

# Implementing a Financial Planning Software

# Success factors and pitfalls

Katja Luotonen

Degree Thesis International Business Management 2023

# **Degree Thesis**

Katja Luotonen

Implementing a Financial Planning Software - Success factors and pitfalls Arcada University of Applied Sciences: International Business Management, 2023

## **Identification number: 9222**

## Commissioned by: -

## Abstract:

At companies, managers look at accounting information to get feedback on how they are performing. Accounting systems have a lot of data, but it must be sorted and filtered for the viewer to be of any value. For this, organisations use reporting systems. The deployment and implementation of reporting systems can be challenging, and many fail at delivering value. This thesis aims to answer the questions on what the success factors and pitfalls are when it comes to deployment and implementation of reporting systems, and what is it managers want from the system. To answer the questions the thesis uses an action research approach combined with semi-structured interviews. The previous research suggest that the most important factors are leadership and management support, proper planning, mapping out the needs, and cooperation between the superusers and the end-users while building the system. The study is done at a medium-sized company and is limited to managers use of accounting information when planning operations and follow up. The case company will take into use a new reporting software that will replace one that they took in use a few years prior, as it does not serve the organisation. The managers are interviewed to map out their reporting needs, to find out why the last reporting software did not serve them and answer the question of what they want from reporting systems. The results reflect on what the previous research identifies. The pitfalls are confirmed through studying what went wrong in the deployment of the last software, and by avoiding them and applying the success factors in the deployment of the new one. The action research confirms that the major success factors are the involvement of the end-users, management support, and good planning.

# Keywords:

Business Management, Reporting, Financial Planning, Accounting Information, Project Management, Change Management

# Contents

1	Introduction						
	1.1	Back	Background				
	1.2	Aim .		6			
	1.3	Rese	arch Questions				
	1 /	Limit	ations	7			
	1.4	Ctrue					
	1.5	Struc		ŏ			
2	Li	iterati	ure review	9			
	2.1	Acco	unting information's usefulness	9			
	2.	1.1	Accounting Information	9			
	2.	1.2	How Managers use Accounting Information	9			
	2.	1.3	Information Quality	10			
	2.2	Imple	ementation of a Reporting System	12			
	2.	2.1	Project Management of System Deployment	12			
	2.	2.2	System	13			
	2.	2.3	Leadership & Management Support	14			
	2.	2.4	Communication & Information Culture	15			
	2.	2.5	Motivation & User Acceptance				
	2.	2.6	End-user Involvement & Training	17			
	2.3	Sumr	nary on Previous Research	19			
3	M	ethoo	1	21			
	21	Data	Collection	22			
	2.I 2.I	1 1	Action Research	23			
	3.	1.2	Semi-structured Interviews				
	2 2	Data	Analysis	25			
	3.Z 2	Dala 2 1	Analysis	25			
	3.	2.1	Gioja Analysis of the Semi-Structured Interviews				
	_						
4	R	esult	5	27			
	4.1	Resu	ts of semi-structured interviews	27			
	4.	1.1	Leadership Practices and Communication	27			
	4.	1.2	Deployment of Reporting Software				
	4.	1.3	Flexibility of Software				
	4.2	Actio	n Research: Implementing a financial planning software	35			
	4.	2.1	Assessment of the Current Situation	35			
	4.	2.2	Planning Action				
	4.	2.3	Taking Action				
	4.	2.4	Evaluating Action				
	4.:	2.5	Author Reflections				
5	Di	iscus	sion	43			
5.1 Usage of Reports & Accounting Information		e of Reports & Accounting Information	43				
	5.2	Succe	ess Factors & Pitfalls	44			
	5.	2.1	End-user Involvement				
	5.	2.2	Leadership & Management Support	45			
	5.	2.3	Project management	47			

6	Conclusion	.50
Refe	erences	.52
Арр	endix 1. Interview Questions	54

# Figures

Figure 1. The cycles of Action Research (Adapted from Saunders et al. 2019)	22
Figure 2. The three steps of categorisation of the interview data into different codes and	summarising
dimensions	26
Figure 3. Categorisation of codes and themes of the Leadership Practices-dimension	27
Figure 4. Categorisation of codes and themes of the Proper Communication-dimension	29
Figure 5. Categorisation of codes and themes of the Involvement of Users and the Training-dime	nsions 32
Figure 6. Categorisation of codes and themes of the Flexible Software-dimension	34

# Tables

Table 1. Summary on Previous Research	19
Table 2. The Action Research process and the cycle of this thesis	23
Table 3. The table used for analysing the Reflective Journal	25
Table 4. Action Research Cycle: Implementing a financial planning software	35

## **1** Introduction

## 1.1 Background

Managers want knowledge on how the company is doing to get feedback on how they are performing, and receiving the information at the right time is essential for them to do their work well and for the business to succeed. According to Hall (2010), a big part of a manager's work revolves around addressing problems caused by uncertainty, doubt and the possibility of significant errors. Decision-making is considered to be an important part of managers' jobs as the results of their decisions affect the performance of their units, and many organisations reward managers for great performance (Chang et al. 2015). Managers getting reports and gaining knowledge allows them to address problems and make informed decisions.

There is a lot of information in accounting systems, but the issue is filtering the information in a way that makes it useful for managers. According to Saukkonen et al. (2018), the reports often fail at this as the information is either irrelevant or the report is presented in a way that renders it useless. With a proper reporting system that shows both financial data and business data, managers can plan for different situations and manage risk. For management reports to be succesful, the system used must be built with care and the needs of the business context taken into account. The reports must be clear and prepared according to the needs of the different roles of the managers and their respective operative area, and give the readers of the reports the required information without difficulty (Saukkonen et al. 2018). Wee et al. (2022) found that the adoption of business intelligence technology is complex, and it requires changes in the organisation itself to become more data-driven and be able to take advantage of it. Some of the challenges and obstacles that were identified for the adoption were a lack of leadership & motivation, preference for gut feel over data, a lack of skills, and company culture.

To provide managers with the required knowledge when they need it, the management control unit needs to know what it is managers need and how to successfully provide them the information. They also need to improve the co-operation between the business controllers and the managers. Providing the information can be done through a reporting software. To successfully deploy and implement a reporting software organisations need to know the success factors and the change management required of them, to ensure that the system is accepted by the users and the organisation.

I set out to deploy and implement a financial reporting system for the case company using an action research approach, where a new reporting system is taken into use instead of the previous one, which was deployed a few years prior. I will use a reflective journal, semi-structured interviews, meeting notes, and reflect on my learning experiences with the emphasis on identifying the main things to consider when taking into use a reporting system for it to succeed and provide value, and what to avoid so that the software does not end up unused. Therefore, the objective of the thesis is to research what are the success factors when implementing a financial reporting software, so that it will support the managers in their work in the best way possible. I also aim to find out why the previous reporting software ended up unsued, to avoid stepping into the same pitfalls with the implementation of the new one. The thesis intends to provide the readers with knowledge on what managers want from a reporting software, and what must be avoided and taken into consideration when taking into use a reporting software so that it supports the management in their work in the best way possible.

## 1.2 Aim

This thesis investigates what it is managers want from reports, and how to successfully implement a reporting software that provides information to managers. The aim is to contribute knowledge on the factors affecting the implementation of reporting systems.

By doing this, organisations can improve the information-flow, and make informed decisions in their operations and move towards their desired goals. The results can contribute valuable insights for managers, business control units, accounting professionals, and management accounting researchers.

The system that will be taken into use is Finazilla, which imports the accounting data directly from the accounting software. The import is scheduled to happen automatically during the night, but it can also be done manually whensoever. The aim of the project is

to use Finazilla for reporting actuals, budgeting, cash-flow management and forecasting. The main users of the system will be the Chief Financial Officer, the controllers, and the managers who have budgeting and reporting responsibility.

The company had deployed another software a few years earlier, however it was never taken into use on a regular basis. The thesis will investigate why managers did not use it, and what we can learn from that project to succeed in this one.

## **1.3 Research Questions**

The aim of this thesis is to investigate what are the critical factors that affect the implementation of a reporting software, and what is it managers want from a reporting software. To do this the thesis will use previous knowledge together with information gained from the project to answer the research questions. The thesis then attempts to improve the current process at the case company with the knowledge gained from the research.

- What do managers want from a reporting software?
- What are the success factors and pitfalls when implementing a reporting software?

## 1.4 Limitations

The thesis is limited to investigating the deployment and implementation of a reporting system at one medium sized company. The investigation of reporting is limited to managers use of accounting information and other information needed when planning and following up on operations. External reporting will not be included, but it does sidestep into it when investigating reporting. The reporting software is in the beginning mainly used for reporting financial numbers from the accounting software, which is why the focus of the thesis will be on that, and not on operational data like units sold, or profitability of customers, but the thesis does touch upon operational data as it is an important part of what managers need for decision making. The system will be developed to include more operational data once the software has been taken into use for accounting information.

The time frame for the thesis project is around one year, which means that a longer followup will not be made for the thesis. Because of the nature of this action-research where reports are created for managers at the case company, the managers interviewed and for whom the reports will be made for will be relatively low, 5 interviewees. The case company does not have many managers, so the thesis will not investigate differences in reporting for top and middle managers.

## 1.5 Structure of Thesis

In chapter 2 I will review previous literature of IT and BI (Business Intelligence) system deployments and implementations. I will start by providing some background of accounting and how managers use accounting information, as well as information quality and usefulness. I will then continue with factors from previous literature found to affect the deployment and implementation of IT and BI systems, and end by summarising the previous research.

In chapter 3, the method for the thesis is presented as well as the way the data analysis is done. The results of the semi-structured interviews as well as the action research is presented in chapter 4. Chapter 5 will include discussion on the results of the study compared to the previous literature. Chapter 6 will conclude the study and present the implications of the research and its shortcomings, and possibilities for further research will be recommended.

