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Finnish payroll accounting and essential functions in an accounting software

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Abstract

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In our contemporary world, as all our social benefits and to a large extent the very basis of our social structure is based on taxation, payroll administration is consequently very strictly legislated, thus requiring easily usable tools. This practice-based thesis was commissioned by SimplBooks OÜ, an Estonian company that provides an accounting software designed especially for small and micro-sized companies. The emphasis of the thesis is limited to the wages module and routine-natured employee wages. The objective of the commission was to define and describe the necessary developments for the Finnish market.

Modern financial management uses applications to process and record transactions and provide information. Nowadays, these applications are mostly digital i.e. data enables immediate further use and run accounting processes as automatically as possible. Though, with projects like the incomes register Katre, Finland is already moving towards real-time management in which digital data is shared immediately with stakeholders through portals.

Payroll accounting process is part of financial management and counts and records personnel costs. Routine-natured wages consist of monetary compensations for work known as monies and fringe benefits paid in goods. They are subject to withholding and thus are the base for calculating income tax. Employee's pension and insurance contributions are redacted in connection with payroll calculation. However, the employer to make a considerable contribution towards the employees' pension and unemployment insurances in addition to employees' gross wages and additional allowances. The same policy applies also to employer's health, accident and life insurance contributions. These employer's side costs will significantly add to the overall personnel costs. In digital payroll accounting, the calculation process relies on automated accounting entries and calculation formulas together with data migration, which allows accurate financial reporting. The mandatory payroll documents include three kinds of statutory documents, and employers are also required to fill in statements for the Finnish Tax Administration and insurance companies.

Qualitative methods were used to gain a better understanding of the subject. Three other applications were observed to determine the essential functions, and the author observed one filling process of annual employer statements to supplement the theoretical knowledge.

In conclusion, the essential payroll functions with Finnish employee wages are as follows: support for progressive taxation, automated calculation for both employee's and employer's contributions, editable calculation rules, creating documents with statutory content and both calculating and recording payrolls correctly and as automatically as possible. The result of this thesis is an independent report with development propositions for the commissioning party.

Keywords
payroll accounting, digital financial management, payroll administration

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1 Introduction

In this age that holds technological advancement in the highest regard, people, the work force, is often seen as an incumbent. However, to operate smoothly and productively, all businesses need human resources. On the downside, people are expensive and labour costs very often are the single largest cost item, sometimes as much as 60 % of the company's turnover (Halonen & Steiner 2010, 370). In our contemporary world, as all our social benefits and to a large extent the very basis of our social structure is based on taxation, payroll administration is consequently very strictly legislated, thus requiring easily usable tools.

This practice-based thesis was commissioned by an Estonian company that provides an accounting software designed especially for small and micro-sized companies. The primary objective of the commission was to define and describe the necessary developments to the wages module for the Finnish market. At the outset of the project, the author went through all literature and other data available on the subject of payroll functions in Finnish accounting software applications. The data provided no direct matches as it mostly covered the selection of a suitable accounting software or the development of payroll administrative controls. The subject was highly educational and the author soon found herself engrossed with the problematics of the subject matter.

1.1 Objectives, scope and delimitation

The emphasis of the thesis is limited to the wages module, and not the complete software. As mentioned, the primary objective of the commission was to define and describe the necessary developments for the Finnish market. The statutory requirements and observed common practices were used as the grounds to determine necessity. The commissioning party also wished the result would include the default settings for accounting entries and applicable taxes and also the general usability of the module from a Finnish view would be taken into consideration. Derived from these objectives, the standpoint was specified: What are the essential payroll functions in an accounting software with Finnish wages?

The perspective was divided into sub-questions:

- What is the general rule base with payrolls?
- Which statements, documents and the like on payrolls are mandatory in Finland?
- How is digital payroll accounting structured?

Complying with the commissioning party's request, the work concentrates on routine-natured calculation. Therefore, pinpointing the scope was required, which resulted in ex-

cluding a number of interesting payroll phenomena, such as calculating the portion of distrainment, costs reimbursed to the employer by the Social Insurance Institution of Finland (Kela), income of a limited taxpayer and withholding tax on the work invoiced by a private trader or a community without affiliation to the Prepayment Register. Also personal taxation phenomena other than employee wages are left out, such as dividends and taxation of limited partnerships and general partnerships, because they're treated as both capital income and earned income. As further explained in Chapter 3, the personnel management side of payroll administration is outside of the scope. Therefore, the starting point is that personnel management aspect is handled appropriately, e.g. salary planning. A Finnish customer is assumed to be a company that is a regular employer, because they face more demands than casual employers (Syvänperä & Turunen 2014, 177). Regular employers pay either to at least two employees on a regular basis or to six employees at the same time on a temporary basis (Finnish Tax Administration 2015a).

As the case software is largely based on the fields assigned to pre-calculated values, the thesis concentrates on how already available values would be treated i.e. how they're recorded and shown in different documents. Unfortunately, applying and testing suggested modifications would had required the input of software developers, which the schedule didn't allow. Hence, the thesis wasn't carried out as a development study that would have included the testing stage. Accordingly, the technical implementation is beyond the scope.

1.2 Terminology and glossary

Table 1 below summarizes the central terms within the context of this thesis.

