

ABSTRACT

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THE ADOPTION OF XBRL REPORTING IN FINNISH LISTED COMPANIES

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Starting from the financial year 2020, European listed companies are obligated to start reporting their annual financial statements in a European Single Electronic Format (ESEF) and tagging the financial information using the eXtensible Business Reporting Language (XBRL). The main objective of this thesis is to study the adoption of XBRL reporting in Finnish listed companies. More specifically this study aims to explore how the companies perceive and comply with the new regulation and whether there are any other outcomes of renewing the reporting process than fulfilling the regulatory requirements. To broaden the understanding of the adoption process, equity analysts' perceptions of XBRL reporting are also examined for supportive analysis. The data for qualitative research was collected by semi-structured theme interviews during the first half of the year 2020. A total of six Financial Reporting Directors / Vice-Presidents responsible for the implementation of XBRL reporting in different Finnish listed companies were interviewed. Additionally, four equity analysts and a financial supervisory expert were interviewed for supportive analysis and validation of the findings. The results indicate that XBRL reporting is still new for both the reporting companies and analysts as the users of structured data. The reporting companies do not yet recognise direct benefits from XBRL reporting for themselves. Also, the added value for the analysts is questioned due to the time delay in the release of information and inadequate frequency of data releases. However, empirical research reveals that some companies are using the implementation of XBRL reporting as an opportunity to update their outdated reporting processes. Therefore, the regulation has worked as a trigger for renewing their processes and as a lever to justify the purchase of software for automating the reporting. Hence, some companies have captured indirect benefits from ESEF as the implemented solutions have streamlined companies' reporting processes. The interviewed companies reported having internally struggled with manual reporting processes for a long time. Hence, this study suggests that companies have accumulated technical debt, as the external reporting processes have been unchanged. Moreover, this thesis proposes that government regulation has worked as a trigger to even out the accumulated technical debt.

TIIVISTELMÄ

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XBRL-RAPORTOINNIN KÄYTTÖÖNOTTO SUOMALAISSA PÖRSSIYHTIÖISSÄ

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Alkaen vuoden 2020 tilinpäätöksestä, eurooppalaisten pörssiyhtiöiden on raportoitava tilinpäätös ja toimintakertomus European Single Electronic Format (ESEF) -vaatimuksen mukaisesti yhtenäisessä sähköisessä raportointimuodossa käyttäen tilinpäätöksen merkitsemiseen eXtensible Business Reporting Language (XBRL) raportointikieltä. Tämä tutkielma tarkastelee XBRL-raportoinnin käyttöönottoa suomalaisissa pörssiyhtiöissä. Työ keskittyy tarkastelemaan raportoivien yhtiöiden näkemyksiä ESEF-vaatimuksista sekä XBRL-raportoinnin implementointiprosessia ja sen vaikutuksia. Prosessin ymmärtämiseksi ja pörssiyhtiöiden haastattelujen tueksi, tutkimus kartoittaa myös osakeanalyytikoiden näkemyksiä XBRL-raportoinnista. Kvalitatiivisen tutkimuksen aineisto kerättiin puolistrukturoiduilla teemahaastatteluilla vuoden 2020 ensimmäisellä puoliskolla. Päähaastateltaviin kuuluu kuusi XBRL-raportoinnin käyttöönotosta vastannutta taloudellisen raportoinnin johtajaa. Päähaastatteluiden tueksi haastateltiin neljää osakeanalyytikköä ja tulosten varmentamiseksi finanssivalvonnan asiantuntijaa. Tutkimuksen tulokset paljastavat, että XBRL-raportointi on vielä uusi asia sekä raportoiville yhtiöille että analyytikoille rakenteellisen datan käyttäjinä. Yhtiöt eivät omalta kannaltaan tunnista vielä suoria hyötyjä XBRL-raportoinnista. Myös osakeanalyytikot kyseenalaistavat XBRL-raportoinnin lisäarvon raportoinnin aikaviiveen ja datan saannin sekvenssin vuoksi. Kuitenkin riippuen implementointistrategiasta jotkin yhtiöt ovat hyödyntäneet XBRL-raportoinnin implementointia mahdollisuutena vanhentuneiden raportointiprosessien päivittämiseen. Näin ollen sääntely on toiminut prosessien uudistamisen laukaisijana sekä keinona perustella järjestelmähankintoja. Täten jotkin yhtiöt ovat saaneet ESEF-vaatimuksista epäsuoria hyötyjä prosesseja automatisoivan työkalun käyttöönoton sekä prosessien uudistamisen johdosta. Yhtiöt kertovat tunnistaneensa prosessien automatisoinnin tarpeen sisäisesti jo pidemmän aikaa. Näin ollen tämä tutkielma osoittaa yhtiöille olevan kertynyt teknistä velkaa raportointiprosessien pysyessä pitkään samana ja argumentoi, että sääntely on toiminut laukaisijana teknisen velan takaisinmaksussa.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
ERP	Enterprise Resource Planning
ESEF	European Single Electronic Format
ESMA	European Securities and Markets Authority
EU	European Union
FAS	Finnish Accounting Standards
FIN-FSA	Finnish Financial Supervisory Authority
GAAP	Generally Accepted Accounting Principles
GL	Global Ledger
HTML	HyperText Markup Language
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IR	Investor Relations
IT	Information Technology
iXBRL	Inline eXtensible Business Reporting Language
PDF	Portable Document Format
US	United States
US SEC	United States Securities and Exchange Commission
XBRL	eXtensible Business Reporting Language
XHTML	eXtensible HyperText Markup Language
XML	eXtensible Markup Language

1 Introduction

This master's thesis begins with an introduction to the topic and arguing the motivation for the study followed by determining the theoretical framework aiming to highlight the scientific discussion in which the study is aspiring to contribute. Research questions and objectives are then defined based on the recognised research gap. Also, the delimitations, i.e. the boundaries of the study, are discussed. Lastly, the research method and structure of the study are briefly introduced.

1.1 Motivation and background of the study

The purpose of financial reporting is to timely communicate useful, relevant, and reliable information for internal and external stakeholders of an organisation (Troshani & Rao 2007, 98). Nevertheless, current financial reporting still involves the exchange of information in non-interchangeable formats such as Portable Document Format (PDF) or spreadsheets (Beattie & Pratt 2003). The processing and analysis of such information requires a manual transfer of data to different formats and is, therefore, time-consuming, labour intensive and error-prone. Furthermore, it makes the data less transparent and therefore, only provides limited value to external stakeholders. (Doolin & Troshani 2004, 93)

Starting from the financial year of 2020, European listed companies are obligated to start reporting their whole annual financial reports in a European Single Electronic Format (ESEF) which is a solution that enhances the digitalisation of financial reporting. ESEF reporting is intended to enable better comparison and utilisation of financial statement data of different companies in the future. It makes retrieving and analysing of data faster and easier and therefore enables more effective use of new technology, such as Artificial Intelligence (AI). (FIN-FSA 2020)

Technically the annual financial reports need to be prepared in XHTML format (eXtensible HyperText Markup Language) meaning that the IFRS (International Financial Reporting Standards) consolidated financial statement must be marked with XBRL tags (eXtensible Business Reporting Language). XBRL is a standardised computer language built to represent

and transmit financial information in and between systems. It enables, e.g. public authorities to get financial information in a standard, structured format from private companies.

ESEF reporting is implemented in stages, starting with financial statements for 2020. In 2022 also the notes need to be tagged with XBRL tags. They are, however, required to be tagged only as block tags, meaning that each note is one XBRL tag. Because the mandate for ESEF reporting is rolled out in 2020 within the EU, there is a research gap in studying the adoption of XBRL reporting in Finnish listed companies, making the topic of this thesis timely and relevant. Even though XBRL reporting is new in Finland, much research about XBRL has been done abroad where it is already widely implemented (Birt et al. 2017). The next subchapter introduces international research on the topic and argues the selected focus of the study.

1.2 Theoretical framework and focus of the study

The theoretical framework introduces the main concepts and the scientific discussion in which this study is aiming to contribute. Research studying the impact of digitalisation on accounting is broad (Knudsen 2020; Rom & Rohde 2007). However, researchers find that existing research is often focused on outdated technologies and argue that more research on technology's impact on accounting is needed due to its dynamic nature (Granlund 2011; Prasad & Green, 2015).

This study was triggered by the ESEF reporting mandate and XBRL reporting requirements in the EU. However, XBRL itself is not something new as it is widely used internationally in financial reporting (Birt et al. 2017, 107-108). One of the most known international implementations might be the US Securities and Exchange Commission's (SEC) mandate to file their financial statements in XBRL format since 2009 (Harris & Morsfield 2012).

There is a wide variety of research addressing different aspects of XBRL. However, prior research has often focused on the implementation aspect (Garbellotto 2009a; Janvrin and No 2012; Hsieh et al. 2019), assurance and quality aspect (Debreceeny et al. 2010; Boritz & No 2008; Locke et al. 2018) and the role of XBRL for the stakeholders, often the investors (Harris & Morsfield 2012; Blankespoor et al. 2014; Birt et al. 2017). Also, there is

international research on the adoption of XBRL (Pinsker & Li 2008; Garner et al. 2013). For example, a survey by Garner et al. (2013) studied companies' level of adoption and their perceptions of XBRL.

Regarding the research on the implementation of XBRL, Garbellotto (2009a) introduced three approaches (bolt-on, built-in and embedded) and the advantages and disadvantages of each approach. Janvrin and No (2012) created a framework for the XBRL implementation process, dividing the implementation strategies to outsourcing, bolt-on and built-in approach. A recent study by Hsieh et al. (2019) examined the factors associated with companies' choices of XBRL implementation strategy, comparing Disclosure Management solution versus stand-alone solution and outsourcing versus in-house implementation.

Based on the recognised research gap from the previous subchapter, this study focuses on providing early evidence on the mandatory adoption of XBRL reporting from the reporting companies' point of view, making a delimitation on Finnish listed companies. However, to better understand the adoption process of XBRL in Finland, supporting viewpoints were gathered from equity analysts and a financial supervisory expert. The research questions and objectives are elaborated in the next subchapter. The conceptual framework of the study is presented in the following figure and explained further.

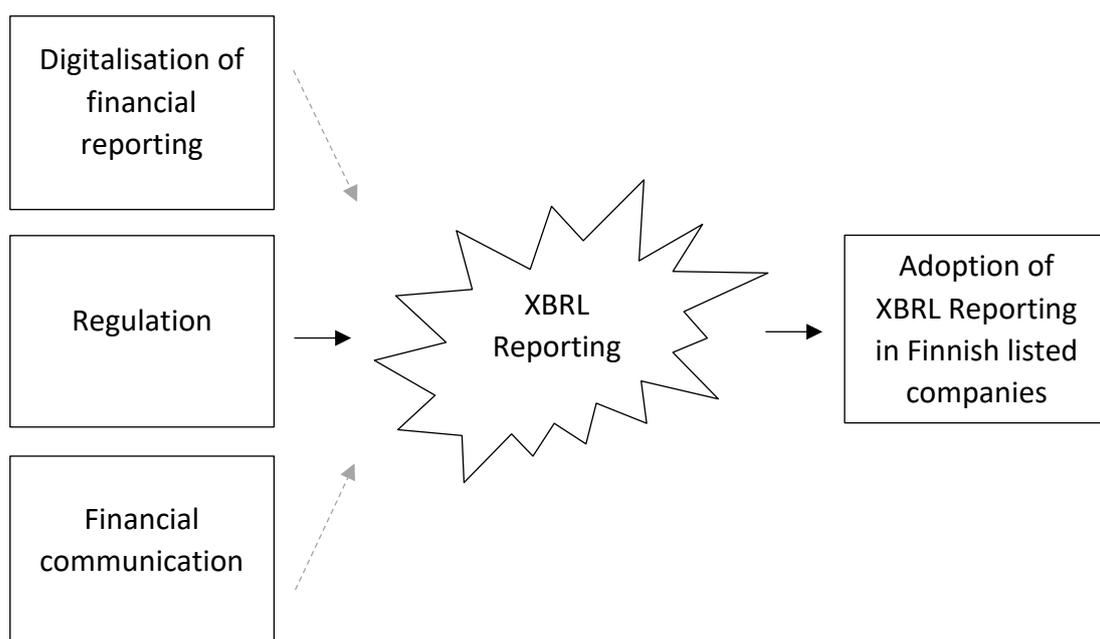


Figure 1. Conceptual framework

As illustrated above, digitalisation of financial reporting, regulation and financial communication needs are seen as the driving forces behind XBRL reporting. Furthermore, XBRL is seen as an enhancer of digitalisation of financial reporting, whilst regulation works as the trigger of the change. Essentially XBRL reporting aims to improve financial communication, and therefore, it is one of the main concepts of the study. To conclude, the main concepts and perspectives of the study covered in the theoretical part are the digitalisation of financial reporting, regulation and financial communication needs. These perspectives will be covered to introduce the justification behind ESEF and XBRL reporting requirements as well as arguing its usefulness and impact.

1.3 Research questions and objectives

As stated, this thesis examines the adoption of XBRL reporting in Finnish listed companies. The study aims to observe and explore how the reporting companies perceive and decide how to comply with the new regulation and whether there are any other outcomes than fulfilling the regulatory requirements. For supportive analysis and validation of the findings equity analysts and a financial supervisory expert were also interviewed. The main research problem is divided into sub research questions listed below.

1. How is XBRL reporting adopted in Finnish listed companies?
 - 1.1 How is the upcoming ESEF reporting regulation perceived?
 - a. by the reporting companies
 - b. by the analysts
 - 1.2 How is the implementation strategy for XBRL reporting selected?
 - 1.3 Are there any other outcomes than fulfilling the regulatory requirements?

A comprehensive picture of the adoption of XBRL reporting is gathered by studying reporting companies' perceptions on ESEF/XBRL reporting, the implementation strategies and the changes to the reporting processes. Furthermore, to gain a better understanding of the adoption of XBRL, supporting interview material was collected from equity analysts as the users of data. The supporting viewpoints from the analysts are seen to strengthen the study as it shows which stakeholders find the regulation valuable and demonstrates the

changes in the financial communication process. The financial supervisory expert was interviewed for validating the main findings and getting insights from a regulator's viewpoint.

More precisely, the first objective of the study is to investigate companies' perceptions on ESEF/XBRL reporting, e.g. the main benefits for the stakeholders and level of knowledge on XBRL. Supporting viewpoints are also acquired from the users of the information. The second objective is to gain an understanding of the decision-making process leading to the implementation strategy of XBRL reporting. The third and last objective is to study the effects of XBRL implementation on the reporting process and to explore if there were any outcomes beside of fulfilling the regulatory requirements.

While ESEF reporting is implemented in the EU, the target group of this thesis are solely Finnish listed companies. Also, as this thesis focuses on the adoption of XBRL in listed companies as a result of the ESEF reporting mandate, municipal XBRL reporting or SMEs (Small and Medium-sized Enterprises) voluntary XBRL reporting will not be in the scope of the research. The following table presents the coverage matrix that shows the dialogue between different parts of the thesis. The matrix connects the research problems with the relevant theoretical/conceptual framework and the results of the study.

Table 1. Coverage matrix (the first column refers to the research question, others to a subchapter)

Research problem	Theoretical framework	Results
1.1	2.1, 2.2, 3.1, 3.2, 3.3	5.1
1.2	3.1, 3.2, 3.4	5.2
1.3	2.1, 3.3	5.3

1.4 Research methodology

The research methodology of the study is qualitative due to the exploratory nature of the research. The research questions are answered based on the dialogue between the theoretical and empirical part of the study. As the nature of qualitative research is iterative (Eriksson & Kovalainen 2017, 33), the theoretical framework was re-evaluated after the empirical part.

The data collection method of the research is semi-structured theme interviews, which is a typical data collection method for qualitative research (Merriam 2009, 137). The interviews were held during the first half of the year 2020. Financial Reporting Directors and Vice-presidents in Finnish listed companies were the primary target group. In total, six interviews were conducted in different listed companies. The secondary target group was equity analysts, and a total of four equity analysts were interviewed. Also, one financial supervisory expert was interviewed for validating the main findings. The total amount of conducted interviews was 11.

The interview material is analysed using the content analysis method. The analysis is conducted with the help of a qualitative data analysis software called NVivo that assists in coding and combining the material into themes. The research method and data collection regarding the empirical part is described more in detail in Chapter 4.

1.5 Structure of the study

After the introduction in Chapter 1, the thesis presents the theoretical part in Chapters 2 and 3. The theoretical chapters include literature research and the main concepts of the study. More precisely, Chapter 2 discusses the digitalisation of financial reporting and financial communication, whereas Chapter 3 introduces the XBRL reporting and discussion around the topic.

After the theoretical background, the thesis follows with the empirical part. In Chapter 4, the research methodology and collection of data are reviewed thoroughly. Also, an analysis of the reliability and validity of the research is provided. In Chapter 5, the findings of the empirical study are presented in detail in the order of the research questions. Eventually, Chapter 5 concludes with a summary of the key findings.

The last chapter of the thesis, Chapter 6, contains discussion and conclusion where the main findings are reflected with the theoretical part of the study. Lastly, the limitations of the research and directions for future research are proposed. The following figure illustrates the structure of the study.

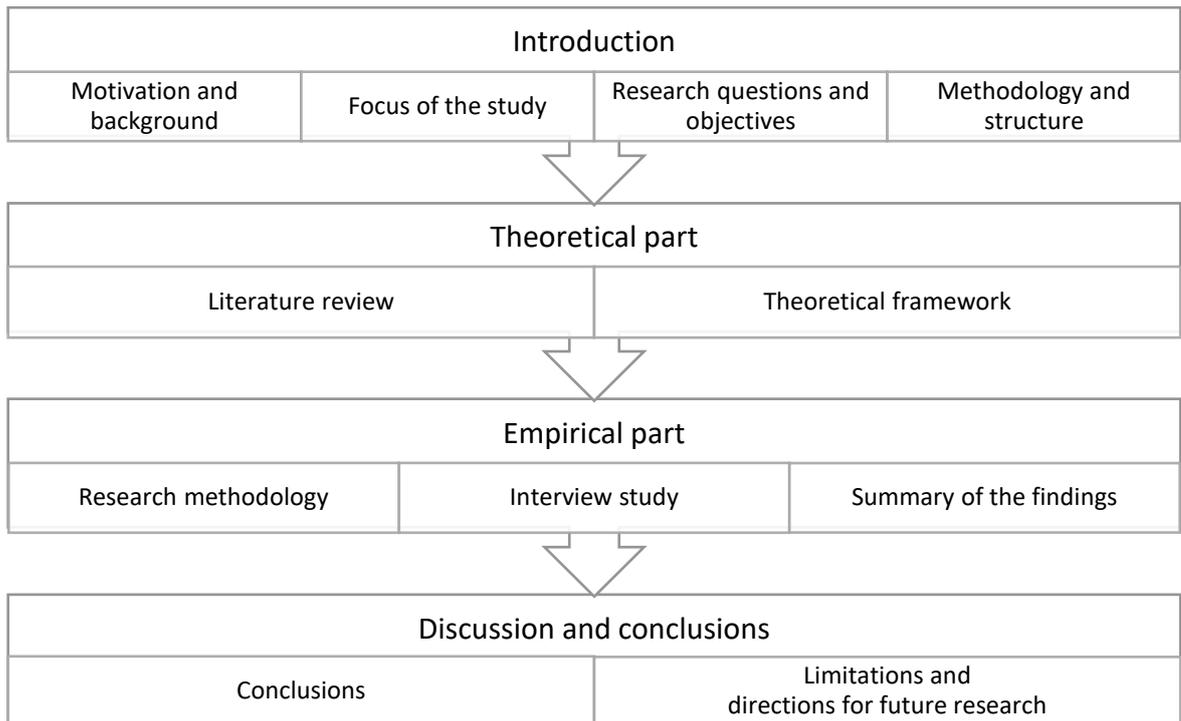


Figure 2. Structure of the study

2 Digitalisation of financial reporting and financial communication

The theoretical part of the study begins by discussing the digitalisation of financial reporting as it can be seen as a driving force behind XBRL reporting. Financial communication is another main topic in this chapter because the implementation of XBRL reporting is tightly connected to the financial communication needs of different stakeholders. To argue the usefulness of XBRL reporting, one must understand the underlying needs for financial communication.