## 2 Literature review

## 2.1 Accounting information's usefulness

## 2.1.1 Accounting Information

Financial accounting together with management accounting are management activitivities that are crucial for a business as they monitor the financial flow of a company. Accounting provides internal and external stakeholders with economic information on the financial position of the business. The information can improve the efficiency of operational activities and aid in the development of the company. Management accounting consists of financial accounting information and can be used to do strategic management, operations planning, budgeting, risk management, business analysis and corporate performance. One of the key reasons management accounting information is used is to support managers in decision-making. (Li 2022)

Hall (2010) argues that the strengths of accounting information lie in the aggregation properties and it being a common language to facilitate communication among managers. Accounting information can be tailored for specific operational concerns, as it provides context which enables managers to debate and discuss what the data means and might implicate. Accounting information can raise to discussion an issue by signalling the need to investigate further. The data serves managers by being put into a specific decision, making it a facilitator of decision-making. It improves their knowledge and ability to make decisions.

#### 2.1.2 How Managers use Accounting Information

Granlund and Lukka (1998) say that companies use accounting information for improving their operations effectiveness. With management accounting, managers can allocate costs better, gaining improved knowledge on the efficiency of different parts of the business. Financial information can be linked with a strategic message to make sure the company is driven towards the goals and the vision the top management has set. According to Jørgensen & Messner (2010), financial information linked together with the strategic message and operations contextualises the information in a way that makes it useful and

actionable, making it possible for the managers to engage in both strategizing and in the accounting information at the same time.

According to Hall (2010), translating operational activities into financial dimensions is one of the most helpful features of accounting for managerial work. He found that managers use accounting information mainly as a resource for mobilising action, i.e., confirming something they already knew and using it as a mean to take certain action. He continues that although the technical improvements and the presentation of accounting information is important, it is secondary to how managers actually use accounting information in their work.

Puskarevic & Gadzo (2014) studied the usage of accounting information and found that it was mostly used for the purpose of control and analysis, instead of performance management. The biggest reasons were low level of development and inadequate adaptation of the accounting function with performance management. They also found that top management used financial accounting information for long term planning.

#### 2.1.3 Information Quality

Kivinen & Lammintakainen (2013) argue that management accounting information today is too late, too aggregated, and too distorted to be relevant for managers. For the information to be relevant for managers, it needs to be of high quality. Information quality in the context of manager reports refers to information specificity, timeliness, accuracy, reliability, format, and overall usefulness. Yeoh & Koronios (2010) define information quality as data accuracy, completeness, timeliness, relevance, consistency, and usefulness of the information generated by the system. Madsen (2012) defines it as accuracy, scope, timeliness, and recency.

Data quality can impact user adoption and perceived value, and bad data will prevent managers from making informed decisions based on data. Data quality is the driver of value provided from the system. The data used in the system should be of high quality and error free, and it must move from the source system within hours or days and not weeks or months to be of use for the decision makers according to Madsen (2012).

#### **Specificity & Aggregation**

Several studies found that the reports the managers received were not specific enough for their needs. Andersson & Mähönen (2014) found that many managers wished to get an overview of the overall development in their area of responsibility, but there were also many who wished for more specific information, as the reports they were delivered were too aggregated to be useful for them. The specificity required was determined by the issue in question. Puskarevic & Gadzo (2014) also found that the data managers used for improving operational efficiency was aggregated data instead of data reported specifically for the operations they were looking at, which meant the data was not detailed and useful enough for seeing what was going on. Accounting information must be delivered to satisfy the needs of performance management and enable operational process management. They also found that the managers wished for accounting information to be able to separate the effect from decisions made by the current management can clearly see how their current decisions are affecting performance and improving inefficiencies.

Kivinen & Lammintakainen (2013) found that managers wanted, in addition to the basic reports, more analysed, refined, and detailed information specified for them. In the current state there was too much information that the managers had to mine and edit to get to the information they were looking for and they did not have the time for that. In other words, managers wished for information to be made specifically for the user needs in question. For the management reporting system to be successful, there must be a systematic way of identifying all user groups, what are the information requirements they have, and what the setting they work in is. Rosedahl (2016) found that the most serious mistake to make in information management is inadequately identifying the information needs of the different user groups. It is also important to categorise the content and the reports in a way all users can find the reports in the system, for example, by creating a report gallery.

In the study of Andersson & Mähönen (2014), they found that the managers would be more likely to use the system if the reports could be designed by the managers themselves instead of them having to use standardised reports. The managers disliked that if they wanted to make any changes, they needed help from the controllers who had the system knowledge. However, Chang et al. (2014) found that most managers do not want to create

reports by themselves, and that they prefer requesting help from IT professionals. It may not be a good option to deliver reports to end-users without communication before, as one of the challenges in delivering content for the end-users is that they may not be able to articulate their information needs, according to Madsen (2012). This suggest that there needs to be end-user involvement in finding out the user needs in what information they want, their work setting, and discovering the differences in training needs. Some may want to build their reports themselves, whereas others want to outsource it to system experts.

#### **Timeliness of data**

Timeliness of data refers to the extent to which data is received on time to take suitable actions and decisions, whereas recency is how up to date the data is relative to the events of interest (Madsen 2012). Hall (2010) found that if it takes too long for events and transactions to show up in the accounting systems, managers will instead of the reports use gossip, gut feel, and observations to make decisions. It was also stated that managers do test the validity of the accounting data by supplementing it with other sources of information, both formal and informal (Hall 2010).

According to Kivinen & Lammintakainen (2013), managers that were using the reporting system had issues trusting in data accuracy, and many of them found there to be too long of delays in the timeliness of the reports, making it less useful for planning, decision-making and evaluation. It also caused haste in budgeting. The mistrust and delay resulted in managers having their own backup systems in place, for example, in Excel, which they used instead of the reporting system. In the study by Andersson & Mähönen (2014) it was also found that the data being up to date was more important than it being highly accurate, meaning that they want the latest numbers as fast as possible rather than having to wait for the data, but it is containing all the numbers.

## 2.2 Implementation of a Reporting System

#### 2.2.1 Project Management of System Deployment

More than 50 % of BI projects fail at improving decision-making processes (Boyton et al. 2015), and most of the projects do not fail because of technological problems, but

because of non-technological problems such as a lack of management support and the project not being aligned with the strategic vision of the organisation. Because of the high failure rate, it is critical to handle the project with consideration, and deploy adequate resources for it.

According to Rosedahl (2016), BI capabilities do not get implemented overnight, rather, they are a journey through which organisational competencies are developed over longer periods of time, which is why the project cannot be seen as a normal IT system deployment, instead it should be seen more as the implementation of a strategic tool where it requires resources over a long period of time. Madsen (2012) recommends making a road map for the project management. To do this, one must first create a working group and do interviews with them, analyse the interviews, create categories of work, and then create a visualised analysis in the road map. After this the road map must be presented to the organisation. From the interviews Madsen says one must get information on what it is the managers need, and how they get their information from the current systems. There also needs to be a business case why the project is even needed in the organisation; what is it the software will fix, and the organisation will gain value from? By having the 'why', the project will set out on a stronger basis (Madsen 2012).

## 2.2.2 System

According to Yeoh & Koronios (2010), the two most critical factors when implementing a BI system is the process performance, i.e., how well the process of the implementation went, and infrastructure performance, i.e., the quality of the system and the data output. Infrastructure performance has the same success variables with information system deployment, including system quality, information quality, system use, and the information processing capabilities such as the system being flexible, scalable, and able to integrate new data. The system chosen needs to be able to adapt to future changes, for example, if the information needs grow, or source systems change. Madsen (2012) says that the required system abilities are scalability, usability, repeatability, and flexibility. They represent key parts that are needed for the success of the system.

If the system is unable to scale with the business, performance of the system suffers as well as user adoption. The hardware and software need to be able to continue to function well despite changes in size or volume. The system needs to be user-friendly, as not everyone is tech savvy. If the system is not user-friendly and easy to learn, it will impact how many will use the system. If the system is not flexible, the system will not be able to adapt to possible changes in the business. There might be new transactions added that the system needs to be able to read. Repeatability in this context refers to the system being able to repeat a process again with consistency and high-quality deliverables (Madsen 2012).

In the study by Kivinen & Lammintakainen (2013), where they studied the deployment and usage of a management information system, they found that the managers thought that the usability of the information system was quite positive, and it was easy to learn. However, one issue was that it took many numbers of clicks to find what the managers were looking for, and the response time was slow, causing frustration and inconvenience. An informant in their study said that managers do not want to use a software where it takes several minutes to load up the wrong report, which sums up the issue well.

#### 2.2.3 Leadership & Management Support

Previous research has consistently identified leadership as the most important factor affecting IT implementation, showing that leaders can establish an organisational culture that enhances the acceptance and implementation of IT systems (Seah et al. 2010). Leadership when deploying and implementing a reporting system is defined by Madsen (2012) as the individual who is accountable for the successful execution of the program. They need to have strong passion for what the system can deliver for the organisation and need to be able to persevere through a lot of obstacles and challenges on the way.

Strong and committed leadership can increase the effectiveness of adoption of BI systems at organisations where there is resistance against change and challenges in intelligence sharing between employees or units, according to Seah et al. (2010). Wee et al. (2022) found that to successfully adopt BI software, leaders need to be able to mobilise people, processes, and the technology into a synergistic relationship and develop analytical capabilities from which the organisation can create value. In their study, they found that the companies that succeeded accomplished it by having leaders who built a culture of

motivating, training and incentivising usage of business analytics and reaching targets and performance metrics.

Management support and strong leadership can break down barriers against change and improve the 'mind-set' within the organisation (Yeoh & Koronios 2010). Wee et al. (2022) and Yeoh & Koronios (2010) suggested that a project-champion can be pointed out, whose job it is to promote innovation, obtain resources and organisational support for the project. This aids the project by showing others the potential benefits of the technology, data management and by developing the information culture. The champion should be a business-IT hybrid who can both understand the business and have technical expertise to aid in the problems faced.