Table 1. Glossary

Term	**Definition**
accounting software	Financial management application used to process and record transactions and provide accounting information
digital (data)	Electronic information allowing immediate further use
function (in a software)	Set of processes and procedures needed to provide data e.g. documents, calculations and statements
mandatory document/statement	Such statutory or otherwise compulsory reports that are exclusively to the monetary aspect of payrolls. This excludes, for instance, statements on working time
module	Software component with one or more routines that may, for instance, serve a specific business operation. A software may include one or more independent modules.
monies	Monetary reimbursements for work
payroll accounting	Recording personnel expenses in bookkeeping

In general, lack of English equivalents for some Finnish words, such as ‘rahapalkka’, forced the author to partly create the very own vocabulary. Therefore, the terminology may vary from other works. Efforts have been made to minimize the number of differences by using the same terms as, for instance, the instructions by the Finnish Tax Administration and the unofficial translations of the national laws.

1.3 Commissioning party and case software

This practice-based thesis was commissioned by SimplBooks OÜ, an Estonian company founded as a start-up in 2010 (Reismaa 6 December 2016). The mission is to “offer a simple accounting software which is easy to use not only for accounting firms, but also for small businesses” (SimplBooks 2016a) and “the main targets as a customers are micro or small business all over Europe” (Reismaa 6 December 2016). However, besides Finland, the company operates currently only in Estonia. In autumn 2016, circa 1700 companies and other organisations were trusting SimplBooks with their financial management, the majority of them Estonian. (Reismaa 6 December 2016.)

Nevertheless, the plan is to expand to the majority of Europe in the near future. Finland was selected as the first expansion to abroad, the main reason being the similarities between the Finnish and the Estonian accounting systems, as the latter was one derived from the Finnish system, according to Reismaa (6 December 2016). The other reasons included the geographical location i.e. proximity, the software was already mostly translated into Finnish and the company had personal contacts in Finland (Reismaa 6 December 2016). The export to Finland was executed in summer 2015 (SimplBooks 6 June 2015). Few modifications were made in the software before entering the Finnish market, such as adding support for Finvoice 1.2, at that time used e-invoice standard, and the Finnish specific VAT declaration, together with adjusting the default chart of accounts and settings for financial reporting. The system was considered to be sufficiently agile and adaptive in its current state, hence no major changes were applied at the time of the expansion. However, as a precaution the wages module was left out “even though our system is very flexible when it comes to salaries”. (Reismaa 6 December 2016). During the thesis process, in spring 2017, the company hired Finnish Regional Manager who will put the results of the thesis into practice.

Originally, when launched in early 2011, the software was based on a sales invoice software created earlier by one of the founders (Reismaa 6 December 2016). The software has come a long way since that, as the modules were at the time of the thesis process as

follows: Accounting, Sales invoices, Purchase invoices, Reporting, Wages, Stock accounting, Non-current asset accounting, Price offers and Client base (SimplBooks 2016b). As supporting e-invoicing is one way to outline digital financial management (Lahti & Salminen 2014, 23; TietoAkseli & JAMK 2015, 7), nowadays SimplBooks is a digital accounting software. The software, as well as helpdesk, is available in Estonian, Russian, English and Finnish (SimplBooks 2016b) and comes in two alternative packages: either with all in-software features or the ditto completed with an application programming interface (API) that sets subroutines to transfer data and/or services between the software and other software applications (SimplBooks 2016c). With SimplBooks API, the customer is able to add and modify data on their SimplBooks account without using a web browser, in addition to being able to connect with a third party application or a custom software. This allows, for instance, adding a production management system or a cash register. (SimplBooks 2016d.) SimplBooks is constantly being developed as modules and features are added into the core software. The upcoming upgrades in the near future include modules for orders and basic production, in addition to new features on cost accounting and customer relationship management (Simplbooks 2016e). Naturally, another objective is to provide the wages module also for Finnish customers.

1.4 Structure of the thesis

Following the traditional report structure, introduction is followed by a theoretical part, an empirical part and a discussion. The coverage matrix (Table 2) below encapsulates which sections in the theoretical framework and the discussion are linked to which sub-question.

Table 2. Coverage matrix

Sub-question	Framework	Conclusions
What is the general rule base with payrolls?	3.1, 3.2	5.2.1
Which statements, documents and the like on payrolls are mandatory in Finland?	3.4 (2.2)	5.2.2
How is digital payroll accounting structured?	3.3 (2.1)	5.2.3

Because payroll administration is strongly linked to financial management and the thesis is about a wages module in an accounting software, the theoretical framework is divided into two parts: financial management and wages. In Chapter 2, such 21st century events that have brought financial management into the digital era are discussed. This is just a few steps away from sharing the digital information with others, for instance authorities and internal stakeholders, for immediate use – the reality of real-time financial management. Currently between these two, Finland is striving to the latter with national projects

like the incomes register Katre (Chapter 2.2). The chapter paves the way for basic comprehension of accounting softwares and their operational logic.

After examining the development process of financial management in Finland, the attention is focused on payroll administration from the point-of-view of financial management in Chapter 3. In order to achieve the required level of accuracy in mandatory documents and to calculate the amount to withhold and other reductions correctly, it's essential to understand the relationship between different payroll items. Thus, the subject is initialized by going through the basics of employee payroll calculation, before moving to digital payroll accounting and mandatory payroll documents.

The theoretical framework is followed by the description on the thesis process and working methods, from the beginning all the way till the end. In Chapter 4, the thesis project is divided into four stages: Foundation, Design, Execution and Closure, and the work phases of each stage are presented in detail. In its entirety, the active part of the process took place from September 2016 to May 2017. In addition to the theoretical information, qualitative methods were utilized in the implementation of the work. As the result, an independent report (Appendix 6) was created to introduce the measures that would correct the noted deficiencies and include the information required to create basic default settings for accounting entry rules and applicable taxes.