2.1 Digitalisation and financial reporting

Digital technology has become a vital part of society, as intangible products have become digital (Hoffman & Rodriguez 2013, 73). As a consequence of the new ESEF regulation, financial statements are becoming digital as well. This subchapter discusses digitalisation, automation and how XBRL enhances the flow of information in the financial reporting supply chain. As stated before, digitalisation is understood as a driving force behind the implementation of XBRL reporting. Discussion about the abovementioned concepts is also essential to understand the digital operating environment in which XBRL reporting is implemented.

Knudsen (2020) argues that the term digitalisation is often expressed interchangeably to other associated terms, such as digitisation or digital transformation and that it seems that there is an absence of a real understanding of the term. The terms are used often assuming the counterpart to understand it, causing semantic confusion. There is, however, a clear distinction between the terms as addressed by Savić (2019). Digitisation refers to the technical process of converting analogue information into a digital format. The conversion enables the transferability and programmability of the digitised content.

Moreover, digitalisation focuses on information processing having the goal to automate business operations and processes. Digitalising processes can lead to lower production costs, optimised business results, new revenue options and new customer experiences, but it does not result in digital transformation. Digital transformation means creating a new business

model with the use of modern information and computer technologies. It refers to a change in culture, management strategy and technology that places the customer in the centre. (Savić 2019, 38; Bharadwaj et al. 2013, 472) Digitalisation is somewhere between digitisation and digital transformation. It is more than a technical process but does not require reconfiguration of strategy nor significant changes in the business.

2.1.1 Automation of financial reporting

Finance functions are notably affected by digitalisation and megatrends, such as data-revolution and automation. Furthermore, digitalisation has already changed financial communications (Koehler 2014). The volume of data is expanding significantly, and today's companies process about 1000 times more information annually than a decade ago. Cloud has enabled organisations to store, access and share resources with more flexibility and at lower costs. However, most of the data companies collect, store, create and manage today are unstructured and cannot be easily retrieved or interpreted. The utilisation of unstructured data has enabled new business intelligence, more information for strategical decision-making and accelerated the speed of service. (Bhimani & Willcocks 2014, Beath et al. 2012)

In today's media, the discussion about the automation of accounting processes is polarised. The pessimistic view is that because book-keepers' job is mainly rule-based, e.g. RPA (Robotic Process Automation) robots can substitute humans which leads to decreasing the amount of manual work and lost jobs. From another viewpoint, automation is seen complementing human work. (Autor, 2015) By automating the repetitive manual tasks, human resources can be allocated to do more complex and meaningful work (Moffitt et al. 2018).

Doolin & Troshani (2004, 93) argue that current financial reporting still largely involves the exchange of information in non-interchangeable formats such as PDF or spreadsheets. Because the processing and analysis of such information require a manual transfer of data to different formats, it is time-consuming, labour-intensive as well as error-prone. Also, it makes the data less transparent, which provides limited value to the stakeholders. In general, automation potential increases with manual and routine tasks (Frey & Osborne 2017). Hence, there is automation potential in the transmission of financial information. A

simplified figure about automation potential of tasks is presented below. The figure shows that the more routine and manual the task, the more it has automation potential.

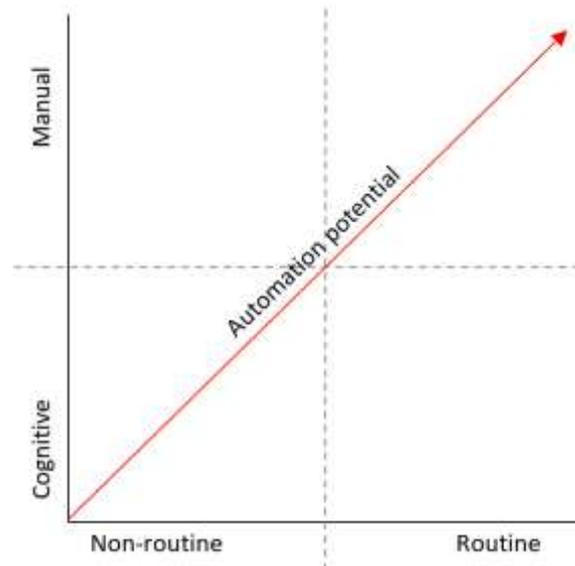


Figure 3. Automation potential of the task (modified from Frey & Osborne, 2017)

As stated earlier, XBRL reporting is implemented to digitalise financial reporting and automate the transmission of data, or in other words, the financial reporting supply chain. Eierle et al. (2014, 162) define as the main parties of the reporting supply chain the filers, regulators and stakeholders. Financial information is distributed to regulators, e.g. business register, after which it flows to the stakeholders, such as investors and creditors. Cohen (2009, 189) has defined a business reporting supply chain similar to Eierle et al. (2014, 162) having as participants also auditors, data aggregators and software vendors as well as service providers.

Figure 4 simplifies the financial reporting supply chain and aims to pinpoint the role of XBRL reporting in the process. Eierle et al. (2014, 162) point out that XBRL reporting helps the stakeholders in analysing and comparing data. The ESEF reporting requirements address primarily to the right side of the figure, aiming to automate the financial reporting supply chain regarding the external business reporting and analysis.

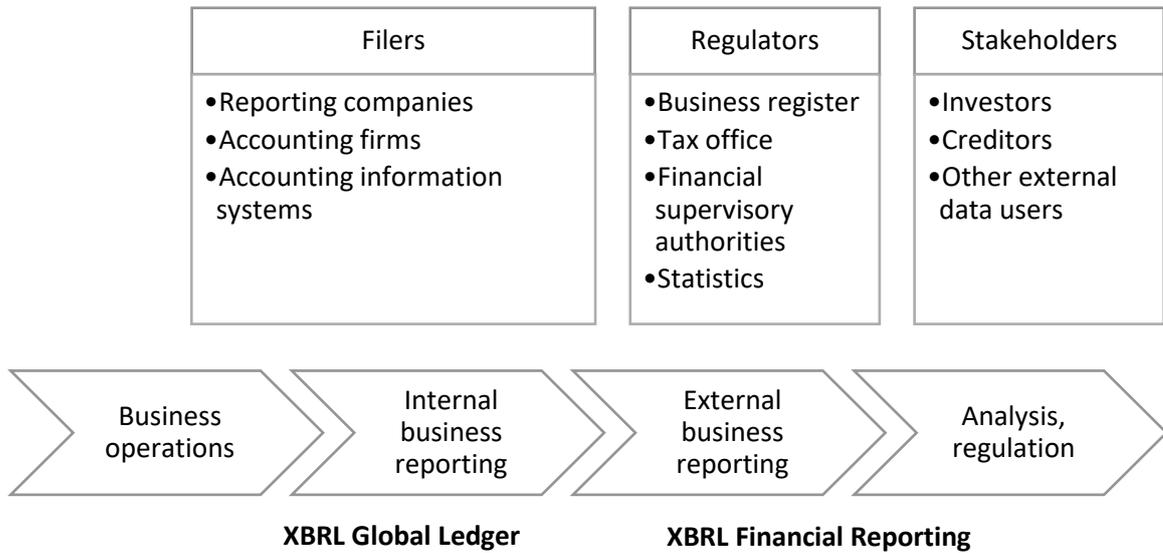


Figure 4. XBRL reporting supply chain (modified from Eierle et al. 2014, 162)

2.1.2 Technological gap and technical debt

The adoption of XBRL reporting requires selecting an implementation strategy. Understanding a concept called technical debt is useful when considering changes to existing systems and processes and hence is briefly introduced in this section. Brown et al. (2010) define technical debt as the gap between the current state and the optimal state of the software system. Kruchten et al. (2012) highlight that technological gaps as sources of technical debt are not necessarily resulting from making bad choices in the implementation but rather result from the passing of time and natural software ageing and evolution.

Originally the concept of technical debt was used as a metaphor for technical compromises made in the implementation, such as shortcuts taken in coding or not choosing the architecture carefully. These compromises might give short-term benefit in saving time but may lead to hurting the long-term health of the software system. (Li et al. 2015) However, the concept has been later expanded to a broader meaning and literature suggests that technical debt can also incur from other levels of software development activity: code level, software testing and documentation and architecture level (Alves et al. 2016; Li et al. 2015; Rios et al. 2018).

Managing technical debt is about balancing between short-term benefits and sustainability. Moreover, it is impossible to avoid the accumulation of technical debt. Therefore, companies

must evaluate their accumulated debt and make plans to settle it, e.g. by modifying parts of the system architecture (Rolland, Mathiassen & Rai 2018). Systems accumulate technical debt throughout their use and, interestingly, the same reason makes the system replacement more challenging (Furneaux and Wade 2017). Managers find it safer to continue working with the old processes to meet with the deadlines and stay in the budget rather than start big development projects where there is a possibility of failing. On the other hand, as the speed of technological development increases, companies want to ensure the sustainability of their software development efforts (Kruchten et al. 2013). Consequently, due to the increasing speed of technological development, the technical debt accumulates faster which makes it more difficult to ensure the sustainability of the software development.

Subchapter 2.1 gave an introduction to the implementation of XBRL from the digitalisation and automation point of view as well as introduced a concept of technical debt relating to the ageing of implemented systems and natural evolution of technology. The ESEF/XBRL reporting is introduced more in-depth in Chapter 3. This chapter follows with a discussion about the financial communication needs that is another main viewpoint to the discussion of why XBRL is implemented.

2.2 Financial communication

As stated before, to understand the need for XBRL reporting implementation, one must understand the underlying needs for financial communication. Like digitalisation, financial communication needs are also seen as a driving force for XBRL reporting. The following sections address topics such as information asymmetry, financial reporting framework and quality of information as well as corporate communication. Lastly, there is a discussion about improving financial communication.

2.2.1 Information asymmetry and regulation

The first section begins with an introduction to a key concept in financial theory that improves the understanding of the dynamics between different stakeholders. Information asymmetry is a fundamental concept in financial accounting theory that emerges from some parties having an information advantage over others or the possibility of some parties to take

actions that are not visible to others (Scott 2015, 22). When information asymmetry is high, the stakeholders do not have resources or access to relevant information to observe manager's actions (Richardson 2000, 325) or the profitability of the company's investment opportunities (Beyer et al. 2010, 296). According to Brown et al. (2004, 344), information asymmetry increases the investors' risk of trading, which increases the cost of equity capital and therefore is essential for companies.

Scott (2015, 22-23) divides information asymmetry into two types, adverse selection and moral hazard. Adverse selection concern emerges from the imbalance of knowledge between the market participants, e.g. company managers having better information on the current state and prospects of the company than investors. Managers can exploit the information advantage in multiple ways which are adverse to the interests of the investors as it influences negatively to their ability to make the right investment decisions.

The moral hazard concern, however, emerges from the imbalance of the ability to observe the actions of different parties in fulfilling the contract. Because the managers' efforts are directly unobservable, investors cannot know how much effort they are giving. Ultimately information asymmetry exists because of the separation of ownership and management, that is addressed in literature as agency theory (Leung & Ilsever 2013, 85; Beyer et al. 2010, 297). Therefore, accounting information combines both investor-informing and manager performance-evaluating roles. As Beyer et al. (2010, 296) describe it, the two principal roles of accounting information are, firstly, to allow capital providers to assess the potential of investment opportunities (valuation role) and secondly to enable monitoring the use of their capital after they are committed (stewardship role).

The above-defined information asymmetry creates the demand for regulation of the information. Public interest theory suggests that regulation is a response of the market demand to correct market failures; however, assuming the regulator aims to maximise social welfare. As this is difficult to implement, the interest group theory considers that multiple interest groups simultaneously demand regulation for their interests. (Scott 2015, 532) Becker (1983) sees these interest groups competing for regulation to promote their interest by lobbying and creating pressure for the regulator.

2.2.2 Financial reporting regulation and quality of information

The following sections and chapters will have many references to different authorities, such as the European Commission, the European Securities and Markets Authority (ESMA), the Finnish Financial Supervisory Authority (FIN-FSA) and the International Accounting Standards Board (IASB). Therefore, this section starts by clarifying their relationships with each other. The following figure aims to define the relationships between the authorities involved in the implementation of European financial reporting regulation.

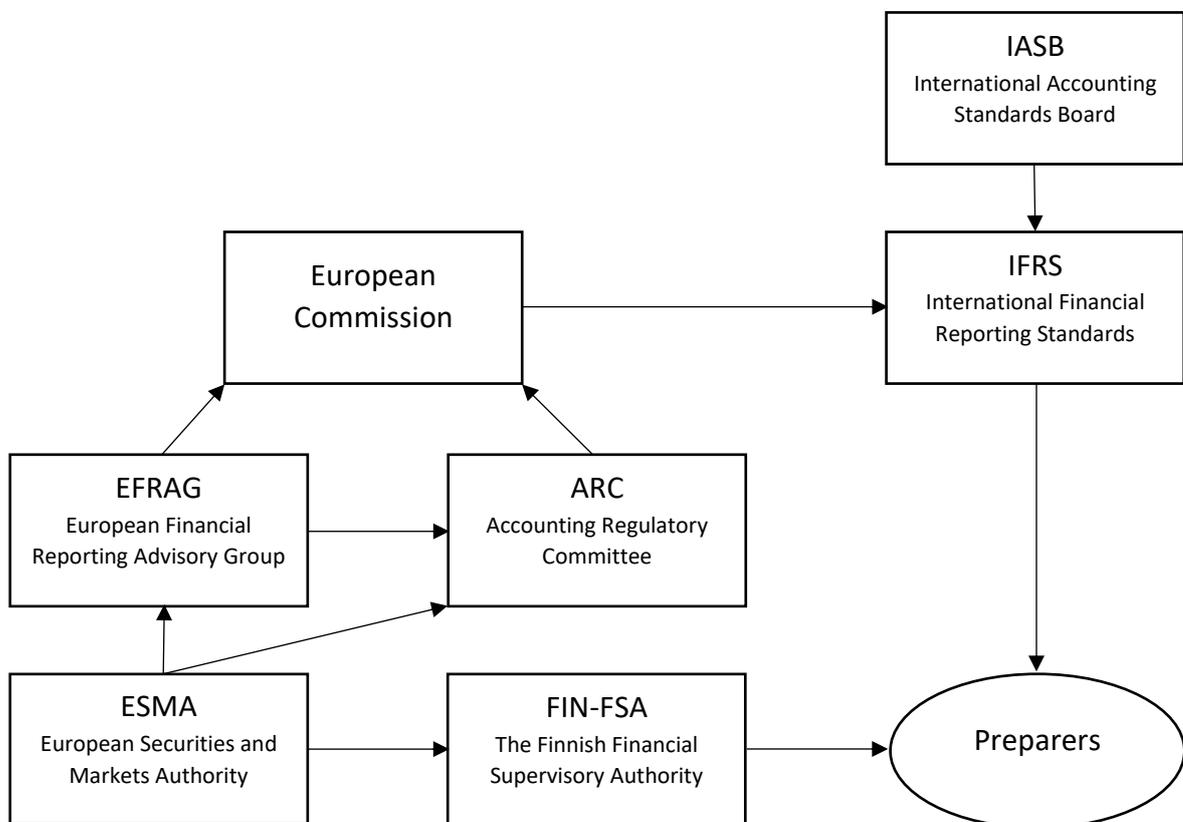


Figure 5. European framework for the implementation of financial reporting regulation (modified from Pope & McLeay 2011, 240)

The IASB is an independent body that is part of the IFRS Foundation and that develops the IFRS. When the IASB issues a new standard, it goes through an endorsement process governed by the European Commission. The European Financial Reporting Advisory Group (EFRAG) and the Accounting Regulatory Committee (ARC) work as consultative and advisory organisations in the process. (EC 2020) The IASB also revises a framework called the Conceptual Framework for Financial Reporting (IASB 2018). It describes the objective

and concepts of financial reporting that guide the IASB in developing the IFRS. However, it also assists the preparers (i.e. reporting companies) to develop consistent accounting policies when e.g. none of the IFRS applies to a particular transaction or assists all stakeholders in interpreting the standards.

The standard-setting programme of the IASB also includes publishing exposure drafts for stakeholder consultation (IFRS Foundation 2016, 27). ESMA (2020a) participates as an observer in the ARC and EFRAG and contributes to the approval process of new IFRS and their amendments by commenting on the IASB exposure drafts. The focus of ESMA (2020a) is primarily in improving the usefulness and transparency of financial information. FIN-FSA is a national enforcer body that is responsible for the financial markets' regulation in Finland.

Regarding the quality of financial information, financial statements should provide investors with information that is useful for making investment decisions (Gjesdal 1981). However, the IASB has recognised that companies find providing such information challenging (IFRS Foundation 2017, 4). The main concerns of the IASB in financial statements are that there is not enough relevant information, too much irrelevant information or ineffectively communicated information. According to the IFRS Foundation (2017, 4), ineffective communication can increase investors' risk and lead to a higher cost of capital for companies. Effective communication can, on the contrary, lead to better investment decisions and lower cost of capital for companies. Therefore, an important focus area of the IASB is better communication in financial reporting.

The IASB (2018) provides an extensive definition of the principles of effective financial communication. They also define the qualitative characteristics of useful financial information, meaning characteristics of information that is likely to be most useful for the investors, lenders and other creditors for decision-making. The IASB (2018) states as fundamental qualitative characteristics the relevance and faithful representation of information. Other essential characteristics are comparability, verifiability, timeliness, and understandability of information. These characteristics of information are also very central concerning the implementation of XBRL reporting.

Brennan & Merkl-Davies (2018, 556-557) argue that most regulator guidance about improving the quality of financial communication is focused on the quality of writing (e.g. avoidance of boilerplate language). However, also, other forms of communication are found essential within different stakeholders (Brown et al. 2015). The following section continues the discussion by introducing some roles of other corporate stakeholders in financial reporting and their communicational needs.

