One of the most important Misci invoicing process improvement areas is implementing electronic invoicing as part of the process. According to the survey 83% of the respondents agreed with the statement that implementing e-invoicing is crucial for Misci invoices. This would basically increase the cost efficiency in long run when less manual work was needed in sending and archiving the invoices in paper. In addition it would have a positive effect on the environmental performance of Misci process. At the same time the delivery of an invoice would decrease in seconds which would help in reaching the new regulation set by European Commission that the invoice should reach the customer by the mid of next month from the supply.

At the moment the sales requests for monthly charged intercompany invoices are created manually in the beginning of each month. The possibility of implementing a recurring entry for these invoices should be investigated. At the moment the drag behind this function has been the fact that the amounts for some of the invoices have been changing during the year. If recurring entry was used there would not be same kind of possibilities for the flexibility in changing the invoicing information. However, in 2012 for instance there were only few changes made to hundreds of created IC invoices. As an example the recurring entry could be put into practice in February and to last until November. In December the adjustment invoices for the whole year could be created manually and during the January the amounts could be calculated and confirmed.

As in many other financial teams also in Misci team the period ends during month ends and quarter ends is busier time than usually. Naturally this is because of the deadlines set for the invoices but somehow the workload could probably be balanced throughout the month. The quarterly invoiced amounts should whenever possible be already invoiced during the second month of the quarter when there would be less to be invoiced in the end of the quarter. In addition the invoicing process for the recurring invoices should be initiated already in the beginning of month in order to reduce invoice volume at the end of months. One of the problems is probably that there are some controllers that are AP approving the invoices only during the last days of the month, even though it could be done already earlier when the invoices are forwarded for approval.

Part of the miscellaneous invoices of UPM is created through manual postings by AR team. At least in the case of manual postings to Turkish company code of UPM Misci invoices cannot be created because the Misci invoice layout does not meet the requirements set by the local law. The reasons behind the manual postings done by AR should be investigated and taken in consideration when the new Misci process is developed.

Many of the Misci tool users were claiming that some kind of refresher training would be useful. There are many years of the most recent training and after it also the personnel handling the invoices has changed quite a lot. On the other hand, part of the respondents was wondering whether there are instructions for the use of Misci tool and that those were needed as well. Some of the open ended answers revealed that respondents were claiming about some issues that are already working/available in the Misci tool. These issues included for example the possibility of creating a SR of an archived invoice and that the BCs are able to see the name of the SR creator when making the AP posting. These already proofed that not all of the personnel are aware of the possibilities of the tool and training as well as work instructions would definitely help to raise the awareness of the users.

Some respondents stated that the process itself is working but the problems in the process mainly derive from the current invoicing tool and its malfunctions. The bottlenecks that are hindering the process should be defined and taken in consideration when the new tool is developed. The users, especially business controllers, wished to be part of the testing group when the new tool is in that phase in order to be able to give comments on its practicality and user friendliness.

5 PROCESS HARMONIZATION

Harmonization of the processes has been a long term target for UPM in a company level. In a smaller scale this harmonization has been focusing on the teams and harmonising the processes within different departments. On a team level one of the means of harmonising the processes has been creating work instructions.

Relating to the creation of work instructions the second research question was to investigate whether tacit knowledge possessed by the Misci team members could be stored in the form of work instructions. Ultimately work instructions are to improve the quality of the services provided to the customers by improving the overall performance of the organization. Creating the work instructions is closely related to knowledge management and, on the other hand, process harmonization in general is related to quality management. Both of these subjects with their connection to Misci team's process harmonization will be handled in more detail during the following section.

5.1 Knowledge management in organizational learning

Knowledge management in today's hectic and information abundant environment is vital for everyone and in every organization. In order to understand knowledge also data and information have to be defined. According to Russel Ackoff (1989), a systems theorist and professor of organizational change, data is raw symbols and it only exists, it does not have significance beyond its existence. Information therefore is data that is processed to be useful and answers questions who, what, where and when. Knowledge, therefore, combines data and information and answers to the question how.

Knowledge can be classified in several ways. One of the mostly used approaches is to divide knowledge into tacit and explicit knowledge. Tacit knowledge is often defined as knowledge gained through experience or working with people who possess "know-how" (Roberts 2001). This kind of knowledge is hard to express in words, it is knowledge of how the things are done and is possessed in person's mind. In contrast explicit knowledge can be embedded into procedures or is represented in books, instructions or databases (Chan, Zannes & Pace 2002). Explicit knowledge is easy to communicate and put into words.

According to Chan et al. (2002) knowledge management is a conscious effort to ensure that the right knowledge reaches the right audience at the right time and therefore the overall performance of an organization can be improved. KM focuses on utilizing information to solve problems and investigates how knowledge possessed by people can be stored. Another interpretation by Broadbent (1998) is that knowledge management is managing two key assets of an organization. The first one refers to maximising the knowledge assets organization has available and the second one to utilizing the skills that the employees have. In a lower level at the company KM can be considered to aim for improving the performance of the teams and therefore maximising the usage of organization intellectual capital, for instance in this case, by creating the work instructions for the Misci team.

Capturing tacit knowledge is seen as a challenge and many times also as a target of knowledge management practice. Different kinds of databases of codified knowledge assets have been the means to store captured knowledge during the past years and also for years to come. One of the desired outcomes of storing the tacit knowledge in organizations is to reduce the risk of losing the knowledge if an employee resigned from his/her position (Harrington 2005). The management of knowledge usually consists of five basic steps as illustrated by the figure 9 below.