In the conclusion part, the significance of the thesis for both the commissioning party and the author is examined. Chapter 5 begins with discussion on the validity and usability of the work e.g. evaluating the theoretical framework and the implementation of the produce. Next, the key conclusions behind the produce are introduced, together with suggestions for further work. To finish, Chapter 6 includes the author's self-assessment covering both working methods and own performance. Furthermore, the project's impact on the author's own learning is discussed.

2 Modern financial management in Finland

This chapter focuses on financial management in Finland in the 21st century and paves the way for basic understanding of accounting softwares. Financial management monitors financial transactions in such a way that the organization is able to report back to its stakeholders. Financial management is a consortium of several business processes, such as purchase invoices, general ledger, payroll accounting and reporting. (Lahti & Salminen 2014, 16–17.) In this context, 'modern' indicates that applications are used to process and record transactions and provide financial information. These applications, such as accounting softwares, run processes as automatically as possible, which relies on data migration both within a software and between different software applications. The prerequisite is that the processes are designed to comply with digitalism: unnecessary work steps are left out and the remaining ones are implemented standardized. (Helanto, Kaisaniemi, Koskinen, Kuntola & Siivola 2015, 4–5; Lahti & Salminen 2014, 24–26.)

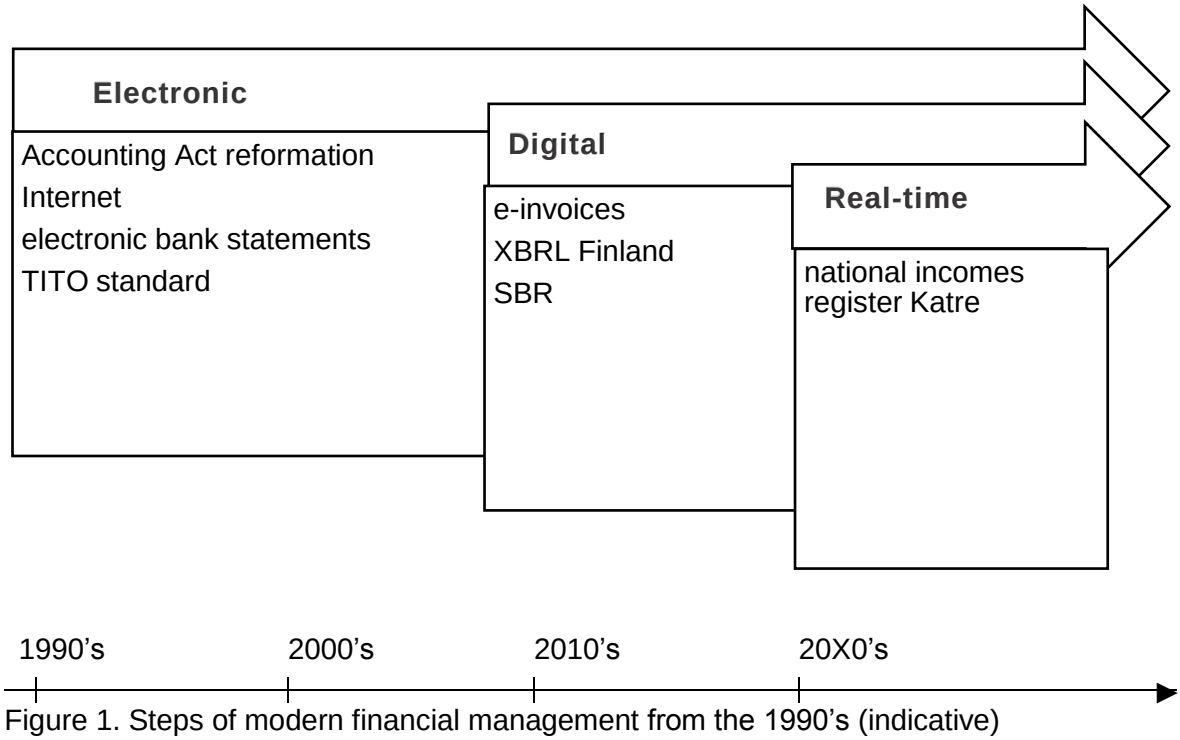

Figure 1. Steps of modern financial management from the 1990's (indicative)

In the last quarter of a century, there has been several revolutionary innovations that have changed financial management permanently. The major development has been the transformation in data (Figure 1): in electronic form, the data can be only viewed (such as a pdf), whereas in a digital form, it is also editable (such as an excel) and therefore allows immediate further use (Lahti & Salminen 2014, 23; Mäkinen & Vuorio 2002, 40). Currently, Finland is heading towards real-time management, in which data is not only digital but also instantly shared with other parties through portals (Tarasov, Eerola, Kulokoski,

Penttinen & Torri 2015, 5). The immediacy is emphasized especially in the upcoming incomes register, discussed later in Chapter 2.2.

In 1997, the law reformation gave the kick-off to modernising financial management in Finland, as electronic financial management and paperless bookkeeping became legal (Lahti & Salminen 2014, 28; Mäkinen & Vuorio 2002, 79). At that time, Mäkinen and Vuorio (2002, 35–38) stated the upcoming change will require, in addition to technological innovations and people's open minds, generating new procedures and standardising key elements, such as e-invoices and chart of accounts, i.e. creating standard business reporting (SBR). Correspondingly, Lahti and Salminen (2014, 28) consider Finland had everything to become the international trendsetter in electronic financial management back then: the reformed legislation allowing the use of modern technologies, Internet was used more extensively than anywhere else on the globe, advanced payment traffic, electronic processing of bank statements and the national TITO standard on bank statements as vouchers. Nevertheless, the transition has been significantly slower than estimated (Lahti & Salminen 2014, 11; TietoAkseli & JAMK 2015, 4).