## 2.2.4 Communication & Information Culture

Two of the most common reasons for unsuccessful BI deployments are employee resistance and change-management related issues, according to Seah et al. (2010). Organisations must show leadership in their organisation to increase the use of information in management work. It is necessary to use information systematically and discuss information quality when making strategic decisions and in other management functions as well, to foster an organisation culture where information forms the basis of decision-making.

Up to half of the information use is explained by information culture, according to Kivinen & Lammintakainen (2013). They found in their study that because of the lack in both communication and marketing of the information system, and the unclear communication on access rights, user education, guidance, and general instructions, like data saving, managers thought that the tool was only for top managers and not for middle. They also found that top managers did not trust the data received from the system, which was why many had their own backup systems.

The top management must show leadership in their organisation to increase the use of information in management work. It is necessary to use information systematically and discuss information quality when making strategic decisions and in other management functions as well, to foster an organisation culture where information forms the basis of decision-making.

According to Kivinen & Lammintakainen (2013), communication about what information is important and crucial to different managers is essential to raise systematic information use in decision-making, so that the reports and information received in different units can be better used for decision-making. Then the information can be made into tacit knowledge which promotes the culture of information and knowledge sharing between the units and on an organisational level. Some managers in their study did not know if information sharing was allowed or not, which highlights a lack of good communication. Hall (2010) found that managers in cross-functional teams were able to both communicate and debate cost issues together when they were allowed to communicate and there was the common language of accounting. This helps the organisation in gaining a better understanding of the costs and how they form. Accounting information can report a deviation, which then prompts discussion and investigation on why a margin has fallen low.

According to Saukkonen et al. (2018), collective knowledge can be expanded through dialog and debate between units by discussing either technical, financial or sustainability figures, even if the parties may value some factors over other. Accounting information can serve to open a dialog on different ways of reasoning whether something should be included or excluded in decision-making.

Saukkonen et al. (2018) found that many managers that use MA-information (management accounting) in decision making do not really reflect or discuss the decisions. They suggest that organisations that wish to improve the effective usage of MA-information should 1. Involve different users' viewpoints in the decision-making process that are already using MA-information, 2. Find ways to use MA-information in unusual decision options, 3. During decision-making, enable reflection on the values, roles, and responsibilities of different users. This improves the understanding of pre-assumptions that affect decision-making.

#### 2.2.5 Motivation & User Acceptance

Wee et al. (2022) found that the biggest barrier of adoption of the system was motivation to use the software and the lack of knowledge around what value one can get out of it. Yoon et al. (2014) studied individual user acceptance of BI applications and found that the important factors are intrinsic motivation, extrinsic motivation, and supervisor & coworker support of the BI system. Extrinsic motivation refers to performing an activity because through it the person receives a valued outcome such as pay or a promotion, whereas intrinsic motivation is performing an activity without an external reward, meaning that the performance of the activity is the reward itself. Social influence such as supervisor support and co-worker support mean that when co-workers or supervisors perceive that the BI application is useful, the individual is also more willing to adopt the new system.

Chang et al. (2014) did a study on managers' intention to use BI software and found that intangible rewards strongly influence the intention to read and use information from the reports. They found that psychological income (e.g., the feeling of belonging, appreciation, recognition) affects the motivation to use reports more strongly than tangible rewards (e.g., monetary benefits or material). Organisations should build a feedback mechanism to encourage both reading reports, sharing information, and making good decisions. By maintaining an atmosphere of information sharing, the organisation benefits by building the expertise of others.

## 2.2.6 End-user Involvement & Training

According to Kivinen & Lammintakainen (2013), co-operation and openness between the managers and the ones who build the reports is essential when designing the management information system, as it promotes the collective sense making and enhances mutual understanding of the impact the management information system has on their daily work. Andersson & Mähönen (2014) found that many managers wanted to co-operate with the controllers, as the controllers were better suited for advanced work, for example, to deliver specific and detailed information. When a manager worked on their own, they relied mostly on standardised reports. They also found the controllers assisting the managers in filtering the information and making customised reports for them.

Yeoh & Koronios (2010) found that having high user participation helps ensuring success in the implementation process. Through this, the main users will learn data dimensions, business rules, context and other information that needs to be in the system for it to deliver value to the organisation. This also results in users learning from the process more which evolves the system further. Through this the users will also realise the full potential of the reporting and analysis process and come up with new possibilities, which will enhance the current version of the system with the feedback and evolve it even further.

Rosedahl (2016) found that one common reason for unsuccessful implementations of BI systems is insufficient training. The users need adequate training in using the software, but they also need to learn the value of the system and how it can help them do their job better and improve the processes. The training and the support of users must be on-going and continuous, and it is critical to understand the differences in the users and their specific needs to create a customised training plan for each type of user.

Kivinen & Lammintakainen (2013) found that managers do not want technical training of the system, they want training in what reports they can get, and how to interpret them. They also found that the knowledge and skill between managers varied a lot. Saukkonen et al. (2018) also found that different managers appreciate different scope, content, and timing when it comes to management accounting information regarding the decision. She found that managers are unable to link their viewpoint into decision-making because of the lack of expertise in management accounting tools, i.e., they need to gain knowledge so that they can link strategic goals to the decision-making process in financial terms.

## 2.3 Summary on Previous Research

Table	1.	Summary	on	Previous	Research
-------	----	---------	----	----------	----------

Summary on Previous Research			
Accounting Information	<ul> <li>Used to gain knowledge how the business is standing</li> <li>Gives an overview of the whole business</li> <li>Delivers information on a specific part of the business</li> <li>Can signal a need to investigate further</li> <li>It is a common language for managers for discussion and debate</li> <li>Must be of high quality to be useful; recent, error free, and tailored for specific needs</li> </ul>		
Pitfalls in the deployment of the system	<ul> <li>Lack of planning and not having the 'Why'</li> <li>System must have scalability, usability, repeatability, and flexibility, otherwise it cannot serve the organisation through changes in size and volume</li> <li>Deployment of system is complex, needs resources and care</li> </ul>		
Success factors in the deployment the of system	<ul> <li>Leadership and management support can break down resistance to change in an organisation</li> <li>Creating an organisation culture that encourages the use of information and fosters analytical capabilities</li> <li>Show the benefits of the technology and the value it can deliver</li> <li>Social influence affects positively; the willingness to adopt rises from seeing one's supervisor or co-worker perceive the software useful</li> <li>Involvement of the end-users; end-users and system experts learn the business rules and context</li> <li>User specific training</li> </ul>		

A summary of the previous research is presented in Table 1. Managers use accounting information for gaining knowledge on how the business is standing. It can give an overview of the whole business or deliver information on a specific part of the business and signal a need to investigate further. Accounting information's strengths lie in it being a common language that managers can use to discuss and debate what the data may mean or implicate.

However, for the information delivered to managers to be useful, it needs to be of high quality. Bad data will prevent managers from making informed decisions. The data must be recent and tailored to the specific need in question. The data needs to move preferably in a day or less between systems for it to be useful for managers, and it must be error free. If the managers do not trust the data received from the system, they will instead use other sources of information and their self-made spreadsheets.

Many of the deployments fail at delivering value, which is why the project must be considered with care and given resources. The critical factors causing the high failure rates have been recognised to not be because of technological issues but as nontechnological issues, such as lack of leadership and management support. For this, it is highly important to create a road map for the project and convince management of the importance of the system by solving business specific needs. Despite establishing the biggest reasons for failure being non-technological, the system itself is also of utmost importance for delivering value. The system needs to have the abilities of scalability, usability, repeatability, and flexibility. Without these, the system will be unable to service the company through changes in size and volume, and it being difficult to learn for endusers severely cuts off the amount of people who will use it.

Leadership is found to be one of the most important factors affecting the successful implementation of IT and BI systems. The support of management and leadership can break down resistance to change in an organisation. The job of the leader is to create an organisation culture that encourages the use of information and fosters analytical capabilities. Others need to be shown the benefits of technology and what value it can deliver for them to better accept the changes, as one of the biggest barriers affecting motivation to use the software was a lack of knowledge what value they can get. Social influence was a huge factor in motivating usage, meaning that seeing one's supervisor or co-worker perceive the software as useful, the individual's willingness to adopt the system also rose. Leaders need to incentivise usage of information, reaching targets and performance metrics to raise user acceptance rate. The encouragement to read reports and make decisions based on data benefits the organisation by building expertise.

It was found that involving end-users resulted in a higher success rate of the deployment. Through involvement, both end-users and the system experts learn business rules and context needed to deliver value from the system. This also raised in end-users the understanding of what value they could get from the software. The end-users also learned to use the software, which was important as insufficient training was one of the common reasons for unsuccessful implementation. The previous research suggest that training needs to be made to specific user needs and it needs to be ongoing and continuous.

## 3 Method

This is an action research study. Saunders et al. (2019) define action research as a research method that aims to solve a practical issue in an organisation in a collaborative and iterative process. According to Coghlan and Shani (2018) action research is an approach that simultaneously aims to both take action and create knowledge. Action research brings forth change and competence in organisations by developing and solving real organisational issues while simultaneously adding to scientific knowledge. It is an evolving process that is undertaken in collaboration between the researcher and the organisation. It is also a dynamic process where knowledge found through the project is applied back to the project.

Coghlan and Shani (2018) characterize action research by it being conducted in the present tense rather than the past, and where the aim is both bringing change in an organisation and in generating robust and actionable knowledge through the evolving process that is undertaken as collaboration and co-inquiry with people rather than on people or for people. Action research provides the organisation with actionable knowledge and contributes to theory by creating a better understanding of 'how we know' and 'what we know' (Saunders et al. 2019).

According to both Saunders et al. (2019) and Coghlan and Shani (2018), key components of the action research are that there is a real organisational issue needed to be addressed, and the researcher is in an active role of the project. Coghlan and Shani (2018) continue that for the researcher to conduct the action research, they must have sufficient access to addressing the issue and being part of the core project, which plays a role in tackling the issue and progressing the action towards the desired organisational outcome. For the researcher to be able to conduct the action research, there must also be both transparency and common understanding between the organisation and the researcher.