2.2.3 Corporate communication in financial reporting

In accounting literature, the term “reporting” is used to represent communication between companies and their shareholders (e.g. corporate reporting, financial reporting). However, Brennan & Merkl-Davies (2018) argue that the term addresses to a one-directional process in a written format where companies provide information for external shareholders that are passive recipients. Hence, Brennan & Merkl-Davies (2018, 554) suggest using the term “corporate communication” to include both written and oral communication and to address communication as a two-way dialogue where information flows to both directions.

To discuss the benefits of XBRL, it is essential to understand the roles of different stakeholders as users of financial information. As stated, Brennan & Merkl-Davies (2018, 557) argue that regulation is mostly focused on improving the quality, such as relevance and reliability, of the written form of financial reporting. These characteristics can also be found in IASB’s (2018) framework for financial reporting presented in the previous section. However, corporate stakeholders, such as the investor relations (IR), auditors and analysts, find essential also other than written forms of corporate communication, such as interpersonal face-to-face communication (e.g. Brown et al. 2015).

The IR function typically works as the point of contact between the company and its shareholders. The National Investor Relations Institute (NIRI 2003) defines IR as “*a strategic management responsibility that integrates finance, communication, marketing and securities law compliance to enable the most effective two-way communication between a company, the financial community, and other constituencies, which ultimately contributes to a company’s securities achieving fair valuation*”. In contrast, Koehler’s (2014, 178) literature review implies IR mainly being defined as a subfunction of corporate

communications. The activities of investor relation officers (IROs) include managing public earnings conference calls, company press releases and management earnings forecasts. Due to the many influential activities of IR, Brown et al. (2019) argue that IROs have an essential role in managing corporate communication with the external shareholders and helping the company to achieve an appropriate valuation.

Auditors have a verifying role in reviewing the financial reports and thus can have an impact on companies' reporting to their shareholders. Beattie et al. (2000, 178) claim that financial reporting is generally done in co-operation and consensus with the auditor, who is seen as a source of advice and support. Furthermore, Gibbins et al. (2001, 536) highlight the significance of negotiations between the client and the auditor to financial reporting, stating that the negotiations can have a material effect on financial statements. Beattie et al. (2000, 177) demonstrate that the discussions between the auditor and client usually revolve around compliance issues, whereas accounting and fee matters dominate negotiations. For that auditors get support from their firm under challenging negotiations, whereas companies can have as a support an audit committee (Beattie et al. 2000, 198).

Lastly, the role of analysts as the users of financial information is discussed. A distinction between buy-side and sell-side analysts is that analysts from the buy-side to usually work for an investment company, such as hedge fund or pension fund, and carry out research only for the company where they are employed. In contrast, sell-side analysts' stock recommendations are available more widely to their customers. (Brown et al. 2016, 139-140)

Sell-side analysts collect information about the companies they follow from different kinds of sources, such as regulatory releases, press releases and conference calls. Many studies (Bradshaw & Sloan 2002, 41; Kolev et al. 2008, 158) find that alternative performance measures, also known as non-IFRS, non-GAAP (Generally Accepted Accounting Principles), or pro forma, have become a more relevant measure for the investors. Moreover, Bradshaw & Sloan (2002, 65) claim the alternative performance measures being more value relevant. On top of that, private communication with management is an essential source of information, especially for sell-side analysts (Brown et al. 2015, 3; Soltes 2014, 245).

Interestingly, Brown et al. (2015, 3) argue that private communication is a more valuable source of information for analysts' earnings forecasts and stock recommendations than, e.g. financial reports. Brennan & Merkl-Davies (2018, 571-572) share the opinion while they find especially large institutional investors to prefer interpersonal face-to-face communication as it gives them an advantage in comparison with mass information from the internet. Also, Chen & Matsumoto (2006, 660) report private access to management to result in better forecast accuracy.

Brennan & Merkl-Davies (2018, 557) claim that corporate communication could be improved by having a dialogue between the preparers and users of the financial statements. Moreover, Johansen & Plenborg (2018, 1593) propose that the lack of understanding of the needs of the information users might prevent the preparers from changing some reporting practises and improve communication.

2.2.4 Improving financial communication

Along with harmonising international accounting language, accounting practices and financial statements, the goal of IFRS is to improve the quality of financial information. However, the way how financial information is currently communicated to users has been criticised. For instance, while the IFRS has increased disclosure requirements, the financial statements have become longer than pre-IFRS (Cheung & Lau 2016, 162). Also, the Financial Reporting Council (FRC 2012) criticised in their discussion paper that the IFRS financial statements have too many generic disclosures. However, at the same time, there is a lack of company-specific information.

Some researchers argue that financial statements have become more complicated and less readable (Richards & van Staden 2015, 298). Moreover, Miller (2010, 2107) claims that the complexity of financial statements leads to lower trading overall due to a reduction in the trading activity of smaller investors. Frings et al. (2012, 17) even suggest that IFRS would increase investor's information risk. Lehavy et al. (2011, 1089) argue that more complex financial reports may reduce the quality of disclosure by increasing investors' information costs.

Johansen & Plenborg (2018, 1593) demonstrate how different kinds of factors can influence how companies present financial figures. They reveal characteristics in the annual reporting process that can create barriers for changes in the annual report. Such barriers can be preparers' assumptions of how oversight agents (enforcers, auditors, audit committees) would react to the changes, or they can be related to the report preparation process. Also, the lack of understanding of the needs of the information users might prevent the changes.

Improving the communication of financial information has been on the agenda of IASB during the last years. Thus, the IASB launched a project in 2013 of which goal was to develop IFRS disclosures. In 2016 it was followed by a project called *Better Communication* that aims to improve financial communication to the investors – or more specifically the way how financial information is communicated to the investors, addressing the primary financial statements, disclosures and management commentary.

The next chapter that discusses the ESEF reporting mandate and XBRL reporting address the issue of improving financial communication from a slightly different perspective. While Lehavy et al. (2011, 1089) argued in this section that more complex financial reports might increase investors' information costs, one of the goals of XBRL reporting is to decrease the information costs of the stakeholders. This chapter introduced concepts that give a steady foundation to start the discussion about the implementation of ESEF/XBRL reporting.

3 ESEF reporting mandate and XBRL reporting

From the year 2020 onwards all listed companies in EU need to start reporting their annual financial reports in a machine-readable European single electronic format (ESEF). ESMA (2020b) lists as the objectives of the legislation to make reporting easier for issuers and to improve accessibility, analysis, and comparability of financial reports. Technically, the annual financial statements need to be prepared in XHTML format, and the IFRS consolidated financial statement data must be labelled with XBRL tags (FIN-FSA 2020).

Referring to the financial reporting supply chain presented in Section 2.1.1 and Figure 4, XBRL is built to present and transmit information between the stakeholders in the reporting supply chain. It enables, e.g. public authorities to get financial information in a standard, structured format from private companies. Steenkamp & Nel (2012, 411) state that the purpose of XBRL is to provide universal definitions for financial information so that financial data can be read and understood by reporting and analytical software without the help of humans and regardless of which system it originates to or will be used.

More precisely, the ESEF mandate requires using Inline XBRL (iXBRL) technology that is not only machine-readable but also human-readable (FIN-FSA 2020). Furthermore, XBRL adds to the data a standardised tag that indicates the nature of the data (Steenkamp & Nel 2012, 411). Hence, the tagged documents, also called XBRL instance documents, can be easily processed with XBRL-enabled software tools (Troshani & Rao 2007, 99).

3.1 Background on XBRL

XBRL is divided into two types, XBRL Global Ledger (GL) and XBRL Financial Reporting (FR), as described by Cohen (2009, 189) and illustrated in the XBRL reporting supply chain Figure 4 in Section 2.1.1. The ESEF regulation, however, requires only the use of XBRL FR. XBRL GL is mainly for the internal reporting of the company but not limited to it (Cohen 2009, 192). Dallavia & Garbellotto (2015, 48) note that while XBRL GL can be used as a support for internal decision-making, it is also used for the information exchange with stakeholders. They describe XBRL GL as a way to standardise granular information from applications such as ERP. The more commonly known type of XBRL, XBRL FR, is about

tagging of data for the needs of external reporting. (Dallavia & Garbellotto 2015, 48) Therefore, it is also the variation of XBRL that this study mainly addresses. However, XBRL GL is still discussed as a possible implementation strategy when companies comply with the ESEF regulation.

XBRL markup language is similar to XML (eXtensible Markup Language) and HTML (HyperText Markup Language) but developed particularly for business communication (Plumlee & Plumlee 2008, 356). The developer is an international non-profit consortium XBRL International that coordinates the implementation of XBRL and distributes knowledge internationally. (Doolin & Troshani 2004, 95.) XBRL is created by the accounting industry, which continues to have a central role in developing the standards through XBRL International (Jones & Willis 2003, 31).

XBRL reporting uses standardised tags from an XBRL taxonomy that works as a reporting account dictionary. The elements of the taxonomy are label linkbase, calculation linkbase, reference linkbase, presentation linkbase and definition linkbase. (Plumlee & Plumlee 2008, 360) Due to different accounting jurisdictions, taxonomies are developed country-specific. The development is done in each country by accounting and technology experts. (Eierle et al. 2014, 161) XBRL tags are based on regulatory accounting standards, and the ESEF taxonomy is based on IFRS Foundation's IFRS taxonomy (FIN-FSA 2020).

The potential use range for XBRL technology is broad. XBRL is possible to utilise, i.e. in financial analysis, regulatory reporting and tax reporting, internal reporting, statistical reporting, management reporting and corporate responsibility reporting (Debreceeny & Gray 2001, 65; Garbellotto 2008, 57; Gray & Miller 2009, 211-212). Outside of listed companies' reporting, XBRL is also used in COREP (Common Reporting) and FINREP (Financial Reporting) reporting in the banking sector and Solvency II reporting in the insurance sector (FIN-FSA 2018). However, as this study focuses on the adoption of XBRL reporting due to the ESEF mandate, the literature review in the next subchapters looks into the XBRL reporting of listed companies.

3.2 ESEF reporting requirements

Reflecting on the Subchapter 2.2 about financial communication, XBRL can be seen as complementing the IFRS of which goal is to harmonise the accounting standards. XBRL is aiming to increase the comparability of financial statements from a slightly different perspective than the IFRS (Cascino & Gassen 2014, 243). While IFRS standardises what is reported, XBRL is focused on standardising how the information is reported.

Behind the ESEF reporting requirements is the EU Transparency Directive concerning the harmonisation of listed companies' transparency requirements (Directive 2004/109/EC) and the amendments made to the directive in 2013 (Directive 2013/50/EU). The directives are implemented to the Securities Markets Act (14.12.2012/746, chapter 7, section 5), and the EU Commission delegated regulation (2018/815/EU) where the Regulatory Technical Standards (RTS) are specified. The regulation also connects to chapter 10 of the Securities Markets Act (14.12.2012/746) regarding the disclosure of and access to regulated information.

The European Securities and Markets Authority (ESMA) has published guidance on the implementation of ESEF reporting for reporting companies and software vendors (ESMA 2020b). However, an essential source of information on the national level in Finland is the Finnish Financial Supervisory Authority (FIN-FSA) who sets the national requirements and supervises their compliance. In Finland the XBRL data will be stored in national central storage, Officially Appointed Mechanism (OAM), maintained by stock exchange Nasdaq Helsinki. OAM is a response to EU's Transparency Directive and stores all regulated information of listed companies, as prescribed by law. (FIN-FSA 2020)

As communicated by the FIN-FSA (2020), currently, the XHTML and XBRL requirements only apply to annual reports, and the XBRL tagging requirements only consider IFRS consolidated financial statements. The tagged documents include a consolidated statement of profit and loss and comprehensive income, statement of financial position, statement of cash flows and statement of changes in equity. For the years 2020-2021, the notes of the consolidated financial statements, the management report and the parent company's separate financial statement need to be included in the XHTML document without XBRL tags but

starting with the year 2022; also the notes must be tagged with XBRL tags. However, the minimum requirement is to use block tags, meaning that each note as a whole is one XBRL tag.

Companies can also create new tags, in case they cannot find an element from the taxonomy that would accurately describe the information. The new tags are called extension taxonomy. Romney & Steinbart (2017, 533) defines an extension taxonomy as a set of custom XBRL tags to define elements that are not part of the standard generally accepted taxonomies for the industry. However, the extensions need to be anchored to the closest accounting meaning of the ESEF taxonomy (FIN-FSA 2020).

Currently, there is no EU regulation about the obligation to audit ESEF reporting, but the European Commission is working to form its opinion on the assurance aspect. According to FIN-FSA (2020), assurance regarding ESEF reporting will be arranged with different schedules in the legislation of EU countries. Even in the redundancy of regulation, the FIN-FSA (2020) and the Finnish Association of Auditors (Suomen Tilintarkastajat ry 2020) recommend the issuers to agree on a separate assurance engagement with their auditors.

3.3 Benefits and challenges recognised in the literature

According to Troshani & Rao (2007, 99), a wide range of stakeholders can benefit from XBRL. The stakeholders include individual organisations, accounting firms, investors and stock analysts, stock exchanges, and regulatory authorities. However, Doolin & Troshani (2004, 97) state that individual investors and analysts are the intended key consumers of XBRL-format information as XBRL is thought to decrease the time used in data conversion, thus freeing more time for analysis and decision-making.

Jones & Willis (2003, 31) list as the benefits of XBRL decreased cost of information production and consumption, increased speed of information exchange, and enhanced access and re-use of information so that reports become more relevant to their users. Hence, the benefits of XBRL reporting are very asymmetric as the receiver of the report gets more benefits compared to the sender. The following figure illustrates an interpretation of Doolin & Troshani (2004, 96) of the production of XBRL and the stakeholders.

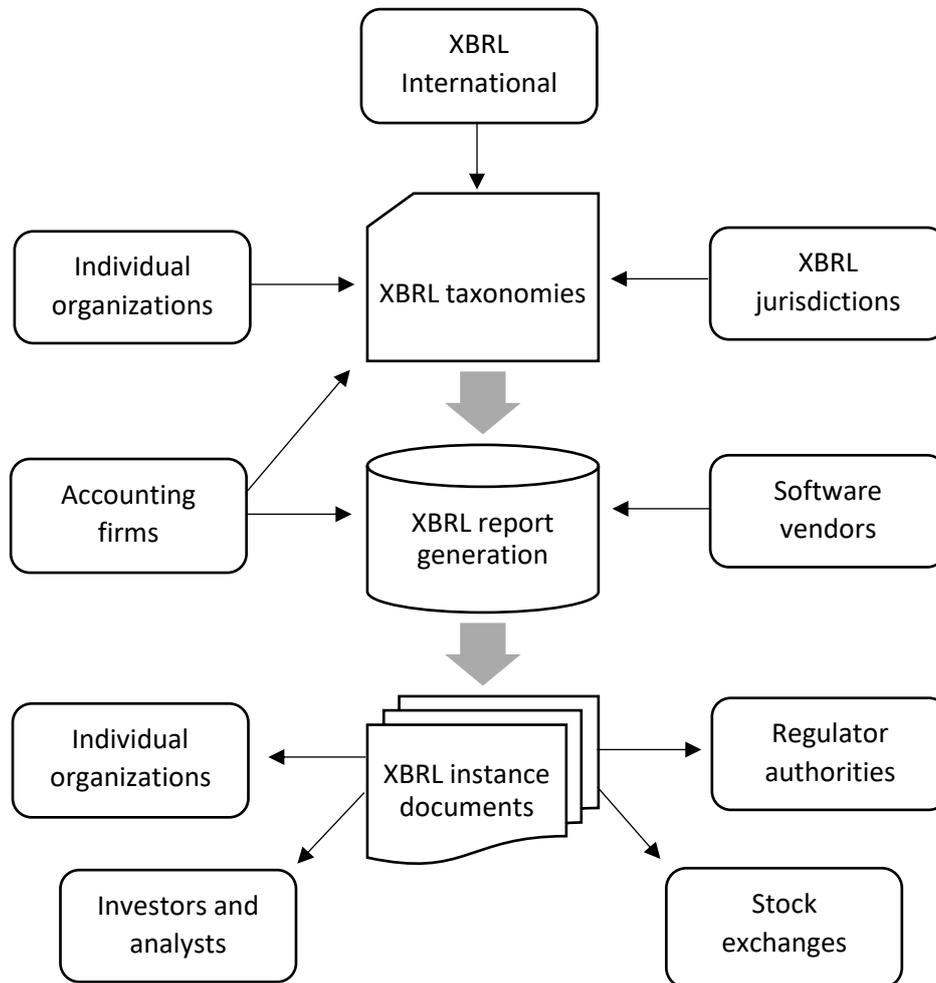


Figure 6. XBRL production and stakeholders (adapted from Doolin & Troshani 2004, 96)

Because this thesis is focused on the adoption of XBRL reporting in listed companies, the following sections aim to identify benefits recognised by literature for the preparers of XBRL reports. However, because XBRL is primarily implemented for external reporting purposes, also the benefits for the main stakeholders, investors and analysts, are discussed. Lastly, some challenges and criticism of XBRL are introduced.

3.3.1 Benefits for reporting companies

Literature has identified different benefits from the implementation of XBRL reporting internationally, but they are often focused on the benefits of the stakeholders, mainly the investors and analysts. For the investors, a clear benefit is that XBRL reduces their information acquisition costs (Peng et al. 2011, 110). However, the benefits for the reporting

companies have not been communicated as straightforward. Cohen (2009, 190) finds unclear communication as a reason for why many companies see XBRL as just a compliance task. Despite less attention, XBRL reporting can bring benefits also for the reporting companies. However, ESEF addresses more to the end of the XBRL reporting supply chain illustrated in Figure 4 in Section 2.1.1.

Some benefits can be found in the distribution and usage of data. For example, Steenkamp & Nel (2012, 411) state that because the information in XBRL format is machine-readable as well as independent of the platform and applications, it can be easily transferred without manual entries which reduces errors as well as improves data quality that was discussed in Section 2.2.2. Also, there is international evidence that transferring data in XBRL format could affect favourably to companies' loan contracting conditions (Farewell & Pinsker 2005, 69; Kaya & Pronobis 2016, 432; Chen et al. 2018, 47). The reason behind is the efficiency gains, i.e. reduced processing cost in the loan decision process.

Benefits can also be derived from the improved comparability of data between different companies. For example, due to the increased comparability of data, the reporting companies can benefit from the utilisation of XBRL data in sector peer analysis (FIN-FSA 2020). Hence, it helps companies to benchmark themselves against their peers. Nevertheless, most of the benefits that literature addresses are related to and depend on the XBRL adoption level or implementation strategy. Respectively, the level of adoption is related to the perceived benefits (Garner et al. 2013, 2). The implementation strategies and their benefits are addressed in Subchapter 3.4.

3.3.2 Benefits for investors and analysts

As stated earlier, much study focuses on the role and benefits of XBRL for investors (Harris & Morsfield 2012; Blankespoor et al. 2014; Birt et al. 2017). Generally, XBRL brings efficiency and interoperability gains for the users of financial information (Pinsker 2003, 732), individual investors and analysts being the key consumers of XBRL information (Doolin & Troshani 2004, 97).