2.1 Reporting in the 2000s

In the 2010's, digital financial management has speared at an accelerated pace, as small and medium-sized enterprises (SMEs) have followed the example of the public sector and large companies (Helanto & al. 2013, 13). Probably, the development of SBR has significantly contributed to the acceleration of the digitalisation. The development towards SBR was commenced in 2009 with a code set known as Raportointikoodisto, a list of information items serving the chart of accounts. The starting point is the idea that a company should only produce a code-based listing of its own accounting data and the actual reporting could be automated on that basis. (Koskentalo 18 May 2016.) Therefore, it can be used to identify the pieces of information that each authority needs in its data collection.

In fact, the code set was the base for the Finnish XBRL taxonomy that was developed to harmonize reporting (Finnish Tax Administration 2015b; Koskentalo 18 May 2016). XBRL is an international descriptive language based on another language, XML. It's especially designed for representing financial data in a structured form that is suitable for automated document creation, data processing and further processing between computer software applications (Lahti & Salminen 2014, 176; XBRL Finland 2016a). The language has already consolidated its position in several western countries (Lahti & Salminen 2014, 176; XBRL Finland 2016b). Also in Finland, the main objective of the national consortium is to actively pursue the national adaptation of XBRL in different reporting needs, for example

financial statements and tax returns reporting (XBRL Finland 2016b). From April 2016 onwards, it has already been possible to deliver financial statements from the period in a structured form with XBRL (Finnish Tax Administration 2015b). Despite this, the upcoming national incomes register was announced to use XML (Finnish Tax Administration 2017b).

2.2 National incomes register Katre

The latest major turn of events was in October 2016, when the Finnish Tax Administration (2016a) announced the winner of the bidding competition on constructing and compiling a centralised national incomes register of all Finnish residents. In the light of current knowledge, Katre is expected to launch in January 2019 with paid wages and associated transactions, then expand to paid pensions and social benefits in January 2020 (Leinonen 13 May 2016, 4; Finnish Tax Administration 2016a; Finnish Tax Administration 2017a; Finnish Tax Administration 2017b). The information will be principally submitted through accounting software and user interfaces and no transition period is applied. However, the traditional paper format is allowed under special circumstances. (Finnish Tax Administration 2017b.) The primary objective is to reduce the administrative burden by simplifying the notification procedures. Hence, the list of participants includes such organizations as Kela, several pension and insurance companies and Statistics Finland. (Ministry of Finance 2015; Finnish Tax Administration 2017b.)

Similar to standardised accounting, the national incomes register Katre has been devised for a longer period of time. Already in 2013, potential benefits gained from a centralised register were pointed out publicly by Service Director of Finland's largest unemployment fund YTK. Perho (13 December 2013) highlighted especially significant reduces in amount of paper work, as the current system obliges reporting separately to every party. In a course of year, the number of the regular statements alone may total over 60 per employer (Kotipelto 17 May 2011). With Katre, the requirement for various types of separate statements and other documents (Chapter 3.4) will vanish, as every piece of information will be directed into the national incomes register in connection with the payment of wages (Finnish Tax Administration 2016a; Finnish Tax Administration 2017a; Ministry of Finance 2015). By the time the thesis was published, the Finnish Tax Administration (2017b) had already announced the data format of choice is XML, the technical interface is in English and the interface descriptions will be published in summer 2017. Katre is also an excellent example of the solid relationship between payroll administration and financial management that is discussed in the next chapter.

3 Payroll administration as part of financial management

This chapter focuses on payroll administration from the point-of-view of financial management. The subject is initialized by going through the basics of payroll calculation: in order to achieve the required level of accuracy in documents and to calculate the amount to withhold and other reductions correctly, it's essential to understand the relationship between different payroll items. Then, the interest moves to payroll accounting and hence deepens the basic understanding of financial management and accounting software applications gained in the previous chapter.

Fundamentally, the purpose of payroll administration is to guarantee wages and salaries are paid to employees accurately, on-time and complying with the law, other regulations and contracts. This includes determining a wage level matching to job description and duration of employment and preparing certificates and applications for authorities, such as the Finnish Tax Administration, insurance companies and Kela. (Hakonen, Eklund & Roos 2016, 154; Stenbacka & Söderström 2015, 14; Syvänperä & Turunen 2014, 13.) By tradition, payroll administration has been positioned under financial management, especially in small companies. However, placing it under personnel management has become increasingly popular. (Lahti & Salminen 2014, 135; Stenbacka & Söderström 2015, 14; Syvänperä & Turunen 2014, 12.) As stated by Lahti and Salminen (2014, 135), despite of the solution for the organizational structure, payroll administration preserve its connection with financial management via several processes, such as bookkeeping, statements and payments traffic. The close relationship of payroll administration with both personnel management and financial management culminates in payroll calculation, as shown in Figure 2.