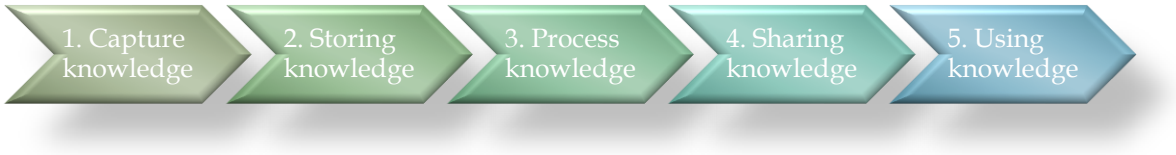

FIGURE 9. Steps for knowledge management (Source: Chan et al. 2002)

1. Capturing knowledge. How a particular problem has been solved will be captured as knowledge by an employee.
2. Storing knowledge. The captured knowledge has to be stored somewhere, for instance in production system or information database.
3. Processing knowledge involves sorting, analysing, comparing, filtering. Knowledge can also be processed by using different complex or statistical methods in order to find relationships and insights.

4. Sharing knowledge occurs for instance by face-to-face interactions or through common databases where users have access to.
5. Using knowledge. Finally knowledge aims to solve problems and reach better performance for the organization.

One of the ways to utilize tacit knowledge possessed by organizations has been to store tacit knowledge in Lotus Notes databases, knowledge repositories or similar kind of technology where employees are advised to store detailed information and know-how of their work (Busch 2008). In some organizations personnel are strongly encouraged to input their information into databases and in general firms have been changing from knowledge hording to knowledge sharing culture during the past years (Harrington 2005).

Today most of the large organizations have some form of Intranet and extranet in place. Intranets are above all knowledge sharing, a centralized approach to manage information and knowledge as well as bring those accessible for all the personnel. The Internet technology enables capturing, storing and sharing of information and knowledge. (Chan et al. 2002)

One of the most recognized definitions of how tacit knowledge and explicit knowledge are connected and converted to each other is provided by Nonaka and Takeuchi's (1995) knowledge management cycle which is illustrated in figure 10. The cycle illustrates above all how tacit knowledge can be transferred into more explicit forms through different kind of actions.

Socialization phase of the cycle deals with how tacit knowledge can be communicated as tacit knowledge to another person. Sharing knowledge this way occurs through social interactions for instance in face-to-face situations or between the tutor and the apprentice. In this method there is a small risk that the know-how of the company leaves at the same time of employees' resignation or retirement. As a means of knowledge creation socialization is very effective, but on the other hand time-consuming if all knowledge should be spread by using this method. (Nonaka & Takeuchi 1995)

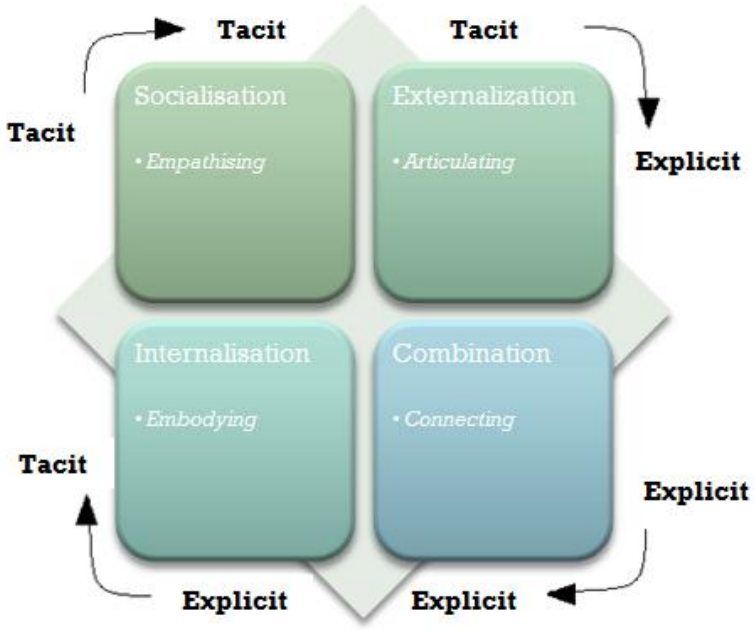

FIGURE 10. The Nonaka and Takeuchi Knowledge Spiral (Nonaka & Takeuchi. 1995, modified)

Tacit knowledge can be transferred as explicit knowledge through the process of externalization. According to Nonaka and Takeuchi the process is "a quintessential knowledge creation process in that tacit knowledge becomes explicit, taking shapes of metaphors, analogies, concepts, hypotheses or models". In this mode knowledge and know-how and even in some cases the know-why and the care-why are transformed into the created explicit knowledge. (Nonaka & Takeuchi 1995)

The step of combination describes how explicit knowledge is transferred to another form of explicit knowledge. At this stage new knowledge is not created but the knowledge is organized logically in order to better meet the existing needs. (Nonaka & Takeuchi 1995)

Internalization process of the knowledge converts explicit knowledge into tacit knowledge. This phase can be considered that it is strongly related to learning by doing. The newly gained consolidated knowledge is used together with the person's existing tacit knowledge while the explicit knowledge is widened, extended and reframed to new tacit knowledge. (Nonaka & Takeuchi 1995)

Knowledge management in MISCI team

Since there were not before work instructions available for Misci team all the information held by the team members could have been considered as tacit knowledge. Even though because of the fundamental nature of tacit knowledge not all of it can be transferred into explicit knowledge but at least some of it could be transferred.

The five steps of knowledge management, as described above, are closely tied to the subject of creating work instructions. In the first phase the knowledge is captured through the working experience gained by the Misci team members. The actual creation process of the work instructions is storing the knowledge in written form and storing them in this case to Misci team site in UPM intranet where it is shared. Processing the knowledge occurs already when the created work instruction is discussed and re-edited among the team members. Finally the created knowledge is to be used to solve problems and it eventually aims for reaching better overall performance in Misci process.

