Applying risk management into invoicing process

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2023 Laurea

Laurea University of Applied Sciences

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Safety, Security and Risk management

Thesis

February, 2023

Laurea University of Applied Sciences **Abstract**
Safety, Security and Risk Management
Bachelor of Business Administration

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Year 2023 Number of pages 27

The work on the application of risk management to the invoice process in the company X includes 27 pages, 1 table, 5 figures and 1 appendix. The theme of the work was risk management. The goal of the thesis was to study the concept of risk and existing risk classifications, consider main approaches to risk management in the modern economy and study the client company's invoicing process and develop risk controls for risks associated with it. The purpose of this thesis was to perform a risk analysis on the company's invoicing process, identify the impact of risks on its effectiveness and implement a risk control with a user guide. Theoretical study of the topic was carried out by the analysis of literature and standards. Applied work was conducted by interview methods, brainstorming sessions and Bow-tie analysis.

In the work, risks were identified and analyzed. Expert interviews were conducted to study the invoicing process of the client company. Then risk identification was performed through brainstorming sessions with company employees. After risks were identified, they were analyzed through the Bow-tie method. According to the results of the risk analysis, the most significant risk for the invoicing process of the company X was the risk of entering incorrect data on the work performed by the company's employees. Based on the findings, it was decided that a guide should be developed for the company's employees to reduce the likelihood of risks being realized in the invoicing process. The guide was then developed at the end of the work and distributed to the company employees.

Keywords: risk management, risk analysis, invoicing

Contents

1 Introduction

In market conditions, companies in various fields of activity are subject to risks. Risk is an integral element of economic activity and accompanies all its directions. For any business, it is important to anticipate any changes in the conditions of its operation that can have a negative impact (Merna & Al-Thani 2008). Therefore, risk management is one of the key competencies for the long-term success of any company. The correct use of risk management in an organization allows maximizing profit and minimizing losses due to the risks that have arisen.

The topic of this work was chosen because risk management plays a big part in today's business environment, since any company's activity is constantly associated with the risk of unforeseen losses. The key to the survival of any company is its financial stability (Merna & Al-Thani 2008). This work discusses invoicing, a key factor in company finances, as well as the risks associated with the process of invoicing. Risks in the invoicing function are a set of unfavorable outcomes in which the company may lose or receive less of its income. For the company to reduce the negative impact of such risks, it is necessary to identify the risks and develop a system to prevent them.

The goal of this work is to study the mechanism of invoicing in a company and develop measures to control the risks associated with it. To achieve this goal, several tasks were set and solved. The first step was to gather information. Information gathering was done in three distinct stages. Firstly, the concept of risk and existing risk classifications were studied. After this, main approaches to risk management in the modern economy were studied, with the emphasis on identification and analysis of risks. Then theoretical foundations of the invoicing process and the risks that are associated with it were studied. After the information gathering stage, the actual risk analysis was started. Risk analysis was performed on the invoicing process of the company. Impacts of risks on the invoicing effectiveness were identified. When risk analysis was completed, a guide for the company employees was developed. The purpose of the guide was to instruct the employees on the invoicing system to minimize invoice errors and prevent risks for the company. The object for which the risk management measure was developed was the company X. The information gathered in interviews with employees of the company was used as an information base for performing the risk management.

2 Theoretical background: Risk management process

The theoretical part of this work consists of several blocks, each of which describes in detail the ideas and theses that were used in the practical part of the thesis work. To describe the theory as informatively as possible in this chapter, specialized books were used, links to

which are presented in the text. The objects of study were analyzed from the point of view of the topic of this work, and as a result, an independent theoretical concept was formed, which became the basis for the practical part.

2.1 Risk management

Risk management is the process of making and executing management decisions by people and businesses aimed at reducing the likelihood of adverse events and minimizing possible losses caused by their implementation (Merna & Al-Thani 2008). Risk, in turn, is the effect of uncertainty on a goal or a probable event as a result of which positive, neutral or negative consequences may occur (ISO 31000). The Institute of Risk Management defines risk as a combination of the probability of an event occurring and its consequences, which can be both negative and positive. Carl Young, in his book Metrics and Methods for Security Risk Management (2010), writes about the three components of risk that can accurately characterize the threat it represents: likelihood, vulnerability, and impact. Probability is the potential for a threat to occur, vulnerability is a property of an individual, system or business that provides an opportunity for the threat to materialize, and impact is the consequences that occur after the risk is realized. Young combines these components into an expression that can be used to evaluate risk:

Security Risk (threat) = Likelihood x Vulnerability X Impact

Risk management in a company is not a set of momentary actions, on the contrary, it is a continuous cycle of actions, and is also part of the overall business management (Merna & Al-Thani 2008). As a process, risk management includes a certain set of stages that can be implemented both in strict sequence and in parallel with each other. According to Principles of Risk Management and Insurance by Rejda, McNamara and Rabel (2022), the key steps in risk management are identifying risks and assessing them, choosing risk management methods, developing a strategy to reduce the likelihood of risk realization and minimizing possible negative consequences, and assessing the results achieved and adjusting the strategy. Hopkin (2017), in turn, represents the process of risk management through the concept of 8Rs and 4Ts, which he depicts in the form of a diagrammatic illustration (figure 1).