According to Coghlan and Shani (2018) action research works by doing rigorous assessments of the context and the purpose of the research and by going through a fourstep process which starts with naming and constructing the issue, planning action, taking action, evaluating action, which leads to planning further action and research for upcoming cycles. The four-step cycle is illustrated in Figure 1. Coghlan and Shani (2018) continue that the cycles do not need to be enacted in a rigid manner; expression and an imaginative approach can be used. There can be multiple cycles operating simultaneously, where it is typical that the cycles have different timespans. It is also allowed to view the entire project as one cycle. Within the one major cycle, there may be minor cycles which have specific incidents as further cycles of action and reflection.



Figure 1. The cycles of Action Research (Adapted from Saunders et al. 2019)

Action research was chosen because it is the most suitable approach to the case, as the organisation at the case company has identified the need for a new financial reporting software which will work for reporting of actuals, budgeting, forecasting, and planning. Together with the implementation of the software, the reports will also be developed so that they suit the needs of the management. Action research enhances both the core project and the thesis through the learning experiences and the reflections. Through the enhanced core project, we can learn more and apply the learnings back into the core project. This will create new knowledge in the form of a better understanding of what it is managers want, how they use reports, and how to successfully implement a reporting software.

Action research was both possible and a suitable approach because the organisation had identified the issue, set the goal, and appointed me as a part of the core project, where the reports were made in collaboration with the management. I worked in the financial management team at the case company, and I had access to the new system through a

superuser/system expert role and was the main project member of deploying and implementing the software, as well as the one building the reports and the budgeting base. Therefore, I had an active role in the core project and was able to do the action research. For action research theses, the appropriate time horizon is mid/long, and participation is critical (Saunders et al. 2019). Both requirements were satisfied in this project.

## 3.1 Data Collection

## 3.1.1 Action Research

This action research project consists of one cycle, where the cycle serves as the primary data collection method. The data is collected throughout the action research by writing notes and reflections into a research journal. The research journal will also include meeting minutes and the semi-structured interviews. The cycle of the action research is illustrated in Table 2.



Table 2. The Action Research process and the cycle of this thesis

The purpose for this structure was to gather data through action and to contribute to current knowledge on how to successfully deploy a reporting software that serves the company in the best way possible in their needs of budgeting, forecasting, and reporting. Critical success factors were identified through the research in the literature review, and through a meeting with the CFO the actions were chosen as the most important. Semi-structured interviews were held with the managers to gain insight into their needs and what their thoughts were around the last reporting software, as recommended by Madsen (2012) in the previous literature. The data collection from the interviews are discussed in chapter 3.1.2.

In **Assessment of the current situation**, the issue why the cycle was necessary was constructed and what was wanted from it. In the **Planning Action** part of the action research, the actions to be taken were planned. In **Taking Action**, the planned action and the research were applied to the project. In **Evaluating Action**, a meeting with the CFO was held, where the project was discussed, and the actions chosen were evaluated. Meeting notes were taken and analysed by the author, and then author reflections were written. The reflections were made by analysing the reflective journal and how the action taken reflects on the problem diagnosis and planned action.

According to Coghlan & Shani (2018), in action research, data collection and analysis cannot be traditionally done as they are inextricably linked to each other, and knowledge is created through the action. They also argue of the importance of reflection which is the key enabler of learning in action research, which is why it is according to them essential to keep a reflective journal during the action research.

For this thesis, I kept a reflective journal. The different part of the cycle was described, and the process, the action, and the outcome were reflected upon. The journal entries were first in a notebook, then moved to electric format, making it easier to link the reflections to each other to find possible echoes of learning in between entries, which enabled further questioning and inquiry. The journal also included the meeting notes and informal notes that came up throughout the project.

## 3.1.2 Semi-structured Interviews

The interview method was also used for data collection as Madsen (2012) highly recommends interviews for finding out manager needs and how they currently get their information. Semi-structured interviews were held with 5 managers from the case company. The interviews were recorded and transcribed. The purpose of the interviews with the managers were to gain knowledge in the managers work, what they use reports for, what their needs are, what type of training they need, so that the reporting software can support their work in the best way possible.

The interviews also inquired if there were reports in other software that could be moved into the new one, so that information is not in several different software, as well as if there was information that they need but cannot currently get. In addition, the questions went into the organisation's information culture, previous experiences, how the interviewees think the reporting should be developed, their thoughts on the last reporting software, and what must change so that they can get more value out of reporting. The interviewees were informed the interviews are confidential, meaning their identity would not be mentioned in the thesis. With the gained knowledge I was able to plan the action together with the literature review.

## 3.2 Data Analysis

The reflective journal was used as the primary data source for analysing this action research. The reflective journal's summaries for each action in the research cycle was further summarised into a table for the purpose of data analysis. Table 3 presents the table used for the data analysis of the action research. The table consisted of the actions taken and the reflections. The actions were analysed through the following questions: What was diagnosed as the issue? What was planned? What actions were taken? What were the outcomes? A meeting was held with the CFO to discuss the project to get critique and to further expand on the reflections. Meeting minutes were written and analysed.

## 3.2.1 Analysis of the Reflective Journal

The reflective journal was analysed and used for the action research evaluation.

Table 3. The table used for analysing the Reflective Journal

Data Analysis of Reflective Journal		
Implementing a financial planning software		
What was diagnosed and constructed as the issue?		
What was planned?		
What actions were taken?		
What were the outcomes?		
Meeting minutes		
Authors reflections		
Learning experiences		

#### 3.2.2 Gioia Analysis of the Semi-Structured Interviews

The semi-structured interviews were analysed with the Gioia method. The Gioia method is a qualitative data analysis method. It is a systematic way to code the data in several rounds. In the first round, the data is coded with terms and codes that are informant centric. In the second round, it is coded through researcher-centric concepts, themes, and dimensions. After the first- and second-order coding, it is aggregated into dimensions. (Gioia et al. 2012) Figure 2 presents how the data was categorised, put into different codes, and then summarised into dimensions. The coding of the transcribed interviews was done using Taguette, a software for qualitative research. In the first round, the data was coded into informant centric terms and codes. In the second round, I used researcher-centric codes. In the third round, the codes were aggregated into dimensions which were then analysed.



Figure 2. The three steps of categorisation of the interview data into different codes and summarising dimensions

## 4 Results

First the results of the interviews are presented. The interview quotes are translated from either Finnish or Swedish into English. The results of the interviews were used to identify and plan the actions in the action research. After the results of the interviews, the results of the action research cycle are presented.

## 4.1 Results of semi-structured interviews

#### 4.1.1 Leadership Practices and Communication

The interviewees were asked about leadership, communication, information culture, and about the last reporting software being replaced with a new one. During the interviews a lack of leadership practices being an issue for using reports came up in several ways, for example, change management, communicating directions, and setting goals. These came up especially during the questions concerning the last reporting software and its usage.



Figure 3. Categorisation of codes and themes of the Leadership Practices-dimension

#### **Unclear Directions and Goals**

For the interviewees, it had been unclear what they should report and follow up on, and what the goal with both the last reporting software and the reports themselves was. An interviewee said that if the follow up was improved, it would also improve the reporting process. When it came to the old reporting software, it had also been unclear who the system was for, causing uninterest in participating in the deployment of the old software. This was recognised as a lack of leadership practices and an absence of communication.

<sup>&</sup>quot;[...]and If no one asks for the information, then I do not need that report. But if we followed up on things better, then it leads to me using the software more and start following up on the information in a whole other way. It goes hand in hand. We need to think about the needs we have and develop the reports from that. [...] But the reports must also be used for something, not just for the sake of reporting,

but for analysing or some other function. The information should be used for decision-making of upcoming things instead of managing by looking into the rear-mirror. We could use the information to a better extent than what we are now." (#2)

## Lack of Motivation

Several said that they did not see a reason to put energy and effort into using the last software. One reason was that as they had not needed to report forward financial numbers, it did not create the habit of looking at the reports regularly. Other reasons were the software lacking in what they needed.

"Because I have not been required to report forward, I have not really followed up on all numbers. Only sometimes for my own interest, and that information I have gotten through other channels than the reporting system." (#2)

"Simply put I have not had the time. And there is so much going on for everyone it's important it's easy to use. [...] I have like 20 different software I use. And everything is changing constantly, new software is deployed, and old ones are taken out of use. To handle the whole picture and to have time for everything." (#4)

Some also said they lacked motivation, time, and resources to start using the last software, and that they disliked some of the previous choices and decisions made concerning software. They thought there was too much going on at once, which caused there not being enough resources for taking into use new things. Some said it felt like as soon as a software is properly deployed and useful, it is time to take into use a new software that replaces the last one. They recognised that there must be enough time and care put into the project, otherwise it would likely fail.

"It's important that there is enough time and resources for projects. Not doing a million other projects at the same time. That's all I will say! It is something I have thought about. It has happened that a software has been taken into use and then no one has time to use it properly, and that's where it will be left. No one uses it. There has to be high motivation to deploy and implement a software and start using it." (#1)

"Leadership must be shown during the process of choosing a software. And then software should not constantly be swapped out to new ones, that as soon as the situation with a software is stable and working, we change to a new one." (#3)

"It has often happened that as soon as the software starts working for us, it is swapped out to a new one." (#4)



Figure 4. Categorisation of codes and themes of the Proper Communication-dimension

## **Information Culture**

There were also questions regarding the information culture currently at the company and how it had changed through the years, and it had gone through a big transformation. Many reported a positive change of increased openness and information sharing in the organisation. It was clearly communicated through leadership that openness is valued and wanted.