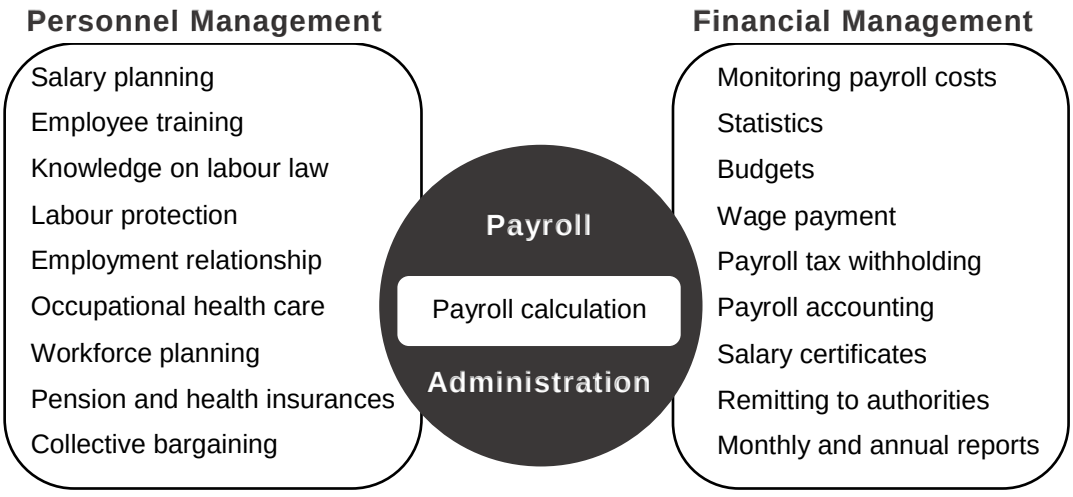

Figure 2. Relationship of payroll administration and calculation of payrolls with personnel management and financial management (paraphrasing Syvänperä & Turunen 2014, 14)

Since this thesis focuses on a wages module in an accounting software, the attention is on the financial management aspect. As pictured in Figure 2, in addition to budgets, the financial management part consists of payroll accounting i.e. recording the personnel expenses, several documents and payments. Consequently, the personnel management side is outside of the scope, which enables establishing the ground rules, as the effect of individual cases is ignored. The starting point for the thesis is that the factors belonging under personnel management are handled appropriately. It should be noted that also budgets are out of the scope, as they're a part of the internal accounting based on the needs of organization management and, therefore, company-specific (Ikäheimo, Laitinen, Laitinen & Puttonen 2011, 105).

3.1 Legislation stipulates the general rule base

The regulation on payroll administration consists of three levels: national, industry and company. Located at the top of the hierarchy, the legislation on payroll administration consists of indispositive and dispositive precepts. The first doesn't permit exceptions, whereas the latter allows agreeing on more advantageous terms and conditions of employment than required by the law. However, these amendments must follow the hierarchy of regulations (Figure 3) i.e. lower levels are required to be in harmony with regulations of the levels above them. (Syvänperä & Turunen 2014, 14). In other words, the national legislation sets the baseline by giving either the only admissible solution or the minimum execution.

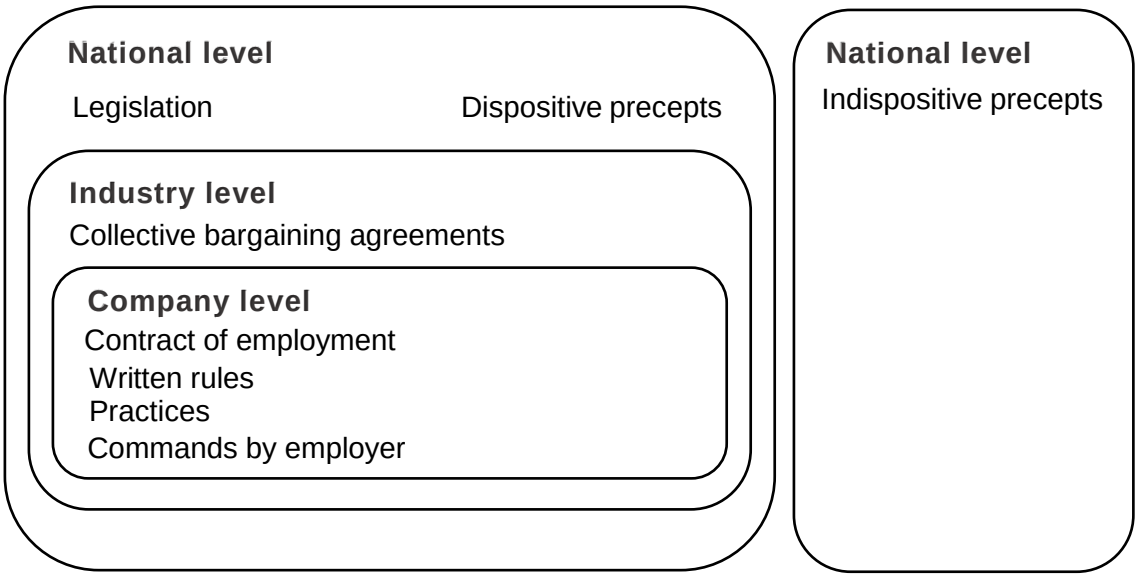

Figure 3. Hierarchy of payroll administration regulations

Whereas indispositive precepts are binding, dispositive precepts are supplemented by the lower levels formed by collective bargaining agreements, a contract of employment, written company rules, unwritten company practices and commands by employer (Syvänperä & Turunen 2014, 14). In addition to legislation, collective bargaining agreements form the other nationwide group of binding regulations. The coverage rate of all levels of collective bargaining is significantly high, around 98 %, and substantially coordinated by the Confederation of Finnish Industries (EK) (Kaartinen & Tönnes Lönroos 2015). Agreements are applicable either normally, i.e. employment parties have signed them or belong to a signatory organisation, or generally, i.e. also an unorganized employer must observe them (Hakonen & al. 2016, 158; Kaartinen & Tönnes Lönroos 2015). However, the EK (25 November 2015) has announced it won't sign new centralized settlements and will instead encourage towards local bargaining at the company level. To an accounting software, this creates a requirement for agility and adaptability.