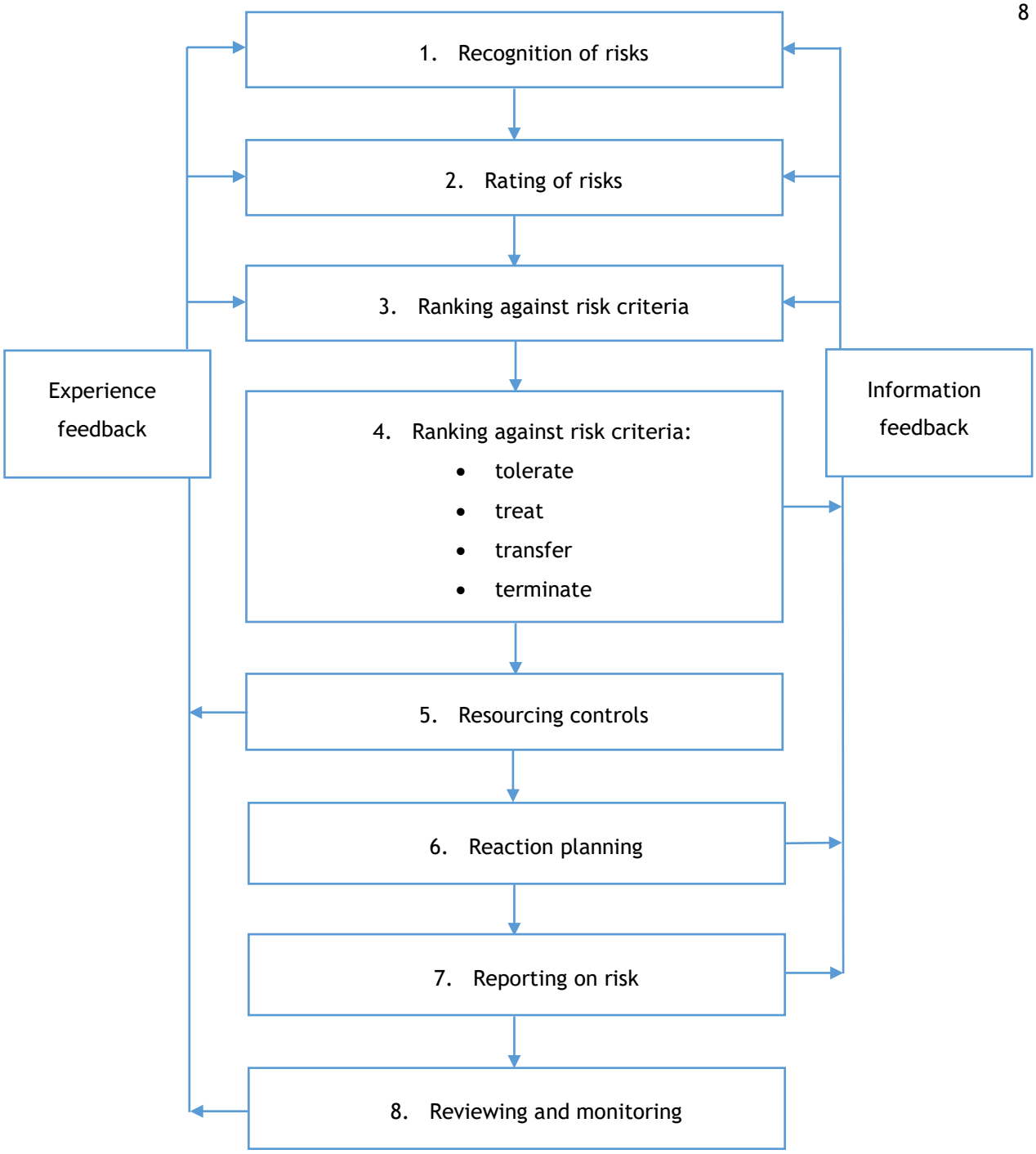

Figure 1: 8Rs and 4Ts of risk management

2.2 Identification

According to Hopkin (2017), identification is the first of the main steps in risk management. Identification refers to the process of finding and compiling a list of the organization's risks. Identification, like other stages, is not a one-time action. On the contrary, it, in combination with analysis, is a continuous process carried out throughout the entire risk management. In case, if little is known about the risks or their properties and, accordingly, they cannot be effectively managed, the identification stage is a self-sufficient step that is performed before

the analysis. The result of this stage, first of all, is the basis for the implementation of the further risk management process, namely the analysis of risk information (Hunziker 2021).

Some approaches to risk management assume preconditions for risk identification. For example, Wolke in Risk Management (2017) mentions the systematization and classification of risks as a component of risk identification. In order to identify all possible risks as accurately as possible, Wolke divides them into financial and productive ones, which, in turn, are divided into several categories. He advises to categorize risks with particular care because incorrect risk allocation can lead to less effective risk management in the long run.

Hopkin (2017) also offers several risk classification systems. One of them is classification by the duration of the impact of the risk on the business and its operations. Thus, risks can be short-term, medium-term, and long-term. Hopkin also notes the importance of highlighting which aspect of the business this classification applies to. For example, short-term risk in a strategically important process is of greater significance than medium-term risk in a minor operational process. In addition to classifying risks by their duration, the author also proposes to classify risks by their nature. He suggests several frameworks by which risks can be classified (table 1).

Standard or framework	**COSO ERM**	**IRM standard**	**FIRM risk scorecard**
Classification headings	Strategic Operations Reporting Compliance	Financial Strategic Operational Hazard	Financial Infrastructure Reputational Marketplace

Table 1: Risk classification system

This classification allows the company to further assign a person responsible for the risk strategy, determine its risk appetite and risk capacity in relation to each group, and form the context for further risk analysis. The approach to risk identification usually depends on the size of the company and the form of risk management in it. In smaller companies, risk identification may be limited to listing adverse events and uncertainties, while in larger companies, internal policies and standards for this process may be developed.

2.3 Analysis

The essence of the analysis stage is to assess those risks that were identified at the previous stage. The purpose of this step is for the company to understand the risks and their impact on its strategies and operations and subsequently reduce their impact on the company's

operations (Fundamentals of risk management 2017). During this stage, the analysed risks can also be ranked according to the magnitude of their potential impact. Then the company compares the already analysed risk value with the acceptable one, i.e. acceptable level of risk and decides what to do with these risks: accept, reduce their value or completely abandon projects or operations associated with risks. Risk analysis can be applied to all risk categories, regardless of their nature or other characteristics.

According to Hopkin (2017) there are two main types of risk analysis: quantitative and qualitative. Quantitative analysis methods use mathematical and statistical calculations of the likelihood of risks occurring and their potential impact. Qualitative methods use peer review for analysis.

