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School of Science
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Lauri Loikkanen

Accounting practices of individual entrepreneurs in the context of E-accounting

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Supervisor: Professor Marko Nieminen

Thesis advisor: MA Jukka Kortesoja

Author Lauri Loikkanen		Abstract of Master's Thesis
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<p>Self-employment has been growing steadily in Finland, meaning that individual entrepreneurs have become an important customer segment for many service providers. Thus it is becoming a more significant user group for software companies who design and develop accounting-related software as well.</p> <p>This thesis studies the accounting-related practices of Finnish individual entrepreneurs, especially in the context of electronic accounting, or E-accounting. Specific focus is placed on entrepreneurs who utilize the services of external accounting firms, meaning that they have outsourced at least some of their accounting-related tasks. The objective of the research is to conclude insights of this particular user group, which could later be applied in the design phase of accounting software. The research was conducted with a qualitative approach using such methods as semi-structured interview as well as contextual inquiry. Furthermore, user feedback by individual entrepreneurs regarding a particular accounting software (Finago Procountor) was collected and analyzed.</p> <p>The results indicate that individual entrepreneurs have varying professional and educational backgrounds, which also makes their accounting-related skills and practices highly variable. Regardless of their background, typical work-related challenges faced by entrepreneurs include financial instability and time management. This makes it vital to design accounting software with user-centered design methods; by providing an optimal user experience and usability, the entrepreneurs can perform relevant accounting-related tasks effortlessly and also consider the software worth its costs.</p> <p>While individual entrepreneurs have varying skills and backgrounds, they tend to outsource the same accounting-related tasks to their accountants, leaving the entrepreneurs themselves with such tasks as invoicing, receipt handling and monitoring of their financial status. Therefore when designing an accounting software specifically for such entrepreneurial users, these tasks should be placed under more focus. Furthermore, the results indicate that the perceived complexity of current E-accounting solutions together with the experienced lack of time leads to the entrepreneurs handling their accounting-related tasks separately from their core business activities, meaning that accounting-related tasks are not well integrated into the everyday work of entrepreneurs.</p>		
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<p>Itsensä työllistäminen on yleistynyt tasaisesti Suomessa, minkä vuoksi yksinyrittäjistä on tullut tärkeä asiakassegmentti monelle palveluntarjoajalle. Näin ollen yksinyrittäjien merkitys on kasvanut myös käyttäjäryhmänä yrityksille, jotka suunnittelevat ja kehittävät taloushallinnon ohjelmistoja.</p> <p>Tämä diplomityö tutkii suomalaisten yksinyrittäjien taloushallintokäytäntöjä, erityisesti sähköisen taloushallinnon kontekstissa. Varsinainen painoarvo on niissä yrittäjissä, jotka käyttävät ulkoisten tilitoimistojen palveluita ja ovat täten ulkoistaneet ainakin osan taloushallintoon liittyvistä toimenpiteistään. Tutkimuksen tavoitteena on kerätä tähän käyttäjäryhmään liittyviä havaintoja, joita voitaisiin myöhemmin hyödyntää taloushallinto-ohjelmiston suunnitteluvaiheessa. Tutkimus toteutettiin kvalitatiivisella lähestymistavalla hyödyntäen tutkimusmenetelminä esimerkiksi haastatteluja ja kontekstuaalista havainnointia. Lisäksi yksinyrittäjiltä kerättiin ja analysoitiin käyttäjäpalautetta eräästä taloushallinnon ohjelmistosta (Finago Procountor).</p> <p>Tulokset osoittavat, että yksinyrittäjien monimuotoinen ammatillinen sekä koulutuksellinen tausta tekevät myös heidän taloushallintokäytännöistään ja siihen liittyvistä taidoistaan vaihtelevia. Taustastaan riippumattomasti yksinyrittäjien työssään kohtaamat vaikeudet tyypillisesti liittyvät epävakaiseen talouteen ja ajanhallintaan. Tästä syystä taloushallinto-ohjelmiston suunnittelu käyttäjälähtöisin menetelmin on erityisen tärkeää; ohjelmiston tarjotessa optimaalisen käytettävyyden ja käyttäjäkokemuksen yrittäjät pystyvät hoitamaan taloushallintoon liittyvät tehtävänsä vaivattomasti, ja täten pitää ohjelmistoa kustannustensa arvoisena.</p> <p>Vaikka yksinyrittäjien taidot ja taustat vaihtelevat, heillä on tapana ulkoistaa samankaltaisesti taloushallintoon liittyviä toimenpiteitä kirjanpitäjilleen, jättäen yrittäjille itselleen vastuualueiksi esim. laskutuksen, kuittien käsittelyn ja taloudellisen tilanteensa seuraamisen. Siksi taloushallinto-ohjelmistoa suunnitellessa näihin osa-alueisiin tulisi kiinnittää erityistä huomiota. Lisäksi tulokset osoittavat, että nykyisten taloushallinto-ohjelmistojen koettu monimutkaisuus yhdessä koetun ajanpuutteen kanssa johtavat siihen, että yrittäjät hoitavat taloushallintoon liittyvät tehtävänsä erillään muusta työstään, jolloin taloushallinnon hoitaminen ei ole täydellisesti integroitunut yksinyrittäjän arkeen.</p>		
Avainsanat taloushallinto, sähköinen taloushallinto, taloushallinto-ohjelmisto, yksinyrittäjät, itsensä työllistäminen, käyttäjäkokemus, käyttäjäkeskeinen suunnittelu, käyttäjätutkimus		

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Contents

1	Introduction.....	1
1.1	Background	1
1.2	Research objectives and questions	2
1.3	Structure of the thesis	3
2	Theoretical background.....	4
2.1	Accounting and the individual entrepreneur.....	4
2.1.1	Accounting as a practice	4
2.1.2	Accounting related practices and legislation in Finland	6
2.1.3	Research on individual entrepreneurs	10
2.2	Electronic accounting.....	13
2.2.1	Digitalization and accounting.....	13
2.2.2	Key features of E-accounting software	14
2.2.3	The benefits and challenges of adopting E-accounting systems	15
2.2.4	Current situation of E-accounting in Finland	19
2.3	User-centered perspective on accounting software.....	20
2.3.1	User-centered design (and related concepts).....	20
2.3.2	User research as a part of the design process.....	21
2.3.3	Need for user-centrism in the context of accounting software	23
2.4	Synthesis of Literature Review	25
3	Methodology	26
3.1	Research setting and phases of the process	26
3.2	Research methods	27
3.2.1	Qualitative research	28
3.2.2	Interview	29
3.2.3	Contextual inquiry	30
3.3	Data collection.....	32
3.4	Data analysis	34

4	Results.....	36
4.1	Working life of an individual entrepreneur	36
4.1.1	Motivation behind entrepreneurship and the perceived challenges	36
4.1.2	The varying attributes of work.....	38
4.2	The effect of accounting on everyday work.....	39
4.2.1	Reasons for outsourcing accounting.....	39
4.2.2	The partnership between the entrepreneur and the accounting firm	41
4.2.3	Entrepreneurs' approach to performing accounting-related tasks	45
4.3	Utilization of E-accounting by individual entrepreneurs	47
4.3.1	Tools and technologies used for accounting.....	47
4.3.2	Benefits and challenges of adopting and using E-accounting.....	50
5	Discussion and conclusion.....	53
5.1	Varying backgrounds of entrepreneurs cause varying needs	53
5.2	E-accounting is beneficial but not problem free.....	54
5.3	Answers to research questions.....	56
5.4	Possible future trends	59
5.5	Practical implications.....	60
5.5.1	Implement a user-centric design strategy	60
5.5.2	Design mobile-friendly software	60
5.5.3	Keep it simple, and focus on invoices and receipts	61
5.6	Research limitations and future research	62
5.7	Conclusion.....	63
	References.....	65
	Appendix A: Table of accounting-related tasks, used in the interviews.....	70
	Appendix B: Codes and their categories ranked by the frequency of their appearance..	71
	Appendix C: Code network exported from Atlas.ti, used in analysis	74

1 Introduction

This thesis studies the accounting practices and needs of Finnish individual entrepreneurs, especially in the context of electronic accounting. The theoretical part consists of a literature review, which provides a general introduction to the topics of accounting and electronic accounting as well as self-employment, while the empirical part specifically focuses on studying the accounting practices of Finnish individual entrepreneurs. This chapter begins with a brief introduction on the background and the motivation for the study. Next, the research objective and research questions are introduced, and the scope of the study is defined. Finally, the structure of the thesis is presented.

1.1 Background

Accounting is a vital part of any company's business, as it not only helps companies keep track of their financial numbers and transaction events, but is also in many parts a legal obligation. The rise of the Internet and digitalization have facilitated the spread of electronic accounting (E-accounting), or accounting software, which has helped companies automate their accounting processes to a large extent. Individual entrepreneurs and micro organizations often outsource several parts of their accounting to external accounting specialists of accounting firms, and with the help of accounting software the two parties can effectively manage the necessary accounting functions. (Wickramsainghe et al., 2017)

While digitized solutions for accounting are becoming more prevailing, there is also a rising demand for software that can provide a good user experience (Hassenzahl, 2008). Furthermore, the number of individual entrepreneurs in Finland has been steadily growing (Suomen Yrittäjät, 2016), and in order to design optimal accounting solutions for that particular user group, it is vital to understand their needs properly. Due to the aforementioned factors, the accounting practices of individual entrepreneurs provide an interesting target for research, which is the background of this thesis.

The topic of this thesis is particularly important for developers and designers of electronic accounting systems and software. Finago Procountor is an example of an E-accounting software solution, it's main user groups being small and medium

enterprises and accounting firms. Finago, which was merged from companies Procountor and Tikon, is a part of the Accountor Group, which in total has more than 2,000 employees and 30,000 customers in seven countries. The software includes a range of features that a company can utilize to take care of their accounting needs. Most of its customers are Finnish companies, but nowadays Finago operates also in Sweden, Norway and Denmark. (Finago, 2018)

1.2 Research objectives and questions

This thesis aims to study the accounting practices of individual entrepreneurs, more specifically those who have outsourced some or most of their accounting functions to a separate accounting firm. The empirical part of the research partly focuses on those individual entrepreneurs who use Finago Procountor as their primary accounting software. For a more detailed scope of the research and taking into consideration the fact that the empirical research takes place in Finland, where Finago has most of its customers, this thesis especially focuses on Finnish individual entrepreneurs. In addition to studying the accounting needs of those entrepreneurs, the research aims to widen the knowledge of the subject by examining how the accounting related activity is generally tied to the daily work of individual entrepreneurs.

In essence, the thesis provides extensive user research data of this subgroup of Finago Procountor users – or potential users – and thus gives valuable knowledge to Finago’s product development department. For example, the user experience and service designers of the company can utilize this knowledge when designing new features or improving existing functionalities. The gathered data and conclusions can also be beneficial for Finago’s marketing and sales departments; by understanding the needs of individual entrepreneurs in greater detail, the customer segment can be taken more into consideration in Finago’s marketing strategy.

From an academic point of view, the objective of the research is to provide a more thorough understanding of the accounting practices of individual entrepreneurs, especially in Finnish – or more generally, Nordic business environment. While academic literature on the topic of accounting and electronic accounting exists, it is mostly focused on larger or small to medium sized enterprises whereas the special accounting needs of individual entrepreneurs has not been the subject of much research. Moreover, this research studies the effects of E-accounting in the context of individual entrepreneurs.

The main research question can thus be defined as follows:

- What especially should be taken into consideration when designing an E-accounting system from the point of view of individual entrepreneurs in Finland?

The main research question is supported by the following research questions:

- What common accounting practices do Finnish individual entrepreneurs have and how do they approach and experience them?
- How has the use of E-accounting been integrated in the context of individual entrepreneurs in Finland?

1.3 Structure of the thesis

This thesis consists of six chapters: 1) Introduction, 2) Theoretical background, 3) Methodology, 4) Results and 5) Discussion.

In the first chapter the background and motivation for the research are described. A short introduction of Finago Procountor is also provided. Furthermore, the introduction describes the scope of the research, and finally proposes the research questions. The theory section then covers the literature review of the selected topics, as well as definitions of concepts that are relevant for this thesis. The topics that are especially important for the literature review include accounting practices of individual entrepreneurs and Finnish accounting practices in general, electronic accounting and how companies have adopted it, and finally, a user-centered design approach to accounting software.

Methodology explains thoroughly the methodological approach for the empirical part of the research, and describes the means of data collection and analysis. The following chapter will cover the analyzed data of the empirical research, presenting the essential results of the study. Finally, a discussion chapter looks at the research questions with the data provided by the empirical research as well as the literature review, ultimately presenting the key findings of the study and how they can be implemented in practice, in addition to introducing the need for further research on the subject. The chapter ends with a conclusion that summarizes the entire thesis.

2 Theoretical background

This chapter provides a theoretical background for the research, focusing on the topics of accounting practices and legislation especially in the context of Finnish individual entrepreneurs, electronic accounting, and accounting software from the perspective of user-centered design. The literature review aims to give a broad understanding of the topics related to the research questions as defined in the introduction chapter. Furthermore, it will provide a solid basis for the empirical part of the research.

The chapter begins with a brief introduction of accounting: what is it and why is it important for companies. The general accounting practices of Finland as well as their legislative basis are also covered, followed by a look into the behavior and motivation of individual entrepreneurs. Next, the effects of digitalization in the context of accounting are reviewed, by defining the concept of electronic accounting and explaining how it has changed the meaning of accounting for accountant firms as well as their business clients. The situation of electronic accounting in Finnish business environment is also covered. Finally, accounting software is examined from the perspective of user-centered design. The chapter ends with a synthesis of the entire theoretical background.

2.1 Accounting and the individual entrepreneur

Accounting as a concept is rather complex, and the practices related to it may vary to a great extent depending on factors such as geographical location and the size of the economic entity. This section thus begins with a brief introduction to the concept of accounting, as well as an explanation on why it is important. As the thesis is particularly studying Finnish individual entrepreneurs, the most relevant accounting practices are covered especially from their perspective, mostly by presenting the legislative obligations that affect those practices. The section ends with a deeper look into the practices and motivation of individual entrepreneurs.

2.1.1 Accounting as a practice

Accounting as a practice dates as far back as the ancient civilizations of Egypt and Mesopotamia, when the growing exchange of goods and services had introduced concepts such as taxation, and the system of writing was being developed (Edwards and Walker, 2009, p. 81). It is even argued that the need to keep financial records of

transactions was one of the key-factors in the development of writing in the first place (Edwards and Walker, 2009, p. 81; Robinson, 2010, p. 35). While the practice of accounting has since developed and changed to fit the needs of modern business world, its essence and importance has remained, as it can still be seen as a highly relevant function to any economic entity (Gillespie, 2014).

The dictionary of Merriam-Webster (2018) describes accounting as “the system of recording and summarizing business and financial transactions and analyzing, verifying, and reporting the results”. A similar, but slightly more extensive definition by BusinessDictionary (2018) describes accounting as a “systematic process of identifying, recording, measuring, classifying, verifying, summarizing, interpreting and communicating financial information.” Accounting in itself is not a single activity, but rather a set of activities that can be subdivided into its more specific forms, mainly financial accounting and management accounting. Financial accounting focuses on keeping track of the business transactions of a company; for example, keeping a record of sales, purchases and company expenses, such as salaries. In management accounting, the financial data is analyzed further to make managerial decisions and implement functions such as planning, budgeting and reporting (Jha, 1990).

Essentially, accounting is highly relevant for two reasons. First of all, it provides meaningful and useful information about the financial matters of a company or another type of economic entity (Christauskas and Miseviciene, 2012; Relhan, 2013). This information can then be analyzed and utilized in the company’s decision-making processes. Secondly, several functions of accounting, such as bookkeeping, are tied to legislative obligations, since in most countries companies are legally required to report their financial numbers to the state, mostly for taxation purposes (Boden, 1999). It is important to note that since each country has its own legislation, the implementation of various accounting practices may vary greatly – however, due to globalisation, the accounting practices are gradually becoming more homogenized worldwide (Granlund and Lukka, 1998). The changes of legislation are therefore also reflected in the accounting practices. Moreover, the practice of accounting is constantly affected by organizational, economical and technological development.

Since accounting is essentially related to financial matters of an economic entity, some of its functions may be difficult to distinguish from the practices of financial management. Financial management refers to processes of planning, directing, organizing, and controlling financial activities and monetary resources of a company (BusinessDictionary, 2018; Juneja, 2017). While the emphasis of accounting is placed

more on reporting and analyzing financial data, financial management is more concerned about strategic planning regarding the use of finances (DifferenceBetween.net, 2017). Furthermore, some electronic tools used for accounting-related activities may also be utilized for activities of financial management of a company, which can also blur the line between the two activities. However, the focal point of this thesis is specifically practices related to accounting, and electronic tools that are used in accounting are referred to as accounting software/system or E-accounting software, whether or not the particular tools discussed also include features used for financial management practices.

2.1.2 Accounting related practices and legislation in Finland

As is generally the case elsewhere, the practices of Finnish companies related to accounting or financial management are largely determined by the laws and regulations of the country. The legislative act that can be considered most relevant in this context is the Accounting Act, as it defines the basic regulations of bookkeeping and reporting of financial numbers to the state of Finland. Also noteworthy are various laws that concern taxation and thus affect organizational practices of collecting and reporting financial data as well.

It is important to note that while majority of legislative obligations and regulations apply in a similar manner to all economic entities that operate in Finland, the Finnish accounting laws are in general more relaxed towards smaller organizations, which ultimately include individual entrepreneurs. As Rekola-Nieminen (2006, p. 13) states, the laws have been adjusted so that it has been deemed appropriate to impose less obligations for those with lesser amount of business activity. In Finland, a single-person organization typically operates either as a sole trader or as a limited liability company, the latter being more extensively affected by legislative obligations but also more suitable for an entrepreneur seeking more financial growth (Verohallinto, 2013).

2.1.2.1 Accounting Act

The Accounting Act, which is a part of the Finnish law, was thoroughly renewed in 1997 in order to make it more easily understandable and applicable in the context of modern business (Rekola-Nieminen, 2006, p. 8; Vahtera, 1998, p. 8). Since then, several sections of the act have been adjusted; many subsequently introduced accounting laws take into consideration modern technological advancements, such as the Internet and electronic systems, which have made paper-based accounting practices less important.

Furthermore, the current accounting legislation has influences from both European Union and IFRS standards and regulations (Rekola-Nieminen, 2006, p. 8).