In this case transferring the tacit knowledge into explicit knowledge could be done by means of externalization as described in the Nonaka and Takeuchi's Knowledge spiral above. The knowledge, know-how and to some extent even the care-why of the Misci team members is transferred into the form of work instructions. The work instructions include detailed steps of all the tasks that are done by the Misci team. The instructions are drawn to be globally relevant for all the Misci users, but still to include the essential information of the limitations and exceptions relating to the process itself and countries involved in the process.

On the other hand, as illustrated by the figure 11 on the next page not all of the tacit knowledge can be transferred as explicit knowledge. The figure created by John Edwards (2008) shows that only some part of the tacit knowledge can be transferred as explicit knowledge. According to Edwards (2008) all knowledge involves elements of both tacit and explicit knowledge, only the balance between them changes according to the type of knowledge concerned. As an example of this knowing how to ride a bike consists almost entirely of tacit knowledge whereas knowledge of how to connect two pieces together is mainly explicit.

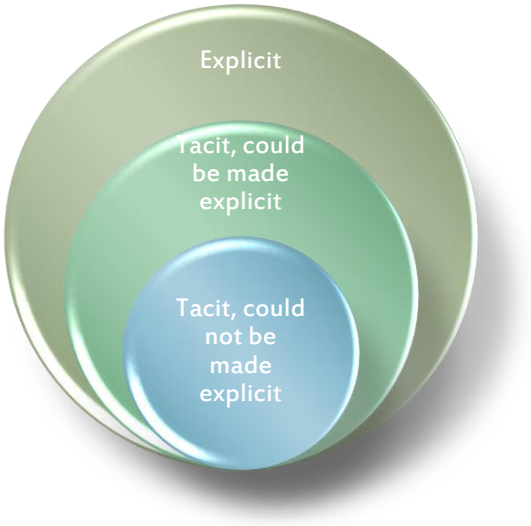

FIGURE 11. The relationship between tacit and explicit knowledge (Edwards. 2008.)

Regarding the figure 11 above, the tacit knowledge possessed by Misci team members cannot totally be converted to explicit knowledge by creating the work instructions. However, a great deal of the knowledge relating to the team's tasks can be considered as explicit since those can be described in words through verbal communication or through written instructions.

Work instructions were created to be clear and simple so that anyone could perform the task only by following the instruction. Relating to this in special occasions, for instance in case of employee absences, work instructions play special role for persons that are not normally performing the tasks. Naturally the instructions are also useful in the orientation process of a new employee. According to the 70 – 20 – 10 rule, 10% of learning occurs through education and training (UPM intranet) and in the beginning of orientation process work instructions play significant role in the learning process.

At times it was seen that probably partly because of the lack of work instructions there are as many ways to perform the tasks as there are persons performing those. Also misunderstandings on how tasks should be performed have emerged. In addition to storing the tacit knowledge, creating work instructions is also to improve the overall quality of the services provided for the customers. Furthermore the instructions are to improve the efficiency and flexibility of the team. These factors in turn relate to the main purpose of the knowledge management to finally with the help of existing knowledge to improve the performance of an organization.

As mentioned before about the used knowledge databases companies are utilizing in their knowledge management, UPM also utilizes widely Lotus Notes as a knowledge database. As far as miscellaneous invoicing team is considered, in addition to the tool itself, the parameters for updating the tool exist in Lotus notes as well. The stored knowledge include for instance all the GL accounts, cost and profit centers, internal order numbers and tax codes that are established in Misci tool. Also the data of Misci tool user rights is stored in the company wide contact information database Domino Directory. In addition Intranet plays nowadays a significant role as a communication, information and knowledge channel for all the UPM personnel.

5.2 Quality management

Process harmonization in a bigger scale is part of quality management. The processes are investigated, analysed and reorganized in order to reach more efficient working environment in organizational level. This section handles Business Process Management as well as Total Quality Management as part of quality management practices.

5.2.1 Business Process management

Currently because the miscellaneous invoicing tool will be replaced in the near future, simultaneously the whole invoicing process is under investigation. The following section focuses on investigating the general definition of Business Process Management (BPM) and maturity test relating to it.

Michael Rohlhoff (2011) states that from operational point of view, process management aims to define the processes clearly, measure their performance and improve the processes continuously as part of daily routines. In addition he insists that process standards and a common process framework are the basis for a systematic design and optimization of results, resources and processes. Jan vom Brocke and Michael Rosemann (2010) define BPM as “an integrated system for managing business performance by managing end-to-end business processes”. BPM was introduced basically by merging best practises of its significant antecedents Six Sigma and Business Process Reengineering.

The Process Management cycle begins by first describing a well-defined end-to-end process after which the process has to be managed continuously by monitoring performance through critical metrics. Those metrics could relate to customer needs or company requirements and specific targets for the metrics are set. In case performance does not meet the targets the reason for it is determined. Basically the performance requirements are not met either because of faulty process design or faulty execution. Occasional shortcomings usually reflect execution problems and pervasive shortcomings problems in process design. After the reason for the performance problem has been identified and corrected, the results are assessed and the cycle begins from the starting point. (Vom Brocke & Rosemann 2010.)

Vom Brocke and Rosemann (2010) defined the following six core elements that are critical success factors in the implementation of BPM: strategic alignment, governance, methods, information technology, people, and culture. Through strategic alliance the BPM is aligned to overall strategy of the organization. Governance, therefore, ensures appropriate and transparent accountability in terms of roles and responsibilities. Different kinds of methods are used to as a set of tools in order to facilitate activities relating to process management lifecycle and organization-wide BPM initiatives. IT-based solutions are significant for BPM initiatives and can focus on process analysis and process modelling support. People as one of the core elements are individuals and groups who continually improve and apply their process management skills for the organization's performance. The culture aspect incorporates the collective values and beliefs into a process-centred organization.