"Well, it changed significantly. It is completely different now, like, the way of presenting things. Everything is open and there is a desire for everything to be open, that people share information and what is going on." (#3)

"We have more open conversations, and not just about what has been reported and what has been done, but we discuss things properly before decisions are made." (#2)

"It has become a lot better in the sense that the top management are a lot more open, and we are shown more than what we were shown earlier. In general, I mean. [...] we are told a lot more about the operations and it's really great that we get to know more. We are also perhaps more critical compared to previously when we maybe did not dare to say anything, but with the new top management I have to give credit because they listen and deal with the negative things that are said out loud. You just notice a clear difference. It is important that things that do not work aren't swept under the rug but put up on the table, it's the only way to make things better." (#1)

"Nowadays we are better aware of the full picture because of the increased openness. We go through things more deeply." (#5)

They said it was both easier to share information and to confront different ideas, as the atmosphere was more open, there was more discussion, and they felt that their thoughts and input were appreciated. Critique was also taken positively. This had led to the

interviewees feeling that there was a higher understanding of where the company was standing.

## 4.1.2 Deployment of Reporting Software

## Software not answering user needs

The dimension of importance of user involvement came through the underdeveloped last software, which lacked what the users needed, as well as the trust issues users had in the data. They said planning of the implementation should be done together as well as setting the goals of what is wanted from the project. Needs must be properly mapped out so that there is knowledge on what to build and ensuring a good outcome.

"It is the whole picture, what do you want out of the program, and is it the right program for that use. Because of course you can't do everything. You need to get out of the program what it was you needed. You need to plan properly" (#4)

"Needs. Needs are what should be started with. Who is it done for, who is going to use it, what are their needs as everyone has such different needs, but still have the same basics that everyone can use and get value out of. And how flexible it is to get information out in numeral and graphical format so that I can swap and drill in." (#2)

"I think it's good that many are involved in making the goals what we want a software to achieve. So that you are on the same page. Then it is easier to achieve a good outcome." (#4)

"It should only take a few minutes tops to check things, not that you sit there an hour and you are still unsure if what you get is correct. But the reports I've seen so far look good – as long as you can trust the numbers. Earlier we had to engage the whole financial department to get answers from the system." (#3)

#### Usage of last software

The last reporting software was difficult and complicated to use according to almost all interviewees. This might be because of a lack of training and not involving the users properly in the process of deploying it, causing them to not know how to navigate the software and understand its logic. According to them the last software did not give any value, and it was very difficult to get an overview of what was going on. It was tough to get information out of the software, it lacked several reports they would have wanted to look at, and the budgeting process was also difficult to grasp, as it involved a lot of jumping between pages. There were also users who did not really use the software more than a few times.

"I cannot say that I ever started using it. I did open it once every now and then but in practice it was [name of coworker] who used it for us. The last software gave no added value. It was not user-friendly;

it was weird and clunky in some way. There was no interest to start using it. It was missing a lot of things, so you did not get an overview." (#3)

"All the data I used was not in the last software. And then it would have been in double places. I used my excels because I was not as good as using the last software as my excels." (#4)

#### Training, Trustworthiness of data, and Fear of breaking things

"The training is important. No matter what the software itself is, the training has to be in depth, so that you actually learn to use it. You can have all type of nice reports that you want, but if you can't use the software, they end up unused and there is no benefit." (#2)

All interviewees wanted training in using the new software. Despite the new software having an easier logic to understand, there was still a fear of clicking something that could break the budget or a report. Many thought basics could be taught in a group, but they also said that it is more useful and timesaving for the end-users to have one-on-one training, as the user needs differ so much depending on their area of work. It also came up that several users did not trust the data in the system, and they did not know what data the software included, what frequency it was updated on, and where the data originated from.

"We all have so different needs that it makes more sense to have one-on-one training per person. For example, when we budgeted together just one-on-one where we looked at exactly what I need to use and where I find it, I learned a lot and was able to "stay in the wagon", compared to if I sat there with [team name] and look at their things, which I am not familiar with and do not need, it would not help me much." (#2)

"The new software is definitely easier to use, but it could be easier. I do not yet know what is safe to click and what is not." (#4)

There were some differences in the interviewees when it came to using the software. Some of the managers wanted to use the software themselves, whereas others thought it was more efficient to leave it to the superusers and the controllers, and the managers would just look at the end result.

"I want to be able to take reports by myself. It is not in my nature to ask and bother people as everyone is busy and I just want to quickly look at some things, get what I was looking for, without bothering anyone." (#2)

"I do not really want to use the software; I do not need to. I would rather "call a friend" when I need a report. It is more efficient that way." (#1)

Many also thought that it would be good to hold regular meetings between the controllers and the managers to check up on the reports together, as they thought it would both work as a way to further develop the system, get repetition on the training, and be able to ask about the financial numbers.



Figure 5. Categorisation of codes and themes of the Involvement of Users and the Training-dimensions

## 4.1.3 Flexibility of Software

#### What is wanted from the New Software

The interview questions also included asking what managers want from the new software, what reports they want, and what type of presentation of the data they would prefer. The answers of the reports they wanted was made into a list and used in the project. One informant recognised the vast amount of data the company had that could be used to create reports, and thought it was important that the software can handle importing the data.

"A company like us has so much data. We are drowning in data. And we need a lot of different reports. Which is why I think it has to be easy to get data imported into the software, but then how the reports are built and what reports we want out of it, that is another question." (#4)

Managers want the software and the reports to be flexible and easy to use, and fast. Many highlighted how important it is to get the reports easily and not having to spend a lot of time in the system to get what they were looking for, otherwise they would go to other channels to get the information.

<sup>&</sup>quot;If I need to work really hard to get data out of the software, I will just use an easier and simpler way to get it from elsewhere, it should not take a long time to get the data." (#2)

"It has to be easy to use and to get an overview so we can check the situation. Not that you jump from tab to tab and sum numbers up and wonder why the result is what it is." (#3)

#### What reports are wanted

Many managers wanted basic reports, meaning profit and loss, the balance sheet, with a comparison to different time periods, and comparing the actuals to the budget and forecast, and changing between cost centre-dimensions.

"We want to compare the actuals to the budget and compare to earlier years. We need that. Rolling twelve months would be great, we have not had that earlier." (#3)

"[...] by having the budget and the actuals next to each other I can with one glance see if we are staying in the budget. This type of report gives the overview fast. And then sometimes I may want to go on a more detailed level to look at some accounts, but I do like overviews as they give easy and good information fast." (#2)

It was also said in several interviews that the managers want to get an overview, from where it is easy to drill in in the case of wanting more detailed data for example looking at cost centres or projects more closely, or a shorter time period.

"What we also need to improve is the follow-up on projects compared to the project plan." (#3)

"It has to be easy to drill in when looking for something specific." (#4)

"It should be easy to use and get an overview. I do not really need anything special, but I do want to follow-up on how a project is going." (#5)

Most managers wanted to improve operation efficiencies by using the data form the new reporting system. Some of the managers had other software that showed data from the production with their own KPIs and did not need them to be also in the new reporting software.

"I would like better follow up on investments and improve cost allocation, like now we are putting working hours quite roughly. That would show the actual cost better. [...] We should calculate and compare how efficient we have been in operations." (#1)

"If the system could provide us with trustworthy data or data that is up to date I think we could use it to be more efficient and streamline what we are doing as we know where we are standing." (#3)

"We definitely need to follow up on investments with reports, and optimise. We also need to improve pricing and risk management, so we also need reports for that so we know where we lay. But those are not the same types of reports. It would be great if we could have reports that show how different decisions affect the results. Of course not everything will be visible in reports." (#2)



Figure 6. Categorisation of codes and themes of the Flexible Software-dimension

It was also theorised that once the software is taken into use, more reporting needs will come up as it is realised what type of reports they might want. Graphical data was also wanted as it visualises the data into a format where it's easier to understand.

"It has to be built in graphical format. A page of numbers says nothing, you need to get it in graphs." (#4)

Dashboards were also wished for, which show the most frequently used reports on the front page of the software. This shortens the time needed to spend on the site and the clicks required, as the most used reports are found on the front page when logging in.

"Some software have dashboards and I would really like that, that way I don't need to start from scratch every time to look for my reports. I do not need to click on 75 different things to get the report I want, instead through the dashboard, they are immediately there. I value that because it saves my time, and I don't need to remember a ton." (#2)

# 4.2 Action Research: Implementing a financial planning software

In this chapter, the results of the Action Research will be presented. Please see Table 4 for a summary of the four different phases of the cycle.

Table 4. Action Research Cycle: Implementing a financial planning software

Implementing a Financial Planning Software				
Current Situation	Meetings were held with the CFO and top management. The implementation of the last reporting software was unsuccessful, resulting in the software not being used to the extent it was hoped to be, and not delivering value. The main reasons for the system not being used were not developing the software according to user's and the organisation's needs, a lack of motivation, and a lack of training.			
Planning Action	To ensure the next deployment goes well, we needed to identify user needs and understand how they use information. This was to be done through semi-structured interviews. The needs were mapped out as a list with the information what the report is used for. The required reports were built. The reports were to be categorised in the system so that it is easy for users to find. We had to ensure the users understand what data is available in the system so that they can trust the data. The users were to be involved in the deployment so that they learn to use the system and ensure that the different parts would be built according to their needs.			
Action Taken	Meetings were held with the users to inform about project and what it would entail. Users were interviewed 1-on-1, where they were asked how they use information and they were able to voice their reporting needs, which was made into a list. Meetings were held to create the sub budgets by discussing and brainstorming about how the users with budgeting responsibility. The reports were created and categorised in different folders, and users were able to give feedback, after which changes were made. Most used reports were put in a dashboard for managers to access quickly with ease. Training was held in both using the software, sub budgets, and what data the system includes.			
Evaluating Action	A meeting was held between the author and the CFO. The deployment of the software has been successful, and it is now in use. The actions done were considered appropriate to tackle the issues. The most important parts were identified to be the interviews, the training, and meetings with the end-users, where the parties brainstormed a lot to create the sub budgets and reports to deliver value for the organisation.			
	Further development is still required in the cash flow report and rolling rules, but otherwise everything works as wished before the project started.			
	The author found that the actions throughout the action research process improved the outcome. Results show that the most important actions were the interviews, meetings with the end-users, and tailor-making the reports and sub budgets for the end-users.			