The first chapter of the Accounting Act 1337/1997 primarily defines the obligation for companies or other economic entities operating in Finland to keep accounting records of their business. This also applies to individual entrepreneurs, with the exception of those pursuing farming or fishery as their main profession. Furthermore, the first chapter states that “a reporting entity shall apply double entry bookkeeping”, unless the entity is a natural person with total assets of maximum 100,000 euros, turnover (or other comparable income) of maximum of 200,000 euros and average personnel per financial year being no more than 3, in which case single entry bookkeeping is legally acceptable as well. The term natural person in this context essentially refers to those individual entrepreneurs who conduct business as a sole trader. Therefore, if the individual entrepreneur chooses to operate, for example, as a limited liability company, the company is obligated to apply double entry bookkeeping. (Finlex, 2015)

Another difference in the first chapter regarding the differences between sole traders and other types of companies lies within the differences imposed on the definition of financial year. Section B defines the standard length of financial year as 12 months, but it may be more or less, in the case that the business operations have been initiated or terminated mid-year. In any case, the financial year cannot exceed 18 months. With this rule, the financial year might begin or end in any possible part of the year, but for a natural person (as defined above) i.e. a sole trader, the financial year has to be the calendar year, if single entry bookkeeping is applied in his or her accounting. (Finlex, 2015)

The practical implication of the financial year is to monitor the financial state of an economic entity on a yearly basis. For that purpose, a financial statement is generated at the end of each financial year. The statement gives factual information of the entity's financial state not only to its owners, but also to its customers, investors and other possible stakeholders (Koivumäki and Lindfors, 2011, p. 25). The statement is legally required to include a balance sheet that is up-to-date, a profit and loss account, a cash flow statement and related notes. However, a law passed in 2015 relieved the reporting needs for individual entrepreneurs, as they are now no longer required to prepare financial statements, if they operate as a sole trader with financial numbers not exceeding the previously mentioned limits of turnover and total assets during two consecutive financial years (Sirkiä, 2016). Regardless of the size of the company and whether or not they are required to prepare financial statements, all economic entities

in Finland who are subject to keeping accounting records of their transactions are also obligated to maintain the vouchers of transactions for 6 years.

Furthermore, regardless of whether the individual entrepreneur operates as a sole trader or as a limited liability company, they also fall in the category of micro-organizations in the eyes of Finnish law; that is, if the company has a turnover of maximum 700,000 euros, balance sheet total of maximum 350,000 euros and no more than 10 employees by average during their accounting period. In addition to aforementioned sections of the Accounting Act regarding the legislative differences imposed on sole traders, micro-organizations in general have some legislative advantages that make their accounting needs slightly less extensive – this has especially been the case since the new law was passed in 2015. Currently, for example, under Chapter 3 Section 1 it is defined that micro-organizations are not obliged to attach a management report as a part of their financial statement. (Finlex, 2015)

2.1.2.2 Laws on taxation

In addition to the Accounting Act, the accounting-related practices of Finnish individual entrepreneurs are affected by several laws regarding taxation. An entrepreneur mainly deals with two types of taxes: income taxes, which are calculated from the company's or the person's income, and consumption taxes, which relate to products and services mostly in the form of the Value Added Tax. The laws on taxation and the Accounting Act are somewhat related, since the tax return – in which an economic entity verifies its taxes to the state each year – is based on the financial statement, which in turn is based on the bookkeeping data. (Koivumäki and Lindfors, 2011, p. 83; Verotieto Oy, 2017, p. 7)

The income tax is a tax calculated from the incomes of an economic entity. Similarly to the Accounting Act, the laws related to the income tax differ slightly depending on whether the individual entrepreneur operates as a sole trader or as, for example, a limited liability company. When operating as a sole trader, the income tax is calculated based on the Act on the Taxation of Business Profits and Income from Professional Activity; other types of economic entities are subject to the Income Tax Act (Koivumäki and Lindfors, 2011, p. 83). If the entity is a limited liability company, it is liable to pay a 20% corporate income tax on its profits (Verohallinto, 2016). Furthermore, an individual entrepreneur operating as a limited liability company likely pays a monthly salary to him/herself. This is considered as a personal earned income, which is taxable, the actual tax rate being progressive and thus depending on the incomes. In addition to

the earned-income tax, the entrepreneur may earn capital-income by paying dividends, in which case either a 30% or a 34% capital-income tax is applied (Verohallinto, 2016).

Moreover, the taxable income is verified to the state in the form of a tax return, which an economic entity is legally obligated to send out yearly before the due date. The tax return is largely based on the financial statement – however, the numbers might differ since not all types of income is taxable (Koivumäki and Lindfors, 2011, p. 93). According to Koivumäki and Lindfors (2011, p. 93), it is recommended that the same person should handle both the financial statement and the tax return in order to avoid mistakes. Nowadays the Tax Administration of Finland requires that the tax return is done electronically, and paper-based tax returns are only allowed in special cases (Koivumäki and Lindfors, 2011, p. 109)

The entrepreneur also needs to be aware of the Value Added Tax (VAT), which is a consumption tax that is added in the price of most products and services. In Finland, the most common VAT rate is 24%, but certain types of products or services may have a different rate. As the tax is included in the price of a product or a service, it is essentially paid by the consumer. However, it is the obligation of any economic entity in Finland to report the total VATs to the state. A company has to keep track of the VATs they have received by selling products or services as well as the VATs they have paid by purchasing products or services from other companies. Ultimately the remainder of these is calculated, reported to the state and paid (or received) accordingly. (Verotieto Oy, 2017, pp. 122-123)

2.1.2.3 Practical implications for individual entrepreneurs

The aforementioned laws ultimately form the basis for the accounting-related practices for Finnish individual entrepreneurs, as various functions related to accounting are directly related to either the Accounting Act or the laws on taxation. Even though individual entrepreneurs are subject to slightly less bureaucracy and legal obligations – especially when operating as a sole trader – the complexity of all the legal aspects of accounting can make their accounting needs rather intricate. To summarize, an individual entrepreneur needs to take care of bookkeeping, in which the financial transactions are recorded as defined in the law. The transactions can be related to, for example, purchase invoices, sales invoices, travel expenses and other business-related expenses. Furthermore, the entrepreneur needs to make sure that the vouchers of these transactions are stored for the required period of time, and finally at the end of each financial year a financial statement is prepared. The financial statement acts as a basis

for the tax return, which the entrepreneur is also responsible for handling yearly. In addition to taxes related to the entrepreneur's income, the entrepreneur needs to consider the Value Added Tax and make sure it is correctly calculated, reported and paid.

2.1.3 Research on individual entrepreneurs

Small organizations, including micro-organizations and individual entrepreneurs have a significant role in the economy (Iacovou et al., 1995; Wolcott et al., 2005, Mashapa and van Greunen, 2010). A study conducted by Suomen Yrittäjät in 2016 revealed that of all 280 000 companies in Finland, 180 000 are individual entrepreneurs, making it approximately 65% of the total number of companies. Furthermore, the increased total number of enterprises in Finland is largely due to the rising number of individual entrepreneurs, as self-employment has been growing steadily during the last 10 years (Suomen Yrittäjät, 2016).

The self-employed aren't an entirely homogenous group; they come from different backgrounds, skill-sets, and have a varying level of education (Feldman and Bolino, 2000; Boden, 1999; Pärnänen and Sutela, 2014). Henley (2004) states that on one hand, self-employment is associated with a higher degree level and professional occupation, but on the other hand, it's also common among people such as construction workers. In Finland, most individual entrepreneurs have a vocational degree, but self-employment among people with a university degree has increased significantly in the recent years (Suomen Yrittäjät, 2016). Finnish individual entrepreneurs often work in the field of services – hairdresser being one of the most common occupations – but entrepreneurship is also especially common among construction workers (Pärnänen and Sutela, 2014; Suomen Yrittäjät, 2016). Moreover, as the number of individual entrepreneurs with a higher level of education is rising, the self-employment in Finland is increasingly often based on special knowledge and expertise in a certain subject or field (Suomen Yrittäjät, 2016). A higher level of education is especially common among younger individual entrepreneurs who enter self-employment through freelancing (Pärnänen and Sutela, 2014).

As individual entrepreneurs have different backgrounds, they also have different motivation and reasons for establishing self-employment. Generally, one of the biggest motivations to become an entrepreneur or a self-employed person is the notion of greater freedom, increased autonomy and ability to have more control over own life (Feldman and Bolino, 2000; Prior Konsultointi Oy, 2017). Entrepreneurs also have

more possibilities to pursue their professional passions and be creative in their own field (Feldman and Bolino, 2000; Suomen Yrittäjät, 2016). Furthermore, when studying personality traits of those who embark entrepreneurship, Douglas and Shepherd (2002) found that these people generally share a bigger tolerance for risk, as well as a bigger overall interest and positive attitude towards decision-making autonomy.

However, as Pärnänen and Sutela (2014) state in their study on the topic of self-employment in Finland, entrepreneurship might not always be initiated solely as a result of personal motivation. In some instances, people turn to self-employment out of a necessity; for example, in the case of a prevailing lack of employment in the person's professional field. Although various reasons may have contributed to the growing trend of self-employment in Finland, one of them is likely related to the economic recession of the past decade, which has made obtaining work as an employee in a company more difficult. This has especially been the case in certain fields of profession, such as construction. In addition to becoming an individual entrepreneur out of a personal desire and motivation, or due to an external factor that makes self-employment more or less a necessity, the third path to self-employment is a combination of various things and events – or simply put, chance. In these cases, the subjects have “drifted into” entrepreneurship when an appropriate opportunity had occurred, resulting in a rather unplanned transition from being employed by a company to being self-employed. (Pärnänen and Sutela, 2014)

As noted, individual entrepreneurs generally experience increased autonomy and freedom in their work. On the other hand, they face the challenge of balancing their work life with their personal time, as well as potentially struggling with financial insecurity (Feldman and Bolino, 2000). Henley (2005) claims that entrepreneurs often rely on their personal financial wealth when initiating self-employment. In Finland, individual entrepreneurs tend to work more as opposed to those who are employed by a company, and often perform work-related duties on weekends as well (Pärnänen and Sutela, 2014). Simultaneously, they tend to have lower average income as opposed to entrepreneurs of larger scale or to those who work as employees in a company (Okkonen, 2012; Pärnänen and Sutela, 2014). However, as Figure 2.1, demonstrates, the income level of Finnish individual entrepreneurs is hugely polarized, as they can be found in both the lowest and the highest income deciles (Pärnänen and Sutela, 2014).

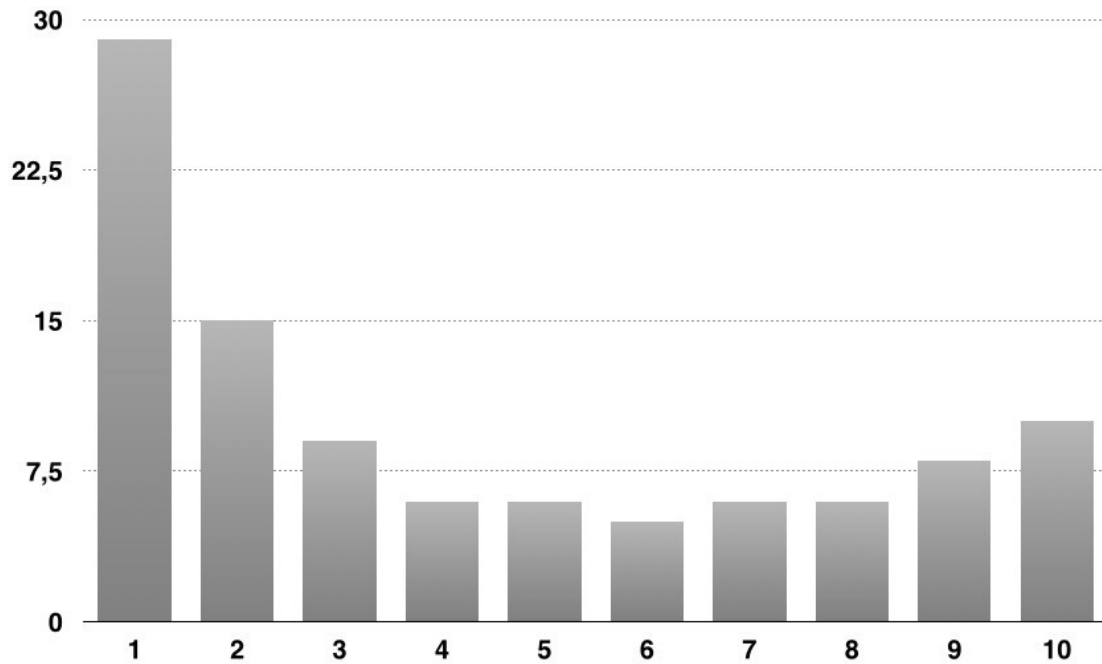


Figure 2.1: The income of the self-employed: placement on the income deciles. The income deciles are derived by organizing all the employed based on their personal yearly incomes and dividing them into 10 equally large groups. The Y-axis then represents the portion (%) of self-employed in each income decile. (Pärnänen and Sutela, 2014)

Besides the challenges related to financial insecurity and time management, an individual entrepreneur might also face challenges related to skill-sets and knowledge required in operating a business. While a single-person organization does have less structural bureaucracy as opposed to larger companies, individual entrepreneurs are still subject to various laws and regulations; therefore, like other companies, they too have to deal with taxes and other legal obligations that are essentially tied to accounting practices and financial management (Feldman and Bolino, 2000; Boden, 1999). Since individual entrepreneurs are primarily experts in their own field, practices of accounting and financial management might not be familiar to them, and their skills regarding financial matters may vary greatly (Boden, 1999). Therefore, it is common and even recommended to outsource several functions related to accounting to an accounting firm, thus allowing the entrepreneur to focus on their core activities and skills (Howieson 2003; Feldman and Bolino, 2000). In Finland, the services of

accounting firms are used by approximately 90% of small to medium enterprises (Taloushallintoliitto, 2014).

2.2 Electronic accounting

Accounting practices and the whole profession of accounting have changed over the years partly as a result of technological advancements and digitalization. This section explains how digitalization has affected accounting from the perspective of accounting firms as well as their business clients. The concepts of E-accounting and accounting software are defined, and their primary features are introduced. Furthermore, the benefits and challenges related to adopting electronic accounting are covered. Finally, this section covers the current situation of electronic accounting in Finland especially by looking into existing statistical data on the subject.

2.2.1 Digitalization and accounting

Throughout history, the development of technology has played a significant role in the transformation of the accounting profession and practices. For centuries, transaction records and other financial information was written and calculated on paper – later on with the help of typewriters and calculators – but the invention of the computer and more specifically, the Internet, has changed the practice of accounting greatly (Relhan, 2013).

Digitalization (or digitization) is generally considered as a mega-trend of the 21st century, as it has affected and altered several professions and lines of business. Companies can benefit from digitalization in multiple ways, as utilizing digital systems can improve their efficiency and facilitate their decision-making processes (Christauskas and Miseviciene, 2012). Another benefit of digital technologies is real-time access to information (Howieson, 2003). Essentially, companies are utilizing digital technologies more and more, as they can provide and enhance multiple business opportunities.

In the context of accountancy, digitalization has meant the emergence and spread of electronic accounting, or E-accounting, which refers to “an accounting system that relies on computer technology for capturing and processing financial data in organizations” (Relhan, 2013). The terms accounting software, accounting information system and computerized accounting system are used rather interchangeably to describe such systems (Relhan, 2013). Likewise, the term “digitalized financial

management”, can be used to describe systems that include functions related to accounting and financial management in a broader sense, such as in the case of Finago’s products (Finago, 2018). In this thesis the term E-accounting software is used to describe all systems that enable electronic or digital accounting-related functions, whether they are also suitable for more complex financial management needs or not.

2.2.2 Key features of E-accounting software

An E-accounting software typically has several features that are somehow tied to the financial processes of a company or other economic entity. Generally, electronic accounting tools help companies record, analyze, monitor, interpret and report financial events and transactions (Mashapa and van Greunen, 2010; Relhan, 2013; Christauskas and Miseviciene, 2012). The financial information gathered from the accounting system can facilitate a company’s decision-making processes and other organizational functions, as well as provide necessary documents for legal purposes, such as taxation (Relhan, 2013; Christauskas and Miseviciene, 2012). In practice, the features of an E-accounting software can be used to, for example, perform such accounting-related functions as invoicing, payment of salaries, tax calculations and tax forms as well as report generation; financial management functions may also be included in the software (Business.com, 2017).

It is important to note that since country-specific legislation affects the implementation of accounting practices on a more detailed level, the accounting systems vary to some extent depending on the geographical context. However, existing academic literature does emphasize the need for certain features or characteristics that can be seen as rather universal. For example, Deshmukh and Romine (2002) mention instant report creation based on real-time data as one of the key features of an accounting software. In addition to easy access to reporting data, Collins (1999) also highlights the importance of real-time information on prices and quantities of products; this can be implemented with an inventory or product register module in the software. The possibility to export data in different formats, such as HTML, is also considered important by Collins (1999) as well as Deshmukh and Romine (2002). Furthermore, as globalization and digitalization have contributed to the growth of E-commerce and global marketplace without physical boundaries (Howieson, 2003), an accounting software should function globally with the ability to support multiple currencies when needed (Collins, 1999).

One of the most integral features in accounting software is electronic invoicing, or E-invoicing (Deshmukh and Romine, 2002). Electronic invoicing is a modern way of

sending out and receiving invoices in a completely electronic form, which is structured in a way that it can be completely and automatically processed by supporting technology – therefore, simply scanning and handling paper-based invoices in an electronic format is not considered as electronic invoicing (Salmony and Harald, 2010). Since dealing with invoices is one of the most common routine tasks related to accounting of a company, an electronic approach to it can significantly save time by automating processes. However, in order to fully utilize E-invoicing as a feature in an accounting software, the technology should be supported not only by the accounting software itself, but all the parties that relate to the payment transactions, including banks (Haq, 2007; Salmony and Harald, 2010).

2.2.3 The benefits and challenges of adopting E-accounting systems

The transformation from traditional, paper-based accounting to electronic accounting systems has affected both organizations and the accounting profession itself. As with other digitized systems that somehow disrupt a traditional method of operation, electronic accounting systems have brought both benefits and challenges for accountants as well as organizations that utilize such systems.

According to Howieson (2003), technological improvements generally empower companies by making it easier for them to manage their own affairs. A company can enhance its decision-making processes with the help of an electronic accounting system, which provides fast and real-time access to information, for example financial figures and reports (Christauskas and Miseviciene, 2012). Clerical work is also enhanced as the systems bring automation to more routine tasks (Relhan, 2013).

Christauskas and Miseviciene (2012) list several other benefits a company can get from utilizing an E-accounting system, especially if it's cloud-based: easy scalability when more user accounts are needed, a higher level of security, real-time backup and access to updates via internet browser, remote or global access to the system and a cost model that is dependent on the actual usage. As with cloud-based systems in general, the users won't need to purchase or install any hardware; simply having a computer with an internet browser and an access to internet is enough. The drawback of this is a higher dependence on the service provider – the maintenance and upgrades of the software are essentially in the hands of the system developers. Also, as opposed to a more traditional, offline-based accounting system which is installed to a client's computer, the use of a cloud-based system is dependent on the Internet connection, which is a

challenge especially in developing countries, where a fast access to the Internet is not always guaranteed (Relhan, 2013).

While electronic accounting systems are often beneficial for a company, one of the challenges lies in the adoption of a new technology itself. If a company has previously used more traditional means of taking care of their accounting needs, there might be some resistance to change. According to Christauskas and Miseviciene (2012), smaller companies are generally more open to changes than large organizations, and they have somewhat simpler IT needs. However, their less stable financial situation and generally smaller resources might limit their ability to take action. A framework by Iacovou et al. (1995) concludes that the main factors affecting how small organizations adopt electronic data interchange systems are perceived benefits, organizational readiness and external pressure, as visualized in Figure 2.2.