Debreceeny & Gray (2001, 48-49) explain that the tasks of any stakeholder (i.e. analysts), can be divided into two tasks: mechanics and analysis. Mechanics would mean the preliminary work, such as location, collection, disaggregation, aggregation, and reformatting of data, that needs to be completed before analysing the data. Because the total time of analyst for all this is limited, the more time spent on mechanical tasks, the less time is available for the analysis. Therefore, XBRL enables analysts to use their time more efficiently. Peng et al. (2011, 110) share the opinion stating that while XBRL decreases the information acquisition costs, it increases the amount and quality of the analysis that the market participants can conduct. For the same reason, analysts find added value from third-party information services that do some of the preliminary tasks for a fee (Debreceeny & Gray 2001, 49), e.g. Bloomberg or FactSet.

Liu et al. (2017, 42) conducted a study about the impact of XBRL adoption in Belgium, and the study argues that XBRL adoption increases market liquidity and thus reduces information asymmetry. Similar results were received from South Korea (Yoon et al. 2011, 157). The empirical research of Liu et al. (2017), however, also implies that improvement in information asymmetry is seen more in larger companies due to better implementation resources as well as in non-high-technology companies whose financial statements investors rely upon more.

However, Blankespoor et al. (2014) have a conflicting argument as they find a reduction in liquidity and a decrease in trading volume, especially for smaller trades after the first few years of the US mandate. The results are to some extent in line with Liu et al. (2017), stating that because larger investors have more capabilities to implement new technology, they can gain more benefits than smaller investors. From one viewpoint, reduction in data aggregation costs improves smaller investor's access to information and therefore reduces information asymmetry between smaller and larger investors. However, the findings indicate that due to the different capabilities of the investors, it is not clear whether XBRL reduces information asymmetry between smaller and larger investors (Blankespoor et al. 2014, 1497).

Moreover, Blankespoor (2019, 954) studied whether a change in the market participants' information costs, namely XBRL reporting, affects companies' disclosure choice. The study implies that the requirements of detailed XBRL tagging of disclosure increased managers

disclosing due to anticipation of decreased processing costs of market participants in the US. Therefore, the study indicates that the processing costs of market participants can impact companies' disclosure decisions. It is to be seen how XBRL affects the disclosure decisions in Finnish listed companies and how Finnish analysts and investors react to structured XBRL data.

3.3.3 Challenges recognised in the literature

There is also criticism of the usefulness and usability of XBRL data. For instance, Harris & Morsfield (2012) find investors and analysts to question the reliability of the data, the simplicity and stability of the taxonomy, and the lack of user value-adding tools that are easily integrated into an investor's or analyst's existing workflow and tools. Harris & Morsfield (2012) argue that XBRL language should become integrated into the underlying systems (e.g. GL) to succeed in becoming the preferred format of financial data used by investors and analysts.

Also, Janvrin et al. (2013, 45) conclude in their study that researchers and practitioners question whether investors will use the information in XBRL format. Based on the proposed critique, a question arises, whether XBRL has promised more than it has delivered. Harris & Morsfield (2012) even suggest that there lies a risk of XBRL becoming obsolete for use by analysts and investors. Other researchers also propose some critique concerning the reliability of the data. Boritz & No (2008) and Debreceeny et al. (2010) provide evidence of a technical and conceptual struggle in the tagging process of the preparers. A later study by Locke et al. (2018) gives evidence that many US filers have made fundamental mistakes in the tagging and therefore supports the earlier findings of Debreceeny et al. and Boritz & No.

Because both IFRS and XBRL require judgement on information classification, they generate a risk that the financial statements might not give an accurate representation of results, as requested in IASB's (2018) framework. Also Romney & Steinbart (2017, 533) point out, that when the XBRL taxonomy offers multiple options for the same concept, there is a risk of selecting an inappropriate tag – especially if the person doing the tagging does not have extensive knowledge on the business and the XBRL taxonomy.

Because the use of extensions reduces comparability between companies, the unnecessary creation of taxonomy extensions is a potential problem. Harris & Morsfield (2012) suggest providing more regulatory oversight and audit requirement of the data as a solution to reduce the error rate and unnecessary extensions (i.e. company-specific tags). Romney & Steinbart (2017, 533) on the other hand, think that the risk should reduce by training and experience. Still, Romney & Steinbart would also find an external audit as a necessary detective control.

3.4 Implementation of XBRL reporting

The last sections of this chapter discuss the implementation process, different implementation strategies and adoption of XBRL reporting. Garner et al. (2013, 1) find that in the US the lack of mandate for internal XBRL use and a wide variety of ways to comply with the requirements has resulted in many different levels of XBRL adoption. For instance, a recent study by Hsieh et al. (2019) researched the factors associated with companies' choices of XBRL implementation strategies in the US market. The research indicated that difficulty in companies' report review process is positively related to the implementation of Disclosure Management solution.

The following sections address studies of Garbellotto (2008), Janvrin and No (2012) and Garner et al. (2013) who have researched the different implementation approaches of XBRL reporting. While Garbellotto (2008) focuses on describing the different implementation approaches and their benefits, Janvrin and No (2012) defines the implementation process and compares it between the different implementation strategies. Garner et al. (2013), on the other hand, analyses the different approaches from the perspective of the level of adoption.

The implementation strategies can be roughly divided into three categories. According to Garbellotto (2009a, 56-57), the three main implementation approaches of XBRL are bolt-on approach, built-in approach, and deeply embedded approach, whereas in comparison Janvrin and No (2012) divide the implementation strategies to outsourcing, bolt-on approach and built-in approach. Furthermore, Garner et al. (2013, 2) separate the adoption levels into four types: nonadopters, low adopters, medium adopters, and high adopters.

In respect to the XBRL implementation process, Janvrin and No (2012) established a framework illustrating the four main phases, starting from planning the implementation, to the tagging of the financial items and creating taxonomy extensions to validating, rendering and issuing the XBRL documents. Additionally, the framework compares the implementation process in the main implementation strategies. The framework is displayed in the following figure.

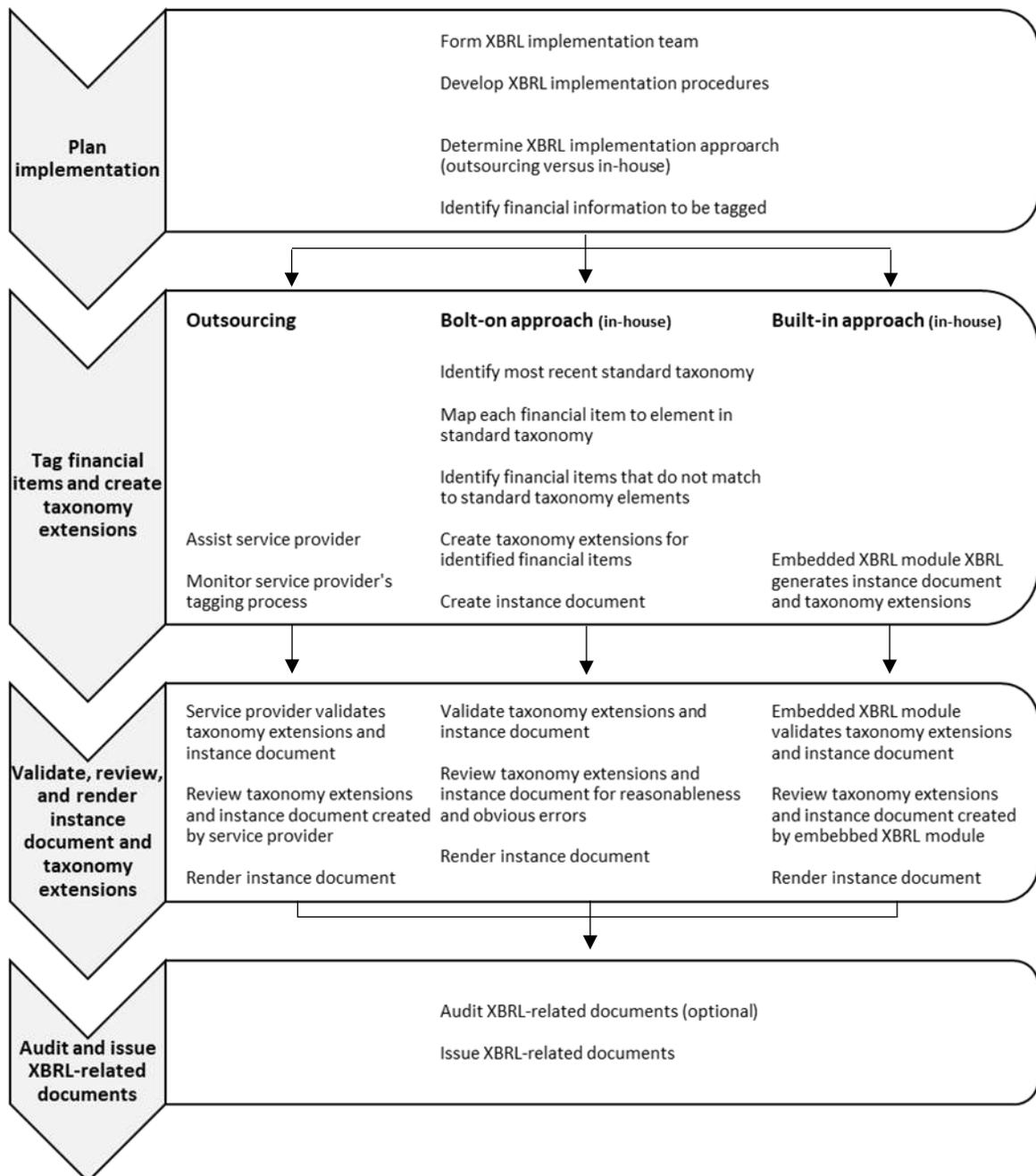


Figure 7. XBRL implementation process (adapted from Janvrin & No 2012, 174)

3.4.1 Implementation strategies and level of adoption

As mentioned, Garner et al. (2013) studied the adoption of XBRL reporting and based on the research, established a framework that compares the implementation approaches as different adoption levels. The following table presents the recognised adoption levels, excluding the nonadopters as this study is focused on mandatory adoption of the requirements, and therefore, non-adoption is not an option.

Table 2. XBRL Adoption levels (modified from Garner et al. 2013, 2)

	Low Adoption	Medium Adoption	High Adoption
Data Conversion to XBRL	Outsourced	Performed in-house	Performed in-house
External XBRL Use	To meet regulatory or trading-partner requirements	To meet regulatory or trading-partner requirements	To meet regulatory or trading-partner requirements, private companies may use XBRL for internal purposes
Internal XBRL Use	No internal XBRL use	No internal XBRL use	Internal XBRL use
Benefits	<ul style="list-style-type: none"> Does not require in-house XBRL-tagging expertise Does not require capital investment Smaller learning curve than medium and high adoption Financial reporting can be completed more quickly and uses less employee time than medium and high adoption levels 	<ul style="list-style-type: none"> Maintain control of the conversion process The lowest level of capital investment for XBRL adoption The lowest level of required in-house XBRL-tagging expertise 	<ul style="list-style-type: none"> Maintain control of the conversion process Easier transmission of internal financial data Potential decrease in the total cost
Costs	<ul style="list-style-type: none"> Requires hiring a vendor to convert data Requires some level of in-house XBRL expertise to review the vendor's work May increase the cost of filing external reports 	<ul style="list-style-type: none"> Requires capital investment for software or hardware necessary for the conversion Requires some level of in-house XBRL expertise 	<ul style="list-style-type: none"> Requires the highest level of capital investment for necessary software or hardware Requires the highest level of in-house XBRL expertise

Garner et al. (2013) define the outsourcing companies as low adopters of XBRL. Business process outsourcing (BPO) is a common business practice, that is not only used for cost reduction but also as a strategic tool (Zhu et al. 2001, 373). There are several outsourcing motivations identified by literature, such as cost reduction and access to expertise. Companies typically outsource processes that are not their core business functions, like

accounting, human resources or call centres (Asatiani et al. 2019a, 39). Prior literature also shows that the decision to outsource a process depends on the type of the process; how frequent it is and how specific assets are required (Asatiani et al. 2019b). The following figure illustrates some identified positive and negative motivations for outsourcing.

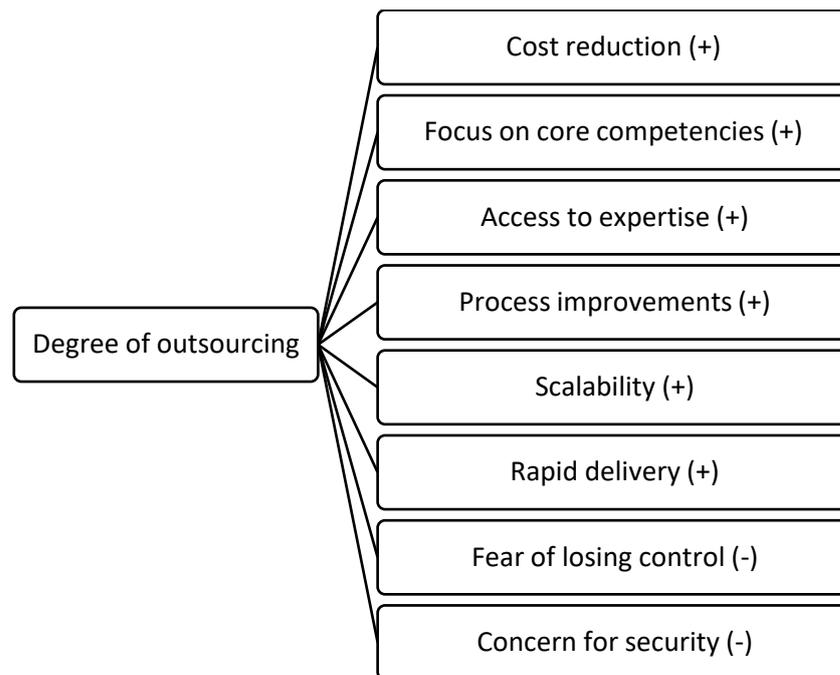


Figure 8. Motivations for outsourcing (adapted from Asatiani et al. 2019b, 41)

Moreover, Asatiani et al. (2019b) studied the relationship between motivations to outsource and the degree of outsourcing in small and medium-sized enterprises in Finland. The study revealed that the motivation for outsourcing is dynamic. The findings suggest that high outsourcers would be motivated by efficiency, whereas low outsourcers by expertise. The findings from the Finnish market align with Garner et al. (2013) in Table 2. Moreover, Hsieh et al. (2019) researched the factors associated with companies' choices of XBRL implementation strategies and found that good XBRL knowledge was negatively related to outsourcing. In contrast, concerns about XBRL compliance and release delays were positively related to the outsourcing strategy.

According to Garner et al. (2013), organisations that choose the low adoption level usually perceive outsourcing cheaper, are lacking in-house expertise for the XBRL tagging or do not want to purchase a mapping tool. Garbellotto (2009b) identifies the approach where reports

are converted into XBRL format after they are generated in another format, such as Word or Excel, a bolt-on approach. The conversion can be done internally using XBRL mapping and instance creation application, or it can be outsourced (Garbellotto 2009b, 56-57).

According to Garbellotto (2009b), the mapping tool that does the conversion is often an Excel add-on. Because the source report is generated as before, the benefits are limited to compliance with the mandate. However, both Garbellotto (2009b) and Garner et al. (2013) find that the benefits of this approach are fast implementation and simplicity of the approach, especially for the first years of the mandate when the requirements are not that extensive. Still, Garbellotto (2009, 56-57) argues that when the amount of needed tags increases, e.g. the mandate is expanded to tag notes in detail, a more automated solution might be more desirable.

Garner et al. (2013) identify as medium adopters the companies that convert the data in-house but use the XBRL data only for external purposes. According to Garner et al. (2013, 3), the medium adopters of XBRL enable maintaining the control of the conversion process, but XBRL is not integrated into the systems. In the built-in approach, introduced by Garbellotto (2009c), the conversion to XBRL is an extension to the reporting process rather than a product from a manually converted Excel spreadsheet that has no connection to system data. The built-in approach requires a consolidation or reporting application to support mapping to XBRL taxonomies. In the built-in approach, XBRL is embedded in the reporting process, which enables process benefits in, e.g. aggregating data and compilation of financial reports (Garbellotto 2009c, 56).

The high adopters, identified by Garner et al. (2013), use XBRL data for also internal purposes. For the high adopters, XBRL becomes a natural extension to the reporting process, where the data has a connection to the underlying systems. As described by Garbellotto (2009d), the deeply embedded approach uses the XBRL GL taxonomy to standardise the data from which the reports are created and the rules that determine their calculation. Hence, the XBRL document generation comes as a by-product of an XBRL-enabled internal process. The deeply embedded approach standardises the whole reporting process, including source data (Dallavia & Garbellotto 2015).

The high adopters of XBRL can also reap internal use benefits. According to a study by Garner et al. (2013, 3), the most common internal uses are establishing a common vocabulary for financial data and providing an audit trail. Garbellotto (2009d, 56-57) mention as typical use cases of embedded XBRL implementations internal data handling and reporting. Moreover, Garbellotto (2009d) mentions as benefits of deeply embedded approach seamless audit trail as well as efficient system integration.

3.4.2 Adoption of XBRL reporting

International research of the adoption of XBRL indicates that awareness regarding XBRL is low, and therefore adoption has been slow (Steenkamp & Nel 2012; Ilias et al. 2015; Abed 2018). Troshani & Rao (2007, 107) argue that for widespread adoption of XBRL to begin there needs to be a critical mass of adopters. Furthermore, a study by Felden (2011, 161) states that the influence of social groups and top management define the level of XBRL adoption.

Garner et al. (2013, 2) suggest that the companies' chosen XBRL adoption level is based on the perceived costs and benefits. Concerning the benefits of XBRL, Garbellotto (2008, 57) states that XBRL is an additional cost only when its use is limited to the end of the supply chain of business reporting, meaning the conversion of reports to XBRL format when they are already ready to be submitted to the regulators. In that case, XBRL is not utilised in the report preparation process. Garbellotto (2008) finds that the most significant gains can be achieved by presenting operation data with XBRL GL, enhanced data quality and continuous auditing being some of the benefits of the approach (Dallavia & Garbellotto 2015, 48).

A study by Henderson et al. (2012, 128) suggests that the companies that implement XBRL for internal purposes gain more benefits but need to change existing systems and internal processes. Hence technological factors influence the internal adoption of XBRL. Furthermore, Henderson et al. (2012) propose that relative advantage is an essential factor for internal XBRL adoption but not for inter-organisational adoption. Relative advantage is referred to in the literature as a significant factor explaining the adoption of technologies, meaning the expected advantages or perceived benefits for the organisation (Henderson 2012, 115). The statement is supported by Garbellotto (2008) that argues that the benefits of

XBRL are mainly received by the organisations exploiting the deeply embedded approach and who can utilise XBRL internally. However, Rinta-Kahila et al. (2016) state that even if a company is willing to adopt a new information system, some reluctance in the adoption process should be expected.