In qualitative analysis, the expert assessment is based on the subjective assessment of experienced professionals and experts of various risk parameters threatening the company. It is reasonable to use these methods when collecting the necessary information that cannot be formalized, that is, its incompleteness or unreliability does not allow the use of accurate risk assessment methods. The advantage of these methods is the speed of obtaining information at a relatively low cost. So, if a company needs to quickly make one or another management decision regarding some risk, but there are no resources to conduct a quantitative analysis, the company can apply one of the qualitative methods. The disadvantage lies in the high level of subjectivity in risk assessment and, accordingly, the company's lack of confidence in the reliability of the result obtained. In this case, the company may adopt additional methods of analysis. Also, to increase the reliability of expert assessments, company can resort to a more demanding selection of experts and specialists (Fundamentals of risk management 2017).

The result of a qualitative analysis can also be in a quantitative form. So, for example, if the analysis process includes not only a description of risks and their components, but also a cost estimate of losses as a result of the realization of risks, then the result of the analysis will be combined from quantitative and qualitative assessments. Sometimes the results of a qualitative analysis can be the source for a quantitative analysis, which in turn will already determine the numerical parameters of individual risks (Fundamentals of risk management 2017).

The need for companies to conduct quantitative rather than qualitative analysis is to identify and analyse risk characteristics and parameters. And the cumulative results of alternative quantitative methods will increase the amount of risk management methods for company to choose from. The purpose of quantitative analysis is to define risks and their characteristics in the form of a numerical expression. Such methods involve risk assessment in absolute or relative terms. In absolute terms, risks and their parameters are measured in monetary terms of losses that the company will incur if the risks are realized. The risks in relative terms are

defined as the number of possible losses related to some point of comparison. Comparison can be made to any value convenient for the company, for example, the costs of certain operations or the expected profit from a project. The choice between calculating an absolute or relative risk is determined by the purpose of the analysis. So if a company wants to calculate a certain type of loss when some of its functions stop, then it is reasonable to use absolute values. If a company wants to compare the amount of losses compared to the previous period or industry averages, then relative values are suitable for this.

All methods of risk analysis, whether qualitative or quantitative, are not without drawbacks. Therefore, to obtain the most accurate result, it is advisable to use several different methods. Due to their different nature, the methods will produce different results, but despite this, such an analysis will reveal factors that can be detected when using one method and hidden when using another. The combination of different methods in risk analysis affects the accuracy of the assessment and the reliability of the results in different ways. Methods that complement each other make it possible to identify existing risk trends and allow predicting risk levels in the future.

2.4 Response

The next stage of risk management is risk control, which consists in making decisions to reduce risks. The purpose of this stage is to reduce risks and their parameters to a level acceptable to the company (Young 2010). At the same time, the company can also do nothing, in other words, take the risk, if it is reasonable. After all, the amount of efforts made by the company to control risks should be proportional to the magnitude of these risks.

According to Young (2010), risk control can be a variety of measures to reduce the severity of the consequences of risks or the likelihood of their occurrence. At the same time, the introduction of such measures may change the situation in the company and lead to the emergence of new risks or an increase in the significance of existing risks. Thus, after the implementation of the control system, companies can revise their existing risk assessments. In addition, measures to improve the company's ability to identify hazards and analyze them can also be implemented in parallel with measures to reduce the risks themselves.

Hopkin (2017) identifies four main strategies in risk management: avoid, transfer, reduce and accept risk. Each of them has its own advantages and disadvantages. It is important not only to approve a certain risk strategy and implement it, but also to review this decision subsequently, possibly adjusting it. Preventive actions in relation to a risk may change its magnitude, and then subsequent planned actions in relation to the risk may not be relevant. It is important to constantly improve the risk management system and provide a timely and adequate response to existing risks.

Risk acceptance is a risk response strategy applied when the risk is rather insignificant in accordance with risk assessment made by the company. In this case, the company does not change its activities in any way and admits the existence of risk. This is justified by the fact that the potential losses from the realization of the risk are not large enough to justify the cost of reducing it. It is important to note that the acceptance of risk as a response strategy must be conscious and adopted as a result of the analysis of all risks and the establishing of the company's priorities. If the analysis was not carried out or was not done properly, the company may unconsciously choose to accept risks as a strategy for responding to them due to a lack of information. The company should be prudent in choosing a risk response strategy and decisions should not be based on the absence of an action plan or lack of information (Hopkin 2017).

Risk transfer is a risk management strategy that involves transferring all or part of the risk to another party. The other party may, for example, take over responsibility for responding to a risk or preventing it. This strategy involves entering into an agreement with the party accepting the risk, according to which the company pays the accepting party for its services and, if the risk materializes, receives financial compensation. It is advisable to take such a decision accompanied by an assessment of the cost of this strategy, since in long-term projects the transfer of risk may be more expensive than its acceptance (Hopkin 2017).

Avoidance strategy involves the complete exclusion of risk from a process or project by a company. The company then adopts methods that completely prevent the realization of the risk. In accordance with such a strategy, the company may be forced to abandon some projects, and hence profits, or change its goals or processes. If the company still wants to continue looking for other ways to achieve its goals, it is advisable to understand that the options found will also carry new risks. Thus, the avoidance strategy is very costly to implement. If a company is still not ready to rethink its goals and give up the profits or spend money on avoiding risks, it may also change its attitude towards risks. For example, reconsider its risk appetite, or the level of risk a company takes in its activities (Hopkin 2017).

Risk reduction is another response strategy that involves reducing the likelihood of its occurrence or the impact on the company. The reduction is applied if the company does not have the opportunity to abandon the process containing risks or transfer the risk to another party. Reduction methods are suitable for different types of risks and with different parameters. At the same time, it is important to monitor the use of these methods and constantly evaluate their effectiveness. Risk reduction should continue until the risk reaches an acceptable level (Hopkin 2017).

2.5 Invoicing

Invoicing is the process of issuing invoices for the goods delivered or services rendered to the client for subsequent payment (Hayes 2022). The invoice, in turn, is a document that is provided by the seller to the client, which contains all the necessary information for payment. Such information may include a list of goods and services, their quantity and price, various features of these goods and services, tax fees, information about the seller and client, and payment data. The invoice can also contain the terms of the transaction and a detailed description of each item sold. Usually, companies have a certain approved template for issuing an invoice and the rules and sequence for entering data into the document, as well as their verification. There are also various ready-made electronic solutions that simplify the process of creating and sending an invoice.