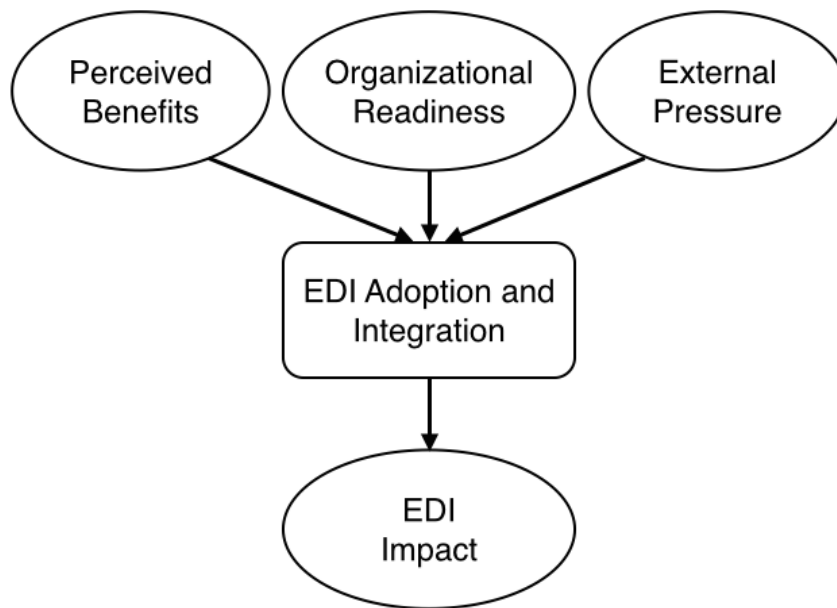


Figure 2.2: EDI Adoption and Integration. (Iacovou et al., 1995)

Perceived benefits include direct benefits, such as reduced costs and higher information quality, as well as in-direct benefits, such as estimated savings that come from increased operational efficiency and possible competitive advantage. In the context of E-accounting, a company is likely to gain improved efficiency by automating some of their accounting-related functions with the help of the software. Organizational

readiness then refers to the company's financial resources as well as technological competences and resources, which are all necessary for properly adopting a new information system. For example, in the case of E-accounting software, the existing IT skills of the company's employees have a significant impact on how seamlessly the use of the system is integrated into their work. Finally, external pressure refers to competitive pressure in the sense that how well a company's competitors are already utilizing similar systems and improving their business with them, but also the pressure from trading partners. For example, if a company has a partner who is utilizing electronic invoicing, their partnership would essentially benefit if both parties were using similar means of sending and receiving invoices. (Iacovou et al., 1995)

Another way to look at the spread and adoption of E-accounting is the Diffusion of Innovation model, first introduced by Robertson in 1967. Electronic accounting, in a sense, is an innovation, which according to Robertson's (1967) definition refers to "a process, whereby a new thought/behavior/thing, which is qualitatively different from existing forms is conceived of and brought into reality". The model divides innovations into three categories. Continuous innovations have little effect on the established patterns of behavior – they are merely slight improvements on existing products. Dynamically continuous innovations introduce a bigger improvement or alteration on existing products or patterns, but are not hugely disruptive. Discontinuous innovations, on the other hand, change radically the existing behavior by providing entirely new approaches or products, which make the previous products more or less unnecessary. E-accounting can be seen as either a dynamically continuous innovation or a discontinuous innovation, as on one hand it essentially continues the established accounting practices and patterns yet provides a digitalized way to perform them, but on the other hand has altered the accounting practices, as well as the profession of accounting, to such large an extent that it can be considered disruptive, since it is making paper-based accounting practices unnecessary. (Robertson, 1967)

Moreover, the Diffusion of Innovation model can be used to describe how companies – or on a higher level, countries – have adopted the use of E-accounting over the years. The model, as visualized in Figure 2.3, categorizes the adopters of an innovation to the following categories based on how early they accept and utilize a newly developed innovation: innovators, early adopters, early majority, late majority and laggards (Robertson, 1967). The companies with more technological readiness are more likely to adopt new technology-related innovations, such as electronic accounting practices, but in general there is also high country-specific variation on how quickly innovations are

adopted, since wealthier countries are typically more prone to faster adaptation (Sundqvist et al., 2005).

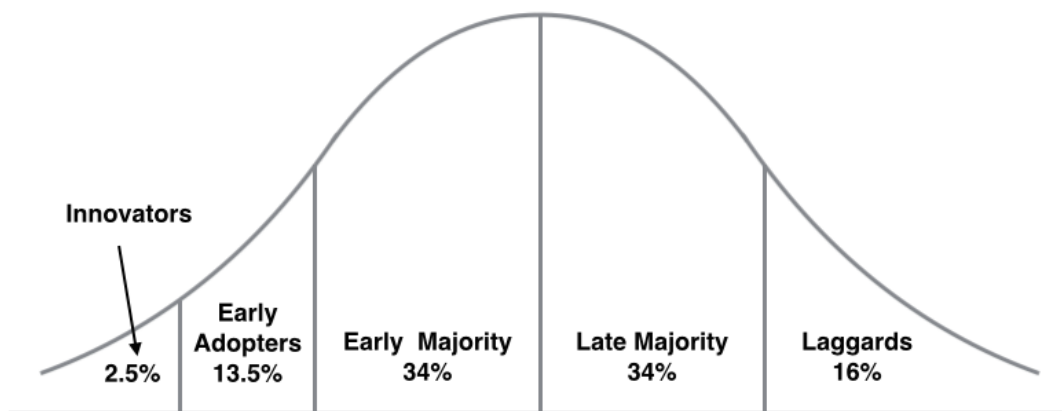


Figure 2.3: The Diffusion of Innovation. (Robertson, 1967)

Aside from affecting organizational practices of accounting, the transition from traditional accounting methods to E-accounting has had a huge influence in the everyday work of accountants and the profession in general. As it is becoming easier for companies themselves to manage their financial matters to a larger extent, the role of the (external) accountant is diminishing on some levels, but it is also being redefined into that of a knowledge worker. While the most routine accounting work is reduced by the automation from E-accounting systems, accountants can enhance and diversify their skill sets, get more involved in the technology of E-accounting systems and help in a company's decision-making processes by, for example, placing more focus on risk analysis. (Howieson, 2003)

Furthermore, Goh et al. (2017) state that while digitalization and automation of accounting functions have reduced the need of human input in the field, it shouldn't be considered solely as a threat to the profession. On the contrary, digitalization and the possibilities of E-accounting provide several options to enhance and expand the role of accountants, essentially keeping the profession important. The recommended strategy, according to Goh et al. (2017), is the so-called "step in" -strategy, in which the accountants handle the changes and possible challenges related to companies' adoption of accounting software. The human input would thus be needed, for example, when the business environment (or accounting-related legislation) changes, causing the need for the software to change as well. With the expertise of accountants the software can be

adjusted to fit the changing business environment, making the accountant an integral link between the business client and the accounting software developers.

2.2.4 Current situation of E-accounting in Finland

On a global scale, Finland can be seen as a forerunner in the use of electronic accounting practices, especially regarding the utilization of E-invoicing (Liikenne- ja viestintäministeriö et al., 2017). This has been partly facilitated by changes in Finnish legislation, which increasingly often allow or even encourage companies to perform their accounting-related tasks electronically, a notable example being electronic invoicing (Talousplus, 2016). Another example of increasing electronic practices in the field of accounting is the current recommendation by the Tax Administration of Finland to handle tax returns electronically instead of filling forms on paper (Koivumäki & Lindfors, 2011, p. 109). In addition to the legislative incentives and recommendations from official authorities, the growing popularity of E-accounting can be attributed to the overall digitalization of Finnish companies as well as technological advancements not only in Finland, but also in European Union.

One way to measure the current situation of E-accounting in Finland is by looking at existing research and data on the use of electronic invoicing, since it is one of the most integral features of E-accounting software. Several studies indicate that the use of electronic invoicing in Finland has been significantly increasing throughout the past decade (Prior Konsultointi, 2017; Suomen Virallinen Tilasto, 2008). A recent YLE news article, however, stated that although electronic invoicing is growing in popularity, majority of invoices in Finland are still handled on paper (Valtanen, 2018). In recent years, the Finnish government has also had plans to increase the utilization of electronic invoicing, further indicating a rising interest in the subject (Salmony and Harald, 2010). From a technological point of view, the TEAPPSXML and Finvoice standards have been specifically developed to facilitate the sending and receiving of invoices within Finland in a standardized electronic format (CEF Digital, 2017). Sending and receiving electronic invoices based on these standards is often implemented in Finnish E-accounting software solutions. Furthermore, the electronic invoicing initiatives in Finland are partly driven forward due to the fact that as an EU country Finland is also a part of SEPA (Single Euro Payments Area), where various initiatives concerning the use of E-invoicing have been introduced (Penttinen, 2008; Salmony and Harald, 2010).

Ultimately, as E-accounting is essentially a digitalized way for companies to take care of their accounting needs, its growing popularity is related to the rising level of digitalization in general. A recent research conducted by Prior Konsultointi (2017) examined the aspects of digitalization in the context of different Finnish organizations by comparing the level of digitalization of individual enterprises to those of larger organizations. According to the study, the self-employed are utilizing digital and electronic tools, including mobile devices, to an increasing extent in their daily work. The study also concluded that those individual entrepreneurs, who are in an early stage of their business, or seeking further growth, are more likely to put more effort into digitalization than other entrepreneurs. This indicates that electronic accounting could become increasingly relevant also in the context of individual entrepreneurs. (Prior Konsultointi Oy, 2017)

2.3 User-centered perspective on accounting software

The design and development of products and services has gradually shifted its focus towards a more user-centric approach. Understanding the actual users of a system is nowadays seen as an essential part of a design process – partly because in most cases users equal paying customers, and not taking them into consideration thoroughly would likely have a negative effect on the business. This applies to the design and development of electronic accounting systems as well. This section provides a conceptual background for the topic of user-centered design, including the definitions of user experience and user research. Moreover, their importance is discussed also in the context of enterprise software, such as electronic accounting systems. Finally, existing literature related to user-centered design of accounting software is covered, essentially aiming to describe how the users can be taken into consideration when designing accounting software.

2.3.1 User-centered design (and related concepts)

User-centered design is an approach for designing products and services, where the focus is placed on the needs of the users. Most definitions for the concept are essentially derived from ISO's (International Organization for Standardization) definition of human-centric design, which defines it as an "approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements and by applying human factors/ergonomics, and usability knowledge and techniques" (ISO, 2010). Although the definition uses the term

human-centric, it is essentially interchangeable with user-centered (or user-centric), as much of the existing literature describes user-centered design in a similar way. In this definition, a large emphasis is placed on the aspect of usability, which according to ISO (2010) refers to the effectiveness, efficiency and satisfaction with which the specified users of a system achieve specified goals in particular environments.

While improved usability can be seen as one of the main goals in user-centered design of a system, more recent literature tends to emphasize the importance of user experience over mere usability, as usability can be considered as only one aspect of user experience. For example, according to Hartson and Pyla (2012, p. 16), in addition to usability factors, user experience comprises of factors related to emotional impact and experienced usefulness of a product or a service. Moreover, ISO (2010) defines user experience as the “person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service”.

Hassenzahl (2008) notably disputes the ISO definition, claiming that it can be considered as rather vague, since it essentially covers all the possible aspects of the user's experience when interacting with a product or a service. In turn, Hassenzahl (2008) describes user experience as a “momentary, primarily evaluative feeling (good or bad) while interacting with a product or service”. In this definition the emphasis is placed on the actual moment of the interaction, whereas in the ISO definition the emotions and feelings related to anticipating the use – or those occurring afterwards – are also considered. Edwards (2015) also states that the concept of user experience might include experiences related to such things as the company brand. However, in this thesis, the term user experience is primarily used when referring to the emotions and feelings the user experiences while actually using a system, and factors such as a company brand are not taken into account, unless otherwise stated.

2.3.2 User research as a part of the design process

In order to achieve the best possible results in terms of usability and user experience when designing a product or a service, the utilization of the user-centered design process is highly recommended. According to the ISO definition of human-centric (i.e. user-centered) design process, it starts with the initial planning of the process, proceeds to the phase of understanding and specifying the context of use and then to specifying the user requirements. After these specifications, initial design solutions are made to match the user requirements, after which these solutions are evaluated. The most important aspect of the process is its iterative nature; after initial design solutions

are evaluated, the process starts over from contemplating the use context, specifying user requirements and producing new design solutions for another round of evaluation. These actions are repeated as many times as necessary until the design solution finally meets the user requirements. (ISO, 2010)

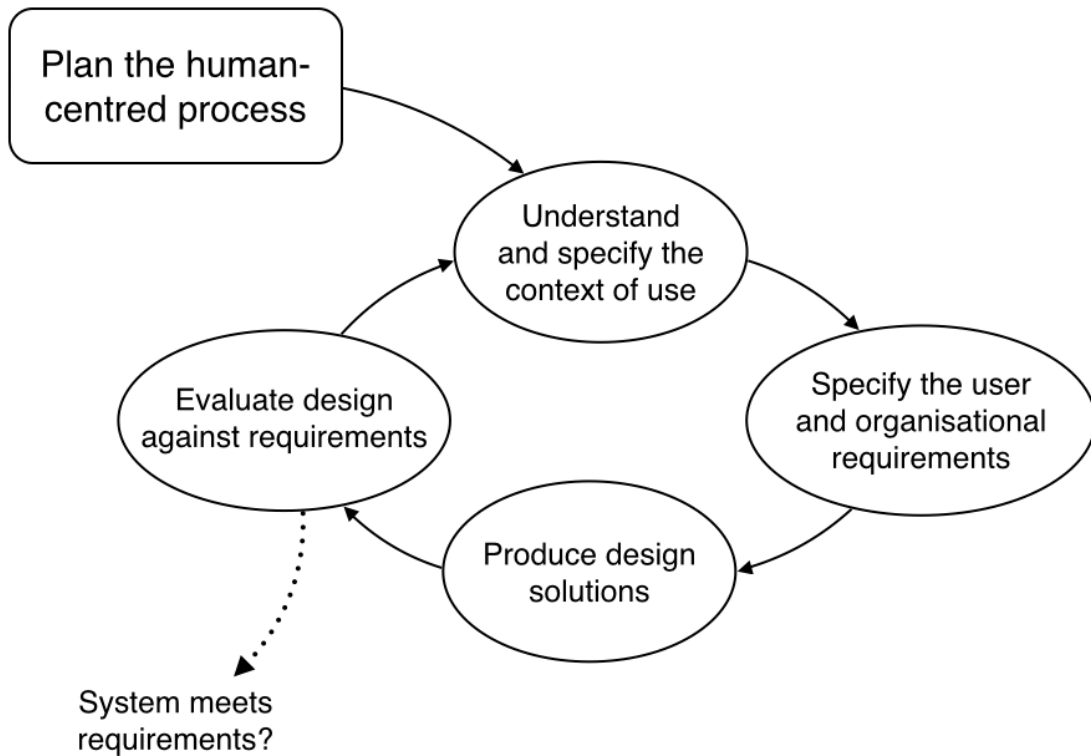


Figure 2.4: The human-centric (i.e. user-centered) design process. (ISO, 2010)

Likewise, Edwards (2015) introduces an approach of “7 D’s” for designing as well as developing software systems in a user-centric manner: Discover, define, design, develop, deliver and (collect user) data. Furthermore, according to Hartson and Pyla (2015, p. 54) the design process should consist of designing concepts, turning them into prototypes, evaluating and analyzing, the latter part essentially referring to gaining a deeper understanding of the users and their needs. Although several suggestions for how to conduct user-centered design exist, they typically share the idea that the process should be iterative in nature (Edwards, 2015; Hartson and Pyla, 2015, p. 55; ISO, 2010). What is also commonly considered highly important in user-centered design is the notion that the needs of the users, as well as the context of use, should be

thoroughly understood when making design solutions (Hassenzahl, 2008). Steen (2007) emphasizes that involving users in various parts of the design process will be beneficial for the user experience as it is likely to enhance the satisfaction of end-users. Furthermore, according to Kuusinen (2015), being able to empathize with users is highly important, although challenging.

In the ISO (2010) definition of the design process, the phases of understanding and specifying the context of use and specifying user requirements essentially refer to user research. When user research is conducted, a specified group of users or potential users are studied through various means of research. Typically, user research is one of the first steps in a process towards a usable system, as it gives important data about the actual people who would be using the system to the people who are designing it – and gaining a thorough understanding of the users in an early stage might reduce the workload of subsequent phases of the process (Brhel et al., 2015; ISO, 2010; Rohn, 2007). Like the other phases in the user-centered design process, user research can be iterated and repeated, and user input should continue throughout the whole design process (Holtzblatt and Beyer, 1993).

2.3.3 Need for user-centrism in the context of accounting software

Although the concepts user-centered design, usability and user experience have been studied in academic literature for a few decades already, their application in practice has not been entirely pervasive, as user-centric design practices still remain somewhat undervalued in software companies (Rohn, 2007). Usability as a metric for a successful software product remains overlooked when compared to, for example, the technical and functional aspects of the software (Scheiber et al., 2012). According to Hartson and Pyla (2012, p. 7), the reason for this might be that since early computer applications were intended more for a more limited, technology-oriented user base, poor usability wasn't considered as much of an obstacle, and even when the general public did begin to use software products, the demand for a better user experience wasn't instantly realized.

However, the interest in UX has been growing steadily, as software-developing companies are beginning to realize its importance (Hassenzahl, 2008). In order for a company to be innovative and simultaneously satisfy their customers – or users of their product – it is vital to understand both the technology and the users (Holtzblatt and Beyer, 1993; Steen et al., 2007). Thus, there is a business incentive for applying user-centered practices: since more and more companies are focusing on a better UX, the

products that can offer it have competitive advantage over those that do not (Hartson and Pyla, 2012, p. 9; Scheiber et al., 2012). Furthermore, Mashapa and van Greunen (2010) state that a large portion of software maintenance costs is related to what can be considered user experience issues.

Although the importance of UX is being recognized increasingly often, the user experience particularly in the case of business-to-business (B2B) products – or enterprise software – fails to satisfy their user bases as successfully as business-to-counter (B2C) products (Edwards, 2015; Mashapa and van Greunen, 2010). This might be partly explained with the fact that these products tend to be complex due to having to answer to several business challenges and use cases (Edwards, 2015). Kuusinen (2015) defines enterprise software as a “software that is intended or used for work purposes in companies or other work-related organizations.” Electronic accounting software falls into this category, and like other B2B software products, it revolves around complex use cases, as the accounting needs of a company consist of several functions, as presented in section 2.1.

Moreover, academic literature that specifically focuses on the user-centered design aspects of accounting software is indeed rather scarce, which furthermore indicates that the user experience of accounting software has not been considered as a topic of greater interest. Collins (1999) does highlight the importance of user-friendliness when selecting an accounting software, but recognizes that the “ease of use” can be difficult to measure due to complexity of use cases and variety of user groups. In order to make the accounting system easier to use, according to Collins (1999), special focus should be placed on graphical guidance, default-rich settings or customizability, and a generally good “look-and-feel”, essentially referring to an aesthetic and minimalist design of the software’s graphical user interface. Mashapa and van Greunen (2010) also introduce the following usability metrics that can be used in evaluating and designing an accounting software: subjective satisfaction, consistency, attractiveness, familiarity, error tolerance, system terminology, predictability, feedback, and control and freedom. These suggestions resonate highly with general guidelines for user interface design, such as Nielsen’s (1995) 10 usability heuristics, which along with other commonly used design guidelines can also be utilized in the design of accounting software.