3.2 Calculation of employee payrolls

Calculation of payrolls contains both calculation of gross incomes, consideration of appropriate reductions and thus calculating net incomes (Halonen & Steiner 2010, 371; Syvänperä & Turunen 2014, 188). Net incomes is the sum an employee takes home i.e. that is paid on their bank accounts once payroll tax and other reductions are carried over with (Syvänperä & Turunen 2014, 188). This section goes through the basics of payroll calculation, including employer's side costs. Later, Chapter 3.3 returns to the topic from the point-of-view of payroll accounting.

3.2.1 Monies and fringe benefits

Stipulated in the Act on Preliminary Tax Withholding (1118/1996), salaries, bonuses and other compensations obtained by the employment or service relationship are considered as wages, same as fees from meetings, personal lectures, presentations, membership in an administrative body and a remuneration obtained as CEO. The same is true with raised wages in limited partnerships and general partnerships and compensations for elected official. (Finnish Tax Administration 2016b.) Wages are commonly referred as 'monies', as they're paid in money instead of goods (Stenbacka & Söderström 2015, 22). Monies are typically time-based, such as hourly pay and fixed wages paid monthly, or performance-based. The former doesn't take into account the amount of work i.e. the pay is a compensation for an employee's time; the latter is independent from the amount of time spent to perform the task and is instead based on other justifications. Performance-based wages

may be piece-work payments, commissions or premiums. (Hakonen & al. 2016, 159; Stenbacka & Söderström 2015, 22–23.)

Therefore, the total pay may consist of several components of which some are determined by work description, such as working conditions, and some by employee's individual attributes, such as years of service. (Hakonen & al. 2016, 158–159; Stenbacka & Söderström 2015, 22–23; Syvänperä & Turunen 2014, 21–22.) Together with company practices, collective bargaining agreements set bases of assessment for wages (Hakonen & al. 2016, 158). In addition to regular working hours, it is possible to do additional work and work overtime (Stenbacka & Söderström 2015, 112–114; Syvänperä & Turunen 2014, 113–115). Section 22 of the Act on Working Hours (605/1996) stipulates on remuneration payable on those cases as follows: from the first two hours exceeding the daily working time of 8 hours, the pay shall be increased by 50 %, and from the hours after that by 100 %. If the employee's daily working time in less than the statutory limit of eight hours, the difference between the agreed working hours and statutory working hours is considered as additional work, for which is paid at least the normal hourly wage. In additional, work delivered on Sunday is compensated by 100% of hourly pay (Stenbacka & Söderström 2015, 114–115).

In contrast to monies, fringe benefits are such non-monetary compensations for work that are a portion of employment income and hence subjects to withholding. The Finnish Tax Administration conforms annually the rateable values for the most common benefits, such as a company car, free or subsidised meals, accommodation and telephone. Such benefits not explicitly mentioned by the Finnish Tax Administration shall be appreciated at the acquisition cost. (Finnish Tax Administration A167/200/2016; Hakonen & al. 2016, 165–166; Stenbacka & Söderström 2015, 25; Syvänperä & Turunen 2014, 68–69.)

3.2.2 Payroll tax

Natural Finnish persons living in Finland are unlimitedly liable to pay progressive tax on their worldwide income i.e. on incomes sourced in Finland and other countries (Finnish Tax Administration 2016c). Unless the employee has provided the necessary information i.e. their valid tax card, the amount of tax to withhold is calculated on a flat rate of 60% (Preliminary Tax Withholding Decree). In connection with calculation and payment of wages, the employer withholds the payroll tax and remits it to the Finnish Tax Administration. The percentage of tax to withhold is announced in a personal tax card, as the withholding rate consists of state tax, community charge and health insurance payment and,

would an employee belong to a religious community, church tax. (Finnish Tax Administration 2016; Hakonen & al. 2016, 171; Stenbacka & Söderström 2015, 46.)

With main occupation, the employee may choose from two alternatives, A and B, how the withholding calculation is delivered. When calculating the payroll tax from main occupation in accordance with the Option A i.e. tax is based on threshold for a pay period, accounting software commonly use the cumulative computation. (Stenbacka & Söderström 2015, 49.) For this reason, the main occupation tax card gives an imputed annual income threshold for IT-systems to determine the income threshold for the selected time period (Figure 4):

$$threshold\ for\ the\ period = \frac{number\ of\ tax\ days\ in\ the\ period\ \times annual\ income\ threshold}{364}$$

Figure 4. Calculation of income threshold (Stenbacka & Söderström 2015, 50; Syvänperä & Turunen 2014, 41)

As tax days are imputed items, there're 364 tax days in a year, 7 tax days in a week and 14 tax days in a fortnight but 364/12 = 30.33 tax days in a month and thus 15.16 tax days in a half of month. A new threshold is calculated in connection with every payment time based on cumulative income for the said period. The amount of payroll tax for the latest payment alone is equal to the difference of cumulative payroll tax and the tax already withheld. (Stenbacka & Söderström 2015, 50–51; Syvänperä & Turunen 2014, 44.) For manual computation with the Option A, pre-calculated income thresholds for a day, a fortnight and a month are included in the tax card and they're used directly. This is called a periodic calculation, as other payroll data is ignored, unlike in the cumulative computation. (Stenbacka & Söderström 2015, 49; Syvänperä & Turunen 2014, 43.)