Kenton (2022) says that errors in the invoice can be made in such elements as the invoice date and number, company name and address, payment details, product, and service information, including name, units of measure, quantity, price, and total cost. In addition, there are optional elements that are not required to be filled in but may be present depending on the type of transaction, for example, the contract number and the invoice payment due date. It is important not only to carefully fill in all this data, but also to describe in an informative and accurate way what the client will pay the bill for. A break down with a detailed description of goods and services will help to avoid misunderstandings.

According to Hayes (2022) and Kenton (2022) the following risks may occur in invoicing process: Late payment occurs when a customer does not pay an invoice by the agreed upon due date, causing a delay in the payment of goods or services. This can put strain on a company's cash flow, as funds are not available when needed to pay bills, invest in new opportunities or meet other financial obligations. Late payments can also increase administrative costs, as staff must follow up with customers and take action to collect payment. In some cases, late payments may result in the need for legal action, which can be time-consuming and costly. Companies can implement credit policies, set clear payment terms, and monitor their accounts regularly to ensure timely payment and mitigate this risk.

Non-payment occurs when a customer refuses to pay or is unable to pay an invoice, resulting in a loss of revenue for the company. This can cause significant financial harm to the company, especially if they are relying on the payment to meet their own obligations or invest in new opportunities. To mitigate this risk, companies can perform credit checks on new customers and follow up promptly on overdue invoices (Kenton 2022).

Invoice disputes can occur when a customer raises objections or disagreements about the amount or goods/services listed on an invoice. Disputes with invoices can arise for a variety of reasons, such as overcharging, incorrect billing, or differences in interpretation of the

agreement between the customer and the company. Invoice disputes can lead to a need for negotiation and can be time-consuming to resolve, causing delays in payment and strain on cash flow. In some cases, disputes may escalate and result in legal action, which can be costly and damaging to the company's reputation. Companies can implement clear billing processes and ensure that invoices accurately reflect the agreement with the customer to avoid or at least mitigate this risk. To prevent needless disputes over misunderstandings or such, companies should also establish clear communication channels with customers to address any concerns or questions about invoices promptly. Having a solid contract in place that outlines the billing process and dispute resolution procedure can help prevent and resolve invoice disputes as well (Kenton 2022).

Error-prone manual process refers to the manual creation and management of invoices. Manual entry of data can lead to human errors in data entry, calculation, or documentation. Manual invoicing processes are time-consuming and can make it difficult to track the status of invoices and payments. Errors in invoicing can cause customer dissatisfaction, delayed payments, and potentially escalate into legal issues. They can also increase administrative costs, as staff must spend time correcting mistakes and following up with customers. Implementing automated invoicing systems streamline the process, reduce errors, and provide real-time visibility into the status of invoices and payments is something companies can look into to prevent this risk. Automated invoicing systems can also improve efficiency, reduce the workload on staff, and provide a more professional and organized billing process (Kenton 2022).

Finally, lack of transparency is also a risk involved in invoicing. Lack of transparency refers to the difficulty in tracking the status of invoices and payments, which can lead to inefficiencies and miscommunication between the company and its customers. This can make it challenging to follow up on overdue payments, reconcile accounts, and manage cash flow effectively. The lack of visibility into the invoicing process can also make it difficult to identify and resolve any issues or disputes that may arise. Implementing systems that give real-time visibility into the invoicing process, such as automated invoicing and payment tracking systems, are a way to reduce this risk. These systems can help companies track the status of invoices and payments, follow up on overdue payments, and resolve disputes more effectively (Kenton 2022).

3 Risk assessment and developing risk control measure: Company case

According to Fundamentals of risk management (2017) and Corporate risk management (2008), controlling risks is an essential aspect of risk management and helps organizations to mitigate the impact of risks on operations, finances, reputation, and other critical areas.

There are many reasons why controlling risks is important. Risks have the potential to cause harm to individuals, organizations and the environment. They can also disrupt an organization's operations and business continuity. Risks can cause losses and damage to assets and reputation. By controlling risks, organizations can minimize the potential harm that risks are associated with, ensure their operations continue even if their risk were to materialize, minimize the risk of losses and negative publicity caused by risks materializing and make informed decisions about risk management strategies, allocate their resources effectively and prioritize risk mitigation.

In the development part of this work the case company was used to provide insights into the topic of the work. Findings from the company analysis were used to gain in-depth understanding of the real-world company and its practices. The company research was conducted through interviews, and findings from interviews contributed to the development of the risk control for company's invoicing process.

3.1 Company description

The client of the development project is a media technology company. The main service they perform for their customers is the production, management, and distribution of media. The company was started in 1996, when the industry of digitized media was just born. New video editing technology was entering the market and the founder of the company brought such a solution to Finland. First years of the business were the most challenging, the main struggle was to finance the next product. Eventually good reputation and committed and dedicated leadership made it so that the ball started rolling. The company was selected as the system supplier for one of the biggest television channels in the country.

Right now, the company performs all the operations that cover the technological needs of media production, as well as its management and distribution. Thus, over the years the company has grown from an equipment supplier to a service provider. As the company has a lot of experience and knowledge of the needs of media businesses, they offer consultation and planning as a service to companies that want to transform their business in the media field. Consultation is provided both in operational workflows as well as the technical side. They also physically do installations and implementations of technology. Currently the company services multiple different production studios with requests that can vary from installing servers to configuring access control. The company also installs AV systems on large ships.

A newer venture for the company is software development. Software development is now the fastest growing service area for the company, as for example, automation is increasing rapidly in the media sector. The company's software development team implements different

kinds of software solutions for their client companies and develops their own product which is sold with the SaaS (software-as-a-service) model.