2.4 Synthesis of Literature Review

The presented theoretical background provides a preliminary understanding of the topic of accounting in the context of Finnish individual entrepreneurs. Accounting in general can be seen as an important business function for any economic entity, including individual entrepreneurs, for two main reasons: first of all, it is legally required; secondly, it provides important financial information to an entrepreneur, which is essential in financial operations and decision-making. Majority of accounting functions are largely derived from laws and regulations – in Finland, mainly the Accounting Act and various laws regarding taxation. In some parts, these laws tend to be “lighter” for individual entrepreneurs, especially for those who operate as sole traders. In other words, Finnish individual entrepreneurs are relieved from certain accounting-related duties that are required from larger companies. This makes the accounting needs of those entrepreneurs slightly lighter in practice.

As individual entrepreneurs operate alone, they are primarily experts in their own field of business. This means that they might have little to no understanding of accounting and how it should be handled in practice. It is thus recommended and typical for individual entrepreneurs to outsource several accounting-related functions to accounting firms, allowing the entrepreneurs to focus on their core business instead. Aside from their varying accounting skills, their skills regarding computer and software usage can vary greatly, which affects their willingness to adopt and utilize electronic accounting solutions, such as E-invoicing. Furthermore, Finnish individual entrepreneurs often have unstable financial situation and lower incomes, which also affects their willingness to invest in an accounting software.

In addition to possible financial difficulties and limitations, Finnish individual entrepreneurs tend to work many hours a week. If they are to invest in an accounting software, it is crucial that the software doesn't suffer from bad usability, especially when it comes to effectiveness, since it would cause them to lose valuable time that they would otherwise spend on their core business activities. As usability and user experience are becoming increasingly important in the world of software, the developers of E-accounting systems should utilize user-centric methods in the product design process, in order to gain competitive advantage. By conducting upfront user research (and including targeted users in later parts of the design process as well) the software can be designed to match the real needs of the users, which ultimately improves the usability and the user experience of the system.

3 Methodology

This chapter consists of a detailed description of the research methodology that was used in this thesis. The research setting and process as well as the methodological approach for the research are described. Finally, the methods of data collection and analysis are presented.

3.1 Research setting and phases of the process

The initial topic for the thesis was proposed by Finago, as Finnish individual entrepreneurs was considered as an interesting user group for a more comprehensive user research. As a part of a larger development project where the accounting needs of entrepreneurial users of Finago Procountor software were under study, the subgroup of individual entrepreneurs (or self-employed) was considered interesting and appropriate for the scope of a master's thesis. To narrow the scope slightly further, and also taking into consideration the fact that the entrepreneurial users of Procountor typically utilize the services of an external accounting firm, the scope was finally narrowed down to individual entrepreneurs, who have outsourced at least some parts of their accounting to external accounting firms, and thus do not perform their accounting-related tasks entirely on their own.

When the scope of the research as well as an initial title for the thesis was confirmed, the process continued by browsing through relevant academic literature. The overall topics of the literature were established rather early on, and were related to the following three themes: Entrepreneurship, mainly focusing on existing research on individual entrepreneurs (especially in the context of Finland, when possible), accounting, specifically in a Finnish business environment, and finally, user experience, with the main focus being user research. The theme of entrepreneurship was chosen as the studied research group was to consist solely of entrepreneurs, as was specified in the scope of the research. Accounting as a topic was equally important, as the study was specifically focusing on various accounting-related functions that are relevant in the everyday work of entrepreneurs. The theme of user experience, especially user research, was deemed important, as the study itself is essentially an extensive user research of a particular subgroup of Finago Procountor users or potential users. Therefore, it was considered appropriate to examine the discovered phenomena from a

UX perspective, as well as utilize various methods that are typically used for user research.

After selecting the general themes for the literature review, the research process continued by contacting potential subjects for the empirical part of the study, while simultaneously writing the theoretical part. The themes present in the literature review were also used as the basis for the qualitative interviews that were conducted with the selected subjects during a two-month period extending from mid-February until the end of March. During this time and until the end of March, the literature review was also written and progressed further, and was essentially finalized by early April. The remaining April as well as early to mid-May was spent in analyzing the data, after which the initial results of the research were formed and presented to other Finago employees. This was followed by a month-long vacation, which caused a break in the process. The remaining parts of the thesis were written over the course of the summer months June to August.

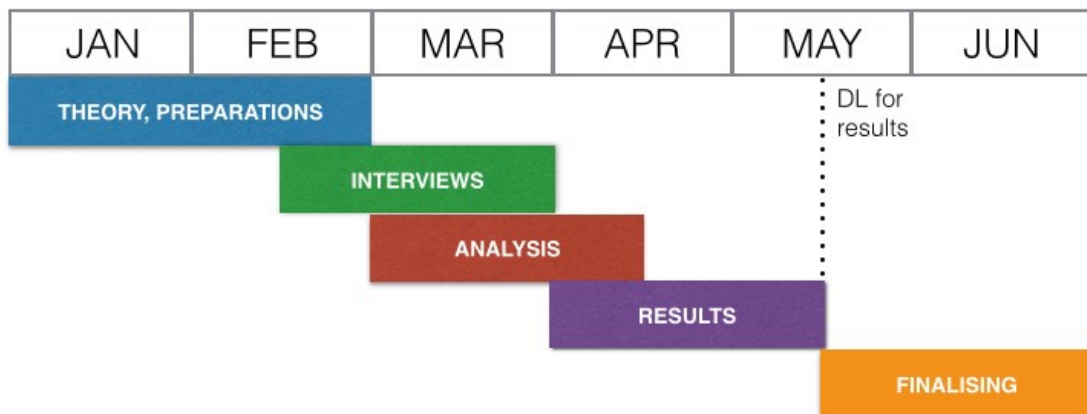


Figure 3.1: Initial planned timeline for the research process.

3.2 Research methods

As elaborated in 2.3, it's becoming increasingly important in software development to understand the users, so that the software can be designed to match their needs and ultimately provide an optimal user experience. In order to discover the actual needs of the users, the use of various methods of user research as a part of the design process is

highly recommended. Given that this research is essentially aiming to study the accounting-related needs of existing or potential users of Finago Proccountor, the empirical part of the research was constructed so that the methodological approach of user-centered research was utilized. Furthermore, the thematic basis of the empirical research was built around the topics and findings of the literature review (Chapter 2). In this section, the selected approach and research methods are explained in further detail.

3.2.1 Qualitative research

The term qualitative research refers to the kind of research where phenomena is studied in a more exploratory and interpretative manner, aiming to discover underlying meanings of things instead of producing statistically significant or quantifiable data, as quantitative research does (Strauss and Corbin, 1998, p. 10-11; Silverman, 2000, p. 1; Denzin and Lincoln, 2011, p. 3). Whereas quantitative research places more emphasis on generalizable findings, the qualitative approach allows the researcher to get closer to an individual's point of view, utilizing such methods as in-depth interview and observation, instead of, for example, structured surveys that are more fit for large sample populations (Denzin and Lincoln, 2011, p. 11-12). According to Silverman (2000, p. 9), qualitative research is especially appropriate when the research aims to explore a phenomenon before testing the findings on a larger sample population. Therefore, the qualitative approach is fit for inductive, theory-building research methods, such as the grounded theory (Strauss and Corbin, 1998, p. 12).

There are several ways to approach a user research, which the empirical part of this research essentially is. While the methods can be either qualitative or quantitative, qualitative methods tend to be more common (Vermeeren et al., 2010). As this research aims to not only discover what accounting practices do Finnish individual entrepreneurs have, but also provide more in-depth data about individual entrepreneurs as a user group, and describe their motivations and feelings when dealing with those accounting practices, an inductive and qualitative approach was deemed appropriate. Moreover, a practical reason for utilizing a qualitative approach in this research was the notion that it would be more fit for an in-depth study of a relatively small sample group, which would be more realistic in the time frame of the study. By approaching the research with qualitative methods, the motivations, feelings and intentions of individual entrepreneurs in the context of E-accounting systems, or accounting in general, could be placed under focus.

3.2.2 Interview

Interviewing is a common research method that can produce both quantitative and qualitative data. An interview format is either structured, semi-structured or unstructured, which determines the extent to which the interview questions are planned beforehand. A structured interview consists entirely of pre-planned interview questions, whereas an unstructured interview resembles a guided conversation focusing on pre-selected topics, and the questions reflect the previous answers of the interviewee. A semi-structured format combines qualities of the two aforementioned methods, meaning that questions and themes are at least partly pre-planned, but additional questions may arise during the interview, which allows the interviewer to get more specific details regarding the answers of the interviewees. When the interview is conducted with a quantitative research approach, it is done to test an initial hypothesis with a more structured and standardized format. Qualitative research interviews, on the other hand, tend to be more unstructured, as they aim to generate a new hypothesis of a subject, or explore a phenomenon on a general level. (DiCicco-Bloom and Crabtree, 2003)

Conducting interviews on existing or potential users of a service or a product is also a typical means of performing user research (Kuniavsky, 2003). As this research is essentially a user research studying individual entrepreneurs as existing or potential users of an E-accounting software, interviewing was deemed as an appropriate research method. Specifically, a qualitative research interview with a semi-structured format was selected as one of the means to collect data. An interview skeleton was constructed focusing on three main themes, reflecting the topics and findings of the theoretical background: entrepreneurship in general, accounting practices of the subjects and finally, electronic accounting practices.

In the beginning of an interview it is crucial to generate trust between the interviewer and the interviewee, which would facilitate the rest of the process and get the interviewee to answer to questions more broadly (DiCicco-Bloom and Crabtree, 2003; Kuniavsky, 2003). Thus, the interview structure was designed to start off with a general introductory part, where the purpose of the study was revealed and the interviewees were asked to sign a document of consent, explaining that they had the right to stop answering questions at all times. The interviews were recorded on audio using a laptop and its internal microphone, and the permission to do so was also verified. The actual interview would start with simple questions about the subject's background, which would serve as a warm-up before discussing the actual research topics more

thoroughly. After the introductory part and warm-up questions, the interview would then proceed into discussing the aforementioned three topics further, starting with the topic of entrepreneurship and motivations behind self-employment, which was followed by discussing the practices of accounting and finally electronic-accounting or the possible usage of E-accounting software, such as Finago Procountor. Due to the semi-structured nature of the interviews, the pre-planned question pattern was followed loosely, with additional questions asked when deemed appropriate.

At the end of each interview after the actual interview questions, the interviewees were presented a table (Appendix A) featuring various accounting-related tasks. The interviewees would then go through each task, explain how they perform it (or if they have outsourced it to an external accounting firm instead) and how do they experience the processes related to the task. These tasks were selected based partly on existing features in Finago Procountor, and partly on the legislative obligation to perform certain accounting-related tasks, as elaborated in Chapter 2 (see 2.1.2). The aim of this was to generate a more comprehensive picture of particular accounting-related tasks to complement the findings of the actual interview, which was more unstructured in its nature.

3.2.3 Contextual inquiry

In addition to qualitative interviews, another research method that is typically used in user-centered research is contextual inquiry (Kuniavsky, 2003; Hartson and Pyla, 2012). In contextual inquiry, users are observed as they perform real tasks in a real-world scenario while using a system or service. As the observation happens in a real context, the data tends to be more accurate and insightful than data produced from merely conducting qualitative interviews (Hartson and Pyla, 2012, p. 91). As Kuniavsky (2003) emphasizes, interviews do not always reveal the interviewees' true thoughts, as subjects might sometimes present their answers as something that they wish happened, instead of what actually happens. Moreover, especially when describing the use of complex systems – such as an E-accounting software – users may find it difficult to describe how they perform certain actions with merely words, which makes the use of additional, observational user research methods valuable (Holtzblatt and Beyer, 1993). Steen, Kuijt-Evers and Klok (2007) describe these observational research methods as empathic design, and emphasize their role in giving a more thorough understanding of the users of a system.

As one of the aims of this research was to really discover how the entrepreneurs perform their accounting-related tasks, and more so, how do they experience these processes especially in the context of E-accounting software, simply interviewing was considered as an insufficient method for a more extensive user research. Also, in qualitative research it is recommended to use methodological triangulation, which means the use of multiple research methods (Denzin and Lincoln, 2011, p. 5). The method of contextual inquiry was thus decided to be a valuable addition to the collection of empirical data, as it would reveal how entrepreneurs really perform the tasks. This would also give more broad data on what tools the entrepreneurs use in performing various accounting-related tasks, and how do these tasks integrate in their daily work.

In addition to simply observing participants, contextual inquiry involves asking questions when necessary, thus allowing the participants to explain in words the motivation for their occurring actions: why they did what they just did, and how did they feel about it (Hartson and Pyla, 2012, p. 91). One of the drawbacks of this research method, however, is that the presence of an external observer might be somewhat intimidating to the participant, and therefore have a negative effect on how he/she performs his/her actions (Blom, Chipchase and Lehtikoinen, 2005). On the other hand, according to Hartson and Pyla (2012, p. 92), the participant might also improve their performance of a task when being observed. In order to combat these issues and lessen the impact of an observer on the participants, in this research the participants of contextual inquiry were first interviewed in the same way as those subjects who only participated in the interviews. This was done in the hope that the participant would be less bothered about the presence of an observer after a certain level of comfort and trust was already established as a result from an extensive interview.

As opposed to the conducted interviews, which were structured to some extent, the two contextual inquiries performed were even more exploratory in nature, and the purpose was to follow the subject performing various accounting-related tasks on the course of one working day. Typically, when performing a contextual inquiry, in addition to observing and asking questions the observer takes notes of the situation, on-site photography is performed. However, as in this research the participants would be performing accounting-related tasks, which would likely include handling sensitive information about their customers as well as their financial matters, taking photos in such a situation was not considered appropriate. Therefore, the contextual inquiries in

this research required relied on taking notes and recording audio, the consent to which was given by each participant.

3.3 Data collection

As the research objective was to study Finnish individual entrepreneurs, more specifically those who have outsourced at least some of their accounting functions to external accounting firms, the sample group was to consist entirely of such subjects. Moreover, as this thesis studies the accounting practices of individual entrepreneurs specifically in the context of E-accounting, entrepreneurs who utilize E-accounting software, such as Finago Procountor, were emphasized in the selection of subjects. Therefore, the process of contacting potential subjects began by browsing a list of Finago's existing customers, and picking out those customers who were revealed to be individual entrepreneurs. In addition to Finago customers, two subjects were acquired from personal contacts. Furthermore, in selection of the potential subjects their line of business was considered, as it was deemed valuable to get data from entrepreneurs who work in different fields of profession.

Early on in the process it became evident that it would be more difficult to get participants for a half or full-day observation as opposed to an interview that would last up to 45 minutes. It was thus decided to focus on getting more interview subjects than participants for contextual inquiry. Ultimately, 5 participants were acquired for an interview only, whereas 2 participants were subjects to both contextual inquiry and an interview. In other words, a similar semi-structured interview was conducted for 7 interviewees in total. As one of the participants of contextual inquiry handled his accounting-related tasks in more traditional and paper-based ways, whereas the other was a user of Finago Procountor, one of the angles of the research was to compare the performance of certain tasks with paper-based and electronic methods. This provided an interesting angle in examining the accounting practices of individual entrepreneurs in the context of E-accounting. Background information of all interview and/or contextual inquiry subjects is summarized in the Table 3.1.

Table 3.1: Background information and research method for each subject.

No.	Company form	Line of business	Duration of entrepreneurship	Finago Procountor user	Research method
#1	Limited liability company	Consulting, IT services	15-20 years	No	Interview, contextual inquiry
#2	Sole trader	Healthcare related	1-2 years	Yes	Interview, contextual inquiry
#3	Sole trader	Massage therapy, canine massage	1-2 years	Yes	Interview
#4	Limited liability company	Landscaping	6 years	Yes	Interview
#5	Limited liability company	Consulting, IT services	10-15 years	Yes	Interview
#6	Sole trader	Hairdressing	Over 20 years	No	Interview
#7	Limited liability company	Consulting, digital marketing	4 years	Yes	Interview

In addition to interviews and contextual inquiries, a third source of data was used: user feedback of Finago Procountor users. As Finago Procountor sends out a customer survey each month, it was deemed as a valuable addition to the data to find comments made by individual entrepreneurs from the feedback. In the end, the user feedback over the course of 5 months (ranging from October 2017 to February 2018) was browsed and the feedback by individual entrepreneurs was isolated and collected for further analysis. Ultimately, the total transcribed material that was left for analysis consisted of approximately 78 pages; the combined transcriptions of interviews was 69 pages in total, while the contextual inquiry notes were 6 pages long and the document of combined user feedback was 3 pages long.

3.4 Data analysis

As the methods used in collecting the data were qualitative in nature, it was deemed appropriate to utilize a qualitative approach in the data analysis phase as well. According to Strauss and Corbin (1998, p. 12), analyzing qualitative data consists of various actions, but it typically includes a process known as coding, where the data is reduced to a more easily analyzable form. Furthermore, as Strauss and Corbin (1998, p. 13) point out, analyzing qualitative data is highly interpretative, which means that there are various ways to analyze a particular set of data.

To make the process of data analysis more consistent, the method of inductive content analysis was applied to some extent. The recommended process of an inductive content analysis roughly consists of the following consecutive steps: preparing the data, organizing the data, and finally, reporting the findings as a new emergent theory. In the preparation phase, it is vital to remove unnecessary pieces of data and make sure that the relevant data is in readable form. Organizing the data includes coding – which can involve both predetermined codes and emergent codes that arise from the data itself – as well as grouping, categorizing, and abstracting the data. Finally as relations between the codes and groups of codes become more evident, the resulting inductive findings can form a basis of a new theory. (Elo and Kyngäs, 2008; Tuomi and Sarajärvi, 2002)

In this research, the data analysis phase was largely done with the help of a software tool named Atlas.ti. As all the interviews were recorded on audio, the process began by transcribing all audio files to text. Next, these text files, along with the notes from the two contextual inquiries, as well as the compiled Procountor user feedback from individual entrepreneurs, were imported into Atlas.ti. After initial browsing through the material, the coding began by reading the text-files one by one and applying codes to sentences or larger pieces of text. The codes included both emergent codes as well as a few predetermined codes, which were derived from the specific accounting-related tasks that were discussed in detail with each subject at the end of the interviews (see 3.2.2). In the end, the total sum of codes was 123.

Again, applying the recommended steps of an inductive content analysis, the process continued by categorizing the codes. In this part, a more theory-based approach was used, as the codes were categorized by essentially utilizing the main themes of the theoretical background (which also served as the basis for the interview structure): entrepreneurship, accounting practices and electronic accounting. Although content

analysis can be used in quantifying data, in this research the analysis was done without any actual quantification, and the methods applied were mainly used for categorizing and finding relations between the codes. However, the number of occurrence for each code played a significant role in the final stages of the analysis. For example, the codes “Partnership between entrepreneur and accountant” and “Threshold for performing actions that cause additional costs” were among the most frequent codes, implying their significance for the results of the study. The list of final codes along with their categories and the number of times they were applied can be found in Appendix B.

Finally, the analysis was concluded with the help of concept maps in Atlas.ti, where the relations of codes were visualized and links between phenomena became more evident (see Appendix C). The codes were placed on the map each in their respective categories, although some codes were not fit for only one category. By linking direct quotations to codes as well as writing the emerging findings in the form of memos furthermore assisted in discovering the essential findings of the research.

4 Results

The results of the empirical part of the research are presented in this chapter. The first section provides an overall look into the background, motivations and work-related experiences of the subjects, essentially aiming to provide an understanding of the nature and everyday life of Finnish individual entrepreneurs. The second section then summarizes how individual entrepreneurs deal with accounting, and how various accounting-related functions are tied to their everyday work. Finally, the third section discusses the concept of electronic accounting in the context of individual entrepreneurs, also by drawing comparison to paper-based accounting methods.