With the Option B, an employee exercises their right to demand to use annual income threshold, as provided for in the Preliminary Tax Withholding Decree (1124/1996). In this case, the payroll tax is based on a singular threshold: up to the income threshold, the base rate is applied, and after the threshold is exceeded, the applied rate is switched to the added rate for the rest of the period. The Option B is recommended for employees in an employment ship lasting less than a year or if their income varies heavily during a year, whereas the Option A is recommended for employees working for only one employer whole year and/or if their income varies only a little. The employee determines which one is applied. (Stenbacka & Söderström 2015, 52–53.) With tax cards for freelancing and side-line job, withholding is executed at the same fixed rate, regardless of the amount of income (Hakonen & al. 2016, 177; Stenbacka & Söderström 2015, 53; Syvänperä & Turunen 2014, 39).

3.2.3 Employee's contributions

In the case of wages and salaries paid to an employee, there are two statutory reductions to be carried out in addition to payroll tax: the employee's pension (TyEL) contribution and the employee's unemployment insurance contribution. (Stenbacka & Söderström 2015, 69.) Traditionally, the degree of professional organisation has been extremely high in Finland: over 70 % of employees belong to a trade union (Findikaattori 2016). Therefore, in addition to the statutory reductions, trade union membership fees are almost certainly the most likely ones to come across. Furthermore, there may be other reductions, which may lead to a situation in which the money wage doesn't cover all the reductions.

To accommodate such situations, reductions are performed according to the priority order as follows (Stenbacka & Söderström 2015, 72; Syvenperä & Turunen 2014, 56):

- payroll tax
- TyEL contribution
- employee's unemployment insurance contribution
- enforcement of payment obligation (distrainment)
- enforcement of maintenance payment (distrainment)
- employer's offsetting from wages
- fund payments (pension, insurance, sickness)
- additional pension contributions
- other reductions, such as trade union membership fee.

The extensive Finnish pension reform came into effect in the beginning of 2017. From the point-of-view of payroll accounting, the reform stabilises the pension insurance contributions and unifies the grounds on which pensions are determined. (Finnish Centre for Pensions 2016.) In 2017–2025, the employee's TyEL contribution is 1.5 % higher at the age of 53–62 years but otherwise the same from the age of 17, whereas the overall TyEL contribution (sum of both the employer's and the employee's contribution) shall be 24.4 % in 2017–2019 (Finnish Centre for Pensions 2014, 6, 13).

In other words, the overall pension and unemployment contributions are divided between employees and the employer. Therefore, in addition to employees' gross wages and additional allowances, the employer also has to make a considerable contribution towards the employees' pension and unemployment insurances. The same policy applies also to employer's health, accident and life insurance contributions. These employer's side costs will significantly add to the overall personnel costs. (Hakonen & al. 2016, 184, 194–197; Stenbacka & Söderström 2015, 69, 79, 82–84; Syvänperä & Turunen 2014, 57, 152, 155, 157, 159.) The Ministry of Social Affairs and Health announces annual rates for insurance contributions that are also published by the Finnish Tax Administration (2016d).

3.2.4 Tax-exempt allowances

Tax-exempt allowances are typically work-related travelling expenses, especially kilometre and daily allowances. Against a receipt, the employer may also compensate other work-related costs for employee tax-free. (Hakonen & al. 2016, 167; Stenbacka & Söderström 2015, 91, 94; Syvänperä & Turunen 2014, 90, 94.) The Finnish Tax Administration (A177/200/2016) announces annual limits for tax-exempt travelling expenses. With kilometre allowances, the amount of compensation paid per kilometre is dependent on multiple factors, including vehicle, road type and other passengers (Syvänperä & Turunen 2014, 94–95). Daily allowances are calculated per travelling diem and vary between travels in homeland and abroad. Free meals will reduce the amount of compensation. (Stenbacka & Söderström 2015, 92–93; Syvänperä & Turunen 2014, 95–96.) Employer may also provide tax-exempt personnel benefits, as long as the benefits are the same for all employees and their monetary value is reasonable. This holds true with employee's social benefits, staff discounts and the like. (Stenbacka & Söderström 2015, 98; Syvänperä & Turunen 2014, 77.) As expected, if an allowance doesn't meet the criteria for tax-exemption, it's treated as a taxable item.

3.3 Digital payroll accounting

The main objectives for payroll accounting are to correctly count and record the personnel costs i.e. wages, payroll taxes and other personnel-related expenses (Halonen & Steiner 2010, 370). Nowadays, almost every company is using a computer software to calculate salaries based on data on working time and employment relationship (Figure 5). This creates a requirement to ensure the functions within the payroll processing are appropriate. (Halonen & Steiner 2010, 370–371.) Furthermore, the system structure should maximize data migration i.e. updating the same piece of information several times wouldn't be required (Lahti & Salminen 2014, 145).