Video and audio calibration is also done as a service by the company. The company's experts analyze the image produced by a monitor using measuring devices and adjusting the settings of the monitor until the client is happy with it. They may use specialized equipment, which is far more accurate in terms of colors and such than the human eye. In audio calibration, audio devices are configured in a way where the devices producing audio are used to their full capacity and work is done to minimize the negative effects of environmental acoustics, for example. The company also provides continuous maintenance and monitoring service for its clients. This means that the client can pay for peace of mind in terms of critical systems being monitored at all times, and fixes implemented as soon as possible after problems are found. There is also life cycle management, where clients that buy services from the company get updates and upgrades to their system as long as they are being used. This provides clients with ease of use and no need for technical knowledge of their systems.

3.2 Invoicing process: Expert interview

Expert interviews were conducted to study the invoicing process of the company. An expert interview is a method of gathering information from individuals who have expertise or specialized knowledge in a particular subject or field (Merna & Al-Thani 2008) the purpose of an expert interview is to gain insight, gather information, and expand understanding about a particular topic. Expert interviews may be conducted in person, over the phone, or through video conferencing, and typically involve a series of questions asked by the interviewer to the expert. The questions are designed to gather information, perspectives, and insights from the expert. The interview process may be structured or unstructured, depending on the goals of the interview and the preferences of the interviewer and expert (Hopkin 2017).

This method was chosen because expert interviews can provide rich, in-depth information and insights that can help to better understand a subject and its complexities. Interviews were conducted in person and involved a series of questions about company's invoicing process asked to the experts. Office manager and financial assistant acted as experts. The outcomes of expert interviews were expressed in narrative form and were focused on their perception of the invoicing process in the company.

Interviews had a semi-structured format. Sets of questions and topics to be covered were prepared in advance. This format allowed to balance between structured list of questions and flexible flow of the conversation.

According to the company experts the invoicing process in the company consists of multiple phases. First, the company prepares an invoice by colleting the necessary information, such

as the customer's name, billing details, as well as the goods or services provided and the total amount due. Then the company manually creates an invoice and distributes it to the customer. After that, the customer either pays the invoice according to the agreed-upon payment terms, or the company follows up with them with a reminder. After the bill has been paid, the company archives the invoice for record keeping.

The company is a service-based business, and they bill their customers for the services they have provided. These services can be diverse, ranging from short tasks to projects that last for several month and require upkeep and maintenance. They deliver their services in a variety of ways, for example on-site visits or through remote work. It typically involves customer interactions, such as customer making a request for a service or adding some tasks to the existing project. The company has a task management system in order to organize, prioritize and assign these tasks and projects to employees and teams. This system ensures that all the services requested by the customers are completed efficiently. This way everyone in the team is aware of what needs to be done and when it needs to be done.

Throughout the process of providing the service to its clients the company employees define and document the tasks they complete. Task management system also allows them to determine the order in which tasks should be worked on based on their importance and allocate tasks to appropriate employees based on their workload and skills. Another feature of task management is monitoring the progress of their work and ensuring that tasks are completed on time. The system allows users to provide regular updates in the status of the tasks, which helps everyone in management keep track of what is going on. Once the work is done, employees that are responsible for the task use the system to give information that further will be used for invoicing. This information can be such as a clear and detailed description of the service provided, the date on which the service was provided, and number of hours worked. Having this information in the task management system available helps financial management to create accurate invoices. The invoice later serves as a record of the service being provided and further can be used for the accounting and tax purposes.

3.3 Risks identification: Brainstorming

In order to identify risks in invoicing process the brainstorming session was held. Brainstorming is a group problem-solving technique that involves generating a large number of ideas and solutions in a short period of time. In risk management it is often used in a collaborative setting to identify potential risks and find creative solutions (Hopkin 2017). To use brainstorming as a risk identification method, a team of stakeholders, such as employees, managers, or experts, can be assembled to participate in the session. The facilitator of the session will start by introducing the topic of risk identification and then encourage the team to generate as many potential risks as possible. These risks can be written down on a

whiteboard or shared electronically in real-time. Brainstorming is an effective risk identification method because it leverages the collective knowledge and experience of the team and encourages creative thinking and open discussion (Merna & Al-Thani 2008).

To effectively brainstorm for risks a group of relevant stakeholders and expert was assembled. Group consisted of office manager, who is organizing and coordinating various tasks in the company and managing schedules, financial assistant, who is responsible for ensuring the financial stability of the company, and individual employees who use the task management system. For the brainstorming session, it was important to choose people that have diverse skills and perspectives, so they could help to generate wider range of ideas. For example, the office manager is responsible for organizing and coordinating various tasks in the company, including managing the schedules and setting priorities. Thus, the office manager is able to identify ways to improve productivity and efficiency in the office and spot risks in the company processes. The office manager is also a user of the task management system. They use the system to oversee and coordinate projects and monitor the overall performance of different teams. The financial assistant was selected as a brainstorming team member as an individual from financial department. The financial assistant is responsible for the financial stability of the company and is able to identify risks and potential impacts associated with incorrect invoicing. The individual employees were chosen to be in a brainstorming team as end-users of task management system. They not only collaborate on tasks and projects and use the system to keep track of their own work, but also fill in all the necessary information for the invoicing.

When the team was assembled, the scope and ground rules were set. It was defined that the focus should be on the invoicing process of the company. Open and honest discussion was encouraged and it was made sure that everyone felt comfortable sharing their ideas. Results were recorded in an electronic document so that it could be easily reviewed and analysed later.

During the brainstorming session, several risks were identified. Financial losses, which includes overpayments, underpayments and delayed payments was listed as a risk. Reputation damage due to customers being unsatisfied with inaccurate invoicing is another risk. This could materialize into lost opportunities, as unsatisfied customers could choose another service provider. Employees workload could increase from certain risks that were identified. In a case of incorrect invoicing, employees have to correct and reissue invoices, which creates extra work. What’s worse, this work is not productive, as it is effectively doing the same thing twice. This work also includes collection of detailed information to correct the invoice.