4.1 Working life of an individual entrepreneur

4.1.1 Motivation behind entrepreneurship and the perceived challenges

All subjects considered the experience of autonomy as one of the main reasons for becoming an individual entrepreneur. Autonomy in this context essentially refers to the ability to control and affect one's own work as well as the relation between working and personal life. For example, subjects #1 and #5 had embarked on self-employment after working several years in a company, having felt that the possibilities to influence own work tasks were limited to such extent that entrepreneurship was seen as a more interesting and rewarding professional path. Subject #7 highlighted that working as an entrepreneur feels more meaningful, as it allows the person to focus on his or her greatest professional interests. Likewise, a significant experienced benefit of self-employment was being able to choose when to perform work-related tasks, thus allowing the entrepreneur to prioritize personal matters and even hobbies over work, whenever possible or necessary.

In addition to internal motivation for self-employment, the decision to become an entrepreneur had external influences in the cases of some subjects (#2, #4 and #6). For example, living in an area that had limited or no working opportunities in the subject's field of profession was an important factor in two of the cases (#4 and #6). One subject (#2) had experienced health-related issues due to poor working conditions in a previous workplace, and considered it a deal breaker in the decision to become an individual entrepreneur. Aside from such direct external factors, several subjects stated that they had witnessed entrepreneurship in their family or other close social circles,

admitting that it may have positively influenced their decision to become an entrepreneur.

Besides discussing the motivation for becoming an entrepreneur, the subjects were also asked about their choice of company form, which in the scope of this research either meant working as a sole-trader or as a limited liability company. Subject #2, who operated as a sole-trader explained that the main reason to do so was saving in costs, as it is cheaper to start a business as a sole-trader, further adding that this decision was validated by consulting friends and relatives who had experience in entrepreneurship. Another subject (#4) who had previously operated as a sole-trader but later on turned to running a limited liability company mentioned that in some ways being a sole-trader was “simpler”, especially regarding the practices of accounting. In turn, those operating as a limited liability company implied that it was more suitable for a growing business where customers are other companies. Subject #7 explained the choice of a limited liability company as a means to keep private and working life separated from each other, adding that: *“I want to leave money to the company’s account, instead of withdrawing it all as my own salary.”* Two subjects (#5 and #7) with limited liability companies further explained that it helps in managing the financial risks associated with entrepreneurship.

The main challenges of being an individual entrepreneur were related to managing time and finances. As an individual entrepreneur can typically decide when to work, schedules can be difficult to predict and manage, especially if the work consists of various customer projects. Not having fixed working hours could result in the entrepreneur having to work late at night and/or during weekends, or even approaching the point of burning out, as reported by a few of the subjects. As subject #2 put it, *“I haven’t really had free time in a whole year.”* Furthermore, unpredictable working hours and a possible lack of customer projects in turn result in financial instability, which was stated as one of the biggest drawbacks of entrepreneurship compared to being employed by a company and having a monthly salary. Due to money being tight and future revenues hard to predict, the subjects stated that it is vital to keep track of all financial transactions and evaluate every expense carefully. For example, when discussing the financial challenges that an entrepreneur might face, one subject (#7) specifically said: *“I’m trying to keep my fixed costs as low as possible.”* In addition to challenges related to finances and time management, subject #2 emphasized that entrepreneurship in general can be quite challenging especially in its early phase, as it requires a lot of skills and knowledge that aren’t related to the

person's core business, and of which the person might have no experience of whatsoever.

4.1.2 The varying attributes of work

As stated, the timetables of an individual entrepreneur are largely unpredictable and rapidly changing, which means that the average working day of an individual entrepreneur can vary significantly in its duration as well as its contents. Aside from subject #6, whose profession was hairdressing, all subjects found it somewhat difficult to describe in detail what kind of tasks their typical working day includes. However, several subjects stated that their work includes a great deal of traveling, as they either meet customers or actually perform work in customer premises. Essentially, an individual entrepreneur has four types of locations to perform work: a home office (i.e. working from home), customer premises, separate business premises that the entrepreneur pays rent for and where he/she meets customers, and finally, public transportation or other means of transport, where the entrepreneur takes advantage of time spent on traveling by working during the trip. In most cases, the work was performed in two or more of these options, making the working days varying in location as well.

Working in several locations typically meant that one of the most valuable tools for working was a laptop. Alternatively, the subjects working mainly in their own home had either a laptop or a desktop computer. The subjects had somewhat varying experiences and skills regarding the use of computers and software. Some had worked in the ICT field and thus were accustomed to performing several or all of their work-related tasks on a computer. As subject #1 stated: *"Having worked for 40 years on computers and selling my expertise to clients, it is mandatory to learn (computer skills). In my work, I do basically everything on a computer."* However, even the subjects #2 and #6, whose work had very little to do with computers and technology, stated that their attitude towards computers and learning new software was mainly positive. Even in these cases a computer was used to perform at least some work-related tasks, for example those related to accounting and financial matters. In other words, whether or not a subject used a computer extensively in his/her work, the attitude towards working with them was mainly positive and they were deemed as important tools.

In addition to more traditional desktop computers and laptops, mobile devices, such as smartphones and tablets were becoming increasingly relevant for the entrepreneurs in work-related matters. The use of mobile devices was mainly related to contacting

customers and other stakeholders, through the use of applications such as Skype, WhatsApp, or a mail application. More traditional uses of mobile phones, calling and text-messaging, were also still used as means for contacting. However, several subjects considered their smartphone or laptop as much more than merely a contacting device, as they also used them for some functions somehow related to accounting, for example reporting hours spent on a customer project – this information was later on utilized when generating invoices. The use of mobile devices was often related to business trips, or when the entrepreneur performed work in places outside of his/her home office. One subject (#5) estimated performing half of the work-related tasks on the computer, and half on a smartphone. Another subject (#7) placed significantly smaller emphasis on mobile devices, by stating that they merely supported the work, but didn't play a significant role, as opposed to computers. The reported drawbacks of using mobile devices, as opposed to computers, were related to practical issues, such as the lack of mouse and keyboard, making the computer a preferable tool for more complex tasks.

4.2 The effect of accounting on everyday work

4.2.1 Reasons for outsourcing accounting

When discussing the topic of accounting, most subjects stated that they had relatively little interest to know about it on a detailed level, since it wasn't directly related to their core business. For example, subject #1 mentioned: *"I'm not an expert in the field of accounting – and I don't want to be."* Although the subjects largely recognized the importance of certain accounting-related functions, such as invoicing or monitoring their financial state, accounting in general was often seen as something mandatory that needs to be taken care of mainly due to regulatory obligations. Despite this, nearly all of the subjects also admitted that their knowledge of accounting had increased to some extent ever since they had embarked on entrepreneurship, meaning that whether or not they were consciously interested in learning more about accounting, they had in fact improved their knowledge of it during their entrepreneurship.

The extent to which the accounting-related knowledge had increased in the subjects also correlated with their previous working experience as well as their educational background. Those subjects who had some previous accounting-related experience, whether it was from their professional career or educational background and courses that they had enrolled on, didn't feel that their knowledge had increased significantly, although one of those subjects admitted to having gained at least some new insights

especially during the very first years of his entrepreneurship. Some subjects (e.g. #5) further commented, that even though in theory they knew several things about accounting because of their previous background, applying that knowledge in practice was a completely different matter, and something that only practical experience helped to improve. As subject #5 subject explained, *“through practice you are bound to learn what you can, what you should or what you shouldn’t do in an enterprise of a certain size.”* Another one (#7) commented: *“It’s really difficult to learn (how to handle accounting) from a book; you don’t really get it before you actually have to imply it in practice.”*

Ultimately, the general lack of interest in learning extensively about accounting together with the need to focus mainly on core business activities were essentially the main reasons for outsourcing some or most accounting-related practices to external accounting firms. The decision to use external accountants was in most cases made early on when entering entrepreneurship, as it was considered as a valuable time saver, and thus worth the costs of outsourcing. Subject #3 explained the decision in the following way: *“Luckily I had taken a course on accounting, so I knew right from the start that I want to have an external accountant.”* Another subject (#7) explained: *“As an entrepreneur I’m trying to optimize these things so that they don’t interfere with what I usually do.”*

As the purpose of this research was to specifically study those individual entrepreneurs who used the services of accounting firms, all selected subjects had at the time of the study outsourced at least some of their accounting-related functions. However, one of the subjects (#4), who had previous knowledge of accounting due to her educational background, mentioned trying to handle accounting-related functions independently at first when operating as a sole-trader, and only began to outsource them after starting a limited liability company, implying that the perceived complexity of handling accounting-related functions increased with the change of company form.

The notion of trust played a major role in the companionship between the entrepreneur and the external accounting firm. Several subjects stated that they had full trust in the expertise of the accountants, and were generally happy to let them take care of their financial and accounting-related matters. As one subject (#6) put it, *“I tend to trust my accountant with these things; I can concentrate on my work and he can concentrate on his.”* The experiences that the entrepreneurs had with their current accountants were mainly positive, apart from minor and rarely occurred calculation errors with no significant impact on the business. Subject #7 commented on the matter: *“An*

accounting firm is full of people, who perform their tasks well, but you never know... there is always the possibility of a human error.” A few subjects mentioned about more severe negative experiences with their previous accountants. These experiences were mainly related to poor communication or advice from the accountant, which had caused a great impact on the entrepreneur’s financial situation – these instances typically resulted in the entrepreneur changing to their current accounting firm. One subject (#6) thus concluded: *“The key factor (for entrepreneurs) is having a good accountant.”*

4.2.2 The partnership between the entrepreneur and the accounting firm

Although the subjects worked in rather different fields of profession and their knowledge of accounting was somewhat varied, the division of tasks between the entrepreneur and the external accountant or accounting firm followed a similar pattern. The accounting-related functions that were primarily studied in this research were sales invoicing (or other means for the entrepreneur to receive money from business operations, including cash and card transactions), purchases and the handling of receipts or transaction vouchers, bookkeeping, calculating and reporting of the Value Added Tax, financial statement and tax returns, inventory management and monitoring of financial numbers (for example in the form of reports). It is worth noting that not all of these tasks were necessarily relevant at all for some of the entrepreneurs; for example, inventory management only concerned those subjects who needed to store and sell physical products as a part of their business (mainly #2), and was therefore an irrelevant function for the subjects who instead of physical products sold their expertise (i.e. practiced consulting) or performed mainly computer-related tasks.

Of the aforementioned accounting-related functions, bookkeeping was entirely outsourced in all of the cases, and therefore did not interfere with or directly affect the daily work of the subjects. Likewise, the preparing of financial statements was considered as a responsibility of external accountants. The entrepreneurs were linked to the process only by browsing through and signing the documents prepared by the accountants. Moreover, tax returns were typically handled in a rather similar fashion: the entrepreneur would provide all the necessary information that affected taxation for the accountant, who would then proceed to handle the actual tax return and the related paperwork. As with the financial statements, the entrepreneur would finally revise and approve the documents of tax returns once the accountants had completed their part of the process. Subject #1 explained: *“I try to have a look at them on a monthly basis, to see if everything’s okay. Every once in a while there might be some errors in there –*

the accountants handle the paperwork so quickly that things don't always go where they should."

The processes of calculating Value Added Taxes as well as handling VAT returns were almost entirely outsourced. However, although the calculations were performed by the accountants, they typically informed the entrepreneur of the final numbers (i.e. the payable amount). In most cases, it was up to the entrepreneurs to perform the actual payment transaction of the calculated VAT amount. Subject #5 did, however, explain that he had outsourced the complete process, including the payment, to his accountant, making his role in the process virtually nonexistent. The topic of VAT was more complicated for those few subjects who sold products or services with various VAT rates, especially in the case of subject #2. These subjects, in addition to merely revising ready-made calculations and paying the amounts, had to consider the different VAT rates when dealing with invoices as well.

The rest of the accounting-related functions fell commonly under the responsibility of the entrepreneurs. These functions were generally those that are tied more directly to the actual business of the entrepreneur: mainly receiving or paying money in the business context. For most entrepreneurs in this research, receiving money required sales invoicing, whether it was electronic or paper-based. Out of the 7 subjects, only #3 and #6 reported that they mainly receive money through cash or card payments instead of sales invoices – these subjects were those whose customer base consisted of consumers rather than other companies. However, one B2C entrepreneur (subject #2) mentioned preferring sales invoices to other types of transactions.

Regarding the process of sales invoices, the entrepreneur was the main performer, whereas the role of the accounting firm was virtually nonexistent. In the case of cash and card transactions, the process typically included the entrepreneur collecting and sending the transaction receipts to the accountants, who would then process them further for bookkeeping purposes. Purchases and expenses, including travel expenses, were dealt with in a similar fashion, meaning that the role of the accounting firm was as insignificant as in the case of sales invoices, as the entrepreneur was the main performer in all of the cases. Likewise, the receipts of the transactions related to purchases were sent to the accountants for further processing and bookkeeping.

Finally, in addition to handling invoices, transactions and receipts, the entrepreneurs would keep track their financial situation by observing financial reports, which can essentially be considered as an accounting-related function as well. Based on the

empirical data, the practice of following financial numbers varied greatly compared to the other aforementioned functions. For example, subjects #1 and #6 – who weren't users of Finago Procountor or any other E-accounting system – mentioned that their accountants would provide them with information on the business entity's financial status in the form of various reports. Other subjects either didn't specify the role of their accountant in the process of observing their financial status, or implied that they perform it themselves independently through various means, for example with the help of an E-accounting software, or simply, by following their bank account.

The following table summarizes the typical division of accounting-related functions and thus provides a general understanding of what are those accounting-related functions that are normally performed by the entrepreneur him/herself.

Table 4.1: The typical division of accounting-related functions.

Accounting-related function	Role of the entrepreneur	Role of the accountant / external accounting firm
Bookkeeping	Minimal or nonexistent.	Main performer.
Financial statement	Minimal; mainly revision and signing of documents.	Main performer.
Tax returns	Minimal; mainly providing the accountant with necessary information that affects taxation whenever needed, and revision of documents in the final phase.	Main performer.
VAT-calculations and payments	Revision of the numbers, paying the necessary VAT amount.	Main performer of the calculations and preparations, possibly also of the actual payment.
Sales (invoices and/or transactions in cash or card)	Main performer; billing the customer.	Non-existent regarding actual transactions.
Purchases and expenses (including travel expenses and claims)	Main performer; paying and handling the invoices.	Non-existent regarding actual transactions.
Handling receipts	Scanning and storing receipts, copying information to accounting	Minimal, but copies of the receipts are used in other functions, such as

	software, sending to accountant for further processing.	bookkeeping.
Monitoring financial numbers, tasks related to financial reports	Variable.	Variable; e.g. providing financial reports or consultation and interpretation for the numbers.
Inventory management	Main performer, if the business included the sale of physical products; otherwise nonexistent.	Minimal, or not specified.

It is important to emphasize, that although some tasks were clearly the responsibility of the accountants whereas some tasks were performed by the entrepreneurs themselves, the division of these tasks was not entirely absolute. Regarding some of the accounting-related functions where the main performer was the accountant, the subjects generally were somehow linked to the process, for example by briefly revising the numbers or documents that the accountants had calculated and worked on, as well as approving them by signing. The entrepreneurs also provided the financial information and necessary documents to the accountants for further processing.

Moreover, the role of the accountant was not merely performing the assigned tasks, but also to provide general consultation on various matters related to accounting and financial management, whenever the entrepreneur required assistance on those topics. Although the subjects mainly seemed content with the division of tasks and the performance of their accountants, one subject (#7) especially expressed the wish for an even more proactive and consultative role from the accounting firm: *“It is a good accounting firm, that’s not the issue, but it would be nice to know what sort of things are coming up on this quarter year, to get more consultation on that. For example, “did you take these things into account regarding your taxes”, or “did you know that you can handle that thing like this.” ... They handle the legal side really well, but there would still be plenty of room for an economic partnership.”*

Finally, the role of the accounting firm was also important in the context of E-accounting. In all 5 cases where an E-accounting software was used by the entrepreneur, the initiative had come from their accountants. For example, subject #7

explained that as she switched from her previous accounting firm to her current one, the deal instantly included the use of Finago Procountor as well. Of the two remaining subjects, subject #6 implied that her accountant had been recommending the utilization of E-accounting, but she had refused. Subject #1, however, commented: *“My accounting firm hasn’t been actively pushing me towards electronic accounting, so I haven’t done anything about it either.”* Nevertheless, based on these findings, the importance of the accounting firm as a facilitator in the process of adopting electronic accounting processes is evident.

4.2.3 Entrepreneurs’ approach to performing accounting-related tasks

As revealed by the previous subsection, the accounting-related responsibilities of a Finnish individual entrepreneur (who utilizes the services of an external accounting firm) are mainly related to invoices or other means of transactions, handling of receipts, and monitoring the financial state with the help of various reports. These findings resonated with the answers the subjects gave to the question: “What comes to your mind when you think about accounting?” – all but one subject (#3) specifically mentioned invoicing. Consequently, as the aforementioned functions are typically left for the entrepreneur to deal with, they could end up taking a potentially significant amount of time in their everyday work.

The majority of time the subjects spent on accounting-related matters was specifically related to dealing with invoices and receipts. However, as the entrepreneurs had a varying amount of both sales and purchase invoices, as well as receipts, the time spent on these tasks also varied to a great extent. For example, a relatively low number of customer projects generally meant a lower number of sales invoices as well. Likewise, the time spent on expense or purchase related invoicing tasks, including travel expenses, varied a lot; more time was spent if the subject’s business required purchasing various products. Also, the time spent on handling travel-related expenses naturally grew with more frequent customer visits.

Apart from one entrepreneur (subject #2), the subjects generally didn’t feel that the accounting-related tasks that they were responsible of were overwhelmingly time-consuming considering their everyday work. When they were asked to estimate how many hours they typically spend on these tasks, the answers ranged from half an hour to a few hours a week. However, the reported numbers might be underestimated by the entrepreneurs, as observational data gathered from the two performed contextual inquiries indicated that in reality entrepreneurs might spend more time on certain

tasks than they state in an interview. In addition to handling invoicing and receipts – which the entrepreneur typically does on a weekly or monthly basis – or monitoring financial numbers from various reports, there are other tasks related to accounting that the entrepreneur may spend time on less frequently or to a significantly lesser extent. These tasks are mainly related to those functions where the external accounting firm is the main performer, such as preparing a financial statement or dealing with tax returns. As such functions do not require a significant input from the entrepreneur, and some of them are only performed on a yearly basis rather than every week or month, they do not have a large impact on the everyday work of an individual entrepreneur.