This chapter introduced the background of XBRL regarding the reporting requirements, the benefits and challenges recognised in the literature as well as the different implementation strategies and adoption of XBRL reporting. The empirical findings reflecting on the theoretical part of the study are discussed in Chapter 6.1. The next chapter starts the empirical part of the study that aims to research the adoption of XBRL reporting in Finnish listed companies. Chapter 4 introduces and argues the research and data collection method applied in the study. Reliability and validity of the study are discussed at the end of the chapter.

4 Research method and data

This thesis studies the adoption of XBRL reporting in Finnish listed companies. More specifically, it is researched by exploring companies' perceptions on the regulation, their selection of implementation strategy and the outcomes of XBRL reporting implementation. A conclusion of the adoption of XBRL reporting is drawn based on the findings of the research. For this research, a total of six Financial Reporting Directors or Vice-presidents responsible for the implementation of XBRL reporting tool in Finnish listed companies were interviewed.

Furthermore, to gain a broader understanding of the adoption process of XBRL in Finland and to observe the perceptions of the stakeholders, who are the key consumers of XBRL information, four analysts were interviewed. The underlying assumption is that by receiving data in a structured, machine-readable format, the analysts can utilise data more efficiently. Hence the analysts being a primary stakeholder and user of financial information, the study benefits from interviews with four equity analysts in Finnish financial institutions and analysis services.

The primary research material comes from the interviews of the representatives of Finnish listed companies. In contrast, the material from the analysts' interviews helps in the additional analysis that supplements the primary interviews. Even though the views of analysts are not in the centre of this research, their insights strengthen the study by offering outlooks on the information needs of the utilisers of financial information. It also allows assessing who finds the new regulation valuable and how does it affect the financial communication processes.

Additionally, a brief interview was conducted with a financial supervisory expert who gave comments on the topic from the regulator's viewpoint. The idea was to validate the main findings and get more insights. The interview took place after two of the reporting companies' and two analysts' interviews. The aim was to observe whether the financial supervisor is knowledgeable of the challenges that the reporting companies face and to get insight on the proceeding of the regulation. Hence, the financial supervisory expert was asked to comment on the findings of the research from the regulator's viewpoint. Also, the

material from this interview supplements the primary interviews with Finnish listed companies.

4.1 Research methodology

This subchapter describes the research methodology of the study on high-level. While quantitative research analyses statistical data to find causalities and correlations between variables and extrapolate the results in a broader population, qualitative research aims to develop an understanding of a phenomenon, collecting textual data from a smaller population of participants (Creswell 2014; Hennink et al. 2020). Quantitative research uses closed-ended questions or hypotheses, whereas qualitative research uses open-ended questions (Creswell 2014).

Using a quantitative method, one can provide a numeric description of trends, attitudes, or opinions of a population by studying a sample of the population, in this case, listed companies. In contrast, the qualitative method can provide an in-depth understanding of the perceptions, decision-making and process changes in listed companies. Because the nature of the research is exploratory, interviews can provide detailed and elaborate descriptions of how people are experiencing the given research matter. (Creswell 2014) The qualitative approach serves better for the study's objectives as it allows us to gather unexpected responses and pain points that listed companies experience. Hence, the chosen research approach for this study is qualitative.

As the nature of qualitative research is iterative (Eriksson & Kovalainen 2017, 33), the theoretical framework and research questions were re-evaluated after conducting the empirical research. Interviews are a typical data collection method for qualitative research (Merriam 2009, 137), and it was also used in this study. An advantage of interviews as a data collection method is, for instance, that the researcher can moderate the interview situation (Creswell 2014). The next subchapter describes the data collection of the research more in-depth.

4.2 Data collection and analysis

As stated, the data collection of the research was done by interviews, and the used method was more specifically semi-structured theme interview. A semi-structured interview is typically used to conduct a more focused study of a specific topic. Compared to a structured interview questionnaire, semi-structured interview instead sets the agenda but does not presume the response. A semi-structured interview provides some structure and a focus for the interview, but the format is open-ended (Cohen et al. 2007, 321). It gives more room for the interviewee to determine what is valuable, and hence semi-structured interview can uncover something non-presumed. An interview guide, including a list of questions, is usually used in semi-structured interviews to guide the interview flexibly. (Fossey et al. 2002, 727)

The interviews followed a semi-structured method and therefore, did not proceed according to a strictly pre-defined plan. The interviewer needed to evaluate throughout the interviews which relevant additional questions would provide valuable information. For instance, detailed technical questions regarding XBRL tagging process would not have been relevant for a company outsourcing the whole XBRL implementation process. The interviews aimed to discuss pre-selected themes but let the interviewee also lead the discussion further. To illustrate, if the interviewee's response took the conversation to another critical path, it could be followed by asking additional questions before returning to the planned interview materials. Still, there was an interview guide to help to keep the focus and conversation flowing.

A semi-structured interview guide was developed to be used as support material in the interviews of the listed companies. The prepared questions were created based on the set of research questions and literature review. After the first interview, the guide was re-evaluated and revised to address more fundamental topics. The interview guide was divided into two main themes and consisted of open-ended questions. The first theme was the implementation of ESEF/XBRL reporting. It consisted of three sections that were opinion on new reporting requirements, received information on the requirements and implementation plan. The second theme was about the current state of financial reporting and its future. There was a separate interview guide for the analysts' interviews. As the interviews were conducted in a

semi-structured method, slightly different topics were emphasised, and therefore every interview was unique. The brief interview with the financial supervisory expert discussed the main findings based on the four first interviews, two reporting companies and two analysts. All of the interview guides can be found in appendices.

The interviews were conducted between January and May 2020, before any of the interviewed companies had delivered XBRL tagged financial statements obligated by the mandate. The industries of the interviewed listed companies were diverse, including manufacturing, energy, and IT. Each interview lasted from 35 minutes to 60 minutes. At the beginning of each interview, the interviewees were guaranteed anonymity to create mutual trust and for the interviewees to answer honestly and openly. Hence, the names, companies and titles of the interviewees are anonymised. A summary of the interviews is presented in the following table.

Table 3. Table of the interviews

Date	Reference	Title/role of the interviewee	Duration
29.1.2020	Interviewee 1	Financial Reporting Director / Vice-President	40 min
26.2.2020	Interviewee 2	Financial Reporting Director / Vice-President	50 min
13.3.2020	Interviewee 3	Financial Reporting Director / Vice-President	45 min
27.3.2020	Interviewee 4	Financial Reporting Director / Vice-President	35 min
3.4.2020	Interviewee 5	Financial Reporting Director / Vice-President	35 min
8.5.2020	Interviewee 6	Financial Reporting Director / Vice-President & Senior Analyst	60 min
14.2.2020	Analyst 1	Head of Research	40 min
26.2.2020	Analyst 2	Equity Analyst	45 min
1.4.2020	Analyst 3	Equity Analyst	45 min
2.4.2020	Analyst 4	Senior Analyst	45 min
11.3.2020	Expert	Financial supervisory expert	15 min

The interviewees from listed companies were contacted based on their titles such as director, manager or vice president of group accounting. The main criteria were that they were responsible for the implementation of XBRL reporting. From the analysts, the targeted titles were equity analyst or equity research analyst. The interviewees were contacted by email and some of the analysts also by a phone call. An email invitation to a face-to-face or remote interview was sent to all with some background information about the upcoming XBRL reporting requirements and the research project. The first half of the listed companies' interviews and analysts' interviews were conducted face-to-face, and the rest were held via video call due to the COVID-19 outbreak.

Six representatives of Finnish listed companies were contacted for the interview from which all agreed. From the analysts, seven were contacted, and four agreed. The success rate is hence ~ 60 % from the analysts' side. The interview guide was sent before the interview for the interviewees. Hence the interviewees had an opportunity to prepare themselves for the questions. The interviews were mainly held in Finnish, except for one interview that was in English. The interviews were conducted by two interviewers, the researcher and a university professor of accounting subject. All the interviews were recorded after which the researcher transcribed them. The material was transcribed word-for-word; however, when the material was translated, spoken language and dialect were trimmed from transcriptions to maintain good readability. Hence the quotations from the interviews are presented in standard language.

The content analysis method was used to analyse the material of the interviews. It is a method used to analyse documents systematically and objectively. The method aims to describe the studied phenomena in a compressed and informative format. (Tuomi & Sarajärvi 2018, 87) Qualitative content analysis can be executed with either an inductive or deductive process (Elo et al. 2014, 1). The differences are in the approach logic. Inductive approach proceeds from individual phenomena to general concepts where the analysis is generated under the terms of the research material. In comparison, the deductive approach proceeds from general to individual, using a theoretical framework as a starting point for the analysis. (Tuomi & Sarajärvi 2018, 80) This study uses the inductive approach as the previous knowledge of the subject is lacking, and because the nature of the research is explorative.

Data analysis in qualitative research consists of multiple steps, starting from organising and preparing the (raw) data for analysis, reviewing and exploring the data, coding the data and combining the data into themes and after that synthesising the material and making interpretation of the findings (Creswell 2014; Fossey et al. 2002, 728). The inductive organisation of data includes reducing, clustering and abstraction of the material (Tuomi & Sarajärvi 2018, 91). For instance, the reducing of the material practically meant that the content that did not concern the research was eliminated. The data analysis of the research was conducted with the help of a qualitative data analysis software called NVivo, that assisted in coding and combining the material into themes.

4.3 Reliability and validity

Research in general aims to provide objective and credible results that are often assessed by reliability and validity. However, the use of reliability and validity concepts have been criticised in qualitative research as they are seen to mainly serve the needs of quantitative research (Tuomi & Sarajärvi 2018, 120). Qualitative reliability means that the research approach is consistent among different researchers, i.e. transferable. In contrast, qualitative validity can be seen as employing specific procedures to ensure the accuracy of the findings, i.e. credibility. (Creswell 2014)

Some general limitations of interviews as a data collection method are that the researcher's presence might bias the responses, and there are differences between the communication and articulation skills of the interviewees (Creswell 2014). The anonymity of the interviewees was guaranteed before starting the interview to obtain honest and unrestricted answers of the interviewees. Furthermore, the interviews started with easy questions, e.g. job title and responsibility, to make participants feel comfortable. In the beginning, there was a brief introduction to the topic and explanation of the purpose of the research. Before starting the initial interview, the respondents were assured that their responses and identity would be handled confidentially. The respondents appeared to be honestly describing their perceptions based on the detailed examples and straightforward answers received.

In each interview, there were two interviewers, the researcher, and a university professor of accounting. Two interviewers can be seen as a benefit as it allows the other interviewer to

take a more active role in asking questions whilst the other one could control the direction of the conversation and ensure that everything relevant was covered. Each interview was recorded, after which the researcher transcribed the recordings. The transcriptions were summarised later for analysis. To ensure that the analysis was not based on errors made in the summarising process, the summary was sent for reviewal to the second interviewer and, if necessary, modified. Thus, the summary faithfully represents the interviewees' responses concerning their XBRL adoption process.

This chapter described the research approach, data collection and analysis methods of the study. This chapter introduced the selected methods and argued that they support the nature and objectives of the thesis. The next chapter continues by introducing the results of the interview study of which data is collected and analysed using the methods described in this chapter.

5 Adoption of XBRL reporting in Finnish listed companies

This chapter describes the results of the interview study consisting of subchapters of which three first ones analyse the answers of the interview study in the order of the main themes of the research. Some of the subchapters are divided into sections. Subchapter 5.1 discusses the perceptions of ESEF reporting regulation. Subchapter 5.2 covers the selection of the implementation strategy and the outcomes from the implementation of XBRL reporting are analysed in Subchapter 5.3. The last Subchapter 5.4 summarises the results of the empirical part following the order of the research questions.

5.1 Perception of the upcoming ESEF reporting regulation

The first objective of the study was to find out how companies perceive the upcoming ESEF reporting regulation. The reporting companies were asked about their general opinion on the new requirements and the main benefits for the stakeholders, information gaps and areas requiring training or external support. Also, a financial supervisory expert was interviewed to support and validate the main findings. Furthermore, supporting viewpoints were collected from equity analysts as the users of the information.

5.1.1 General opinion and main benefits

This section presents the reporting companies' opinions regarding ESEF reporting and its benefits. In general, the statements of interviewees were aligned. Overall the interviewees perceive ESEF reporting as a positive change, however, all find that the benefits of XBRL reporting are received by the users of the information. Moreover, internal benefits from XBRL reporting are not yet recognised, except for indirect benefits related to the implementations of new reporting tools. Some of the reporting companies think that the new requirements do not give them any added value.

Interviewee 1 finds that benefits will show on EU level when companies start reporting more with the same rules, and due to the tagging, the data will be more comparable. Interviewee 1 sees the ESEF reporting to force companies to a more uniform reporting which has been the objective of IAS and IFRS. However, compared to changes in accounting

standards, Interviewee 1 finds ESEF reporting regulation a small change. Interviewee 1 stated as follows:

“I have now done group accounting since 2012 and experienced the change from FAS to IAS. If you compare that change to this [XBRL], the previous one was a big change in accounting standards but this is only tagging of information. I do not see any added value for the company.” (Interviewee 1, 2020)

Interviewee 1 finds that XBRL reporting does not bring any added value for the reporting companies but is made only for analysts and the utilisers of the information, namely research and authorities like the Financial Supervisory Authority (FIN-FSA). Also, consultants are seen to benefit from the ESEF requirement. Interviewee 1 sees XBRL reporting as an external requirement which needs to be fulfilled.

However, Interviewee 1 knows about another company that chose a different implementation strategy and therefore benefitted from ESEF reporting. This other company decided to renew the whole reporting process and invested in software that produces the whole published material. To illustrate, when one inserts a number in the system, it updates it automatically to other referenced places in the report. Interviewee 1 speculates that this other company might have had more resources and time to put in or they might be more agile in comparison with Interviewee 1’s representing company.

Interviewee 2 says that, at the moment, XBRL reporting feels like a mandatory requirement of which added value is difficult to see, agreeing with Interviewee 1’s statements. Interviewee 2 finds that the added value is even questionable for the analysts because of the requirement being currently narrow. Furthermore, the financial statement is often published so late that the analysts have already moved to Q1 period. Interviewee 2 believes that if the requirement would be extended to concern the whole content and brought forward to interim reporting, only then, analysts would gain added value from it. For instance, the company that Interviewee 2 represents still publishes Excel files on their website from which analysts can copy the figures.

Interviewee 2 finds that currently, the shareholders that mostly benefit from XBRL reporting are the vendors of XBRL tools, auditors, and consultants. The view on the relevance for analysts is more pessimistic with the current set of requirements. Interviewee 2 speculates that there could be some internal benefits for analysis purposes if an interim report with all figures tagged would be available right when published. Interviewee 2 also points out that a built-in XBRL solution could significantly streamline and automate internal financial reporting processes but believes that such standardisation in systems would take a long time to achieve. Interviewee 2 speculated as follows:

“If an interim report with all the figures tagged was available as soon as it was published, perhaps in such a situation it could be useful for internal analysis. That [XBRL] is a good idea and it would be great if figures would be given so a tag from the beginning. However, systems are lagging so much behind that it probably takes a long time for it to become a standard – that it would be built into the systems. Now it is a so-called patch approach meaning that a tag is put on [later on]. If we could get the systems to classify transactions in their correct categories [when they are entered], there would be no need to do anything at the closing of accounts, but the information would come automatically, however, this can take time.” (Interviewee 2, 2020)

Interviewee 3 finds XBRL reporting to be in line with the direction of the development, i.e. automation of manual tasks, and perceives it as an advancement. Interviewee 3 considers positive the improvement in comparability and that analysts can get the data in electronic format, which likely would ease their work. Interviewee 3 finds that XBRL is more directed for the analysts and does not recognise internal benefits for the reporting companies (e.g. the management).

Similarly as Interviewee 1, **Interviewee 4** says that XBRL reporting itself does not feel substantial. However, it has created a significant change when simultaneously Interviewee 4 is aiming to put into practise other internal process improvements. The reason for the process improvements is to gain internal benefits from the new requirements. Interviewee 4 finds that XBRL reporting helps mostly analysts in their work due to standardised content being more straightforward to interpret. XBRL is seen to significantly help all users of

financial statements, whether it is an analyst or competitor. Interviewee 4 thinks XBRL reporting helps in understanding the meaning of the figures.

Interviewee 5 states that XBRL reporting itself is not something beneficial for the company, but there are other things, such as the implementation of the tool that the company can benefit from. Interviewee 5 proposes that the ESEF requirements have motivated the top management to invest in a tool, which probably could not have been justified without the presence of regulation. Therefore, Interviewee 5 appreciates the motivating effect of the regulation towards automation. Interviewee 5 described it as follows:

“We do not see that many benefits in XBRL as such. However, we do certainly benefit from implementing the tool, and there are also other angles to it. We most likely would not have been able to justify such a tool as it comes at a considerable cost. These XBRL sanctions have motivated our top management to invest in it, which is great, but in our opinion, the actual XBRL does not give much added value to investors as long as the XBRL tags are available to investors and other target groups only when the financial statement is published.” (Interviewee 5, 2020)

Sharing the opinion with Interviewee 2, Interviewee 5 finds as the biggest problem of the new regulation that the information is released too late for the investors. Interviewee 5 questions the added value of the reporting and states that the value of the information decreases due to the information being available a few weeks after the Q4 release. Therefore, Interviewee 5 thinks that even investors would not directly benefit from XBRL reporting as long as the tagged document is available for the market only after the official financial statement is published. Interviewee 5 stated as follows:

“We have experienced that the upcoming XBRL reporting, is information that comes to market too late or that its usability has decreased because it comes a few weeks after the closing of the books or Q4 releases when the financial statement is made public. In that sense, we have thought that the added value is a bit questionable.” (Interviewee 5, 2020)

Interviewee 6 finds that the new reporting requirements are implemented to increase the transparency and comparability of data, make the financials more structured and

understandable for different stakeholders and help to automatically get the data to the registry (NASDAQ). However, Interviewee 6 points out as a limitation that non-IFRS measures are not included, despite their importance in following the performance of the company. Moreover, Interviewee 6 hopes that the annual report figures offer at least some added value for the analysts, sharing the worry with Interviewee 2 and 5. Currently, Interviewee 6 finds XBRL reporting as an additional task to comply with but hopes that later also the reporting companies would gain direct benefits from XBRL reporting itself. So far Interviewee 6's representing company has received only indirect benefits from XBRL reporting due to implementing a tool that not only enables XBRL reporting but also automates their reporting processes.

The Financial supervisory expert was asked to comment on the finding that the reporting companies find the users of the information to receive the benefits of XBRL reporting. At the same time, internal benefits are not recognised. The Financial supervisory expert agrees that in the beginning, XBRL does not benefit the reporting companies and that the direct benefits are received by the users of the information. However, The Financial supervisory expert sees long-term benefits from ESEF reporting for the reporting companies. The Financial supervisory expert speculated as follows:

“In the long run, companies will have it easier once they have done this [XBRL reporting] once. The first exercise is big and difficult. Maybe later the data they provide will be more useful than currently. I completely understand and agree that it [XBRL reporting] does not add much value for them [reporting companies] at the early stage. They will incur costs.”