3.4 Risks analysis: Bow-tie method

For performing risk analysis, the Bow-tie method was used. The Bow-tie method is a risk analysis technique that provides a visual representation of potential risks and the steps that can be taken to mitigate them. It is named after its shape, which resembles a bow tie. In a Bow-tie, a risk is defined as the consequence of an event that has the potential to cause harm to an organization. The bow tie structure separates the risk properties into two parts: cause or trigger of the risk and consequence or the impact of the risk on the organization. The middle part of the bow-tie represents the control measures that can be put in place to prevent the threat from occurring or mitigate the consequences if the threat does occur. Bow-tie method is useful for risk assessment, as it helps organizations to understand the interconnections between different risks and the control measures that can be implemented to manage them (Hopkin 2017).

Each specific risk from the identified risks was analyzed. For that for each risk its sources and causes were determined. Also the potential impacts and outcomes with the steps and measures that can be taken to mitigate it were defined. The relationship between the causes, risks, impacts and control measures were represented in a bow-tie diagram. For the causes the control measures were of a preventive nature, when for the outcomes the measures were defined to recover from the consequences.

Figure 2 represents the analysis for the risk of financial losses, figure 3 – reputation damage, figure 4 - increased workload of employees who must correct and reissue invoices, and figure 5 - increased workload of employees who must collect the detailed information for the invoicing if it provided incorrectly.