## 4.2.1 Assessment of the Current Situation

The company needs a financial planning software for reporting and planning that gives the users easy access to see the information concerning them, to get a better view and control on the business units. The system must provide both external, internal, and managerial reporting, and to compare different versions and times. It was also a requirement that the ones with budgeting responsibility can do their own budget themselves in the new software, and that they could take reports for their own units.

A meeting was held between me and the CFO to discuss the last reporting software. We concluded that it would not be able to support the company, as it was too clunky to use, and it had not been developed enough for the organisation. It was lacking in reports, there was no integration between the accounting system and the reporting software, and the structure itself would not accommodate the reporting needs. It was also costly, and difficult to use for the superusers, requiring the help of the consultants in simple things for example creating reports.

The new reporting software was chosen on the basis that it was relatively simple and easy to use, works through the browser, and had a built-in integration and partnership with the accounting software. New accounts and cost centres move to the system through the integration and do not need to be manually opened in both systems. The software is Finnish and from a relatively new company, and they respond fast to customer requests and development ideas, and they continuously add features to improve the user experience. The system chosen is Finazilla.

We also decided that the project was suitable for me to do my thesis on as an action research study, and that semi-structured interviews would be a good way to gather information from the users on their reporting needs and investigate what went wrong with the last project. Through the interviews it was identified that the implementation of the last reporting software was unsuccessful, resulting in the software not being used to the extent it was supposed to be. The main reason for the failure was found to be a lack of developing the software according to the users' needs, and the users lacking the motivation to use the software and getting the training in how to do so. This made the software very difficult and cumbersome to use for them, as it lacked what they needed, and they did not know how to navigate the system and how it worked. The last system was taken into use without involving the end-users enough, some of which had only participated in the kick-off meeting.

## 4.2.2 Planning Action

With the information gained from the semi-structured interviews and the literature review, the goals of the action planned was to 1. Ensure that the users' reporting needs are met, 2. Ensure that the users understand and trust the data, 3. Raising the motivation to use the software by involving the users in the deployment.

Several of the studies in the literature review showed that managers' needs are not taken into enough consideration when deploying reporting software, and managers cannot get the information they want through the system. The reports are often too aggregated to be of any value, causing the managers to search for the information they want elsewhere, for example, through gut feel and observations. In the interviews it also came up several times that the previous reporting system did not meet the managers' needs. If the output of the system is not relevant, the managers will not use the new reporting system. To ensure that the managers and end-users get their needs met in the new reporting system, their reporting needs would be mapped out as well as how they use information in their work to ensure the usefulness of the reports. Once the information usage and needs were mapped out, the reports would be created. After this, the reports would be shown to managers, after which they could give feedback on what changes should be made, and what type of reports they still wanted. This process would be repeated until the managers were satisfied with the reports available.

Kivinen & Lammintakainen (2013) found that managers had issues in trusting the data, which causes managers to use other sources, for example, own back-up systems such as Excels, to get the information they needed instead of the reporting system. Through the interviews this also came up for the case company, and I understood that some of the users do not know what all is available in the accounting system and thus in the reporting software. If they do not understand the data, they cannot trust the reports. They also did not know how up to date the different data is, so this must also be clarified. Ensuring the managers are able to 1. Trust the data, 2. Understand Data Type, 3. Data Recency, and 4. Data Source, is crucial for them to use the system, otherwise they will use other sources that they understand better. To ensure that the users trust the data, a plan was made to present a table of all the different data types available in the reporting software, and from what source system it comes from, in what format, and how frequently it is updated to

the accounting system. Through presenting this information, I hoped that the users would gain an understanding of the data and through that gain trust in the reports and the reporting system.

The previous literature also showed that through involving the users in the project, the organisation can gain a lot, as users that are involved in the project give their input and get more committed. This also came up as a failure of deploying the last reporting system, as some users had only participated in the kick-off meeting for the project start, instead of meeting regularly to ensure the system is built for their needs and the users stay up to date about the project. Through involvement, users learn to use the software, their needs are better met as they are involved, and they are more motivated to use the system when they have been a part of the project, and the system experts learn crucial business rules and context to meet the users' needs. We planned that the users would be involved in creating their own sub budgets and their reports, and there would be training provided in using the software. In Finazilla, a sub budget is a spreadsheet in the reporting system where budgeted data is inputted into different rows from where it goes to the actual budget. The rows where the data is inputted has what account, cost centre and timeframe the budgeted data is. There can be several different sub budgets, for example, loans, salaries, and different departments. The previous research suggested that user specific training that is ongoing and continuous is more effective than having the same training for a bigger group.

#### 4.2.3 Taking Action

We had meetings with the users on a department level to inform of the plans of the software deployment and what it would entail.

We held a meeting where we discussed the sub budgeting system, and what wishes the managers had to their own sub budget. The sub budgets were then created by the system experts. We then presented the sub budgets to the users and asked for feedback and made the changes that were needed. They were also given training in the building and the budgeting of the sub budget.

A training-session was held for introducing the software and to give training in the basics on how the system works and all the different parts of it. The training was designed according to user needs, as the managers all have varied needs, and some wanted to delve deeper into the software training so that they could make reports themselves. The training was held in a live meeting one-on-one so that we could focus on their use case.

The reports were created according to the user needs that were mapped out from the semistructured interviews. Some reports were built while the manager watched, but not all, as some take more time to build than others. Managers were shown the reports in a live meeting and asked to give feedback on the reports and if they still wished something to be added or changed. They were also prompted after the meeting through an email as a reminder of the reports and that they can still be changed, and new ones can be created to ensure their needs are met. This was done to ensure the reports meet the needs of the managers, and that they show the information the managers want, in a way that is understandable at a glance.

To ensure the users understand what data is available in the system, and they can trust the data, a table of data was created and presented to the users in a live meeting. The table included 1. Company, 2. Source system, 3. Data, 4. Time period, 5. How it moves to the reporting software, 6. The recency of the data in the accounting system and reporting system. The table included both accounting data, operative data, actuals and forecast data. I also went through what is possible to add to the system if new needs arise in the future. The users were able to ask questions so that if anything was unclear it could be cleared up as well as improving the table. This was done so that the users of the reporting system would understand both what data there is as well as what possibilities there are in reporting, as the data is the basis of building the report. Afterwards they were asked if they thought they had gained a better understanding of the data.

#### 4.2.4 Evaluating Action

This subchapter is written based on the evaluation meeting held with the CFO of which meeting minutes were written, and the user feedback.

The software has been taken into use, and it has replaced many excels that were previously required for both reporting and budgeting. The system does not have a user log to check how often users log in, so we cannot verify how much the system is used by different users in that way. However, based on discussions, the reporting system is mostly used for getting reports to the top management meetings, board meetings, and various other reports that are needed by the financial department. It is expected that the system will be used most actively after budgeting the year 2024, which happens in the last quarter of the year 2023.

The following areas in the new reporting system work: budgeting, forecasting, internal reports, group reports, external reports, board reports, the integration to the accounting system, and end-user access. Users can also click on a row to drill in and see what the numbers contain, like all vouchers per account and cost centre. This is an immense improvement to previous reports. The users also gave feedback that the budgeting process was a lot easier with the new software compared to the last software. The cash flow statement however is still done by excel, and some rolling rules need some development. These require some changes in the accounting system so that it works automatically.

We discussed during the evaluation meeting that the actions done were appropriate considering the constructed issues. The actions were designed to tackle the issues of not meeting the users' and the organisation's needs, a lack of motivation, and a lack of training.

The semi-structured interviews were important to understand the current situation from the manager point of view, learning about how they use information in their work, reports, and their thoughts around the last reporting system that failed at delivering value. Together with the interviews and the previous literature, the appropriate action was possible to plan.

The meetings with the different users were important for discussion, learning about how they budget and report, and brainstorming what type of sub budgets should be built for their cases. We did discuss if it would have been better if the managers built their sub budgets and reports themselves, but we thought that it is better that the system experts build the sub budgets and the reports, because system experts have the accounting and system understanding needed. We did give training in making changes to the sub budgets, but most managers preferred that the system experts do the changes. The user feedback was that the meetings and the training were the most important parts when it came to learning to use the software and the positive user experience. They also thought the process of budgeting and reporting was a lot easier in the new software.

We deemed that creating a table of the different data in the system is an effective and efficient way to teach about the data to improve the understanding and trust in the system. The table makes it easy to sort between versions and companies, and the visual part of the table makes it easier to learn. Presenting the table in a live meeting lowers the threshold to ask for clarifications. Other ways to teach about the data would be more time consuming, such as the users spending time in the accounting department to learn about the accounting system. The table could maybe have been clearer and more readable. The feedback from the end-users was that this was a good way to learn about the system, and the gained a better understanding of what data there is and what is possible to report.

During the evaluation meeting, we discussed what could have been made differently and what was unnecessary. We did make a lot of reports, which made the reporting section of the system cramped and a bit difficult to navigate for a time, but we did clean it up by deleting doubles and by creating folders to organise them. What we also would do differently next time would be to understand the whole picture better before beginning the building and asking for help from the software provider with a lower threshold. Now we attempted to do everything on our own and it wasted some time when it would have been more efficient to contact the customer service, as they reply very fast to all questions. We also had put the forecast and budget into different versions when they should have been the same version, which also caused some unnecessary wasted time. In other words, we did rush into building things without reading instructions, which we would not recommend for others. If we had used more resources the result might be different, but we did get a good working software with the resources we had.

We came to the conclusion that the most valuable part of the process considering the result was meeting the end-users and discussing things, brainstorming, and learning about

what they need and how they view things. The meetings were very productive to both parties, as they lower preconceptions of the system, raise understanding, and make it easier to adopt the changes. Another significant thing was the training we gave in both using the system and the sub budgeting.