There have been numerous implications on different kind of BPM maturity models, which are used for measuring and improving business process competence. In the maturity model defined by Rosemann and de Bruin (2005) the level of maturity of an organization is defined as a combination of coverage and proficiency. Coverage in this relation refers to the extent to which BPM practises are implemented and proficiency, therefore, measures how well the implemented practices are conducted.

The comparison of high and low maturity by Rosemann and de Bruin (2005) in figure 12 helps to understand the concept and range of BPM maturity. There are five stages included in between the lowest and highest maturity levels: 1. Initial state, 2. Defined, 3.

Repeatable, 4. Managed, and 5. Optimized. Each stage of maturity involves, as a pre-requisite, the requirements of the lower stages.

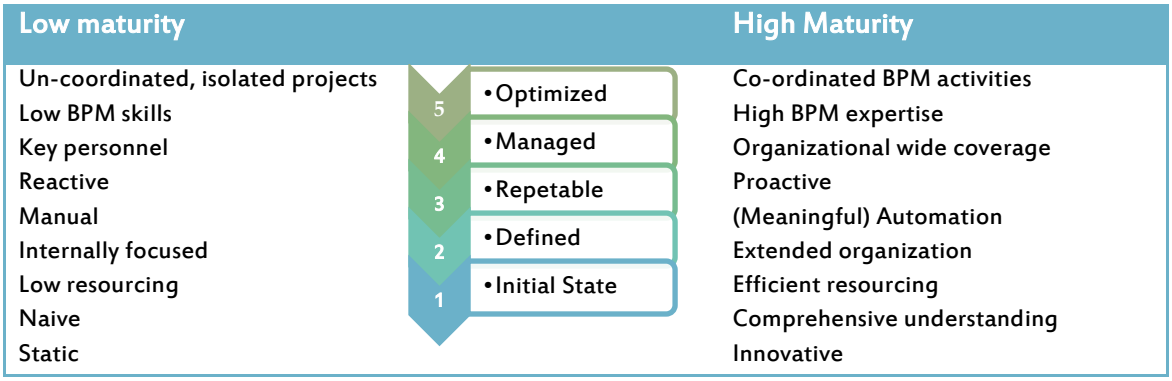

FIGURE 12. Comparison of low and high maturity (Rosemann & de Bruin 2005)

5.2.2 Total quality management

One of the UPM organizational principles states "renew with courage" which encourages employees to strive for continuous improvement. In that sense harmonization of the processes is also closely related to quality management, since the whole harmonization process aims finally for better overall performance in an organization. Total quality management (TQM) is a subject that has been investigated significantly by different practitioners and is one of the quality management practices. There are numerous studies of TQM in relation to different subjects such as organization's performance, organizational culture, operational performance and project management.

According to Baird, Jia Hu and Reeve (2011) TQM is an integrative organizational-wide philosophy which aims to continuously improve the quality of products/services and processes in order to meet or exceed customer expectations. It is a management system for customer-focused organization which involves all employees in continuous improvement by integrating the quality discipline into the culture and all the different activities of an organization. The Malcom Baldrige National Quality Award (MBNQA) was introduced in 1995, according to which TQM comprises the elements of leadership, strategy and planning, customer focus, information and analysis, people management, and process management (Jung & Wang 2006).

In practise organizations can model TQM for instance after the Baldrige Criteria for Performance Excellence or by incorporating the ISO quality management standards. TQM is a collection of different principles and best practises that over time have been proven effective. The above mentioned TQM elements are considered so crucial parts of TQM that many organizations integrate them at least to some extent as a set of core values or principles on which the organization is to operate. Most of the world class organizations possess the characteristics that are typically identified with TQM. (American Society for Quality, ASQ, 2013).

Hale Kaynak (2003) investigated the relationship between the TQM and organization's performance. In her study the TQM elements were defined according to the study conducted by Saraph, Benson and Schröder (1989) about constructing instruments capable of measuring TQM practises. The defined practices were outlined bit differently from those of Baldrige Criteria and are management leadership, training, employee relations, quality data and reporting, supplier quality management, product/service design, and process management. Out of these elements those that are most closely related to Misci processes are handled in more detail in the following paragraphs.

First of all management leadership can be considered as the most influential part in the implementation of TQM practises since it improves organization's performance by influencing other TQM elements. Management involvement is needed in order to change the organizational culture to strive for continuous improvement, open communication, and cooperation throughout the value chain. (Kaynak 2003; Jung 2006.)

Employee relations are also positively related to organization's performance: factors such as empowerment in decision making, teamwork, and proper recognition and compensation enhance employees to work harder and participate more in the change process. Management must ensure that an organization-wide training program exists so that employees can be equipped with the proper skills. (Kaynak 2003; Jung 2006.)

Kaynak states in her article (2003) that training is a critical component in workforce management when significant changes are implemented in an organization. Training should be effective and focus on problem solving in small teams, communication and statistical process control. Furthermore, the training must be continuous in order to sustain the improvement effort. Several studies argue that the number of skills needed to be

a productive worker is correlated positively with the level of engagement employees have with their jobs. Therefore it can be expected that an increase in training would result in higher engagement with the work and increased awareness of quality-related issues.

The purpose of quality data and reporting is to provide information on areas of possible improvement. Quality problems are identified by using control charts and analysing costs of poor quality such as scrap, rework or warranty costs. Quality data and reporting affects positively firm's performance through three other TQM techniques: supplier quality management, product/service design and process management. Valuable quality data for supply chain can be collected for instance through supplier performance measurement database. In product design all the different professionals are included in the process, when accurate quality data is needed from all different sections of the organization in order to help in the decision making process. Process management is directly affected by quality data and reporting, since with the help of quality data workers can immediately be informed and take corrective actions in order to prevent producing defective products. (Kaynak 2003.)