While the number of invoices and receipts as well as the estimated time spent on accounting-related tasks varied to some extent between the subjects, the habits regarding when to perform those tasks were rather similar. Several subjects stated that they tend to perform accounting-related tasks at the end of the week, or at the end of the day, when there is time to perform them without it interfering with their actual work. Subject #7 described how she might perform accounting-related tasks “*for example on a Friday afternoon... when I don't get anything else done, I might take a look to see if there are some invoices I could now send*”, further adding that “*it (invoicing) is something that I never start my day with.*” A more extreme example was given by subject #1, who mentioned that he did “*these (accounting-related) things at 10 or 11 in the evening.*”

Essentially, in the subjects' answers it was strongly implied that accounting-related functions were seen as something that was separate from their normal, daily work, and the general attitude was that it is something that needs to be done, rather than what they actually want to do. This again reflected the subjects' attitude towards accounting (as elaborated in the subsection 4.2.1) – the tasks related to it were considered secondary compared to the core business tasks. As the entrepreneurs always prioritized taking care of core business activities, the tasks related to accounting were left to be handled when the time was right, which in the most typical scenario meant the end of the week, or as subject #1 put it: “*once I feel inspired enough to do them.*” In addition to performing accounting-related tasks by own choice when there is enough time to do so, a few subjects (#1 and #2) explicitly mentioned that their accountants also require various kinds of financial information (for example, receipts of the month) on certain dates. This essentially provides the entrepreneurs with deadlines regarding certain accounting-related tasks.

Furthermore, even if the entrepreneur had a clear routine regarding when to perform accounting-related tasks, extensive customer visits or business trips made matters more complex. Subject #1 elaborated that since he might spend a few weeks away on a business trip when working for a certain customer, he typically generates the sales invoice for that particular customer only after the trip is over. Subjects #2 and #5 likewise implied that customer visits ultimately cause them to perform accounting-related tasks, mainly invoicing and receipt handling, after they have returned home. In practice, this means that billing the customer for the performed service can happen days or even weeks after the work has occurred. In order to make the process easier, several subjects mentioned that they keep track of what they do, for example by inserting their working hours on a mobile application, when working at the customer premises. The entrepreneurs would then, after the customer visit, compile these working hour reports into one sales invoice for the customer, which typically meant more manual work.

Some subjects (e.g. #1 and #5) mentioned that they would save time from extensive invoicing by compiling several work performances under one bigger invoice, if the customer was the same. Similarly regarding the handling of receipts, the entrepreneurs would sometimes have a wallet full of paper receipts, collected from a period of time, and handle them all at once, for example by inserting them into an E-accounting software. These findings strongly indicate that the most time-consuming accounting tasks that an individual entrepreneur performs, invoicing and receipt handling, are not fully integrated into a typical working day of an individual entrepreneur, but are rather something that the entrepreneur ends up performing all at once. However, for the two subjects (#3 and #6), who didn't practice sales invoicing at all or did it very rarely, the whole process regarding business incomes was more directly integrated in the actual work, as billing the customer would happen immediately after the performed service, and the transaction would happen with a card or cash.

4.3 Utilization of E-accounting by individual entrepreneurs

4.3.1 Tools and technologies used for accounting

In order to efficiently accomplish their accounting-related tasks, the subjects used various tools and technological solutions they deemed appropriate for their needs. As the research sample group was mainly acquired from Finago Procountor users, 5 out of 7 subjects used Procountor to perform the majority of their accounting-related tasks.

The remaining 2 subjects (#1 and #6) used a combination of paper-based methods and other software solutions that were not actual E-accounting tools, but could be used as such in order to perform certain accounting-related tasks. However, such solutions were also used to some extent by even those subjects who mainly performed their accounting-related tasks on specialized E-accounting software, in this case Proccountor.

For example, Microsoft products Excel and Word were evidently significant tools for performing various accounting-related tasks, as all subjects apart from one mentioned using them. The exact purpose for which these software solutions were used varied to some extent, but the most common use regarding Microsoft Excel was keeping track of financial status by performing calculations that could help in estimating future revenue or other important financial numbers. Other uses of Excel included the calculations related to travel expense claims, as well as reporting of working hours performed for customers, which served as a basis for sales invoicing. Subject #1, who didn't use any E-accounting solution, and thus didn't utilize the practice of electronic invoicing either, used Microsoft Word for creating sales invoice templates – the invoice attachments, however, included Excel-made calculations, where the invoice rows were generated based on billable working hours performed for the customer.

Furthermore, in order to keep track of their financial state, all entrepreneurs implied that they observed their bank account (or their company's bank account, if they operated as a limited liability company) in an online bank service. Subject #3 mentioned following individual transactions through her bank service as well. In addition, other accounting-related web services were used in some instances; subject #1 mentioned using the official web service of Finnish Tax Administration for handling certain tax-related duties, such as tax returns. Essentially this meant that even if a subject was an avid user of an E-accounting software (such as Proccountor), it wasn't uncommon that he or she performed various accounting-related tasks in other web services as well. Subject #7 commented on the use of multiple web-based services for taking care of various needs: *"The fewer different services there are, the better,"* implying that it would be beneficial for the entrepreneur to be able to handle all relevant functions in one place.

Besides using multiple software solutions and web services, the studied entrepreneurs also used various physical devices and tools in order to perform the necessary accounting-related tasks. As elaborated in 4.1.2, the subjects performed various work-related tasks on a (desktop or laptop) computer, in addition to which mobile devices were used to an increasing extent. The increasing importance of mobile devices also

meant that various accounting-related functions were handled with the assistance of them. Mobile devices, mainly the camera phone, were especially essential in taking photos of receipts, but in addition they were used by a few subjects to report working hours for customer projects, which was later used as a basis for sales invoicing. Regarding other hardware devices, both contextual inquiries as well as one interview revealed the importance of a scanner. For these three subjects (#1, #2 and #5) it was a relevant device for performing certain functions, mainly receipt handling as well as scanning paper-based purchase or sales invoices. It is notable that even when two of these subjects (#2 and #5) were avid Procountor users and mainly preferred electronic invoicing, the invoices they received from their purchases were not always electronic, and therefore a device for handling paper-based material remained relevant. The following table summarizes the use of various devices and tools that the entrepreneurs utilized for performing their accounting-related tasks.

Table 4.2: Devices and tools used by entrepreneurs to perform accounting-related tasks

Device or tool	Type	Used for
Computer / laptop	Hardware	Running an E-accounting software and other software used for accounting-related tasks.
Smartphone / tablet	Hardware	Running an E-accounting application, taking pictures of receipts, reporting working hours in an application.
Scanner	Hardware	Scanning receipts and paper invoices.
Printer	Hardware	Printing copies of invoices, purchase receipts or bank statements.
Microsoft Excel	Software	Financial calculations, following financial status, travel expense claims, basis for invoicing and working hour reporting.
Microsoft Word	Software	Generating invoice templates.
Finago Procountor	Software	Most accounting-related tasks (when in use): invoices, receipts, reporting etc.

4.3.2 Benefits and challenges of adopting and using E-accounting

All 5 subjects who were Procountor users agreed that using E-accounting software was generally superior to handling accounting-related tasks fully on paper. Subject #5 commented on the topic: *“If you compare to paper-based accounting, ANY software is a huge improvement.”* Another one (#7) said: *“I’ve never even had any other accounting solutions than an E-accounting. I cannot even imagine a world that is full of paper – to me an electronic solution is the obvious one.”* Generally, adopting E-accounting was perceived to be beneficial, as the software was considered flexible, made accounting-related processes faster and reduced the workload on mundane tasks, such as calculating numbers or inputting same numbers multiple times. One subject (#5) was especially happy with the flexibility brought by the software, as it reduced the need for face-to-face meetings with the accountant firm – the software was used for sending and storing financial information that would otherwise have to be sent on paper, and thus it also made the communication between the entrepreneur and the accounting firm more effective and immediate. Even the 2 subjects who didn’t use Procountor, or any other actual E-accounting software, admitted that the automation brought by electronic solutions was indeed valuable. For example, one of these subjects (#6) used Microsoft Excel for performing financial calculations, and mentioned it being a valuable time-saver, as custom-made formulas for calculation had reduced the workload substantially.

Based on the interviews as well as the user feedback gathered from Procountor used over a time period of 5 months, the feature of the software that was deemed especially useful was electronic invoicing. As invoicing was generally considered as one of the most time-consuming processes related to accounting, the possibility to avoid sending or receiving paper-based invoices and instead handle all invoicing electronically was considered to be highly valuable by several users. However, it is worth noting that even if the entrepreneur him/herself prefers, and is able, to utilize E-invoicing, he/she still has to work with paper invoices if the stakeholder doesn’t have sufficient technology to send or receive E-invoices.

In addition to the perceived benefits of E-accounting that were explicitly mentioned in the interviews or in the user feedback, the contextual inquiries revealed its superiority over paper-based accounting in practice. Subject #1, who didn’t utilize any E-accounting software, had visible overlap in certain accounting-related processes, as

dealing with only paper-invoices required the entrepreneur to manually insert all the information into Microsoft Office software for further use. Processing only paper-invoices made the scanner an even more important device than it was for the other subjects. Scanning several sales invoices, receipts and purchase invoices appeared to be a relatively time-consuming process, which was only made more burdensome by unexpected hardware-related problems with the scanner. The subject had a system of processing sales invoices on paper, where he would manually write necessary information on the invoice, which would then be sent by mail to his accountant for further bookkeeping-related processes. In addition, for following his financial state and transactions, the subject relied heavily on bank statements that were mailed to him on paper by his bank. All the papers, including bank statements, receipts and paper invoices were stored in massive amounts of files and folders that took up plenty of space in the entrepreneur's home office, and he admitted that occasionally it was difficult to find exact pieces of information that were stored in paper form. The entrepreneur also admitted that in some parts an E-accounting solution would reduce the workload regarding his accounting-related tasks, and even mentioned having been encouraged to utilize E-invoicing by his stakeholders. The other subject of contextual inquiry (#2), experienced notably less of these problems, as her accounting practices were mostly handled electronically with the help of Proccountor.

Although the general consensus among subjects was that using an E-accounting system made various accounting-related tasks, such as invoicing and receipt handling, less complicated and time-consuming than they would be without a dedicated software, adopting E-accounting had notable barriers as well, which were evident in the cases of subjects #1 and #6. Subject #1, who still preferred paper-based accounting methods, explained that he hasn't switched to E-accounting because he is so used to his current ways, and considers them efficient enough for his accounting needs. He had a strong preconception that due to the probable complexity of E-accounting solutions, learning to use a software would be more time-consuming and burdensome than maintaining the current paper-based habits. Also, both subject #1 and #6 stated that since they spend, in their opinion, relatively little time in accounting-related tasks, there has not been a significant need to change the current state of things. Both of these subject had been entrepreneurs for more than a decade, which might explain why they are so accustomed to their routines that at this point of their careers adopting new routines is not seen as necessary. Furthermore, another important barrier in adopting an E-accounting solution in the case of these subjects was the notion of high costs that would be involved with it. Both subjects felt that since they can perform their accounting-

related tasks more or less adequately without specific E-accounting software, adopting such solution would not be worth its costs.

An electronic accounting solution was not particularly trouble-free for those subjects who used it, either. Regarding the use of Finago Procountor, the user experience and usability of the software was a commonly mentioned drawback in both interviews as well as in the user feedback. Subject #5 criticized the user experience of accounting software in general: *“I am generally good with computers, but I feel that the user interfaces and functionalities of these accounting systems are not fit for the current decade.”* Many individual entrepreneurs felt that Finago Procountor was too “heavy” for their accounting needs as the user interface was full of features of which the entrepreneur was likely to only use a small fraction. Subject #7 commented on the topic: *“I would definitely recommend Procountor for small-to-medium sized businesses, but currently not for individual entrepreneurs, because you can handle those (accounting-related) tasks with a more light setup as well.”* Likewise, one user stated in the feedback: *“The software could be developed further to serve the needs of simple small enterprises. Now the software has all kinds of features, and I only use a very small part of them.”* Furthermore, in interviews as well as user feedback it was repeatedly stated that the software’s terminology wasn’t as suitable for entrepreneurial users as it may be for accountant users, as the software is designed for the use of both of these groups.

Of some otherwise working functions the entrepreneurs felt that the process was made too complex from an individual entrepreneur’s point of view. Mainly this concerned the process of purchase invoices, where the entrepreneur would need to go through many steps, such as approving the invoice, in order to actually perform the transaction. It is worth noting that this functionality is indeed necessary for bigger companies, where a separate person (e.g. a superior) would approve the invoice. However, in the case of an individual entrepreneur, who is the only person in the company, the feature becomes unnecessary and thus impairs the user experience.

Finally, another somewhat recurring theme in the user feedback was the need for more features that could be used on mobile devices. For example, three users wished for a functionality that would allow the user to handle invoices on a mobile user interface as well. Regarding that potential feature, a user stated that it would be highly important to be able to follow the status of invoices on mobile device as well. In addition, other feedback wished for generally lower prices as well as more support from the software’s customer service side.

5 Discussion and conclusion

This chapter binds together the presented findings of the empirical research and the theoretical background. Based on the mutual findings, the answers to the research questions are presented. Furthermore, this chapter explains how various current or upcoming trends may affect the accounting practices of individual entrepreneurs or the aspects of electronic accounting in Finland in the near future. Next, the practical implications of this thesis are presented which is followed by an analysis of possible research limitations. Finally, the conclusions of the thesis are presented.

5.1 Varying backgrounds of entrepreneurs cause varying needs

Both empirical findings as well as the literature review show that when it comes to individual entrepreneurs and their accounting practices, there is not a universal model that fits every single entrepreneur, even in the context of Finland alone. As stated by Feldman and Bolino (2000) as well as Boden (1999), the self-employed come from various professional and educational backgrounds, which means that their accounting-skills may vary to a great extent. This was clearly evident in the empirical findings, as some of the studied entrepreneurs were more interested in the topic of accounting and possessed more knowledge of the subject, whereas for others it was merely something that had to be taken care of. As mentioned by Howieson (2003), outsourcing accounting-related tasks to external accounting firms allows the entrepreneur to focus on his/her core business activities, and for the majority of subjects this, along with a possible lack of interest in accounting-related matters, were the main reasons for doing so. This makes the role of the external accounting firm essential for individual entrepreneurs.

However, taking into consideration the varying backgrounds and motivations of the studied entrepreneurs, the findings suggest that those Finnish individual entrepreneurs who do utilize the services of accounting firms tend to outsource the same accounting functions, which leads to the entrepreneurs taking more control in such accounting-related tasks as invoicing and receipt-handling, as well as monitoring their financial state and numbers through various means. These functions thus become the most relevant focus areas when designing E-accounting systems specifically for individual entrepreneurs who do not handle their accounting-tasks alone, but with the help of external accountants.

As well as the varying interest in accounting, it is important to note that entrepreneurs' motivation for being self-employed varies. Even though external factors sometimes contribute to the decision to become self-employed, as revealed by the previous research of Pärnänen and Sutela (2014), the most common motivation for becoming an individual entrepreneur is the notion of greater professional autonomy together with the improved ability to pursue one's professional passion and thus reach self-fulfillment (Feldman and Bolino, 2000; Prior Konsultointi Oy, 2017; Suomen Yrittäjät, 2016). In the light of the findings, whatever the motivation behind entrepreneurship and self-employment is, it does not seem to affect the individual entrepreneur's accounting practices per se, but it may increase the willingness to work longer hours (as previously discovered by Pärnänen and Sutela, 2014) and during weekends, as was the case with some of the subjects.

The tendency to work longer, focus mainly on core business activities, as well as the habit of working in various locations and perform business trips – which is often the case in the profession of consultancy – all contribute to the habit shared by individual entrepreneurs regardless of their background, where accounting-related tasks are performed at the end of the day, or even during the weekend, when there is sufficiently time to do so. In other words, as entrepreneurs do not typically prioritize accounting-related matters over their core business activities, the most burdensome accounting-related tasks, handling invoices and receipts, end up being separated from typical daily activities instead of being seamlessly integrated into them. Furthermore, as mentioned by Feldman and Bolino (2000), and validated by this study, balancing working life with personal life and other difficulties in time-management tend to be common problems for individual entrepreneurs in general, which makes it even harder to establish strict routines for handling accounting functions.

5.2 E-accounting is beneficial but not problem free

The benefits of electronic accounting have become evident to many entrepreneurs as well as accountants, although it has affected their practices, as demonstrated by Goh et al. (2017). The findings of this empirical research resonate highly with presented benefits of E-accounting that are mentioned in existing literature (see Christauskas and Miseviciene, 2012; Relhan, 2012): improved performance times of routine tasks when various paper-based clerical work is reduced, fast and easy access to real-time information and flexibility of use regardless of location or time.

Resembling Robertson's (1967) model of Diffusion of Innovations, E-accounting can be seen as an innovation that is already used by entrepreneurs in various professions, and is likely to spread more. Moreover, reflecting on the model of EDI-adoption, presented by Iacovou et al. (1995), the perceived benefits of E-accounting over paper-based accounting, have become so widely understood, that entrepreneurs may make the decision to adopt an E-accounting system based on that factor alone. However, the other two contributing factors presented in the model, organizational readiness and external pressure, are likely to increase as well based on the following two notions. First of all, while individual entrepreneurs in Finland come from various backgrounds, the number of entrepreneurs with high-level degrees is rising (Suomen Yrittäjät, 2016). Thus it is becoming more likely that they possess a wide range of skills, including computer skills, which are relevant when adopting electronic systems, such as E-accounting. Also, as revealed by this research, even those entrepreneurs whose profession does not directly involve computers, nor do they have an educational background in the field of IT, the common attitude towards working with computers and electric systems might still be positive. Secondly, external pressure to utilize E-accounting systems, especially electronic invoicing, is also growing. In Finland, this is caused by both increasing use of E-invoicing by enterprises that might be stakeholders to individual entrepreneurs, as well as government-based initiatives, which aim to increase the use of electronic invoices (see 2.2.4). In addition, as demonstrated in this research by the case of subject #1, the adoption of electronic invoicing is likely to be encouraged by various stakeholders, who themselves do utilize them. The role of the accounting firm, however, may be even more significant than other stakeholders, as the other subjects of this research who used Finago Procountor had all embarked upon electronic accounting because of the recommendation by their accountants.

While the aforementioned factors are likely to contribute to the increasing spread of E-accounting, adopting complex systems still has its barriers. In the case of individual entrepreneurs, the notion of increased costs can be a significant factor in the decision to not purchase a software for accounting purposes, as financial instability is one of the most commonly reported drawbacks of self-employment, and entrepreneurs tend to be very cautious about any additional costs (Feldman and Bolino, 2000; Okkonen, 2012; Pärnänen and Sutela, 2014).

In addition to costs, the lack of time may give the entrepreneur the impression that learning to use a new system is not worth the effort. This indicates that entrepreneurs, who refuse to adopt E-accounting systems, share a preconception that such systems are

complex and offer poor user experience that decreases their learnability. Indeed, as revealed by this research, the problems related to user experience are a common experienced problem of E-accounting software. This resonates with the common notion of poor usability in B2B systems, that according to Edwards (2015) is related to their complex use cases.

5.3 Answers to research questions

Research question 1: What especially should be taken into consideration when designing an E-accounting system from the point of view of individual entrepreneurs in Finland?

In the light of the empirical findings as well as the provided theoretical background, it can be agreed that on a more detailed level, it is difficult if not impossible to design a unique solution to fit the exact needs of every single individual entrepreneur in Finland, as they come from varying backgrounds and they might have different use cases for such systems. Moreover, it's important to emphasize that as this research particularly studied those individual entrepreneurs who use the services of external accountants, this research question can only be answered from their perspective. However, in order to design an accounting software that would most effectively answer to the needs of the defined user group, the most important step would be to apply the principles of user-centered design. In practice, this would mean conducting user research on a regular basis as well as performing user testing to existing design solutions with individual entrepreneurs as test users. This way, the design solutions can be validated with real users, and the final product would provide an enhanced user experience for individual entrepreneurs.