## 4.2.5 Author Reflections

I found that the actions done throughout the action research improved the outcome of the project and the deployment of the software was found to be successful.

The previous research showed that to successfully deploy a reporting software in an organisation it is important to involve end-users, ensure data trustworthiness, and the relevance of the reports. The interviews confirmed that there was a need for this through the information gathered around why the last software failed, so the actions chosen were appropriate to answer these needs.

Especially involving the end-users through interviews, having regular meetings, training, and including them in the building of their sub budgets and reports resulted in easy to use and relevant sub budgets and reports. Throughout the involvement in the different parts and the communication the users gained an improved understanding of how to use the system. The end-users were satisfied with the deployed software because of how much of an improvement it was to the previous system. Budgeting was made very easy by having the sub budgets tailor made to the end-users, and reports that showed what was needed to budget the upcoming year(s).

Planning of the action could have been made better by being more organised, meaning that a clearer and more detailed project plan should have been made instead of just the outlines and most important parts. The project could also have benefitted from more resources to ensure the superusers have enough time for the project.

## 5 Discussion

The objective of this action research was to deploy a financial planning system by researching the success factors and pitfalls and studying what it is managers want from a reporting system.

## 5.1 Usage of Reports & Accounting Information

In the previous literature it was found that managers want accounting information to get data on how the business is performing, then using the information for control, analysis, and long-term planning (Puskarevic & Gadzo 2014). It is also used for supporting decision-making (Li 2022). In the case company, the managers did not use accounting information as often and to the same extent as the previous literature suggest, it was mostly used by the financial department and top management. This was mainly because of the last reporting software being cumbersome to use, and the managers not being required to report forward regularly on how they were performing. By having regular follow ups, managers would get into the habit to look at reports. All interviewed managers did have interest in checking on the accounting information more often in the new system for control and further analysis, and to improve efficiency in both operations and projects.

Granlund & Lukka (1998) found that accounting information is used by companies for improving operational efficiency. At the case company, some managers used other systems to check their performance, but those reports did not include accounting information. It was however recognised by the managers as a priority to be able to follow better up on projects, pricing, and risk management, and for this they wanted accounting information.

When it came to what managers want from reports, the managers wished for basic reports from where they could check how the actuals were compared to the budget, and what the forecast looked like. Managers had also wished that it would be possible to see in the reports how different decisions affect the result. Some of this can be done with scenario planning inside the reporting system to try out different situations, for example, price or volume adjustments. According to Madsen (2012), bad data quality impacts negatively user adoption and perceived value, causing them to lose interest in using the system. In the case company, this was the situation for the latest reporting software. It also came up that some managers were not sure what information the reporting system uses. This was tackled in the deployment of the new system by giving the managers training in what data there is and its recency.

In the semi-structured interviews, managers had said about the late reporting system that the information was not of any value because it was not on a specific enough level. It was not able to give an overview for the manager and the system itself was too difficult to use. This was pointed out in the previous research by Kivinen & Lammintakainen (2013) who found that management accounting is not specific enough and too late to be of use for managers. They found that managers that must spend too much time to mine and edit the reports to get what they want instead of the reports being made specifically for them will get frustrated and not use the system. The managers in the case company had to work too hard to get information out of the system, have several tabs open, and still be unsure of what they are looking at. This caused them to find the old system unusable and find other ways to get the information they wanted. In the new system this was greatly improved upon by having the managers involved in the deployment and giving them training, so that they had a better understanding of the system and the data it had.

## 5.2 Success Factors & Pitfalls

#### 5.2.1 End-user Involvement

The main success factors identified in the previous literature were co-operation and openness between the team who deploys the system and the end-users, as it promotes the collective sense making and building of the system, which can enhance the motivation to use the software (Kivinen & Lammintakainen 2013). By interviewing the end-users, I was able to learn about what went wrong in the last project, what to avoid in the new one, and how the managers use information. This combined with the literature review was essential in planning the action to implement the new reporting software.

During the deployment of the late reporting software in the case company, the end-users had not been involved adequately. Not involving the end-users and mapping out the needs of the managers are the major pitfalls according to the previous research (Rosedahl 2016, Kivinen & Lammintakainen 2013, and Yeoh & Koronios 2010). According to Yeoh & Koronios (2010), the involvement in the implementation process is important because the co-operation and user participation improves the superusers' understanding of the business rules and context, different dimensions, what it is the end-users need, how they use the system, and how it impacts their daily work. The end-user learns how to use the system and can realise the potential value gain they can get from using the system. The end-users can with their input improve the system even further. This was confirmed by the action research as in the late reporting software, not involving the end-users resulted in the software not having the reports the managers wanted as it was not built according to their needs, and through involving the end-users in the deployment of the new system we were able to build better as we understood how the managers do planning and reporting.

According to Rosedahl (2016), insufficient training was one of the most common reasons for failure. At the case company, not involving the end-users in the implementation of the late reporting software also resulted in them not knowing how to use the software properly, which was a major contributor for the previous software feeling cumbersome and difficult to use. Through the involvement and training of the end-users during this action research, the managers reported that the new software was easier to use, and they knew how to navigate it, making planning and reporting convenient.

## 5.2.2 Leadership & Management Support

Other factors that affect the deployment and implementation of a reporting system in an organisation is leadership and management support. According to Seah et al. (2010), leadership can affect the organisation by decreasing the resistance against change and enhancing the acceptance of IT systems. In the case company, there was some resistance against change. Several informants thought that some new software had been taken into use too fast and without giving the projects adequate resources. This could be improved with better communication, planning and leadership as suggested by the previous literature.

Leaders can foster an organisation culture where information is used for making decisions and the information forms the basis of decision-making. Jørgensen & Messner (2010) say that leaders should link financial information to a strategic message to contextualise the information for the organisation, making it more actionable. This enables a culture where managers can strategize while engaging with accounting information. Using information and discussing it for making decisions can also be recognised and rewarded at companies. This had not been done at the case company, and what was also lacking was a plan for increasing both psychological income and tangible rewards when it came to using reports, as recommended by Chang et al. (2014). Wee et al. (2022) found that the companies that succeeded in deploying reporting software were those who motivated, trained, and incentivised usage of information and reaching targets and performance metrics. According to Yoon et al. (2014), supervisor support and co-worker support of the system were important factors when it came to user acceptance of the system, which shows it is important leaders show their support for the new systems and the value they can give. In the study by Kivinen & Lammintakainen (2013) managers had thought the reporting tool was not meant for them, and only for the top managers, as there had not been communication and marketing about the system. In the deployment of the late reporting software at the case company, there had not been clear enough communication who the system was for, and what it was for. This may have been the reason why not many participated in more than the kick-off meeting.

In the case company, using accounting information had not been encouraged, which caused several end-users to not be interested in following up on their unit's financial performance regularly through the previous reporting system. However, there had been a cultural shift in the organisation to be more open and encourage more discussion, which all informants thought were positive as it encouraged everyone to give their thoughts on a subject. The usage of accounting information could still be raised by clearer directions and goals when it comes to follow up. The leaders could also incentivise the usage of accounting information and find ways to link it to the strategy.

#### 5.2.3 Project management

For the system chosen to be successful for the company, the technical parts and project management cannot be overlooked. According to Yeoh & Koronios (2010), the system needs to be flexible, scalable, and able to integrate new data, so that it can adopt to any future changes the company faces when it grows, or the source systems change. To Finazilla, the software the case company chose, it is possible to import data through an integration to many different accounting software, and through text-files, that most accounting systems can produce. It is also able to import operative data from the accounting system and through text-files if the operative data is not in the accounting system. Madsen (2012) also points out the importance of the system being usable, meaning it needs to be easy to learn and use by many different people. The system chosen for the case company satisfies these aspects according to the evaluation with the CFO and the feedback given by the end-users. The old reporting software would have required an overhaul to make it work, as so many things in the foundations of the system were not built or built in the wrong way. It lacked in both reports and budgeting that would make it easier for the end-users. It also did not import the information from the accounting information automatically, as the importance of it had been overlooked in the planning phase. Many of the issues in the old reporting software could have been prevented with better planning, project management, and end-user involvement.

Kivinen & Lammintakainen (2013) found that managers had trust issues when it came to how accurate the data in the system was, and that there were serious delays in the timeliness of the reports. If there is a big delay, it makes it difficult for managers to plan, make decisions, and evaluate the situation. This also came up in the interviews for this study; some managers did not trust the numbers that the old reporting system gave, causing them to have backup excels that they would rather look at because they understood them better. In the old system, because the information was manually imported, it was always late and there was a mismatch with the accounting system. This caused the need to do several manual imports per day during the reporting days, as once the reports were looked at, something was found to be missing. For the new system we wanted to fix the issues the managers had by explaining what data the reporting system how detailed it is imported, and the process of controlling the data. This was found valuable according to the feedback of the managers.

When it comes to starting the project, Madsen (2012) recommends companies making a roadmap for the project management and doing interviews with the different end-users. The interviews should provide the organisation with information what it is the end-users need from the new system and from where they currently get the information. The road map should also be presented to the organisation. Rosedahl (2016) finds that the most serious mistake is to inadequately identify the information needs and work settings of the end-users, which is what had happened in the deployment of the late reporting software at the case company. End-users had not been interviewed and involved enough in the system deployment, so the system did not have what they needed. Most of the end-users had only participated in the kick-off meeting. In this new project, we did not do a roadmap nor present the findings in the interviews for the organisation, as the interviews were to be confidential excluding the information on the reports they needed. We did have more meetings with the end-users so that they could be involved in the project. We acknowledged in the evaluation of the action research that we should have done a better job at project management, and doing a road map would have aided us a lot in having more structure. We did instead mostly follow the structure provided by the software company.