Process Management aims by preventative approach to design fool-proof processes that provide stable production schedules and work distribution. The goal is to reduce process variation and build quality into the process already during the production stage. At the same time reduced process variation should result in increased output uniformity as well as reduced rework and waste. (Kaynak 2003)

The results of Kaynak's survey (2003) illustrate the direct and indirect effects of TQM practises to firm's performance in financial, marketing and operational functions. According to the findings a positive relationship exists between the extent to which companies implement TQM and firm performance. Three of the TQM practises have direct effect on operating performance (inventory management and quality performance) and those are supplier quality management, product/service design and process management. The other TQM practises; management leadership, training, employee relations, and quality data and reporting affect operating performance indirectly through above mentioned practices supplier quality management, product/service design and process management. As a conclusion TQM practises affect positively on organization's financial and market performance through operating performance.

5.2.3 Quality management in Misci team

UPM has numerous organization-wide management systems that aim for sustainability and continuous improvement. Among others environmental management systems, occupational health and safety management systems, quality management systems and supplier management systems exist (UPM intranet 2013). UPM as a word class global company has also incorporated the most significant elements of TQM as part of the organizational culture principles and courses of action.

In a smaller scale the most significant elements that have effect on the quality management in Misci team currently are process management, training, employee relations, and quality data and reporting. Out of these factors process management affects directly to operational performance of an organization, while the other factors have an indirect effect on it. Ultimately, creating the work instructions has started the process to critically evaluate the invoicing process, investigate the exceptional cases relating to it and to finally harmonize the process.

As described in the BPM section by Vom Brocke and Rosemann (2010) a clear definition of the end-to-end process must exist before the actual process management can take place. In the current situation of Misci the invoicing process is to be re-evaluated and in later stages also redesigned to some extent simultaneously with the development of the new tool. There are same kinds of basic elements included in the both BPM as well as TQM. In both practices the importance of people, the significance of management involvement as well as quality data as part of development processes are highlighted. On the other hand TQM is probably a quality management practice of wider perspective than BPM. Actually process management is one of the important elements involved in the core elements of TQM.

In UPM Intranet there is a short guide for project quality management which includes different stages illustrated by the figure 13 below. At the moment the whole Misci process is under scrutiny since the new tool for the miscellaneous invoicing will be developed. Currently the idea for the project implementation has already been drawn and the project stage is at the phase of pre-feasibility study which has been initiated by the current state analysis included in this paper. According to the UPM guidelines on project

realization the quality management consists in short of quality planning, performing quality assurance, monitoring and control as well as follow-up of the feedback.

FIGURE 13. UPM project quality management (UPM Intranet 2013)

Process management should help in designing a process that is fool-proof and provides stable production schedules and work distribution. The process variation in Misci could be reduced by paying more attention to the numerous exceptional cases relating to the invoicing process. Partly because of the large number of company codes and countries handled in Misci process the variation between the countries for instance is quite high and there are a lot of cases to be remembered by heart. Even though not all of the exceptions can be removed, the number of those could most probably be reduced. As a result the output uniformity should increase and the amount of rework (for instance in form of correction invoices) could be reduced.

In Misci team open communication, trust on each other and team work are working well which positively affects the employee relations. On the other hand continuous training is something that could be brought to next level. As stated in the survey conducted for the Misci tool users, many of the respondents insisted that a refresher training of the use of the Misci tool would be appreciated. In addition training on the VAT code usage in foreign companies would be beneficial for the Misci team.

Quality data and reporting would be important in controlling the performance of Misci team and to identify the issues that could be improved. There are personal and team specific targets set for the team yearly which for one's part enhances the engagement and development mind set. However, at least some statistical process control could possibly be implemented in the form of rework measurement. This could include variables such as how many correction invoices are created yearly, which are the reasons behind those and how those could be prevented from happening.

6 CONCLUSIONS AND DISCUSSION

This study had two objectives. The first objective was to examine what is the current situation of the Miscellaneous invoicing process. As a starting point a need for replacing the old invoicing tool has emerged, most importantly because the current tool is based on Lotus Notes and is to be shut down in UPM by the end of the year 2015. Furthermore, the invoicing volume has increased significantly and the purpose of the tool's use changed so that the current tool does not meet any more fully the needs set for it primarily.

An online questionnaire was conducted among the different Misci user groups; their background information, level of satisfaction, and the improvement suggestions relating to the Misci process were investigated. In addition to the conducted survey the findings and experiences of the Misci team members were also taken into consideration in the analysing process of the experienced problems and are mostly in line with the findings of the survey.

The questionnaire consisted of 13 questions which were both qualitative and quantitative in nature. Altogether 127 responses were given to the questionnaire and a lot of open ended answers were included in the responses. The target group consisted of respondents from all geographical regions and different user groups. The most significant user groups represented by the respondents were business controllers (39%), SR creators (39%) and SR approvers (37%). The biggest geographical regions represented in the study were Northern Europe (60%), Central Europe (26%), and UK and Northern America (16%).

Great majority (79%) of the respondents had experienced problems while working with the Misci tool and only 17 % replied that there is no need for improvement relating to the Misci processes. When the satisfaction of the respondents was measured it came out that instructions for the use of Misci tool are missing and refresher training would be appreciated by many of the respondents. Respondents were most satisfied with the functionality of AP approval and receiving e-mail notifications, whereas most dissatisfaction was directed to archiving of the invoices and clarity of error messages.