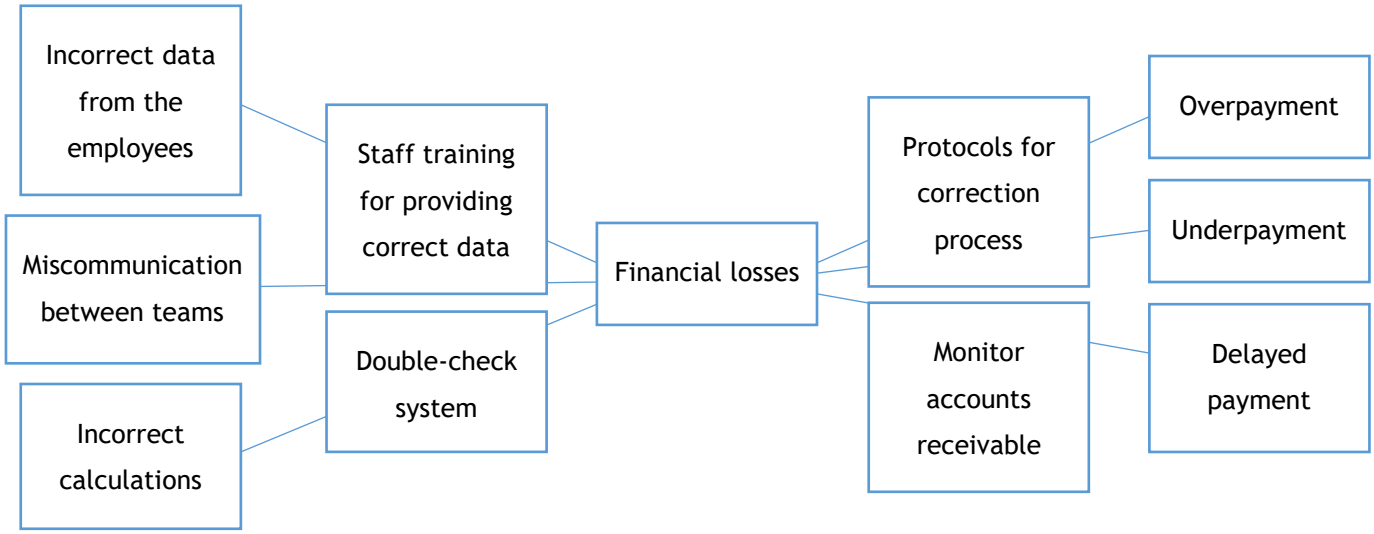

Figure 2: Bow-tie analysis for the risk of financial losses

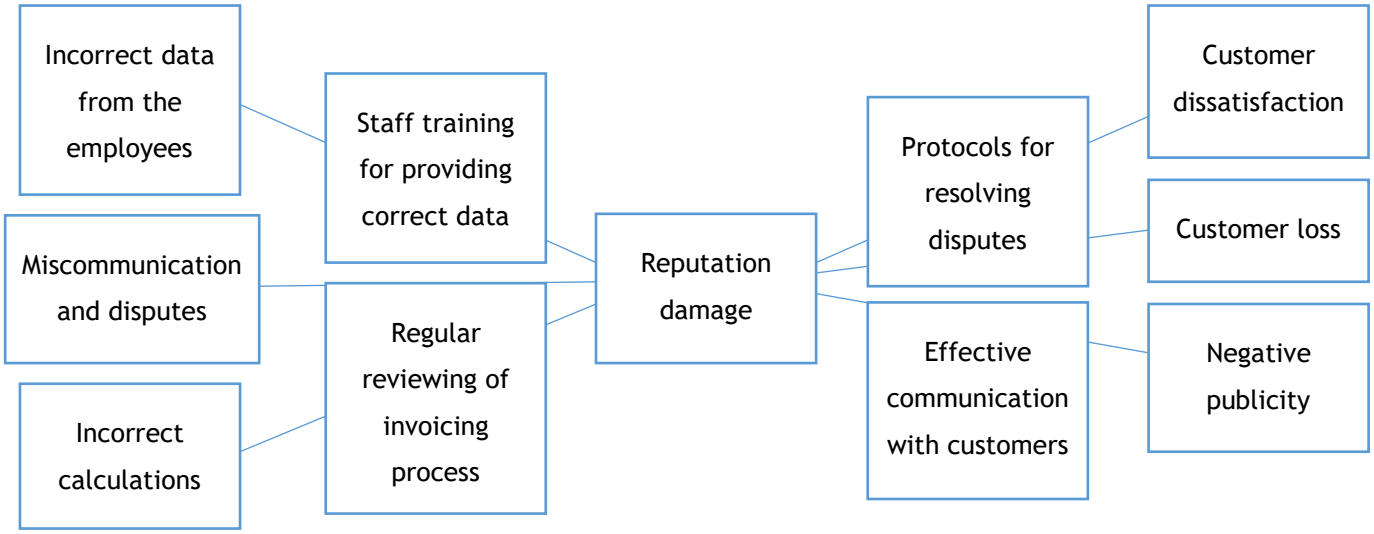

Figure 3: Bow-tie analysis for the risk of reputation damage

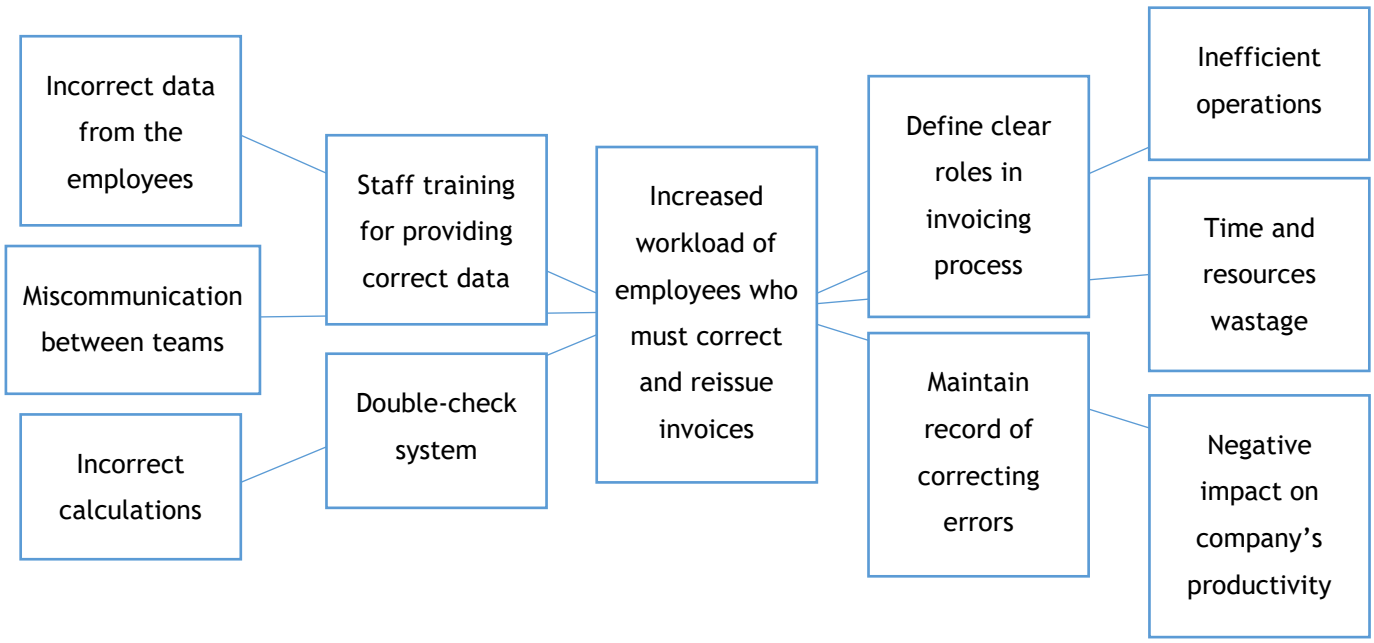

Figure 4: Bow-tie analysis for the risk of increased workload of employees who must correct and reissue invoices

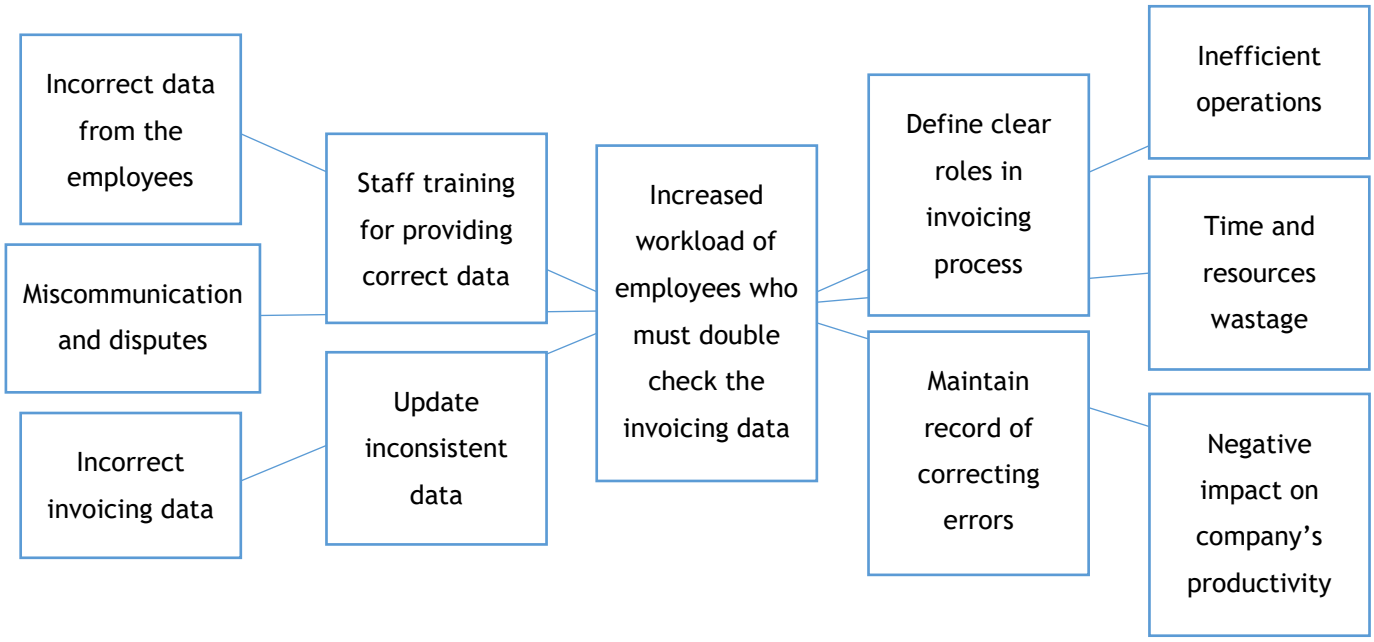

Figure 5: Bow-tie analysis for the risk of increased workload of employees who must collect the detailed information for the invoicing if it provided incorrectly

4 Results: Developing a risk control

Risk analysis outcomes defined the significant potential threat that poses many risks in invoicing. That is, incorrect data provided by employees can result in incorrect invoices being issued which can lead to financial losses, customer dissatisfaction, reputational damage, and increased workload of employees. This thread was prioritized by the company as the one that should be addressed, and the guide for the employees was determined as best control measure to minimize the likelihood of the risks.