Rosedahl (2016) also recommends categorising all the reports and content into a way that makes it easy to find for the users. It came up in most of the interviews that in the late reporting system the end-users had to jump around a lot and not find what they were looking for, which had caused a lot of frustration and that lowered motivation to use the system. This we had to work on as there were so many reports that we had created, some for the financial department, some for the board, some for the end-users etc. It was at times overwhelming to know what the correct report was that one was looking for, but once we categorised and deleted the unnecessary ones it became easier to find what one was looking for. Finazilla has a tagging system that enables reports to be in several different folders, but there is still room for improvement when it comes to categorising by the software company. What we also did was putting the reports the end-users were

most interested in on the dashboard, so that they saw their reports immediately when they logged in and could from the dashboard jump into the report.

When it came to building and designing the reports, Andersson & Mähönen (2014) found that managers that get to design their reports themselves are more likely to use the system than those that use standardised reports. In their study, managers had disliked that if they had any changes that had to be done, they had to contact the controllers/superusers. During the interviews and the meetings with the end-users, I found that managers were not that interested in non-standardised reports, but they wanted the reports to be specified for them, meaning only the cost centres they wanted to follow up on. When it came to the managers being able to make changes to reports themselves, there was a split; some wanted to have the system knowledge to build reports and make changes themselves, whereas the majority preferred the controllers to do the changes. This was also the case found by Chang et al. (2014), that most managers prefer the help from professionals when it came to creating the reports.

## 6 Conclusion

Accounting systems include a lot of data, but it must be sorted and filtered for the viewer to be of any value. For this, organisations use reporting systems. However, for the reports to be useful they must be created with the business context and the end-users taken into account. Many companies provide their managers with reports that are too aggregated to give an overview for the managers, and the systems are too difficult to use, causing managers to go look for the information elsewhere. Deploying a reporting software can be very difficult, as there are many pitfalls that organisations can step into. The case company in this thesis had stepped into several of these issues with the deployment of the last reporting software. It was lacking in many areas and was cumbersome to use, and it was also expensive and required the use of consultants for most issues as there was not enough expertise in-house. Because of this it was decided that it was better to change into a new system and put effort into the project. The new reporting system of the case company has been deployed successfully and is in active use by the financial department and management, it is used for budgeting, forecasting, and reporting. It also provides the organisation with group budgeting and reporting, and it has enhanced the information flow in the company. A lot of manual labour and spreadsheets have been eliminated because of the sub budgets and reports that were created.

Because of the case company being relatively small and not having many managers, I did not study the differences between top and middle managers when it came to reporting and usage of the last reporting system. What was also not done in this study was studying the leadership role in action and how it affects the motivation and information usage. It would be valuable to learn about different ways how leaders can create a feedback mechanism to encourage the usage of information, so future studies should research how it is leaders foster a culture in organisations to increase the usage of information and to make the company more data driven. Another idea for future studies is to link the strategy into the reports and KPIs and to study how it improves the information usage culture. What was also not done was comparing different reporting systems, as the thesis project started after the reporting system had been decided upon. Here it could be interesting to study the involvement of end-users in choosing of the system, and the needs of the users should be mapped out before choosing the system. In the case company, the usage of financial reports was mostly done by the top management and the financial department, whereas middle managers focused more on operational information that they got through other means. As the organisation does not have that many end-users, we were able to tailor-make the reports and sub budgets for everyone, which might not be as feasible in bigger organisations, or then more resources must be deployed for the project. However, the results show that it is highly recommended that organisations do take their time in involving the end-users in the project to find out what they want and how they use information, so that they can have an easier time in navigating the system, saving a lot of time and frustration. With the business context in mind, the superusers who build and deploy the system can make a better end-product. It also enhances the motivation of the end-users, as they have participated in the creation of what they will use. The deployment and implementation of a reporting system is not without its challenges, which is why organisations need good planning, management support and collaboration to improve their internal processes and increase the success rate of the project.

## References

- Andersson, C., & Mähönen, L. (2014). Managerial use of accounting information-A study on how managers use business reports at NCC. Department Of Business Studies Master Programme in Business and Management-Management Controlling. <u>https://www.diva-portal.org/smash/get/diva2:727366/FULLTEXT01.pdf</u> (Accessed: 2nd April 2023)
- Boyton, J., Ayscough, P., Kaveri, D. and Chiong, R. (2015). Suboptimal business intelligence implementations: understanding and addressing the problems, *Journal* of Systems and Information Technology, Vol. 17 No. 3, pp. 307-320. https://doi.org/10.1108/JSIT-03-2015-0023
- Chang, Y. W., Hsu, P. Y., & Wu, Z. Y. (2015). Exploring managers' intention to use business intelligence: The role of motivations. *Behaviour and Information Technology*, 34(3), 273–285. <u>https://doi.org/10.1080/0144929X.2014.968208</u> (Accessed: 9 October 2022)
- Coghlan, D. & Shani, A., (2018). "Conducting Action Research for Business and Management Students", 1st edn. SAGE Publications. London.
- Erro-Garcés, A. and Alfaro-Tanco, J. A. (2020) "Action Research as a Meta-Methodology in the Management Field", *International Journal of Qualitative Methods*. doi: 10.1177/1609406920917489. (Accessed: 4 June 2022)
- Gioia, D.A., Corley, K.G. and Hamilton, A.L., (2013). "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology". Organisational Research Methods, 16(1), pp. 15-31. (Accessed: 29 December 2022)
- Granlund, M., Lukka, K., (1998). "It's a Small World of Management Accounting Practices". Journal of Management Accounting Research, 10, 1998. 153-179. (Accessed: 25 September 2022)
- Hall, M. (2010). Accounting information and managerial work. *Accounting, Organisations and Society*, 35(3), 301–315. <u>https://doi.org/10.1016/j.aos.2009.09.003</u> (Accessed: 26 September 2022)
- Jorgensen, A. & Messner, M. (2010) Accounting and strategising: A case study from new product development. Accounting, Organisations and Society, 35, 2010, 184-204 <u>https://doi.org/10.1016/j.aos.2009.04.001</u> (Accessed: 27 September 2022)
- Kivinen, T. & Lammintakainen, J. (2013). The success of a management information system in health care – A case study from Finland. *International Journal of Medical Informatics*, 82 (2013), 90-97. <u>http://dx.doi.org/10.1016/j.ijmedinf.2012.05.007</u> (Accessed: 9 October 2022)
- Li, Q. (2022). Analytical Study of Financial Accounting and Management Trends Based on the Internet Era. *Computational Intelligence and Neuroscience*, 2022, 1–11. <u>https://doi.org/10.1155/2022/5922614</u> (Accessed: 25 September 2022)

- Madsen, L. (2012), "Healthcare Business Intelligence : A Guide to Empowering Successful Data Reporting and Analytics", John Wiley & Sons, Incorporated, Somerset. Available from: ProQuest Ebook Central. (Accessed: 30th April 2023)
- Puskarevic, S. & Gadzo, A. (2014) Place of Accounting Information in Business Decision Making Within Tuzla Canton Companies. *TEM Journal*, 3(1), 68-80. (Accessed: 18 March 2023).
- Rosedahl, J.L., (2016). *Business Intelligence: Strategies for Improving BI Adoption*, The College of St. Scholastica. Available from: ProQuest. (Accessed: 23 April 2023)
- Saukkonen, N., Laine, T., & Suomala, P. (2018). Utilizing management accounting information for decision-making. *Qualitative Research in Accounting & Management*, 15(2). <u>https://doi.org/10.1108/qram-01-2017-0007</u> (Accessed: 17 September 2022)
- Saunders, M., Thornhill, A. & Lewis, P. (2019) "Research Methods for Business Students". 8th edn. Pearson
- Seah, M., Hsieh, M.H., & Weng, P., (2010). A case analysis of Savecom: The role of indigenous leadership in implementing a business intelligence system: SSIS. *International Journal of Information Management*, 30(4), pp. 368. <u>https://doi.org/10.1016/j.ijinfomgt.2010.04.002</u> (Accessed: 28<sup>th</sup> April 2023)
- Wee, M., Scheepers, H., & Tian, X. (2022). The role of leadership skills in the adoption of business intelligence and analytics by SMEs. *Information Technology and People*. <u>https://doi.org/10.1108/ITP-09-2021-0669</u> (Accessed: 24th March 2023)
- Yeoh, W., & Koronios, A. (2010), Critical Success Factors For Business Intelligence Systems, *The Journal of Computer Information Systems*, vol. 50, no. 3, pp. 23-32. Available from: ProQuest. (Accessed: 28<sup>th</sup> April 2023)
- Yoon, T.E., Ghosh, B., & Jeong, B. K. (2014) User Acceptance of Business Intelligence (BI) Application: Technology, Individual Difference, Social Influence, and Situational Constraints, 2014 47th Hawaii International Conference on System Sciences, Waikoloa, HI, USA, 2014, pp. 3758-3766, doi: 10.1109/HICSS.2014.467. (Accessed: 28<sup>th</sup> April 2023)

# **Appendix 1. Interview Questions**

## BACKGROUND

What is your education? What is your work history at the company? What is your present role?

## REPORTS

Do you need reports in your job? Why/Why not? For what purposes?

## **INFORMATION**

How do you use information in your role? From where do you get this information? Could it be possible to get this information from a reporting software?

## THE LATE REPORTING SOFTWARE

Did you use our late reporting software? How did you use it/Why not? What are your thoughts on the software? Why do you think it did not serve the organisation? Is there anything that could have made you use the software more? Was there anything missing in the software?

## REPORTING

Do you have experience in reporting from earlier workplaces? What was it like/What did you think of it? How has reporting been done in your current job? Has it changed the past years? Is there ways reporting could be developed in your current job? How? Does anyone report to you? Do you report forward?

## NEW REPORTING SOFTWARE

Could the reporting software support you in your job? How? Could the reporting software support the organisations strategy? You have been introduced to the new reporting software, what are your thoughts so far? Is there anything you find important to have inside it? Is there currently information that you want, but cannot get? Is there information you think should be available through the software? Do you have needs for graphical reports? Do you want training in using the software? How should this be provided? What do you think is important when deploying and implementing a reporting software? Thank you for taking part in this research. Is there anything you would like to add?