Hundreds of open-ended answers were given to the survey. Certain answers repeated themselves from time to time and in different questions. As a conclusion of those could be stated that the invoicing process itself is workable, but the tool makes it difficult and inefficient. The tool should be rebuilt to meet the requirements of its users and today's environment by paying attention to its current problematic. The presented improvement suggestions included among others the following issues. Many found tracing an invoice pretty complex and it should be facilitated in the new tool. In addition especially AP approvers had faced significant shortcomings in the tool and the process. They wished a program that could be more user-friendly and automated as far as posting issues were concerned. Also the communication inside the tool could be more effective, as it is currently in Rondo for instance.

Furthermore, some of the more process related comments stated that the whole invoicing process could be even more electronic including totally electronic archive as well as possibility to send invoices electronically to the customers. The current electronic archive received a lot of negative feedback of its functionality and reliability. In contrast altogether 83% of the respondents agreed with the statement that implementing e-invoicing for Misci invoices is crucial. The amount of customers accepting only e-invoices is constantly increasing and therefore it would be important to be able to respond to the demand. In addition it would result in better environmental performance and efficiency.

The second objective of the study was to examine whether tacit knowledge possessed by the employees could be stored in the form of work instructions. Regarding this question globally relevant work instructions for the use of the current Misci tool were drawn. The process of creating the work instructions basically included the steps of knowledge management from the point of capturing the knowledge to the point of sharing knowledge. The work instructions were posted to the intranet of UPM in the team site of Misci which ensures that the knowledge is available for all the users.

Transferring tacit knowledge into explicit knowledge can be considered as complicated and time-consuming process. Furthermore according to some knowledge management practitioners not all of the tacit knowledge can be expressed as explicit knowledge because of its nature. As a result at least to some extent the tacit knowledge possessed by the Misci team members has been put into explicit form by creating the work instruc-

tions. However, still some of the possessed tacit knowledge could be stored by documenting it. For instance the company code specific information relating to contact details, posting information such as used general ledger (GL) accounts and tax codes could probably be collected or reorganized in order to better meet the current needs and be available for the users.

Creating the work instructions also aimed in a bigger scale to harmonize the processes. Process harmonization, therefore, is ultimately aiming to improve the overall performance of an organization by paying attention to different aspects of quality management. UPM is already utilizing different kinds of quality management procedures in order to monitor and develop even further its practises. Currently for the Misci team process management is probably the most important element to pay attention to since the development project for the new tool will be kicked off in the near future. In the process management of Misci the attention could be directed certainly for the new tool, but also to reduce the process variation and to ensure stable production schedule and work distribution throughout the month. By further harmonizing the Misci process and establishing measures for instance of done rework (created correction invoices), the development of the quality management in the Misci team could be better monitored.

The action plan created as a result of the thesis aims in the near future to ensure that the right knowledge reaches the right audience at the right time. This is to say that the different user groups of the Misci tool are informed about the created work instructions and their location. In addition, even though refresher training was hoped by many respondents in the survey, at this point it is probably not necessary to provide it to all of the users since the new tool will anyway be launched after a relative short time. However, training should be arranged to all new users of the Misci tool and to those who request it. A proper training will be provided to all of the users as soon as the new tool is implemented.

At the moment the current state analysis of the process itself is completed along with the creation of work instructions. However, the investigation process and listing of the existing problems in the invoicing tool and in the invoicing process will continue until the development project is finally kicked off. In any case, the thesis has provided a profound starting point for the upcoming development project by conducting a major part of the pre-feasibility study.

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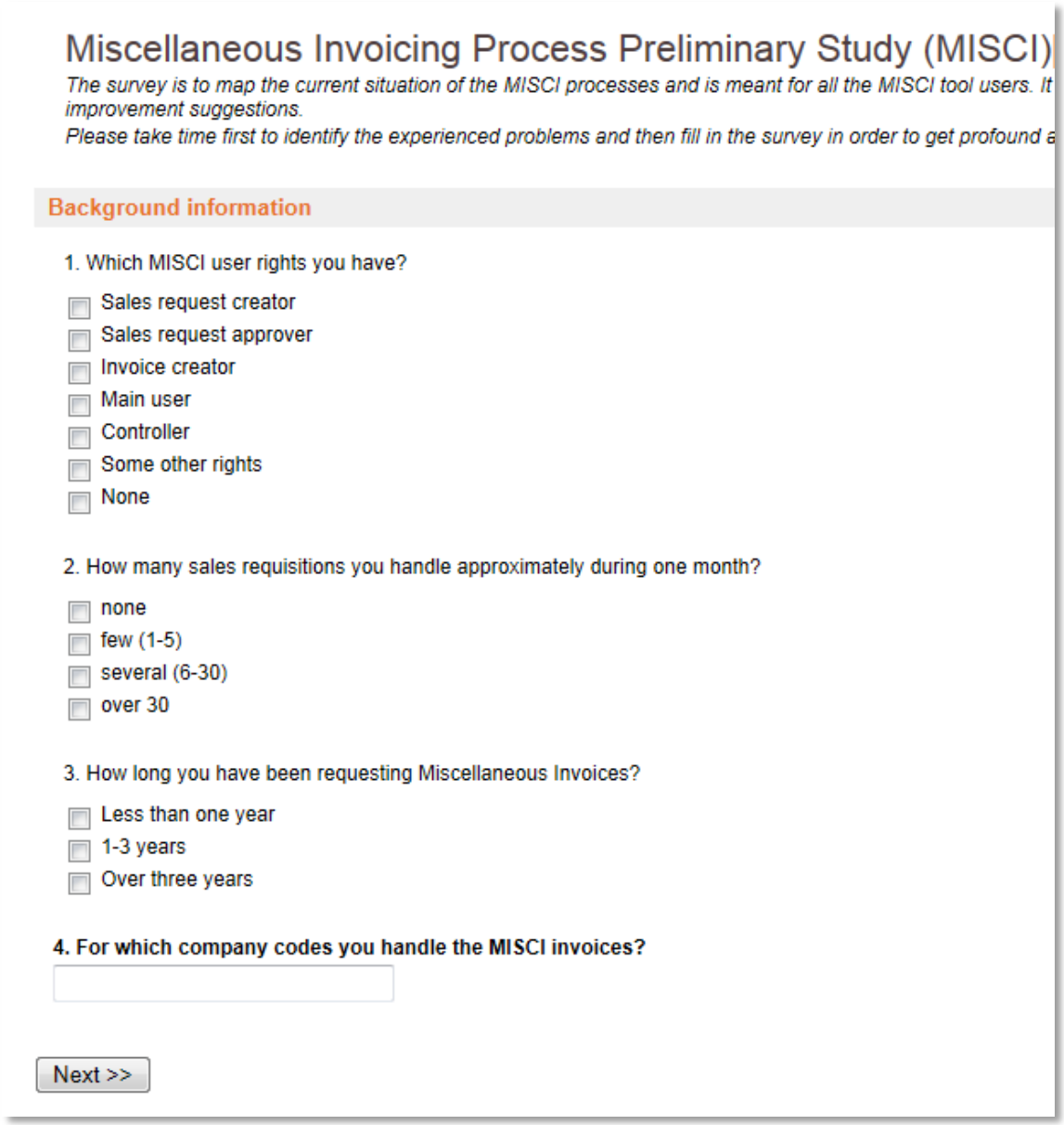
APPENDICES