Given that this research already is essentially a user research on individual entrepreneurs, the findings do provide several factors that can be taken into consideration when designing an E-accounting software for Finnish individual entrepreneurs. First of all, for individual entrepreneurs the biggest work-related challenges are typically related to financial instability as well as time-management. Because of these factors, an E-accounting software targeted specifically for individual entrepreneurs needs to be affordable, although this does not directly affect the design phase of the software. The challenges of time-management, however, can be reduced to some extent if the software has been designed so that it doesn't have a steep learning curve, but instead could be taken to use rather effortlessly. The features of the software

should be designed so that they can be performed with minimum effort, as they would be automated to a great extent, whenever appropriate. Again, this can be achieved using the methods of user-centered design, as it would improve the overall usability, including learnability of the software.

Another important aspect to consider is the nature of everyday work for some entrepreneurs, especially those who do business trips on a regular basis. These entrepreneurs can work in varying locations and use mobile devices to an increasing extent in their work. Therefore, designing an E-accounting software that is functional on mobile devices as well computers is becoming more and more relevant. As with the desktop version of the software, to ensure the optimal user experience for as many users as possible, methods of user-centered design should be utilized.

Research question 2: What common accounting practices do Finnish individual entrepreneurs have and how do they approach and experience them?

As stated, individual entrepreneurs have their own approaches to their work, and this applies also to their accounting-related tasks. However, the findings suggest that those individual entrepreneurs who have outsourced some parts of their accounting to external accounting firms, share most of the accounting-related tasks that they themselves perform. Mainly, this includes handling invoices and receipts, as well as occasionally following financial status and numbers, for example with the help of financial reports, if such feature exists in their accounting system. Therefore, accounting functions such as bookkeeping, tax returns and preparing of financial statements are typically the duties of external accountants.

Furthermore, regardless of their educational or professional background, entrepreneurs tend to prioritize their core business activities over accounting-related tasks, which in practice means that they put off performing accounting-related tasks until it is absolutely necessary. Thus, the common approach to those accounting-related tasks that are left for the individual entrepreneurs to perform is to do them whenever there is time, which tends to be at the end of the week or late in the evening. This is partly related to the general attitude towards accounting: Although some entrepreneurs have more interest in the topic, for many it is merely a legal obligation and something that has to be done.

Research question 3: How has the use of E-accounting been integrated in the context of individual entrepreneurs in Finland?

Statistical reports reveal that electronic methods for performing various accounting-related tasks, for example electronic invoicing, are becoming more common, which means that they are being used increasingly often by individual entrepreneurs as well. Accounting systems that facilitate the use of such functions are thus becoming more relevant as well. The findings suggest that individual entrepreneurs recognize the benefits of E-accounting systems over paper-based methods. For example, a well-functioning E-accounting system can be a valuable time-saver, as the system allows the same data to be used in multiple places, reducing the need to input numbers manually. Overall, as revealed by the contextual inquiries that were performed as a part of the empirical research, handling accounting-related tasks with an electronic system instead of on paper can be significantly less time-consuming and more flexible.

Although the spread of E-accounting can be attributed to many factors, such as government-based initiatives to increase E-invoicing, the role of the accounting firm is crucial particularly for individual entrepreneurs, as the findings suggest. Furthermore, pressure from other stakeholders, such as customers, to support E-invoices can be of great significance. The use of E-accounting in the context of individual entrepreneurs is also likely to grow as Finnish individual entrepreneurs are more often experienced on working with computers and mobile devices. In other words, for many new entrepreneurs performing various work-related tasks on computer is the norm.

It is important to note, however, that whether or not a particular individual entrepreneur uses an E-accounting system for performing his/her accounting-related tasks, not all aspects of accounting, as of now, can be electronic. The findings reveal that for individual entrepreneurs, the most time-consuming tasks related to accounting are handling invoices and receipts. Even if the entrepreneur is an avid user of an E-accounting system and thus prefers E-invoicing, he/she might be dealing with customers or other stakeholders who only use and accept paper invoices. Also, as of now, receipts are still mainly made of paper, and to input their information into an E-accounting system, the user needs to perform manual work. Because of this, accounting is not entirely electronic even for those entrepreneurs who utilize E-accounting systems, and handling paperwork is still necessary for performing certain accounting-related tasks.

5.4 Possible future trends

As self-employment in Finland is rising (Suomen Yrittäjät, 2016), individual entrepreneurs as a user group are becoming increasingly important for companies that develop B2B software. Simultaneously, electronic accounting practices, especially E-invoicing, are becoming more prevailing as opposed to traditional paper-based methods. This can be explained by both increasing amount of companies utilizing E-invoicing (Prior Konsultointi, 2017; Suomen Virallinen Tilasto, 2008) as well as government-based initiatives to facilitate electronic invoicing methods (Talousplus, 2016). Given the rising interest in E-invoicing and E-accounting in general, it is possible that in the near future Finnish individual entrepreneurs will spend even less time in accounting-related tasks, as the need to handle paper-based invoices is gradually declining.

While invoicing is increasingly often performed in an electronic form, the handling of receipts is mostly still rather paper-based. However, this is also likely to change in the future, as the concept of electronic receipts is already taking hold in Finland. A relatively recent news article by Tekniikka & Talous (Lehto, 2017) mentions an initiative introduced by Finnish banks and IT companies, with the aim to create a general standard that would support electronic receipts, in the same way that the Finvoice standard is used for E-invoicing. As with E-invoicing, the development of electronic receipts is also supported by the government of Finland, as revealed by another news article by Tekniikka & Talous (Lehto, 2017). In a possible near-future scenario where both invoices and receipts could be completely electronic, the need to handle any paper-based material could become obsolete, which in turn would significantly help in reducing manual accounting-related work tasks and thus make accounting needs of individual entrepreneurs less complex and time-consuming.

Furthermore, a 2017 study reveals that mobile devices are becoming increasingly popular as a means to access the Internet (Suomen virallinen tilasto, 2017). As accounting practices in general are becoming more electronic and Internet-based, it is likely that together with the growing use of mobile devices it will facilitate the spread of mobile-friendly E-accounting services as well. Finally, whether the future development of E-accounting services is aimed for mobile or desktop/laptop users of the software, given the rising attention to developing user-friendly products – even by developers of B2B software – it is safe to assume that E-accounting software will generally improve in

terms of usability and user experience, as customers are likely to favor the software which provides the best possible user experience.

5.5 Practical implications

The findings of this research provide several practical implications that are especially aimed for designers and developers of E-accounting software. The following points can thus be used as common guidelines for those with the goal to design E-accounting software that is specifically aimed for Finnish individual entrepreneurs, who use the services of external accounting firms in most of their accounting-related needs. These aspects can also be implemented to some extent in marketing strategies of such software.

5.5.1 Implement a user-centric design strategy

First and foremost, in order to provide the optimal user experience for individual entrepreneurs, a user-centric design strategy should be implemented when designing E-accounting software. In essence, this means utilizing the approach for user-centric design process, as described by ISO (2010), where the phases of user research, building prototypes and user testing are iterated until the final design solution is deemed fit for the needs of the users, in this case individual entrepreneurs. As individual entrepreneurs form a highly variable user group, it can be recommended to include different types of entrepreneurs in various stages of the design process. While upfront user research is important in order to gain a rough understanding of the users' needs before doing any design, emphasis should also be placed in the subsequent parts of the process, such as user testing. Having users test and comment on design prototypes allows them to get a more tangible understanding of the product, and this will also provide more concrete data on their needs than simple upfront interviews and other research methods. Also, constantly involving users in the design process ensures that feedback is gained from final design solutions as well.

5.5.2 Design mobile-friendly software

Given the rising importance of mobile devices also in work-related matters, an E-accounting software should function on mobile devices as well. By designing usable and mobile-friendly E-accounting software, the entrepreneurs gain a better chance of performing their complex accounting-related tasks while on business trips or even during commutes. For those individual entrepreneurs who spend most of their working

time on customer premises, this would be extremely valuable, as it would help in integrating accounting-related tasks better into their everyday work. While complex data, such as in the case of financial reports, is potentially difficult to include on a small screen of the mobile device, several functions related to accounting, such as invoicing and receipt handling, may not share the problem. Furthermore, using a mobile device becomes useful when the device's built-in camera allows the user to take photographs of receipts and invoices, which reduces the need to use external hardware devices, such as a scanner, for those particular tasks.

5.5.3 Keep it simple, and focus on invoices and receipts

For those Finnish individual entrepreneurs who use the services of external accounting firms for most of their accounting-related needs, invoicing and handling receipts remain the two most time-consuming and burdensome accounting-related tasks that the entrepreneur needs to take care of. Therefore, an E-accounting software that is aimed for such entrepreneurs should especially provide an easy and effective way to perform tasks related to invoicing and receipts. By designing the software so that the entrepreneur can perform these functions without great effort and regardless of the location, the tasks will become more profoundly integrated into their everyday work. For those individual entrepreneurs who perform billable working hours for their customers, being able to combine working time tracking with automatic invoice generation would reduce the workload significantly. This can be done by either including a time tracking feature in the software, where the reported billable working hours for a certain customer could be easily turned into a sales invoice for the same customer, or alternatively by designing the sales invoice feature so that it can be used to report working hours and save it as a draft before sending the final invoice for the customer.

In addition to handling invoices and receipts, individual entrepreneurs may need other features in order to take care of all of their accounting needs. For example, a feature related to financial reports, where the entrepreneur can easily track his/her financial numbers can be highly significant, although it may not be used as frequently as the features related to invoices and receipts. However, it is important to note that the accounting-related needs of individual entrepreneurs are fairly simple compared to those of large organizations, and as this research reveals, the perceived complexity of E-accounting software is widely considered as one of their biggest flaws. Therefore, the software should not be cluttered full of features that aren't really relevant, but only

include those that are – as the result of a user-centered design process – deemed the most relevant for this particular user group.

5.6 Research limitations and future research

As this study was qualitative in nature, it does not, nor does it aim to provide statistically significant findings. As the sample population of the empirical research was relatively small, the results of this research cannot be generalized to a larger extent. Moreover, since the focus of this research was specifically in Finnish individual entrepreneurs, who have outsourced some parts of their accounting to external accounting firms, the results might not apply in the cases of other individual entrepreneurs. For example, as accounting practices are dictated by legislative regulations to a great extent, individual entrepreneurs in other countries are likely to have significantly different accounting needs. Furthermore, even those entrepreneurs who operate in Finland are likely to experience accounting differently if they don't use the services of external accounting firms but take care of all of their accounting-related functions themselves; hence, the findings of this research do not directly apply to such entrepreneurs.

It should also be noted that while this study discussed E-accounting in general, the majority of the sample group were specifically users of Finago Procountor, and thus were not really experienced users of other E-accounting systems (although use of other software was mentioned briefly by one subject). This means that the results related to the subjects' experiences in the area of E-accounting might have been different had they been using other software for their accounting-related needs. However, the findings in regards to the benefits and challenges of E-accounting correlated with the findings from the literature review, implying that regardless of the selected software the essential experiences of E-accounting would be at least somewhat similar in other systems as well.

Moreover, while in the selection of the sample group it was considered important to include subjects from various different professions, with varying IT and accounting-related skills and knowledge, all possible combinations of profession and skill-sets could not be covered in the scope of this research. Although the findings regarding various accounting practices as well as the experiences of E-accounting were rather similar with each subject, it is possible that having more subjects with more variance would have shown other interesting results that this study did not reveal. Finally, as

qualitative research lies heavily upon interpreting meanings, motivations and feelings, a researcher bias is a potential influencer in the analysis of the results, especially if the study is conducted by a single researcher, as was the case in this thesis. The potential effect of researcher bias can be especially evident regarding the method of contextual inquiry, since the findings rely heavily on the researcher's notes during the performed inquiry, and are subject to interpretation.

While this research does provide insight into the accounting practices of Finnish individual entrepreneurs, and also into their experiences of E-accounting systems, it also provides a basis for potential future research. As the nature of this research was particularly qualitative, further research on the topic could be conducted with a more quantitative approach as well. For example, as this research revealed that, in regards to accounting-related tasks, the subjects consider handling invoices and receipts as the most time-consuming practices. Further quantitative research could be conducted in order to find out more precisely how much time do these tasks take from individual entrepreneurs' everyday working life. Moreover, as this research introduces various motivations behind entrepreneurship but doesn't really examine their relationship to the accounting practices of the entrepreneurs, it would also be a potential topic for future research. In addition, given that this research particularly studied users of Finago Procountor, further research could be conducted on those entrepreneurs who use other E-accounting systems, to find how the selection of the accounting software affects the accounting practices of the entrepreneur. Finally, another area to study would be those individual entrepreneurs who perform all accounting-related tasks themselves.

5.7 Conclusion

This research studied the accounting practices of individual entrepreneurs in the context of electronic accounting, or E-accounting, mainly focusing on those Finnish individual entrepreneurs who use the services of external accounting firms for at least some of their accounting-related functions.

Individual entrepreneurs come from various backgrounds, and their skills regarding both accounting and IT are highly varied. However, their decision to outsource various accounting functions to external accounting firms typically comes from their need to focus on their core business activities, in addition to a general lack of interest in accounting-related matters. Individual entrepreneurs often embark upon

entrepreneurship driven by a personal motivation that is facilitated by the notion of increased autonomy from being self-employed, while the reported drawbacks of entrepreneurship typically relate to managing time and finances. Due to the lack of time and financial instability, the entrepreneurs are cautious about purchasing and taking into use new software systems, such as those related to accounting. While the decision to implement E-accounting practices is often encouraged by their accountants, the perceived notion of the complexity of such systems together with potential high costs can be significant barriers in adopting E-accounting software. By utilizing methods of user-centered design the system can be built to provide an optimal user experience, so that the entrepreneur can perform the relevant functions efficiently and in reasonable time, and thus consider it worth the costs.

Moreover, Finnish individual entrepreneurs who utilize the services of external accounting firms typically spend the most time, in regards to accounting-related tasks, in handling invoices and receipts. Performing these functions may take several hours each week, depending on the number of invoices or receipts. As performing tasks related to accounting is not commonly the core business activity of an individual entrepreneur, they typically put off performing the tasks and often end up performing a lot of accounting-related work at the end of the day, on late evenings and even during weekends. This indicates that accounting is clearly not integrated into the everyday work of individual entrepreneurs.

While E-accounting systems have been proved to be superior in comparison to paper-based accounting methods, the systems have their problems, and due to their complexity and time-consuming nature of the accounting tasks, tasks related to accounting remain something that's typically separate from typical daily work of an individual entrepreneur. For entrepreneurs, having a "light version" of an accounting software, where the user interface would be clear and minimalistic, and the most relevant functions (invoicing and receipt handling) could be performed, would be of significant value. Furthermore, designing the system as mobile-friendly would allow the entrepreneurs to perform the necessary accounting-related tasks during commutes or business trips, which would further improve the integration of accounting functions and E-accounting into their daily working lives.

References

- Accountor Finago Oy 2018. Finago. [Online]. Available at: <https://finago.com/en/about-us>. [Accessed: February 26, 2018].
- Blom, J., Chipchase, J. and Lehtikainen, J. 2005. *Contextual and cultural challenges for user mobility research*. Communications of the ACM, 48(7). Pp.37-41.
- Boden, R. 1999. *Figure it out yourself: financial reporting, accountability and the self-employed*. Critical Perspectives on Accounting, 10(1). Pp.37-62.
- Brhel, M., Meth, H., Maedche, A. and Werder, K. 2015. *Exploring principles of user-centered agile software development: A literature review*. Information and Software Technology, 61. Pp.163-181.
- Business.com 2017. *Features of Accounting Software*. [Online]. Available at: <https://www.business.com/articles/features-of-accounting-software/>. [Accessed: April 11, 2018].
- CEF Digital 2017. *eInvoicing in Finland*. [Online]. Available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eInvoicing+in+Finland>. [Accessed: April 11, 2018].
- Christauskas, C. and Miseviciene, R. 2012. *Cloud-computing based accounting for small to medium sized business*. Engineering Economics, 23(1). Pp.14-21.
- Collins, J.C. 1999. *How to select the right accounting software*. Journal of accountancy, 188(4). P.67.
- Corbin, J. and Strauss, A. 2008. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 3rd Ed. Thousand Oaks, CA, USA: Sage Publications.
- Denzin, N.K. and Lincoln, Y.S. eds. 2011. *The SAGE Handbook of Qualitative Research*. 3rd Ed. Thousand Oaks, CA, USA: SAGE Publications Ltd.
- Deshmukh, A. and Romine, J. 2002. *Accounting software and e-business*. The CPA Journal, 72(11). P.52.
- DiCicco-Bloom, B. and Crabtree, B.F. 2006. *The qualitative research interview*. Medical Education, 40(4), Pp.314-321.
- DifferenceBetween.net 2011. *Difference Between Accounting and Financial Management*. [Online] Available at: <http://www.differencebetween.net/business/difference-between-accounting-and-financial-management/>. [Accessed: April 10, 2018].
- Douglas, E.J. and Shepherd, D.A. 2002. *Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization*. Entrepreneurship theory and practice, 26(3). Pp.81-90.
- Edwards, J. 2015. *The great oxymoron: B2B UX*. Journal of Direct, Data and Digital Marketing Practice, 16(4), pp.266-269.

- Edwards, J.R. and Walker, S.P. eds. 2009. *The Routledge companion to accounting history*. Routledge.
- Elo, S. and Kyngäs, H. 2008. *The qualitative content analysis process*. Journal of Advanced Nursing, 62(1). Pp.107-15.
- Feldman, D. C., & Bolino, M. C. 2000. *Career patterns of the self-employed: Career motivations and career outcomes*. Journal of Small Business Management, 38(3), 53.
- Finlex 2015. *Accounting Act 1336/997, Unofficial Translation – Ministry of Economic Affairs and Employment*. [Online]. Available at: <https://www.finlex.fi/fi/laki/kaannokset/1997/en19971336.pdf>. [Accessed: April 10, 2018].
- Gillespie, I., Lewis, R. and Hamilton, K. 2004. *Principles of financial accounting*. Pearson Education.
- Goh, C., Seow, P.S. and Pan, G. 2017. *Automation and the Accounting profession*. IS Chartered Accountant. Research Collection School Of Accountancy.
- Granlund, M. and Lukka, K. 1998. *It's a small world of management accounting practices*. Journal of management accounting research, 10. P.153.
- Haq, S. 2007. *Electronic invoicing gains as adoption barriers fall*. Financial Executive, 23(7). Pp.61-63.
- Hartson, R. and Pyla, P.S. 2012. *The UX Book: Process and guidelines for ensuring a quality user experience*. San Francisco, CA, USA: Elsevier.
- Hassenzahl, M. 2008. *User experience (UX): towards an experiential perspective on product quality*. In Proceedings of the 20th Conference on l'Interaction Homme-Machine, ACM, pp. 11-15.
- Henley, A. 2004. *Self-employment status: The role of state dependence and initial circumstances*. Small Business Economics, 22(1). Pp.67-82.
- Henley, A. 2005. *Job creation by the self-employed: The roles of entrepreneurial and financial capital*. Small Business Economics, 25(2). Pp.175-196.
- Holtzblatt, K. and Beyer, H. 1993. *Making customer-centered design work for teams*. Communications of the ACM, 36(10). Pp. 92-103. ISSN: 0001-0782, doi:10.1145/163430.164050
- Howieson, B. 2003. *Accounting practice in the new millennium: is accounting education ready to meet the challenge?*. The British Accounting Review, 35(2). Pp.69-103.
- Iacovou, C.L., Benbasat, I. and Dexter, A.S. 1995. *Electronic data interchange and small organizations: Adoption and impact of technology*. MIS quarterly. Pp.465-485.
- International Organization for Standardization 2010. *SFS-EN ISO 9241-210: Ergonomics of Human-System Interaction. Part 210: Human-Centred Design for Interactive Systems (ISO 9241-210: 210)*.