Guide to the task management system for its users can provide clear, specific, and step-by-step instructions on how to correctly provide all the necessary invoicing data reducing the likelihood of errors in the invoices. This standardization may help to minimize human error, improve efficiency, and ensure consistency in the performance of tasks, ultimately reducing the risk of financial losses, damage to reputation, legal liabilities, and other adverse outcomes. Additionally, a user guide can help to ensure that all users understand the proper procedures for invoicing, reducing the risk of mistakes or miscommunication. Having a well-documented user guide in place can help increase the efficiency and accuracy of the invoicing process.

To start developing a user guide it was important to identify the user audience, their level of expertise, and their needs and goals. The users of the guide typically would be the employees

and other stakeholders who would use the task management system in their work. The guide would provide guidance on how to effectively use the system, including how to access and input invoice data. This information was then used to determine the format of the guide and the content of it. The format of the guide was chosen to be a PDF file, that is, a digital document that provides instructions and information on how to use a task management system. It may be designed as a step-by-step guide and includes screenshots, diagrams, and other visual aids to help users understand the system. The guide then can be saved in a PDF file and easily shared or accessed by users.

To achieve the purpose, several tasks and processes were determined to be necessary additions to the guide. The guide should have detailed information on how to create and manage user accounts and tasks, description of the process of a task's lifecycle and when to mark task complete and approved, details on how to receive notifications and reminders regarding tasks and information on reporting the completed tasks, including the detailed breakdown of work and workhours. Appendix 1 demonstrates the example of a guide chapter that describes the feature that allowed to add workhours to the task. After creating and distributing the guide, in order to see if any areas needed further clarification or improvement, feedback from users was collected and incorporated into the work.

5 Conclusion

This work was devoted to the issue of risk management and the development of risk control in the organization X. The work achieved its goal - to study the theoretical foundations of risk management, analyze the risks in the company X in its invoicing process and develop a measure to control these risks. In the theoretical part of the work, the nature of risk was studied and the theoretical foundations of risk management in the companies, as well as risk management strategies, were considered. On the basis of these theoretical materials, risks were identified and their impact on the functioning of company X was analyzed. The result of this analysis showed that the most significant risk for the invoicing process in the company is incorrect data entered by the company's employees, which are subsequently used for invoicing. A measure to minimize the risks of incorrect invoicing was the creation of a user guide for the task management system for the company's personnel.
A user guide for the task management system is a critical tool for the client company as it provides a comprehensive explanation on how to provide information for the invoicing. It ensures that employees understand the functions of the system and can accurately enter all data. This is essential for the company's financial process and helps minimize errors and avoid costly mistakes. In the future the user guide can be used as a reference when employees have questions or encounter issues while using the task management system. The guide can also be used as a training tool for new employees, providing them with a clear

understanding of the software's capabilities and how to use them in their work. This can help reduce the learning curve for new employees, enabling them to be more accurate and prevent risks.

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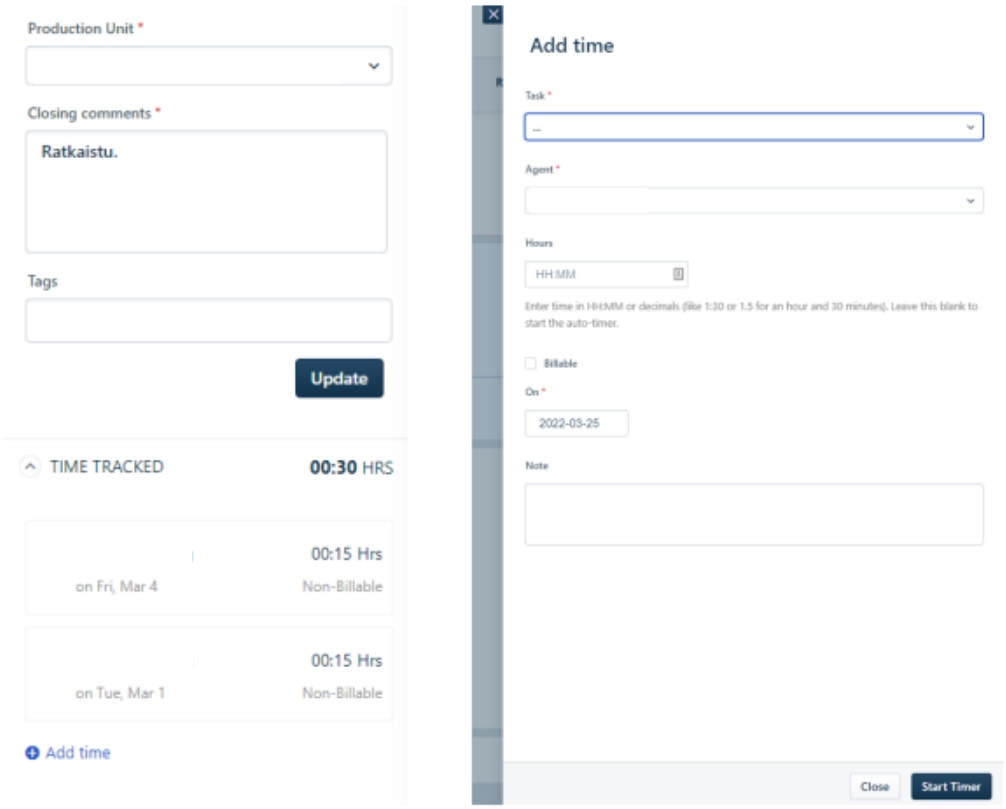
Figures

Tables

Appendices

Appendix 1: The example of guide chapter

Adding work hours



The time entry screen pops up after clicking "add time".

To add spent time on a ticket, the user must first pick the task they have performed regarding the ticket. The user can then set the number of hours and minutes they spent doing the task.