(Financial supervisory expert, 2020)

5.1.2 Information gap and problematic areas

The interview also investigated which information regarding the requirements companies are still lacking and which areas they possibly recognise problematic. One of the main recognised information gaps concerns auditing. As mentioned in Subchapter 3.2, there is a recommendation from the FIN-FSA (2020) and the Finnish Association of Auditors (Suomen Tilintarkastajat ry 2020) to audit the financial statements in ESEF format, however,

no binding legislation for the audit of ESEF yet exists. Hence, some of the companies expressed their opinions regarding the auditing of the tagged financial statement.

Generally, all interviewed reporting companies find the auditing aspect beneficial due to assurance and validation benefits. Even though **Interviewee 1** thinks that XBRL reporting does not add value to the reporting company, they find that XBRL tags should be audited. Also, **Interviewee 4** finds it positive and beneficial if someone would validate that they have selected the right tags. Sharing the opinion, **Interviewee 5** would find auditing beneficial so that everyone would use the tags in the right way and that it would support the use of the information in, e.g. research. Interviewee 5 also mentions that the auditing of the tags would be essential and valuable so that the information would be correct and broadly correspondent.

Interviewee 6 has understood that there is a recommendation from FIN-FSA that the XBRL document would be audited, but it is not compulsory. The company that Interviewee 6 represents have not yet decided whether they want the auditing of the tags. However, also Interviewee 6 finds some assurance benefits related to the auditing of the XBRL tagged financial statement. **Interviewee 2** finds that the auditing of the XBRL tagged financial statement should be part of the regular auditing and not a separate assignment. This issue also relates to the question about what the official financial statement is, and which one will be audited. Interviewee 2 does not see that XBRL reporting would ease auditing. Moreover, Interviewee 2 believes that a separate assignment would create more work for auditors and more cost for the reporting companies. The Financial supervisory expert was asked to elaborate on Interviewee 2's proposal that XBRL would increase the audit fees. The Financial supervisory expert confirmed that an increase in audit fees is very likely and stated as follows:

“It [auditing of XBRL reporting] can incur additional costs. At least, in the beginning, it will be a separate assignment and billing item. Even if it is part of the basic audit in the future, it will of course be priced accordingly. Therefore, auditing will be more expensive than before.” (Financial supervisory expert, 2020)

As many decisions regarding ESEF are left for national decision-making, many issues are still open. In addition to the extent of auditing, there is discussion around e.g. the format of the official financial statement. Also, e.g. the schedule of sending the documents is unclear for the reporting companies.

Interviewee 2 finds that informing from the FIN-FSA's side has worked, and they have given timely information for the companies. However, there is some confusion in informing on the EU level. Certain topics are left for national decision-making, and guidelines regarding some aspects such as auditing are not provided. Interviewee 2 is still lacking information about what to do after having generated the tagged XBRL document.

An issue that is still unclear for Interviewee 2 is what will be the official financial statement. There is confusion regarding whether it will be the tagged XBRL report or the signed financial statement. To Interviewee 2, it seems that companies are just getting an additional requirement as there is the old requirement (signed official financial statement) that is sent to one place and the new requirement (XBRL financial statement) sent to another place.

Interviewee 3 states to have received enough information regarding ESEF reporting, for instance, from FIN-FSA letters with links to information sources and by visiting webpages. To Interviewee 3 it feels that with the informing about ESEF, they have "*made a mountain out of a molehill*". Interviewee 3 finds that the talk is ultimately not about such a substantial issue and therefore, would find it useful to add to the message of FIN-FSA a side note that it is nothing dramatic, and there are service providers who are familiar with the topic.

Interviewee 3 is still lacking information about the schedule of filing the tagged financial statement to the stock exchange and what is the official financial statement. Interviewee 3 reflects that if it is the official financial statement that needs to be tagged, it means that the interim report has already been released, which decreases the importance and utilisation of the tagged financial statement. Interviewee 3 also misses some information regarding the practicalities as the preparation of the tags, checking the tags and sending the documents need to be timed in the process. Other information gaps include how to file the documents and where precisely they should be filed. Interviewee 3 wishes that the first reporting year's schedule will not be too tight so that companies would have time to practise.

Interviewee 4 finds the latest publications regarding XBRL quite technical and harder to interpret for a non-technical person. Interviewee 4 mentions that earlier there were Excels on the webpage where one could easily, e.g. view the taxonomy. Now it feels that IT-people would be needed to interpret the content. Interviewee 4 reasons that it might be due to the assumption that the companies are now further in the adoption process.

Interviewee 4 finds essential that the companies understand the content of the tags and how they should be used. After reviewing the tags, Interviewee 4 has noticed that choosing the tags is not always unambiguous and has considered requesting external interpretation. Interviewee 4 argues that the meaning of the tags is not clearly described. To Interviewee 4 it seems that all the reviewed software are logical, serve the purpose, and the tagging itself appears to be handy, but choosing the tags might take more time than they would hope to allocate.

Interviewee 5 mentions that the practice of making extensions to the taxonomy, meaning the creation of tags for the published key figures or numbers that are not included in the taxonomy, is still unclear. Another unclear topic is how the tagged financial statement delivered to the stock exchange relates to the official signed financial statement delivered to the Finnish Trade Register. Interviewee 5 wishes that the FIN-FSA would provide clear communication about their expectations.

The company that Interviewee 5 represents has not yet done XBRL tagging because of waiting for the last taxonomy and update in their reporting tool. The update is expected in May after which the tagging could be started. Currently, Interviewee 5 does not have any concerns about the tagging as there will be only relatively few figures to be tagged. However, Interviewee 5 wonders whether there will be some practical challenges after the tagging starts in practice. Interviewee 5 hopes to have an understanding already in Q3 about the open issues or possible challenges they might face.

Interviewee 6 has received lots of information regarding XBRL from their supplier's success manager but hopes for more information concerning the taxonomy. They have not started tagging yet due to waiting for the latest version of the taxonomy. Interviewee 6 speculates

in which format the documents should be sent and how to handle the reporting for the stock exchange and the business register.

As a summary, due to the interviews taking place in an early stage of the adoption, before the first reporting period, there were many open issues regarding the reporting practicalities. The main information gaps that were raised in the interviews were discussed with the Financial supervisory expert. One of the main information gaps was uncertainty regarding auditing. Another often raised topic was the conversation regarding the official financial statement and its format. The Financial supervisory expert verified that both topics are recognised problem areas and currently being worked on. The Financial supervisory expert stated as follows:

“These issues [audit and the discussion regarding the format of the official financial statement] have now been identified as problem areas during the spring. Both temporary and longer-term solutions are being sought. Longer-term solutions are likely to require amendments to the law.” (Financial supervisory expert, 2020)

The Financial supervisory expert also advises that the stakeholders of XBRL reporting have patience regarding ESEF while it is being developed. Compared to the US, the tagging requirements are significantly smaller and the Financial supervisory expert is sure that Finnish listed companies will perform well with the help of a suitable partner and software. The Financial supervisory expert stated as follows:

“[...] while it may seem like a big deal, this European ESEF is ultimately a very small compared to the US. [...] Here we will only have about 300-400 tags whereas, in the US, the number is many times higher. This is a small exercise and Finnish companies will be able to handle it quite easily as soon as they find a suitable partner and software.”
(Financial supervisory expert, 2020)

5.1.3 Areas requiring training or external support

Companies were also asked about possible areas where they would need training and whether they have needs for external support or outsourcing. Based on the interviews,

companies have not yet profoundly familiarised themselves with the XBRL taxonomy and hence many are using the software vendor to support with the first XBRL tagging. In general, companies find that the tagging of the primary financial statements should be relatively easy but many companies find the taxonomy extensions an area where they would require more training. This section presents the interviewed companies' thoughts about their needs for training or support.

Interviewee 1's representing company chose to outsource the preparation of the XBRL tags for a consultancy company. Generally, Interviewee 1 finds that XBRL reporting requires the company to know IFRS to be able to choose the right IFRS standard to tag. Interviewee 1 finds their company not to have problems knowledge-wise as they understand what XBRL reporting is. Also, because there is IFRS knowledge within the company, Interviewee 1 finds that they will know which standards need to be tagged.

The company that **Interviewee 2** represents is planning to use the software vendor to perform the first tagging because the vendor has good XBRL knowledge due to SEC companies as customers. Interviewee 2 finds that the primary financial statements will be quite fast to tag as they are relatively standardised. However, Interviewee 2 expects that tagging the non-IFRS measures of the statement of profit and loss will require more work.

So far, XBRL reporting has not required training for **Interviewee 3**. Interviewee 3 explains to understand the topic but have not had time to read manuals regarding the tagging. Interviewee 3's representing company will buy the first tagging as a service from the software vendor for the financial statement of 2019 so that they can only re-evaluate the tags that the vendor has selected and in the best case just copy them for the next year. Interviewee 3 finds it easier to learn and evaluate whether the tags are correct after someone has made a draft than to first learn the tags and start from the beginning. Interviewee 3 understands that they are eventually responsible for the tagging but does not see it as something substantial.

Interviewee 4 states that XBRL reporting itself feels like a small thing compared to their aspiration to make other internal process improvements by redesigning their publishing process. They have not yet done the XBRL tagging, but to Interviewee 4 it seems technically simple with the software. However, Interviewee 4 guesses it will take some time to

familiarise oneself with the taxonomy. Interviewee 4 finds income statement and balance sheet simple but reckons that tagging of the cash flow and equity might take slightly more time.

Interviewee 5's representing company is aiming to build know-how within the company so that they could be self-sustainable, without external support. If support is needed, they will firstly discuss with their auditor. Also, **Interviewee 6** hopes to become self-sustainable with the XBRL tagging so that they would have resources to make changes and to prepare for the extension of XBRL reporting in the future.

Based on short training from the software vendor, Interviewee 6 finds the tagging technically simple. However, there is lots of information one needs to know, such as how to use the tags from the taxonomy and how to make taxonomy extensions. Interviewee 6 finds the pieces of training received from the vendor relatively short and hopes for more extensive training regarding XBRL and especially regarding the making of extensions. Additionally, Interviewee 6's representing company has a small budget for using the supplier's consultant to get things right the first time.

5.1.4 Supporting viewpoints from analysts

In addition to reporting companies' interviews, four equity analysts were asked about their perception of the new reporting requirements, their information needs, and the possible effects of the regulation to their work. The following paragraphs summarise the overlapping opinions and statements of the four interviewed equity analysts as the answers were generally aligned with each other. The interviewed analysts emphasise the differences between finance and accounting and the significance of their judgement while doing valuations. Simply put, their job consists of estimating the comparable result of the financial period and making the interpretations based on a large set of data, and thus they seem to understate the meaning of financial statements.

The analysts highlighted that understanding the drivers behind the cash flow and revenue is crucial. While analysts go through interim reports, their answers suggest that not much time is used to compare different companies, and some of them stated that the annual report is

read *"when there is time"*. In terms of analysing tools, the way of working of analysts seems stable, the most used tool being Excel. No other IT solutions for analysing purposes are actively being investigated. The Financial supervisory expert commented on this finding that the purpose of the regulation is to allow analysts to use better data but not to steer how the analysts are using the information.

None of the interviewed analysts had heard about XBRL reporting requirements before the interview. The analysts mention as the primary issue with XBRL reporting that the frequency of releases is too long. The requirement covers currently only annual reports while equity analysts would need quarterly data. Interim reports and financial statements bulletins are more relevant for analysts providing information for the investors. Another issue with XBRL is that the prolonged processing time does not meet the information needs of the analysts that require prompt report release. For the interviewed equity analysts, it is a matter of hours whether the structured data is useful on a result day.

Another mentioned proposal is that the data should be stored in a single database so that it is easy to fetch and compare. The data should not be shattered in many national databases with different database structures as the competitors of Finnish companies are often non-Finnish. Also, the analysts would need historical data from a more extended period in a structured format to build forecasting models. Even though XBRL reporting has a good intention, due to the abovementioned issues, the interviewed sell-side equity analysts find the significance of the first implementation stage of ESEF reporting as minor.

The Financial supervisory expert commented on the finding that the stakeholders would find a common database for the whole EU more beneficial than different databases in each country. The Financial supervisory expert agrees that the database should be Europe-wide, however, argues that the completion might take a long time. The Financial supervisory expert commented on storing the data as follows:

"When conducting a sector-specific analysis, the Finnish market is quite small. It is not possible to make a very extensive analysis of the companies in the industry found in Finland. In that sense, it goes without saying to me that it [the database] should be Europe-wide, but that can be a long process." (Financial supervisory expert, 2020)

Analysts of financial institutions (e.g. credit analysts) are expected to benefit more from annual XBRL data than buy- or sell-side equity analysts. Some analysts find that currently the benefits of XBRL reporting are collected by the financial information service vendors, such as Bloomberg L.P. and Suomen Asiakastieto Oy. To benefit all analysts, the sequence of getting structured data (quarterly) is essential, and the time delay should be minimised.

The finding that expanding XBRL reporting to e.g. interim reports could bring clear benefits for the users of the information was discussed with the Financial supervisory expert. Expanding XBRL reporting outside of the annual financial statement is voluntary and the Financial supervisory expert supposes it to also stay voluntary. The Financial supervisory expert elaborated as follows:

“Tagging of notes will become mandatory in two years but there is no regulation on the interim and half-yearly reports. The starting point has been that everyone can do it voluntarily. Of course, the presumption is that the OAMs, or information repositories, are able to receive them. At this moment, I do not think they will become regulated, but it might be dictated by the market. Why should everything be regulated? If the financial statements are regulated, others [reports] might follow gradually.” (Financial Supervisory expert, 2020)

5.2 Selection of implementation strategy for XBRL reporting

The second objective of the study was to gain an understanding of the decision-making process leading to the implementation strategy of XBRL reporting. The interviewees were asked to elaborate on their approach in selecting the solution – more specifically, the requirements and reasoning for the selected solution. Companies were also asked which parties were involved in the selection process. Some companies also estimated the size of the investment made.

5.2.1 Selection process

This section presents how the interviewed companies selected the tool for XBRL reporting. Overall, Finnish listed companies are in different stages of selecting and implementing a tool for XBRL reporting. Different approaches have been considered but many companies have found implementing Disclosure Management software with XBRL reporting functionalities beneficial. The number of criteria and the extensiveness of the implementation process varied between companies. The selection criteria that the interviewed companies mentioned included price, the familiarity of the tool, Excel and Word functionalities, automation of manual tasks, easy transfer to InDesign, the flexibility of the vendor, the vendor's experience with XBRL and the vendor offering XBRL tagging as service.

Interviewee 1 started the selection process by going to events and learning what XBRL is. In summer 2019, Interviewee 1 started meeting software vendors to see what they could offer and how everything works in practice. After meeting three software vendors, they concluded that the implementation would require the company to redesign many processes. Moreover, the timing would be bad for the company due to other software renewal plans. Therefore, Interviewee 1's representing company decided to outsource XBRL reporting to a consultancy company for the first year or two.

So, eventually, Interviewee 1's representing company chose a careful approach for the transition phase when only the primary financial statements are required, only aiming to fill the minimum requirements. Price was a critical factor in the selection of the reporting tool. The tools that would have been most beneficial would have required to renew the publishing process together with the communications team, for which the company was not ready. However, within the first year or two, Interviewee 1 believes in investing in a software that enables them to do the XBRL reporting themselves (in-house). Interviewee 1 explained their approach as follows:

“We have interviewed software vendors, but have concluded that the first year, maybe even the second year, we will purchase it as a service. Our future intention is to start to do the reporting ourselves – especially when even the notes have to be tagged. We are still monitoring the situation during the first year and going with the minimum requirements.”

We have selected a cautious approach. We will meet the requirements but with the minimum own effort at least during the first year.” (Interviewee 1, 2020)

Interviewee 1 plans to send their main financial statement Excels for the consultancy company in spring to perform the first pilot. Interviewee 1 does not see risks in outsourcing as their company will, after all, check what the consultants have done. More specifically, Interview 1 describes that the consultancy company uses a software where AI is used to do the first tagging after which the consultants check it, and then the responsibility moves to the reporting company.

Compared to Interviewee 1’s described careful outsourced approach for the transition period, the other interviewed companies implemented or are planning to implement a software that aims to automate and streamline the reporting process, and also generates the XBRL document. These companies aimed to gain benefits for themselves from the new regulation. Moreover, many companies described having struggled internally with the old processes that were highly manual, time-consuming and error-prone.

Interviewee 2 described there being one costly solution on the market that everyone thought they would want in the beginning. However, after comparing the price-quality ratio to other solutions, Interviewee 2 found it not to stand out. The solution they selected is a cloud software built on Word and Excel. Excel is linked to the consolidation system from which the figures come. The solution enables XBRL tagging, and the document can be divided into parts so that many people can work on it at the same time.

Price was an essential factor for Interviewee 2’s representing company. However, it was also crucial that the solution had Word and Excel functionalities as the tool has many different users, and the tool should be familiar. Because the financial statements bulletin is in Word and Excel format, it also eases the transition. Interviewee 2 wanted to get rid of copying and pasting figures as it is time-consuming and error-prone activity. Hence, an automated transfer of the financial statement to InDesign was also crucial. None of the vendors offered a ready solution for transferring data to InDesign, but the chosen vendor offered a solution that used a third-party tool to transfer the data.

For Interviewee 2's representing company it was also important that the vendor is flexible and can support them vastly. Therefore, the company preferred that the software vendor is responsible for the delivery of the solution and has XBRL know-how. Interviewee 2 does not have intentions for outsourcing, however, because their vendor has had SEC companies as customers and good knowledge of XBRL, they will use the vendor to prepare the first XBRL tagging. Overall regarding XBRL reporting, they have asked the vendor to do everything they can for them.

Interviewee 3 started the selection process in 2018 when attending an event where many service providers were present. They evaluated a few different solutions but Interviewee 3 had quite a clear vision of the tool that should be implemented so eventually not that many vendors were heard. However, getting the financing for the tool required from Interviewee 3 intensive internal pitching. Interviewee 3 started the implementation project in July 2019, and Q3 was the first go-live reporting with the new tool. The chosen tool works so that once a data file (Excel) exported from the consolidation system is updated, the file is imported to the software and a button is pressed, most of the notes are ready.

The most important criteria for Interviewee 3 was that they could rationalise and automate the reporting of the notes to the financial statement, to get away from sending papers back and forth with the communications agency and on the side to be able to generate the XBRL report. The XBRL reporting abilities were the least critical part of the selection for Interviewee 3 as the XBRL report generation and tagging seemed similar and straightforward with all the tools and all the vendors offered the tagging as a service.

Interviewee 4's representing company had not yet chosen the tool for XBRL reporting. The reason for not yet selecting the tool was due to the company being in the middle of decision-making regarding other more significant IT solutions and waiting for implications from that side. Interviewee 4's representing company is currently thinking about big questions regarding the whole IT landscape and Interviewee 4 thinks that if they would select some specific software vendor for another business need, it might be reasonable to consider their XBRL reporting solution as well.

Interviewee 4 describes some big questions in the company being what are the tools that they will be using in the future, e.g. regarding planning or ERP and in what schedule are they moving to cloud from their traditional tools. Interviewee 4 finds that the future of IT is in the cloud, and software vendors are also giving indications of that. Hence, the motivation for moving to the cloud is more technology-driven.