Jha, L.D.N. 1990. *Introduction to management accounting*. Mumbai, India: Himalaya Publishing House. Pp. 1-4.

Juneja, P. 2018. *Financial Management - Meaning, Objectives and Functions*. [Online] Available at: <https://www.managementstudyguide.com/financial-management.htm>. [Accessed: April 10, 2018].

Koivumäki, J and Lindfors, H. 2011. *Tilinpäättöksestä veroilmoitukseen*. Hämeenlinna, Finland: Helsingin seudun kauppakamari.

Kuniavsky, M. 2003. *Observing the user experience: a practitioner's guide to user research*. San Francisco, CA, USA: Elsevier.

Kuusinen, K. 2015. *Integrating UX work in agile enterprise software development*. Doctoral dissertation, Doctoral thesis, Publication 1339, Tampere University of Technology.

Lehto, T. 2017. *Eroon paperikuiteista: Suomalaiset yrittävät luoda standardin*. Tekniikka & Talous. [Online]. Available at: https://www.tekniikkatalous.fi/talous_uutiset/eroon-paperikuiteista-suomalaiset-yrittavat-luoda-standardin-6674468. [Accessed: August 13, 2018].

Lehto, T. 2017. *Valtio alkaa vaatia yrityksiltä sähköisiä kuitteja – toiveena satojen miljoonien säästöt*. Tekniikka & Talous. [Online]. Available at: <https://www.tekniikkatalous.fi/ttpaiva/valtio-alkaa-vaatia-yrityksilta-sahkoisia-kuitteja-toiveena-satojen-miljoonien-saastot-6643867>. [Accessed: August 13, 2018].

Liikenne- ja viestintäministeriö, Tekes, Teknologiateollisuus ja Verkkoteollisuus 2017. *Digibarometri 2017*. Helsinki, Finland: Taloustieto Oy.

Mashapa, J. and van Greunen, D. 2010. *User experience evaluation metrics for usable accounting tools*. In Proceedings of the 2010 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists. ACM. Pp. 170-181.

Merriam-Webster, Incorporated 2018. Merriam-Webster. [Online]. Available at: <https://www.merriam-webster.com/dictionary/accounting>. [Accessed: February 26, 2018].

Nielsen, J. 1995. *10 usability heuristics for user interface design*. Nielsen Norman Group, 1(1).

Okkonen, K. 2012. *Yrittäjätalouksien tulot ja pienituloisuus*. Tilastokeskus. [Online]. Available at: https://www.stat.fi/artikkelit/2011/art_2011-12-12_003.html?s=0. [Accessed: March 12, 2018].

Pärnänen, A. and Sutela, H. 2014. *Itsensätyöllistäjät Suomessa 2013*. Helsinki, Finland: Tilastokeskus.

Penttinen, E. 2008. *Electronic invoicing initiatives in Finland and in the European Union: taking the steps towards the real-time economy*. Helsinki, Finland: Helsinki School of Economics.

- Prior Konsultointi Oy 2017. *Polkeeko PK-yritysten digitaalisuus paikoillaan?* [Online]. Available at: https://www.yrittajat.fi/sites/default/files/suomalaisten_pk_yritysten_digitaalisuus_2017.pdf. [Accessed: March 6, 2018].
- Rekola-Nieminen, L. 2006. *Kirjanpitolaki käytännössä*. Helsinki, Finland: Edita Publishing Oy.
- Relhan, A. 2013. *E-Accounting Practices of SMEs in India*. International Journal of Technical Research, 2(1). Pp.1-10.
- Robertson, T.S. 1967. *The process of innovation and the diffusion of innovation*. The Journal of Marketing. Pp.14-19.
- Robinson, A. 2010. *The Origins of Writing* (In Crowley, David; Heyer, Paul. Communication in History: Technology, Culture, Society). 6th Ed. Routledge.
- Rohn, J.A. 2007. *How to organizationally embed UX in your company*. Interactions, 14(3). Pp.25-28.
- Salmony, M. and Harald, B. 2010. *E-invoicing in Europe: Now and the future*. Journal of Payments Strategy & Systems, 4(4). Pp.371-380.
- Scheiber, F., Wruk, D., Oberg, A., Britsch, J., Woywode, M., Maedche, A., Kahrau, F., Meth, H., Wallach, D. and Plach, M. 2012. *Software Usability in Small and Medium Sized Enterprises in Germany: An Empirical Study*. In Software for people. Springer, Berlin, Heidelberg. Pp. 39-52.
- Silverman, D. 2000. *Doing Qualitative Research: A Practical Handbook*. London, UK: SAGE Publications Ltd.
- Sirkkiä, J. 2016. *Uusi kirjanpitolaki vähentää tilinpäätösvelvollisuuksia 1.1.2016 alkaen*. [Online]. Available at: <https://relipe.fi/uusi-kirjanpitolaki-vahentaa-tilinpaatosvelvollisuuksia-1-1-2016-alkaen/>. [Accessed: April 10, 2018].
- Steen, M., Kuijt-Evers, L. and Klok, J. 2007. *Early user involvement in research and design projects—A review of methods and practices*. In 23rd EGOS Colloquium (European Group for Organizational Studies). Pp.5-7.
- Sundqvist, S., Frank, L. and Puumalainen, K. 2005. *The effects of country characteristics, cultural similarity and adoption timing on the diffusion of wireless communications*. Journal of business research, 58(1). Pp.107-110.
- Suomen virallinen tilasto (SVT) 2008. *Tietotekniikan käyttö yrityksissä: Sähköinen lasku*. [Online]. Helsinki, Finland: Tilastokeskus. Available: http://www.stat.fi/til/icte/2008/icte_2008_2008-11-20_kat_004_fi.html/. [Accessed: March 30, 2018].
- Suomen virallinen tilasto (SVT) 2017. *Väestön tieto- ja viestintäteknikan käyttö* [Online]. Helsinki, Finland: Tilastokeskus. Available: http://www.stat.fi/til/sutivi/2017/13/sutivi_2017_13_2017-11-22_tie_001_fi.html. [Accessed: August 15 2018].

- Suomen Yrittäjät 2016. *Yksinyrittäjäkysely 2016*. [Online]. Available at: https://www.yrittajat.fi/sites/default/files/sy_yksinyrittajakysely_2016.pdf. [Accessed: February 13, 2018].
- Taloushallintoliitto 2014. *Avaintietoa*. [Online]. Available at: https://taloushallintoliitto.fi/sites/default/files/Avaintietoa_2015.pdf. [Accessed: March 12, 2018].
- Talousplus 2016. *Uusi kirjanpitolaki kannustaa sähköiseen taloushallintoon*. [Online]. Available at: <https://www.talousplus.fi/blogi/uusi-kirjanpitolaki-kannustaa-sahkoiseen-taloushallintoon/>. [Accessed: March 1, 2018].
- Tuomi, J. and Sarajärvi, A. 2002. *Laadullinen tutkimus ja sisällönanalyysi*. 2nd Ed. Helsinki, Finland: Tammi.
- Vahtera, P. 1998. *Paperiton kirjanpito*. Jyväskylä, Finland: Tilintarkastajien Kustannus Oy.
- Valtanen, T. 2018. *Sähköiset laskut maksetaan paperilaskuja paremmin ajallaan – Jopa 25 % paperilaskuista myöhässä*. YLE. [Online]. Available at: <https://yle.fi/uutiset/3-10058385>. [Accessed: April 11, 2018].
- Vermeeren, A.P., Law, E.L.C., Roto, V., Obrist, M., Hoonhout, J. and Väänänen-Vainio-Mattila, K. 2010. *User experience evaluation methods: current state and development needs*. In Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries. ACM. Pp.521-530.
- Verohallinto 2013. *Toimintamuodon muutos osakeyhtiöksi*. [Online]. Available at: https://www.vero.fi/syventavat-vero-ohjeet/ohje-hakusivu/48395/toimintamuodon_muutos_osakeyhtioks/. [Accessed: April 10, 2018].
- Verohallinto 2016. *Income taxation - companies and organisations*. [Online]. Available at: https://www.vero.fi/en/businesses-and-corporations/about-corporate-taxes/income_taxation/. [Accessed: April 10, 2018].
- Verotieto Oy 2017. *Yrityksen verotietopaketti*. Helsinki, Finland: Verotieto Oy.
- WebFinance Inc. 2018. Business-Dictionary. [Online]. Available at: <http://www.businessdictionary.com/definition/accounting.html> [Accessed: February 26, 2018].
- WebFinance Inc. 2018. Business-Dictionary. [Online]. Available at: <http://www.businessdictionary.com/definition/financial-management.html> [Accessed: April 10, 2018].
- Wickramsainghe, D. M. J., Pamarathna, R. M. M. D., Cooray, N. H. K., and Dissanayake, T. D. S. H. 2017. *Impact of accounting software for Business Performance*. Imperial Journal of Interdisciplinary Research, 3(5).
- Wolcott, P., Kamal, M. and Qureshi, S. 2008. *Meeting the challenges of ICT adoption by micro-enterprises*. Journal of Enterprise Information Management, 21(6). Pp.616-632.

Appendix A: Table of accounting-related tasks, used in the interviews

Taloushallinnon osa	Kuka tekee? (yrittäjä / tilitoimisto)	Miten tehdään?	Miten koetaan?
Tulot (myyntilaskut ym.)			
Menot (ostolaskut, kulut)			
Tositteiden hallinta			
Palkanlasku			
Kirjanpito			
Viranomais-ilmoitukset			
Materiaalinhallinta			
Raportointi			
Tilinpäätös			

Appendix B: Codes and their categories ranked by the frequency of their appearance

KOODI	ESIINTYMISKERTOJA	KATEGORIA
Tilitoimiston ja yrittäjän yhteistyö	30	Taloushallinto yleisesti
Ostolasku	21	Taloushallinto yleisesti
Kynnys tehdä asioita, joista koituu kustannuksia	20	Yrittäjyys
Excelin käyttö	19	Taloushallinto sähköisesti
Taloudellisen tilanteen seuraaminen	19	Taloushallinto yleisesti
Kuittien käsittely	17	Taloushallinto yleisesti
Epäintuitiivinen käyttöliittymä	16	Taloushallinto sähköisesti
Myyntilasku	16	Taloushallinto yleisesti
Mobiililaitteiden käyttö	15	Taloushallinto sähköisesti
Sähköisen taloushallinnon edut	15	Taloushallinto sähköisesti
ALV-laskelmat	15	Taloushallinto yleisesti
Veroilmoitukset	15	Taloushallinto yleisesti
Taloushallinto mobiililaitteilla	13	Taloushallinto sähköisesti
Skanneri	12	Taloushallinto sähköisesti
Taloushallintoon koetaan menevän vähän aikaa	12	Taloushallinto yleisesti
Mihin tyytyväinen Procountorissa	11	Taloushallinto sähköisesti
Laskujen pieni määrä	11	Taloushallinto yleisesti
Raportointi	11	Taloushallinto yleisesti
Procountor	10	Taloushallinto sähköisesti
Taloushallinto-ohjelman opittavuus	10	Taloushallinto sähköisesti
Taloushallinnon osaaminen	10	Taloushallinto yleisesti
Yrittäjä tarkastaa tilitoimiston tekemisiä	10	Taloushallinto yleisesti
Liian monta palikkaa ohjelmistossa yksinyrittäjän tarpeisiin	9	Taloushallinto sähköisesti
Muut sähköiset järjestelmät	9	Taloushallinto sähköisesti
Paperinen vs sähköinen taloushallinto	9	Taloushallinto sähköisesti
Sähköinen laskutus	9	Taloushallinto sähköisesti
Tietokone	9	Taloushallinto sähköisesti
Aineiston lähetys kirjeitse tilitoimistolle	9	Taloushallinto yleisesti
Kotitoimisto	9	Yrittäjyys
Taloushallinto-ohjelmiston soveltumattomuus yksinyrittäjälle	8	Taloushallinto sähköisesti
Tietotekninen osaaminen	8	Taloushallinto sähköisesti
Kirjanpito	8	Taloushallinto yleisesti
Kuukausittain tehtävät taloushallinnon asiat	8	Taloushallinto yleisesti
Laskuihin käytetty aika	8	Taloushallinto yleisesti
Laskun koostaminen asiakaskäyntien pohjalta (sis. tuntikirj.)	8	Taloushallinto yleisesti
Matkalasku	8	Taloushallinto yleisesti
Paikanmaksu	8	Taloushallinto yleisesti
Paperisen aineiston säilytys	8	Taloushallinto yleisesti
Tositteiden hallinta	8	Taloushallinto yleisesti
Verojen maksu	8	Taloushallinto yleisesti
Ajanpuute, ajanhallinnan haasteet	8	Yrittäjyys
Asiakaskäynti	8	Yrittäjyys
Autonomia	8	Yrittäjyys
Taloudelliset haasteet	8	Yrittäjyys
Yrittäjämuodon valinta	8	Yrittäjyys

Sähköinen taloushallinto tilitoimiston suosituksesta	7	Taloushallinto sähköisesti
Mitä tulee mieleen taloushallinnosta	7	Taloushallinto yleisesti
Paperin pyörittelyyn menee aikaa	7	Taloushallinto yleisesti
Taloushallinnon oppiminen käytännön myötä	7	Taloushallinto yleisesti
Ei aikaa opetella taloushallinnon ohjelmistoa	6	Taloushallinto sähköisesti
Paperinen laskutus	6	Taloushallinto sähköisesti
Ei kiinnostusta tietää ylenpalttisesti taloushallinnosta	6	Taloushallinto yleisesti
Käteismaksut	6	Taloushallinto yleisesti
Lukujen pyörittely "päässä"	6	Taloushallinto yleisesti
Tilinpäätös	6	Taloushallinto yleisesti
Varastonhallinta / fyysiset tuotteet	6	Taloushallinto yleisesti
Aikatauluihin vaikuttamismahdollisuus	6	Yrittäjyys
Täyspäiväinen yrittäjyys	6	Yrittäjyys
Työmatkat	6	Yrittäjyys
"Turhat" asiat/vaiheet käyttöliittymässä	5	Taloushallinto sähköisesti
Yhteistyö tilitoimiston ja yrittäjän välillä sähköisessä taloushallinnossa	5	Taloushallinto sähköisesti
Koetut ongelmat tilitoimiston kanssa	5	Taloushallinto yleisesti
Kulu/ostolasku	5	Taloushallinto yleisesti
Lainsäädäntö	5	Taloushallinto yleisesti
Taloushallinnon toimenpiteet tehdään, kun aikaa on	5	Taloushallinto yleisesti
Tilitoimistolta kaivataan isompaa roolia	5	Taloushallinto yleisesti
Asiakkaina yritykset	5	Yrittäjyys
Koulutustausta	5	Yrittäjyys
Yksinyrittämisen tuoma yksinkertaisuus	5	Yrittäjyys
Haluttomuus käyttää montaa erilaista palvelua	4	Taloushallinto sähköisesti
Paperiset / ei-sähköiset menetelmät	4	Taloushallinto sähköisesti
Viranomaistahojen omat portaalit	4	Taloushallinto sähköisesti
Korttimaksu	4	Taloushallinto yleisesti
Myyntilaskun teko toimeksiannon jälkeen	4	Taloushallinto yleisesti
Taloushallinto koetaan "pakkopullana"	4	Taloushallinto yleisesti
Asiakkaina yksityishenkilöt	4	Yrittäjyys
Verkostoituminen muiden yrittäjien kanssa	4	Yrittäjyys
Yrittäjyys lähipiirissä	4	Yrittäjyys
"Muutosvastarinta" sähköisiä systeemejä kohtaan	3	Taloushallinto sähköisesti
Käyttöliittymä ei tehty yrittäjälle	3	Taloushallinto sähköisesti
Reaaliaikainen laskutus	3	Taloushallinto sähköisesti
Wordin käyttö	3	Taloushallinto sähköisesti
Yhteydenotto Procountoriin	3	Taloushallinto sähköisesti
Asiat menee rutiinilla nopeasti	3	Taloushallinto yleisesti
Taloushallinnon hoitaminen päivittäin	3	Taloushallinto yleisesti
Taloushallinnon hoitaminen tiettyinä päivinä tilitoimiston takia	3	Taloushallinto yleisesti
Taloushallinnon hoitaminen vuodenvaihteen ympärillä	3	Taloushallinto yleisesti
Vuositasolla tehtävät taloushallinnon toimenpiteet	3	Taloushallinto yleisesti
Kiinnostus yrittäjyyteen	3	Yrittäjyys
Osa-aikainen yrittäjyys	3	Yrittäjyys
Työpäivien vaihtelevuus	3	Yrittäjyys
Vastuu vain omasta tekemisestä	3	Yrittäjyys

Selkeä käyttöliittymä	2	Taloushallinto sähköisesti
Taloushallinto-ohjelmiston hankaluudet	2	Taloushallinto sähköisesti
Tietokone vs mobiililaitte	2	Taloushallinto sähköisesti
Ulkoinen paine sähköiseen laskutukseen	2	Taloushallinto sähköisesti
Laskun maksamisen monta vaihetta	2	Taloushallinto yleisesti
Taloushallinnon hoitaminen viikoittain	2	Taloushallinto yleisesti
Taloushallinnon hoitaminen viikon lopulla	2	Taloushallinto yleisesti
Vähäinen tietämys taloushallinnosta	2	Taloushallinto yleisesti
Yhden ison laskun tekeminen kerralla vrt monta pientä	2	Taloushallinto yleisesti
Liiketoiminnan aloittamisen hankaluudet	2	Yrittäjyys
Pitkät työpäivät	2	Yrittäjyys
Töiden teko toimipisteellä	2	Yrittäjyys
Toiminimen helppous vrt OY	2	Yrittäjyys
Työn merkityksellisyys	2	Yrittäjyys
Vaihteleva määrä töitä	2	Yrittäjyys
Vapaa-ajan harrastukset	2	Yrittäjyys
Yrittäjyys lokaation vaikutuksesta	2	Yrittäjyys
Yrittäjyys olosuhteiden pakosta	2	Yrittäjyys
Ei tarvitse tavata kirjanpitäjää usein	1	Taloushallinto sähköisesti
Harkinnut vaihtoa koettujen hankaluuksien takia	1	Taloushallinto sähköisesti
Ostolaskun monta vaihetta Procountorissa	1	Taloushallinto sähköisesti
Procountorin valinta	1	Taloushallinto sähköisesti
Vaikea löytää ohjelmistosta asioita	1	Taloushallinto sähköisesti
Tietojen manuaalinen syöttäminen	1	Taloushallinto yleisesti
Tuoterekisteri	1	Taloushallinto yleisesti
Suomen yrityskulttuuri	1	Yrittäjyys
Töiden epävarmuus	1	Yrittäjyys
Uuden luominen työssä	1	Yrittäjyys
Yrittäjille vähän palveluita	1	Yrittäjyys
Yrittäjyys yleistä omalla alalla	1	Yrittäjyys
Yritystoiminnan jatkaminen tulevaisuudessa epävarmaa	1	Yrittäjyys