Appendix 1. Questionnaire design



Miscellaneous Invoicing Process Preliminary Study (MISCI)

The survey is to map the current situation of the MISCI processes and is meant for all the MISCI tool users. It
improvement suggestions.
Please take time first to identify the experienced problems and then fill in the survey in order to get profound a

Background information

1. Which MISCI user rights you have?

- [ ] Sales request creator
- [ ] Sales request approver
- [ ] Invoice creator
- [ ] Main user
- [ ] Controller
- [ ] Some other rights
- [ ] None

2. How many sales requisitions you handle approximately during one month?

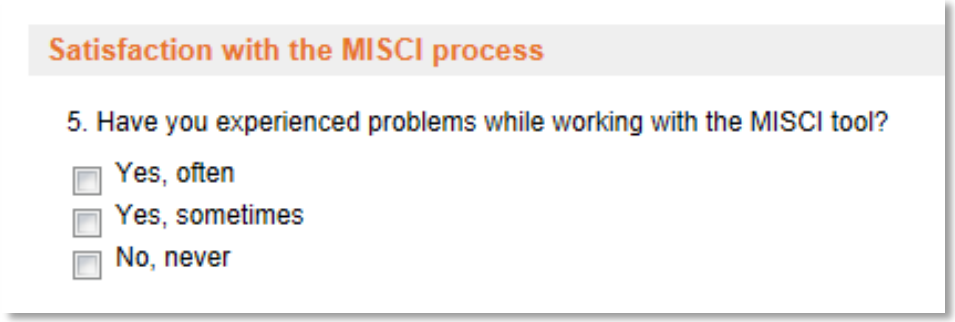
- [ ] none
- [ ] few (1-5)
- [ ] several (6-30)
- [ ] over 30

3. How long you have been requesting Miscellaneous Invoices?

- [ ] Less than one year
- [ ] 1-3 years
- [ ] Over three years

4. For which company codes you handle the MISCI invoices?

Next >>



Satisfaction with the MISCI process

5. Have you experienced problems while working with the MISCI tool?

- [ ] Yes, often
- [ ] Yes, sometimes
- [ ] No, never

6. Please choose the best option to correspond your opinion. ?

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree
MISCI tool is easy to use	○	○	○	○
Communication in the MISCI tool works well between the different user groups	○	○	○	○
The invoicing process is fluent	○	○	○	○
I know how the MISCI process works	○	○	○	○
There are enough instructions for the use of MISCI tool	○	○	○	○
There is NO need for additional training for the use of MISCI tool	○	○	○	○
MISCI invoicing fulfils the legal requirements	○	○	○	○
The problems relating to MISCI process are easy to solve	○	○	○	○
Implementing e-invoicing is crucial for MISCI invoices	○	○	○	○

If you answered somewhat disagree/totally disagree to some parts of the previous question, please specify which kind of problems you have encountered?

7. Which things are working well in MISCI process? ?

- ☐ AP approval
- ☐ Archiving of the invoices
- ☐ Attachments
- ☐ Communication in MISCI tool
- ☐ Clarity of error messages
- ☐ Invoice handling
- ☐ Posting issues
- ☐ Process flow
- ☐ E-mail notifications
- ☐ SR approval
- ☐ SR creation
- ☐ Other issues, what?

Comments relating to the previous question

8. Which things are NOT working well in MISCI process? ?

- ☐ AP approval
- ☐ Archiving of the invoices
- ☐ Attachments
- ☐ Communication in MISCI tool
- ☐ Clarity of error messages
- ☐ Invoice handling
- ☐ Posting issues
- ☐ Process flow
- ☐ E-mail notifications
- ☐ SR approval
- ☐ SR creation
- ☐ Other issues, what?

Comments relating to the previous question

Improvement suggestions

9. Is there need for improvement relating to the MISCI processes?

- [ ] Yes
- [ ] Probably yes
- [ ] No

10. Could some of the invoices you handle be processed in some other way? ?

11. Please report all the process errors that you have faced while creating MISCI invoices. ?

12. Please report all the programm errors that you have faced while creating MISCI invoices. ?

13. Free comment ?

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Thank you for your time and effort!