Interviewee 4 has started the selection process by meeting with vendors, attended seminars, and interviewed old colleagues working in different companies. To benefit from the new reporting requirements, Interviewee 4's representing company wants to invest more than the minimum requirement and simultaneously improve their existing processes and reporting tools. Interviewee 4 finds it beneficial if they could use ESEF regulation as leverage to justify investment for a Disclosure Management system. Interviewee 4 described the reasoning for their approach as follows:

“Our goal is to rethink our processes and tools at the same time. That way, it might become a little bigger exercise after all. [...] The reason for our broader approach is to gain some benefit for ourselves as well. We are not aiming only at complying with the mandatory requirements, but we want to improve the closing of accounts process at the same time. [...] We see we could benefit from this if we can use it as leverage to justify investment for a Disclosure Management system. [...] Otherwise, it might be hard to justify a business case for the purchase of such a tool.” (Interviewee 4, 2020)

Interviewee 4 is confident about their schedule with the implementation of the tool. They are planning to choose during H1 how they will go ahead with this matter. However, as the current exceptional situation with COVID-19 results in more workload, Interviewee 4 ponders that at some point there could be a shortage of time for the project. After finishing with Q1 reporting, Interviewee 4 is planning to re-evaluate their resources and think over whether they will need external resources.

Interviewee 5's representing company decided already in spring 2019 that they want to streamline their external reporting as the way how their interim reports and the official financial statement has been made requires much manual work. Interviewee 5 described that the company had internally struggled with the manual process already for many years. In

spring 2019, Interviewee 5 realized that while complying with the ESEF reporting requirements, the company's top management could be motivated to invest in the process of how their interim reports and the official financial statement are prepared. Interviewee 5 described their intentions as follows:

“Already a year ago, we stated that XBRL could give us an excuse to motivate our company's top management to invest in the technology of producing interim reports and official financial statement.” (Interviewee 5, 2020)

After surveying the market of vendors, Interviewee 5's representing company selected and implemented a tool that they have used since the Q3 of 2019 in preparing their interim reports. Also, the official annual financial statement of 2019 was prepared using the tool. Getting the data from the consolidation system to the new reporting system requires only minor manual steps. The data is exported from the consolidation system using an Excel tool. The easily refreshable tables of data are imported to the new software using an Excel tool provided by the software vendor. The tool also enables adding the XBRL tags to the group reporting figures but, so far, Interviewee 5's representing company has used the tool only for streamlining the process, which was also the initial driver for getting the tool. Interviewee 5 argued the drivers for their selection of the tool as follows:

“We had other even more important reasons to select this tool. The tool had other features that were important to us from the perspective of streamlining our process. We thought as part of developing the process, we want to be able to produce the tags ourselves. Our need to do things more efficiently was the primary driver.” (Interviewee 5, 2020)

For **Interviewee 6's** representing company, the ESEF requirements have meant that they have updated their whole end release process. However, XBRL reporting has been a second priority for getting the tool, and the process improvements have been already achieved, even without utilising the XBRL tagging feature. Interviewee 6's representing company implemented in 2018 a tool to be used for the XBRL tagging. The company had been thinking for a few years to get a tool that would automate the reporting process as they wanted e.g. to reduce time spent on manual tasks in the closing processes, have roll-forwards for the releases and have multiple users more easily working for the release. For Interviewee

6's representing company, XBRL reporting requirements gave an additional reason and argument in getting the tool. Interviewee 6 described their selected approach as follows:

"[...] we had already hoped for some years to get a tool that would link the interim or annual report text and the numbers that would flow automatically instead of [manual] copy and paste. That was the initial trigger [for the tool]. Moreover, now that these requirements were coming, it gave us additional ammunition, in discussing the budget [for the purchase]. We wanted to mainly improve the process, but the tool can also do the upcoming XBRL tagging. So, it is not [implemented] only for this requirement. We have used it for the time being, and we are happy with it because of the automation. Nevertheless, XBRL was an additional reason why we wanted to put the effort to get such a tool." (Interviewee 6, 2020)

Before starting the project, Interviewee 6 needed to establish a business case proving why the project would be beneficial. The business case needed to show also financial estimates of the benefits in terms of hours saved. In this case, the time saving was mainly related to streamlining the process and spending less time on manual work. The schedule of the project in Interviewee 6's representing company was quite tight as it took only six months from initiating the project to completion.

There were five suppliers in total that Interviewee 6 discussed with of which three went into more in-depth discussions. Interviewee 6 had a list of 70 requirements defined and the features of the different systems and the offers from the suppliers were ranked based on the criteria. The selected solution takes the figures from the consolidation system to the new system, however, there is an Excel file in between the systems. So that Interviewee 6's representing company get the figures as they want them released, some manual work needs to be done in between in Excel. The manual work includes calculating ratios and key figures such as capital employed, operating capital and EBITDA percentages.

The tool itself enables transferring all data straight from the consolidation system to the tool and working without an Excel master file in between. However, Interviewee 6 described that manual calculation wanted to be enabled to ease the handling of the data. Interviewee 6 considered having the key figures already in the consolidation system and picking them up

directly from the system. Nevertheless, Excel makes it easier to check whether the formula is right. Even though the formulas could be checked from the calculation rules of the consolidation system, Interviewee 6 finds it faster and easier to work and make changes with the master file in Excel.

5.2.2 Parties involved in the selection process

The interviewed companies were asked to name the people or teams involved in the decision-making or selection process. Within all companies, group reporting team was the driver of implementing the XBRL reporting tool. However, as the work of IR or financial communication team is affected in many companies by the selected reporting tool, they were in many companies also actively involved in the selection process. The parties that were involved in the selection process and discussions with the vendors, were commonly financial reporting, financial communications and IT experts. In many companies, the CFO mainly just accepted the purchase of the new tool.

In **Interviewee 1's** representing company, all communications and discussions regarding ESEF reporting have happened on the group level, and people involved in the discussions have been from the head office. Financial and management accounting, communications and some experts from IT are knowledgeable of the requirements. The CFO of Interviewee 1's representing company knows about the requirements on a high level. People involved in the selection of the tool were the group reporting director and vice president of financial reporting who is responsible for IFRS. In the discussions with the software vendors, IT experts were also present.

In **Interviewee 2's** representing company, financial reporting and group controlling teams are most knowledgeable of ESEF reporting. Interviewee 2 presented the audit committee that such requirements are coming, and the CFO accepted that the tool can be purchased. In Interviewee 2's representing company the IR was heard and consulted as the team writes parts of the financial statement and interim reports. The selection of the tool was made by the financial reporting team but also IR was present in the demos. The group controlling team didn't take part in the decision-making.

In **Interviewee 3's** representing company, mostly only group accounting knows and have done actions towards ESEF reporting. The CFO has mainly just accepted that the company can implement a tool for the reporting when applying for approval for financing. In Interviewee 3's representing company the selection of the tool was made together with the IR as the tool has affected the work of IR significantly. However, the IR hasn't been included in discussions about XBRL tagging.

In **Interviewee 4's** representing company, external and internal reporting, IT and communications have been in discussions when planning the renewal of the reporting processes and fulfilling the ESEF reporting requirements. Internal reporting took part in the discussions because the Disclosure Management systems can be used for standardising management and executive reports. The IT business partner was present because of a more comprehensive understanding of IT processes. The CFO in Interviewee 4's representing company is also well knowledgeable of the requirements.

If Interviewee 4's representing company implements a new reporting tool, it will influence the communications as the annual financial statement project is done in close collaboration with them. Communications is responsible for all other content in the annual report except for the financial statement part. Group reporting finds that also communications would benefit from getting the data faster and less manually and more reliably to their part of the annual report. However, Interviewee 4 finds that more discussions with the communications would be still needed so that they would understand the benefits of the reporting process change in the same way as group reporting.

In **Interviewee 5's** representing company, the XBRL reporting project and decisions were made together with the group reporting and IR team. The CFO was also in discussions raising some topics to think about while considering options for the new system. In **Interviewee 6's** representing company, the teams that were included in the project were mainly group reporting and financial communications. Also, the sourcing team was involved in running the negotiations and reviewing the offers from the suppliers. Interviewee 6's representing company had a structured process in selecting the tool. First, the head of finance approved working on the project, then a business case needed to be created and approved by the committee and ultimately the project was approved by the CEO.

5.2.3 Estimation of the size of the investment

Part of the interviewed companies estimated the size of the investment made for implementing a solution for XBRL reporting. The size of the investment was dependent on the selected implementation strategy, functionalities of the solution and the size of the company. The costs for a software that automates the whole financial reporting process ranged between 30 000 to 100 000 euros for the first year.

Interviewee 1's representing company chose to outsource XBRL reporting for a consultancy company but estimated that getting a tool to renew the publishing process would have cost tens of thousands of euros plus all the internal work. The tool that **Interviewee 2's** representing company selected was not very expensive in their opinion, yearly cost being about 30 000 euros and the price including two languages, transfer to InDesign and the services from the vendor. Interviewee 2 feels their solution's quality-price ratio is quite good compared to other solutions.

The solution that **Interviewee 3's** representing company chose costs about 80 000 euros per year which they find expensive compared to other available solutions. Interviewee 3 estimates that choosing just a tagging tool they might have paid about 2 000 - 5 000 euros per year. However, the main goal of Interviewee 3 was to streamline and automate the reporting process, and they are content with their selected solution.

Interviewee 6's representing company pays running licence costs from their selected solution around 80 000 - 100 000 euros per year, depending on e.g. the number of users. Interviewee 6 finds that it is not a massive investment for a company of their size and points out that investment always needs to be compared with the return on the investment. For instance, 100 000 euros could be compared with the salaries of two FTEs. However, because automation reduces time on manual work, reporting time decreases, and the people can focus on more high-skilled work such as analytics. Hence, Interviewee 6 argues that all financial benefits are not always possible to calculate.

5.3 Outcomes from the implementation of XBRL reporting

The third objective of the study was to discover whether there are any other outcomes from the implementation of XBRL reporting than fulfilling the regulatory requirements. Therefore, the interviewees were asked to elaborate on how the existing reporting processes have changed or will change in consequence of the implementation of XBRL reporting. The interviewees were also asked about their plans to use structured data for something else outside the mandatory requirement.

The recognised value of XBRL reporting depends on the selected implementation strategy of the company. For instance, the companies choosing the outsourced implementation are now converting the finalised reports into a new format and hence find it challenging to recognise any internal added value. **Interviewee 1's** representing company plans to fulfil only the minimum requirement having chosen the outsourced implementation strategy. Hence, Interviewee 1 sees XBRL reporting only as an external requirement. Once Interviewee 1's representing company has the numbers released, the tables are sent to the outsourcing service that creates the tags and therefore, XBRL reporting does not affect their current release process or schedule significantly.

However, the other interviewed companies reported having gained indirect benefits from ESEF reporting by implementing reporting tools that not only resolve the XBRL reporting requirements but also automate the publishing process. The interviews revealed that as a result of new ESEF, many companies have managed to justify investments that automate the reporting process, typically investments to a Disclosure Management software. Companies explained that the need for automating the publishing process had been internally recognised already for years. The sought benefits from the implementation of new reporting tools were streamlining companies' manual reporting processes. Moreover, the interviewed companies described that the improved reporting process has become more user-friendly, reliable, and efficient. Some companies indicated also greater job satisfaction from automating highly manual and error-prone tasks.

Interviewee 2 will start using the tool for interim reporting in 2020 Q1 or Q2 and foresees that the new reporting tool will ease and streamline their way of working. However, the

XBRL tagging will only be started in autumn. Hence, the features that streamline the process are not directly related to XBRL reporting but they are something that the tool enables. Currently, Interviewee 2's representing company has the consolidation system's figures linked to Excels as much as possible. So, that part is already relatively automated. However, the tables of the front pages are not included which means that for the front pages the numbers still need to be manually inputted as well as inside the text. The new tool will streamline the process so that also the front pages are linked to the tables, and numbers in the text can also be linked.

Checking that all figures are copied and pasted correctly into InDesign has required especially much time for Interviewee 2's representing company. The new reporting tool is expected to decrease the time spent to check whether everything is correct as figures can be cross-referenced in the document. In other words, the tool enables automatically updating of the figures. Also, the automatic transfer of data to InDesign will significantly streamline the reporting process.

The users of the tool in Interviewee 2's representing company are external reporting, IR, tax and treasury. Interviewee 2 describes that challenges in working with Excel have been that only one person can make changes to the document at once, and the changes were not able to be tracked. The new tool will also solve the abovementioned challenges as with the new tool the report can be divided into sections which enable working on the different sections at the same time. Also, the changes can be traced backwards which improves version management.

The primary goal of **Interviewee 3's** representing company was to streamline and automate the reporting process. The company used to have all notes for both interim reports and financial statement in Excel tables in two languages. When the figures were ready, they were manually copied to an Excel, which was sent to an external communications agency that made the report publishable. The old process consisted of sending PDFs back and forth and at the same time worrying whether the numbers were correct and whether all the latest corrections were updated to both language versions. Interviewee 3 describes the old process as follows:

“Before, we had all the notes in Excel (in Finnish and English) for both the interim report and the financial statements. When the figures were ready, they were manually entered into Excel and sent to an external communications agency, that made them publishable. It was such a back and forth sending of PDFs. Were all the figures correct? Were the same numbers in the Finnish version? Were the last changes in both versions? It started to feel very old-fashioned. [...] We have been happy with the implemented tool and it has speeded up the work of group accounting from the moment we have the consolidation system’s figures ready.” (Interviewee 3, 2020)

The new way of working of Interviewee 3’s representing company has significantly decreased the need for manual copying of figures. As a comparison to the old way of working, nowadays most of the notes are composed just by updating a data file with a connection to the consolidation system, importing it to the new tool and pressing a button. Because Interviewee 3’s representing company has not either started XBRL reporting with the tool yet, the received benefits from the tool are disconnected from XBRL reporting. Interviewee 3 describes the new process as follows:

“For the most part, our notes are formed so that when we have the figures [in the consolidation system] ready, we update the data file, import it [into the tool] and press a button and the notes are ready. All manual entering is left out of it [the process] and we can concentrate on ensuring that the figures are correct. If there is data that is not in any system but only in Excel, it has to be entered manually but that is much less than before.” (Interviewee 3, 2020)

Also, the IR of Interviewee 3’s representing company is very content with the new tool. The implemented tool enables dividing the document into areas that different people can work on and managing the access rights of the users – whether they can only view, comment or edit the content. An external communication agency is also trained to use the tool as they are making changes to the visual looks. Other users of the tool are a translator and a proof-reader. Implementing the new tool changed the publishing process of Interviewee 3’s representing company also so that the company does not anymore use InDesign, a desktop publishing software, for the tables of interim reports. Instead, the tables are attached to the

text layout as PDF from the tool. Interviewee 3 finds that removing one step (InDesign) from the publishing process removes one risk factor.

As the new software holds all the time the latest version of the report, Interviewee 3 is aiming to get the auditors to use the tool as well. Interviewee 3 would find auditing most efficient if the auditors would give real-time comments using the tool, and the company could make changes continuously. During auditing Interviewee 3 finds all the waiting most stressful. The auditors already have access to the system where they see the documents and the notes attached to them. However, Interviewee 3 does not quite understand why the auditors cannot take the most up-to-date notes from the tool once they start to audit. Interviewee 3 speculates that the change in the auditors' way of working is still in progress.

Interviewee 4's representing company has not yet selected the reporting solution, but Interviewee 4's vision is that interim reports would follow the same renewed process as the annual reports. The aim of Interviewee 4's representing company is that the process would be automated so that the ready data would be nearly in release format without any manual steps. Interviewee 4's representing company has currently a highly manual process of preparing the financial statement and interim reports, the tools being Excel and Word which are printed as PDF. The company is aiming to get a Disclosure Management tool while complying with the ESEF reporting requirements.

Interviewee 4's representing company has internally already for long been hoping for improvements to their manual reporting processes, and to make the process less error-prone. Moreover, Interviewee 4 finds manual copying and checking of data a burdensome work. The expected improvements in the reporting process are mostly related to the implemented tool and not XBRL reporting as such. Interviewee 4 described their wishes regarding the renewal of the reporting process as follows:

“Our financial statements and the interim report are prepared in quite a manual way, the tools being Excel and Word, which are printed as PDF. Hence, we would like to get a Disclosure Management tool and process [while complying with the regulation]. [...] Internally, we have long hoped for decreasing the amount out of manual work. [The new process would] decrease risks, for instance, if there are small decimal changes to e.g.

turnover figure which can be found in many places in the annual report. Manual comparison of figures feels like a burden after a month of long workdays.” (Interviewee 4, 2020)

Interviewee 5’s representing company also implemented a reporting tool to streamline the manual process they had internally struggled with for years. Interviewee 5 described that when there are many different reports and language versions, the amount of work that is needed for checking had been enormous. Furthermore, because the work had been very manual, it had felt dull and burdensome.

Interviewee 5 is also very content with the new reporting tool because of getting access to real-time documents and increasing efficiency in the reporting process. In Interviewee 5’s representing company also the auditors are using the software and hence now have access to real-time information. Interviewee 5 also describes that the implemented tool has also significantly decreased the experienced stress about the correctness of the figures. Even though Interviewee 5’s representing company has not yet generated the XBRL tags with the tool, they have seized other beneficial aspects from the investment. Interviewee 5 describes the benefits of the new reporting tool as follows:

“We had been internally struggling with this issue for many years. Producing the official financial statement is quite a burdensome task for many companies, including us. It caused frustration and demotivation when in the final stages one needs to fix the mistakes of the printing house etc. [...] The stress about whether the figure that was changed (at the end) has been updated in all places is straining. It is very nice that with the new tool, the concerns about whether all the figures are in the right place has been substantially reduced. We have gained benefits from this system, although, the XBRL feature has not yet been tested.” (Interviewee 5, 2020)

Considering other changes in the reporting process, the implementation of the new tool has redefined roles and responsibilities within the Interviewee 5’s representing company. Interviewee 5 has experienced that the new tool has brought the group reporting and IR team closer to each other than before. For instance, while working on the financial statement and interim reports, the teams are nowadays in daily contact. However, Interviewee 5 also

comments that even though the top management now has access to the real-time data in the system, their way of working still relies on being provided with PDFs from the tool.

Also, **Interviewee 6** finds the new tool very beneficial for several reasons. Once the figures are updated, they flow in the new system to all selected places in the document, which decreases the time spent on manual work, e.g. checking the figures in the text and tables. Before having the new tool, the figures needed to be manually updated on all pages. However, what is worth noting is that because XBRL tagging has not been started yet, the mentioned benefits do not directly relate to XBRL reporting.

The users of the tool in Interviewee 6's representing company are the communications team, group accounting and reporting as well as group business controlling. Interviewee 6 describes that collaboration is a key factor in the new tool. Now multiple people can use and make changes to the documents at the same time. The commenting used to be done by sending Word or PDF documents via email which made it hard to keep track of the latest version. The new software has functionalities for commenting and managing the access rights, which has made the closing processes more straightforward.