Appendix 2. Survey target group

UPM companies included in the survey target group

Company name	**Geographical region**	**Company code**
Paper Business Group (GHO)	Finland/NE	1107
UPM France S.A.S	France/WE	1103
UPM-Kymmene Timber	Finland/NE	4000
UPM-Kymmene Wood Oy	Finland/NE	5101
UPM-Kymmene Forest Oy	Finland/NE	6001
UPM Raflatac Oy	Finland/NE	3502
UPM Sales Oy	Finland/Europe/NE	2042
UPM GmbH	Germany/CE	1017
UPM Kymmene Ltd	United Kingdom/UKNA	1002
UPM-Kymmene Inc.	USA/UKNA	2010
UPM-Kymmene Austria GmbH	Austria/CE	1020
Myllykoski Corporation GmbH	Germany/CE	1121
UPM (China) Co. Ltd.	China/APAC	1015
Raflatac Pty Ltd	Australia/APAC	3522

Appendix 3. Questionnaire table data

1. Which MISCI user rights you have

	Lkm	*%*
Sales request creator	49	39
Sales request approver	47	37
Invoice creator	25	20
Main user	7	6
Controller	49	39
Some other rights	3	2
None	2	2
Yht.	182	143
N:	127	

2. How many sales requisitions you handle approximately during one month?

	Lkm	*%*	*Kum. lkm*	*Kum-%*
none	15	12	15	12
few (1-5)	61	49	76	61
several (6-30)	37	30	113	90
over 30	12	10	125	100
Yht.	125	100	125	100

3. How long you have been requesting Miscellaneous invoices?

	Lkm	*%*	*Kum. lkm*	*Kum-%*
Less than one year	17	14	17	14
1-3 years	42	35	59	49
Over three years	62	51	121	100
Yht.	121	100	121	100

4. For which company codes you handle the MISCI invoices?

	Lkm	*%*
NE	73	60
CE	31	26
WE	17	14
UKNA	19	16
APAC	2	2
uncategorized	3	2
Yht.	145	120
N:	121	

5. Have you experienced problems while working with the MISCI tool?

	Lkm	*%*	*Kum. lkm*	*Kum-%*
Yes, often	13	11	13	11
Yes, sometimes	82	68	95	79
No, never	26	21	121	100
Yht.	121	100	121	100

6A. MISCI tool is easy to use

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	4	3	4	3
Somewhat disagree	21	17	25	21
Somewhat agree	70	58	95	79
Totally agree	26	21	121	100
Total	121	100	121	100
Mean	3,0			

6B. Communication in the MISCI tool works well between the different user groups

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	4	3	4	3
Somewhat disagree	40	33	44	36
Somewhat agree	65	54	109	90
Totally agree	12	10	121	100
Total	121	100	121	100
Mean	2,7			

6C. The invoicing process is fluent

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	3	2	3	2
Somewhat disagree	29	24	32	26
Somewhat agree	73	60	105	87
Totally agree	16	13	121	100
Total	121	100	121	100
Mean	2,8			

6D. I know how the MISCI process works

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	5	4	5	4
Somewhat disagree	32	26	37	31
Somewhat agree	60	50	97	80
Totally agree	24	20	121	100
Total	121	100	121	100
Mean	2,9			

6E. There are enough instructions for the use of MISCI tool

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	9	7	9	7
Somewhat disagree	48	40	57	47
Somewhat agree	56	46	113	93
Totally agree	8	7	121	100
Total	121	100	121	100
Mean	2,5			

6F. There is NO need for additional training for the use of MISCI tool

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	12	10	12	10
Somewhat disagree	40	33	52	43
Somewhat agree	48	40	100	83
Totally agree	21	17	121	100
Total	121	100	121	100
Mean	2,6			

6G. MISCI invoicing fulfils the legal requirements

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	3	2	3	2
Somewhat disagree	11	9	14	12
Somewhat agree	75	62	89	74
Totally agree	32	26	121	100
Total	121	100	121	100
Mean	3,1			

6H. The problems relating to MISCI process are easy to solve

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	5	4	5	4
Somewhat disagree	39	32	44	36
Somewhat agree	73	60	117	97
Totally agree	4	3	121	100
Total	121	100	121	100
Mean	2,6			

6I. Implementing e-invoicing is crucial for MISCI invoices

	Qty	*%*	*Cum. Qty*	*Cum-%*
Totally disagree	3	2	3	2
Somewhat disagree	18	15	21	17
Somewhat agree	77	64	98	81
Totally agree	23	19	121	100
Total	121	100	121	100
Mean	3,0			

7. Which things are working well in the MISCI process?

	Qty	*%*
AP approval	42	42
Archiving of the invoices	17	17
Attachments	31	31
Communication in MISCI tool	11	11
Clarity of error messages	8	8
Invoice handling	29	29
Posting issues	15	15
Process flow	20	20
E-mail notifications	42	42
SR approval	28	28
SR creation	26	26
Other issues, what?	3	3
Total	272	269
N:	101	

8. Which things are NOT working well in MISCI process?

	Lkm	*%*
AP approval	15	21
Archiving of the invoices	26	36
Attachments	14	19
Communication in MISCI tool	16	22
Clarity of error messages	27	38
Invoice handling	8	11
Posting issues	21	29
Process flow	21	29
E-mail notifications	13	18
SR approval	7	10
SR creation	8	11
Other issues, what?	4	6
Yht.	180	250
N:	72	

9. Is there need for improvement relating to the MISCI processes?

	Lkm	*%*	*Kum. lkm*	*Kum-%*
Yes	42	35	42	35
Probably yes	58	48	100	83
No	21	17	121	100
Yht.	121	100	121	100

Appendix 4. Open ended answers of the questionnaire

Appendix 5. Work instructions