In Interviewee 6's representing company, the CEO, CFO and the division heads (management) are now able to make comments to the release draft and tag persons from whom they need to get the answer. Also, the auditors of Interviewee 6's representing company are giving comments directly in the system, which has enabled a lot more collaborative way of working. Interviewee 6 finds that improved collaboration is something that not all tools can enhance so easily. The new tool has also helped Interviewee 6's representing company to report interim and annual report faster than earlier, which has been requested by the top management.

Extending the use of structured data outside the mandatory requirement

The interviewees were asked about whether they are planning to extend the use of structured data to something else than the mandatory requirement. None of the companies had yet planned to extend the XBRL reporting for other purposes than financial statement reporting. The aim of XBRL reporting for all interviewed companies was just to comply with the

requirements, and they had not thought about what other tagged information they could give the investors.

Most of the interviewed companies could not identify any benefits on extending the reporting outside the annual report. Some of the companies were knowledgeable of discussions about EU taxonomy for sustainability reporting. For instance, Interviewee 4 had some discussions with the communications team getting a similar reporting requirement in the future but has not considered it at this point. Interviewee 5 reflects that in the future, they could have discussions about utilising some technical bridges between the reporting.

The implemented reporting tool in Interviewee 2's representing company is not seen as useful for sustainability reporting due to sustainability reporting not being standardised. Hence, the added value from the tool is not seen for reporting that changes every year. For instance, the content of sustainability reporting depends on what the company wants to present and what is topical.

Even though the interviewed Finnish listed companies hadn't yet thought about extending the use of structured data outside the mandatory requirement, the interviewed Financial supervisory expert points out that XBRL offers many possibilities for expanding. However, ESEF applies only to regulated information which is determined by legislation. The regulated information includes the financial statement and annual report as well as the half-yearly financial report which is not covered by the ESEF. The Financial supervisory expert finds that currently we are just at the beginning of utilising the technology.

“There are opportunities in XBRL to expand to many areas. Recently there has been discussion that reporting taxonomies would be applied to NFI reporting (Non-Financial Information). There's a wide range of areas where XBRL could be used, but one has to start with something. The financial statement is a good first step once it is up and running. In the future, I see that it could be used more widely and that we are only in the beginning.” (Financial supervisory expert, 2020)

5.4 Summary of the findings

The previous parts of this chapter discussed the findings of the conducted interview study. This subchapter summarises the main findings of the study following the order of the research questions before moving on to the conclusions.

How is the upcoming ESEF reporting regulation perceived?

The first research question consisted of two parts, aiming to observe how the upcoming ESEF reporting regulation is perceived both by the reporting companies and by the analysts. XBRL reporting is still new for both the reporting companies and analysts as the users of structured data. The reporting companies do not yet recognise direct benefits from XBRL reporting for themselves. Still, companies generally perceive ESEF reporting as an enhancement that sets the course for future development. The interviewed Financial supervisory expert agrees that the benefits for the reporting companies can be minor at the early stage, however, sees long-term benefits from XBRL reporting also for the reporting companies.

Companies find that the regulation is primarily made for the users of information, the principal shareholders benefitting from the reporting being analysts, Financial Supervisory Authority (FIN-FSA), research, authorities, software vendors, auditors, and consultants. However, some of the interviewed companies questioned the added value even for analysts due to the reporting requirements being too narrow and time delay in publishing the information.

The interviewed companies find that the informing of the Financial Supervisory Authority (FIN-FSA) has worked, but there is still confusion in informing on EU level. Many things are left for national decision-making, and therefore some issues are still open, such as the extent of auditing. Also, there are discussions about the format of the official financial statement. Related to the auditing issue, all interviewed companies found the auditing aspect beneficial due to assurance and validation benefits. The interviewed Financial supervisory expert verified that both of the topics are recognised as problem areas and are currently worked on.

Many companies have not yet extensively familiarised themselves with the XBRL taxonomy but believe that mainly IFRS knowledge is needed to be able to select the right tags. Companies find the primary financial statements relatively easy to tag but expect that e.g. the taxonomy extensions will require more knowledge. Even though the XBRL tagging is planned to be done internally, many companies are utilising the software vendor to support them with the first tagging. Companies trust that the vendors have more extensive knowledge about XBRL reporting and want to ease their first tagging process.

The interviews also scoped the opinion of analysts as the users of XBRL data. XBRL reporting is still new also for analysts as none of the interviewed analysts had heard about the new reporting requirements before the interview. Analysts estimate the comparable result of the financial period and make the interpretations based on a large set of data, understating the meaning of financial statements, and emphasising their judgement in valuation. For them, understanding the drivers behind cash flow and revenue is essential. In terms of analysing tools, the way of working of analysts seems stabile, the most used tool being Excel.

The significance of the first implementation stage of ESEF reporting is perceived minor for sell-side equity analysts due to multiple reasons. Analysts mention as the primary issues with XBRL reporting that the frequency is inadequate, and the prolonged processing time does not meet the information needs of the analysts that require prompt report release. Also, a common database for the whole EU would be seen as much more beneficial than separate databases in each country. The interviewed Financial supervisory expert agrees with the analysts' opinion about the common database but expects the completion to take long. Analysts of financial institutions (e.g. credit analysts) are expected to benefit more from annual XBRL data than buy- or sell-side equity analysts. To benefit all analysts, the sequence of getting structured data (quarterly) is essential, and the time delay of release should be minimised.

How is the implementation strategy for XBRL reporting selected?

Finnish listed companies are in different stages of XBRL reporting tool implementation and have selected different implementation approaches. Even though XBRL reporting is seen as

a small change, many companies have seized the opportunity to redesign their reporting processes and invested in new reporting software. One of the interviewed companies chose a more careful approach for the transition period and decided to postpone the implementation of XBRL reporting into their processes and outsourced the process for a consultancy company. Because everything is new, the company wants to see how it evolves and postpone the decision-making for the upcoming years to consider smart choices.

Rest of the interviewed companies already implemented or are planning to implement a software that automates and streamlines the whole reporting process, and on the side generates the XBRL document. The companies aimed to gain benefits for themselves from regulation that otherwise would seem to serve only the users of the information. These companies described having struggled internally for years from manual, error-prone processes and experienced demotivation from highly manual tasks.

The extensiveness of the implementation process and the number of criteria for the software varied between companies. The criteria for the software selection that the interviewed companies mentioned included price, automation of manual tasks, the familiarity of the tool, functionalities of Excel and Word, easy transfer to InDesign, the flexibility of the vendor, the vendor's experience with XBRL and the vendor offering XBRL tagging as service.

Group reporting team was the driver of implementing the XBRL reporting tool in all interviewed companies. However, many companies' IR or financial communication teams were also actively involved in the selection process of the new tool due to being one of the primary users of the tool. The teams that were involved in the selection process and discussions were commonly financial reporting teams, financial communications team, and IT experts. In many companies, the CFO only accepted the investment and was knowledgeable about the requirements on a high level.

The size of the investment depended on the implementation strategy, functionalities of the selected solution and the size of the company. The companies that invested in a software automating the whole financial reporting process ranged in costs between 30 000 to 100 000 euros for the first year.

Are there any other outcomes than fulfilling the regulatory requirements?

The last research question aimed to explore whether companies take regulation as an external requirement and only aim to reach the minimum compliance level or as an opportunity to improve their processes and gain other positive outcomes. As implementation strategies varied between the interviewed companies, both abovementioned approaches were found. Companies choosing the outsourced implementation find it especially challenging to recognise the added value from the regulation as they are now only converting the finalised reports into a new format. However, depending on the implementation strategy, automation and efficiency in publishing process can be achieved through redesigning reporting processes and making investments in IT software.

Many companies have gained indirect benefits from ESEF reporting by implementing reporting tools that not only resolve the new technical XBRL reporting requirements but also automate the whole publishing process. As a result of new ESEF reporting requirements, many companies have managed to justify an investment in software that automates the reporting process, typically a Disclosure Management type-of-software. The need for the automation of the publishing process had been recognised internally in companies for a longer time.

The implemented solutions have improved and streamlined companies' reporting processes by making them more user-friendly, reliable, and efficient. The experienced benefits also include more job satisfaction as the implemented software has automated some highly manual and error-prone tasks. The implementation of new reporting solutions has resulted in redefining some roles within the reporting company and in some cases provably improved communication between different teams, namely group reporting, IR and communications. Indication about improved communication with the auditors as a result of the new reporting tool was also found.

While some of the interviewed companies had already implemented and started using the new reporting software, none of them have started the XBRL tagging of figures yet. Still, these companies found to have already seized all the benefits of the reporting tool – even

without implementing the actual XBRL reporting function. Therefore, they do not recognise direct benefits from XBRL reporting.

None of the interviewed companies have yet planned to extend XBRL reporting for other purposes than the mandatory requirement as they have difficulties identifying any benefits from it. Generally, it seems that companies have not yet thought about what other tagged information they could give to investors. However, the companies that are making a more significant investment in new reporting tools seem to use the same tool also for interim reporting, which in practice would enable extending XBRL reporting to interim reports. Moreover, the interviewed Financial supervisory expert states that XBRL offers many possibilities for expanding and proposes that currently we are just at the beginning of utilising the XBRL technology.

6 Discussion and conclusions

This thesis aimed to give early evidence on the mandatory adoption of XBRL reporting in Finnish listed companies. Firstly, the study explored how reporting companies perceive ESEF reporting regulation. To broaden the understanding of the adoption process, equity analysts' perceptions were also examined for supportive analysis. Secondly, the study aimed to observe how the reporting companies decide to comply with the new regulation and thirdly, whether there are any other outcomes than fulfilling the regulatory requirements. This chapter, the last chapter of the thesis, discusses the main findings of the empirical study, reflecting them with the theoretical part, and concluding the study. Lastly, the limitations of the study and avenues for future research are proposed.

6.1 Conclusions

An interesting finding of the research is that many companies seem to use the implementation of XBRL reporting as an opportunity to update their outdated reporting processes. Moreover, companies reported that they have internally struggled with manual reporting processes for a long time. Surprisingly, the new regulatory requirements have worked as a lever to justify reporting process automation projects as many companies have been able to justify investment on software that automates their reporting processes. The earlier lack of initiative and justifiability to purchase new or update software can be described by a concept called technical debt.

As Brown et al. (2010) describe in Section 2.1.2, technical debt can be defined as the gap between the current and optimal state of the software system. Moreover, technological gaps typically result from the passing of time and the evolution of technology (Kruchten et al. 2012). In the context of this thesis, the evolution of technology corresponds to the digitalisation of financial reporting. Furthermore, the interviewed Finnish listed companies reported that the external reporting processes have remained the same for a prolonged time which implies that technological gap has been accumulated. Moreover, as discussed in Section 2.1.2 it is actually impossible to avoid the accumulation of technical debt, however, it can be managed by making conscious decisions to settle the debt.

This study suggests that companies have accumulated technical debt, due to the fact that there have not been any changes in the external reporting processes for a long time. The results indicate that the ESEF reporting requirements have helped companies to justify purchasing software that automates the reporting processes. Thus, this thesis argues that government regulation has worked as a trigger of amortisation of accumulated technical debt. Consequently, without the disruption, i.e. change in regulation, the processes and systems would have expectedly remained as they were.

Even though companies do not yet recognise direct benefits from XBRL reporting itself, the regulation has activated the renewal of processes. Moreover, companies have captured indirect benefits from the new regulation as the newly implemented solutions have streamlined companies' reporting processes by making them more user-friendly, reliable, and efficient. While XBRL reporting has not yet delivered the promised benefits for the stakeholders introduced in Subchapter 3.3, it seems to have indirectly eased the manual workload in companies that have upgraded their reporting processes in consequence of the regulation changes. This is very likely an unintended consequence of the regulation.

The decision to incorporate analysts' interviews in the research proved to be valuable due to the differences in the attitude and perceptions compared to the reporting companies. Hence, this research also enables evaluating the realisation of the goals of ESEF. Currently, the analysts are still unaware of XBRL/ESEF reporting but show a clear interest in structured data. However, they perceive the significance of the first implementation stage of ESEF reporting a minor one due to the time delay in the data release and inadequate frequency of reported data.

As indicated by this study, the information needs of analysts are mainly speed, transparency and accuracy, of which the last two are supported by regulation. However, as seen from challenges in international implementations introduced in Section 3.3.3, the use of XBRL does not guarantee the accuracy of the financial information (e.g. Boritz & No 2008; Debreceeny et al. 2010; Locke et al. 2018). The key issues to consider are how to avoid creating unnecessary taxonomy extensions and mistakes made in the tagging process. Therefore, regulators and reporting companies should learn from international implementations of XBRL to better prepare for ESEF reporting.

The literature introduced in Section 3.3.3 suggests audit requirement as a necessary control to ensure the accuracy of XBRL tags (Harris & Morsfield 2012; Romney & Steinbart 2017). However, as discussed in Subchapter 3.2 there is currently no local legislation for the mandatory audit of ESEF, although, it is recommended by the Finnish Association of Auditors (Suomen Tilintarkastajat ry 2020). Nevertheless, based on the study, the assurance and validation benefits received from auditing are perceived positively by the interviewed companies.

Even though in principle financial information is produced for the investors (Gjesdal 1981), companies are primarily reporting based on regulation, regardless of the investors' needs. Moreover, as shown by this study, analysts do not always find the information they would like to have. Hence, a question arises that when a new regulation is implemented, are the users of the information heard? Based on the conducted interviews, it seems that maybe not enough. Subchapter 2.2 discussed the quality and needs of financial communication and the findings of this study align with e.g. Brennan & Merkl-Davies (2018) emphasising that corporate communication could be improved by having a dialogue between the reporting party and users of the financial statements. Also, this study signals that improving corporate communication requires more than one-way dialogue with the shareholders and better quality of textual communication. It is yet to be seen, how significant benefits and on what time frame the stakeholders receive added value from XBRL.

Referring to the framework of Garner et al. (2013) regarding the level of adoption presented in Section 3.4.1 in Table 2, the interviewed Finnish listed companies can be categorised as low and medium adopters of XBRL. In many companies, XBRL is implemented as a built-in solution in a larger system development project. However, according to the framework of Janvrin & No (2012) in Figure 7, the approaches are still rather bolt-on. The empirical findings of this thesis strengthen the finding of Hsieh et al. (2019) claiming that difficulties in companies' report review process have a positive relation to the implementation of Disclosure Management solution. Overall, this study indicates that the automation of manual reporting tasks, introduced in Section 2.1.1, is perceived positively and is aligned with e.g. Moffitt et al. (2018) stating that by automating the manual tasks, human resources can be

allocated to more meaningful work. Moreover, the automation of manual tasks saves time during hectic reporting periods and hence can increase job satisfaction.

As the ESEF reporting requirements are becoming effective in 2020, this study is timed as an early-stage adoption study. Hence, not much academic research focused on the adoption of XBRL on the Finnish market has been yet conducted. As revealed by this research, the implementation strategies and adoption level of XBRL vary between companies. Hence, compared to a case study focusing on the adoption in one company, this study manages to present a more comprehensive picture of the adoption of XBRL on the Finnish market and also succeeds to analyse the reasoning for the decision-making in each interviewed company due to qualitative approach. The findings of this thesis provide information for the legislators in developing XBRL implementation policies. This study can also benefit service providers who design XBRL solutions. Also, the results give useful and timely information for companies that are in the adoption process by analysing the preliminary outcomes of different XBRL implementation strategies.

6.2 Limitations and directions for future research

The last subchapter of the thesis presents the limitations of the study and avenues for future research. As stated, this thesis presents early evidence of Finnish listed companies' adoption of XBRL reporting. This research represents the interviewees' perceptions and knowledge of XBRL on the day the interviews were conducted. Due to the timing of the study, companies were in the early stage of implementing XBRL reporting and none of the companies started the reporting yet in practice. Also, the information regarding XBRL reporting increases as the start of reporting approaches. Hence, this study creates an opportunity to repeat the study e.g. after the first XBRL reporting round and compare the results with the early evidence.

In addition to repeating similar study to this one after companies have gained more experience in XBRL, future research could be conducted using a quantitative method, to get e.g. a broader scope of the spectrum of different implementation strategies and to make a quantitative analysis. Another interesting target group of the research could be auditors, focusing on the effects and benefits of XBRL to the audit process. Considering that an

auditor uses a considerable amount of time in the auditing process for data preparation, they could greatly benefit from getting the data in a standard, machine-readable format. Also, as revealed by this study, equity analysts' XBRL knowledge is still very limited or non-existent. This study proposed that analysts of financial institutions (e.g. credit analysts) would benefit more from annual XBRL data than equity analysts. Hence, this thesis builds the foundations for a broader study from the analysts' perspective on the Finnish market, focusing on the differing needs of analysts.

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Appendices

Appendix 1. Semi-structured theme interview for listed companies

Introductions

Background questions

Theme 1: Implementation of ESEF/XBRL reporting in the EU

- What is your opinion on the new reporting requirements?
 - Why implemented?
 - Benefits for the reporting companies (external reporting/internally)?
 - Benefits for other stakeholders (which)?

- Do you feel to have received enough information regarding the requirements?
 - What kind of additional information would you need?
 - Training needs regarding XBRL?

- What kind of solution are you planning to implement/are using?
 - What was your approach in selecting the solution?
 - Who has been involved in the selection process/discussions?
 - Size of investment?

Theme 2: Financial reporting now and in the future

- What will or has changed in your existing reporting processes due to XBRL reporting?
- Are you planning to use structured data for something else than the mandatory requirement?

Something else important regarding the topic?

Appendix 2. Semi-structured theme interview for analysts

Introductions

Background questions

Information about the new reporting requirements for listed companies

Theme 1: Implementation of ESEF/XBRL reporting in the EU

- What is your opinion on the new reporting requirements?
 - Why implemented?
 - Benefits for analysts?
 - Benefits for other stakeholders (which)?

- How has the topic been communicated?
 - What could have been done better?

Theme 2: Collecting information for the investors now and in the future

- How do you currently collect the data?
 - What kind of information do you collect?
 - Which information sources do you use?
 - Do you use pro forma measures?

- How could structured data benefit collecting the information?
- How should the data be so that analysts would get added value from it?

Something else important regarding the topic?

Appendix 3. Interview with the financial supervisory expert

Introductions

Discussion about the main findings

- **Reporting companies**

- The benefits of ESEF are mainly received by the users of information
- The reporting companies do not yet recognise direct benefits from XBRL reporting for themselves
- Added value and process improvements are being captured from the implemented solution for XBRL reporting (indirect benefits)
- Open issues regarding audit and the format of the official financial statement
- An expected increase in the cost of auditing as it will be a separate assignment and billing item

- **Analysts**

- The analysts are still unaware of XBRL/ESEF reporting, however, interested
- The analysts find the benefits of the first implementation stage of ESEF to be collected by the financial information service vendors (e.g. Bloomberg)
- There are expected benefits for the users of data from expanding XBRL reporting to e.g. interim reports
- There is a request for a common database (vs. separate in each country) to enable e.g. sector-specific analysis
- The analysts use Excel as their main analysing tool and no other IT solutions for analysing purposes are actively being investigated

Something else important regarding the topic?