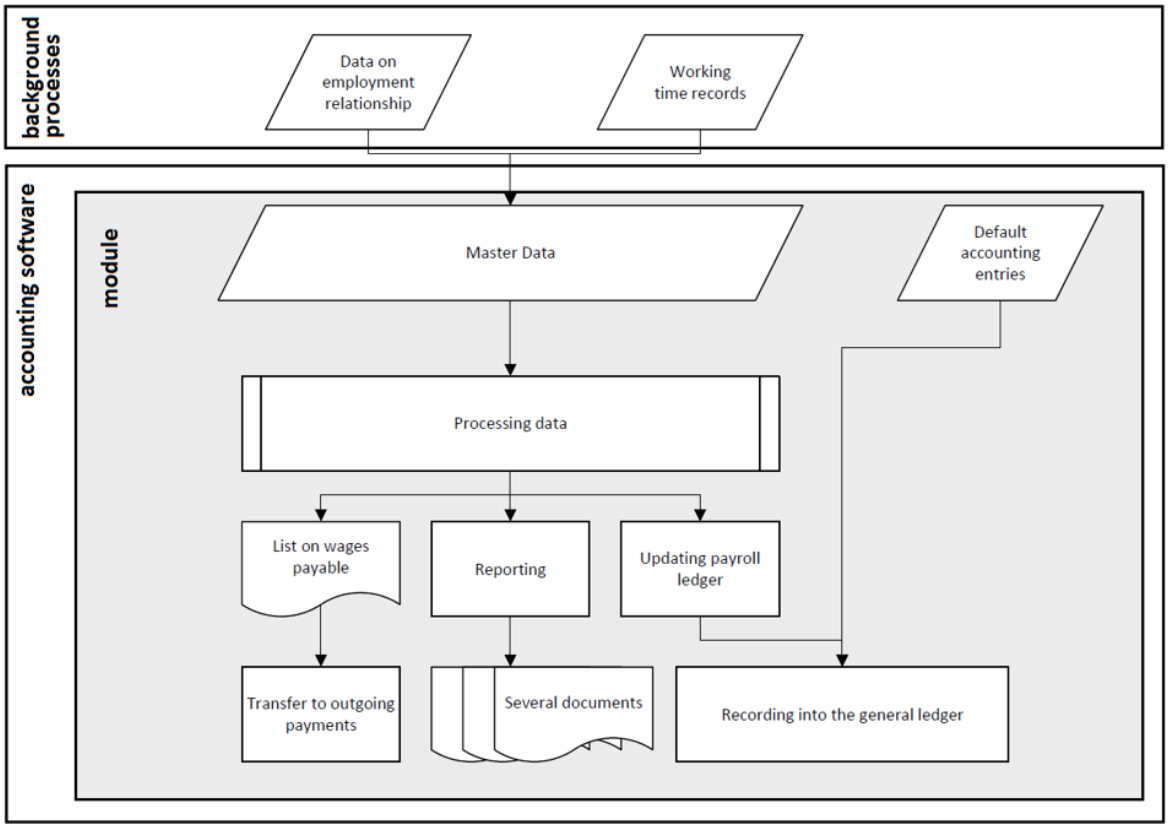

Figure 5. Payroll process within an accounting software

The importance of the data migration is highlighted in digital payroll calculation as well: the data should transfer from subsystems into the accounting software so that the master data is complete and up-to-date (Lahti & Salminen 2014, 145). Pictured in Figure 5, a payroll process within an accounting software is based on the master data that consists of personal and employment-related background information in addition to working time records. As the result of processing the information, payroll calculation is carried out, which results in a list of wages payable. With automatic accounting entries, the software takes the transactions into the main general ledger and includes them into various reports that can be exported directly from the system. (Helanto & al. 2013, 48; Lahti & Salminen 2014, 145.)

In general, salaries and other personnel expenses are separated into multiple accounts. However, accounting principles resulting from specification of requirement will depend on the company's cost accounting and other reporting needs (Halonen & Steiner 2010, 370). Creating default settings for accounting entries is a simple yet effective control, as it advances systematic classification in which all transactions are recorded within the correct accounts in the general ledger according to their nature (Halonen & Steiner 2010, 372; Lahti & Salminen 2014, 67). An accounting software that limits risks of fraud or errors is able to produce more accurate and more qualified financial reports (Halonen & Steiner 2010, 372).

On the other hand, automation requires enhanced control, such as a regular reconciliation of accounts, as an incorrect account definition continues repeating the error until detected (Mäkinen & Vuori 2002, 40). With wages, an intermediate account "Payables to employees" is generally used: in connection with payroll accounting, the amount of net wages is recognized as a payable and later, at the time the bank transaction is logged, checked off (Lahti & Salminen 2014, 162; Syvänperä & Turunen 2014, 182–183). Employers' contributions should be reconciled with control notifications (Mäkinen & Vuorio 2002, 157). Therefore, they're typically recorded as payables in their own accounts within the balance sheet and checked off in connection with payment. The same holds true for the amount of the payroll tax withheld but not yet remitted to the Finnish Tax Administration. (Leppiniemi & Leppiniemi 2007, 138–140; Syvänperä & Turunen 2014, 183.)

Nonetheless, payroll accounting and possible notes shall be drawn up in such a way that paid salaries and other payments subject to withholding are sufficiently specified and the connection between accounting entries, payroll card, payroll sheet and the amount remitted to the Finnish Tax Administration is identifiable without difficulty (Preliminary Tax Withholding Decree). This is also stipulated in Section 6 of the Act on Accounting (1336/1997) that states the connection between transactions, vouchers and entries between general ledger, financial statements and periodic reports to the authorities must be easily identified in both directions. In digital financial management, this sequence of accounting data i.e. audit trail can be facilitated by reconciling accountancy accounts and with clean transfers between vouchers and statements (Lahti & Salminen 2014, 161; Mäkinen & Vuorio 2002, 86). A company with an accounting obligation must compile a method description of used software programs and their connection to the general ledger (Accounting Act). However, it doesn't refer exclusively to payroll accounting, and therefore is not a mandatory document within the meaning of this thesis.

3.4 Mandatory documents and statements

Regular employers must compile several documents frequently: payslips for individual employees, payroll cards per employee, payrolls sheets per payment time and statements for the Finnish Tax Administration, insurance companies and Kela (Hakonen & al. 2016, 185–189; Syvänperä & Turunen 2014, 177). Digital data creates several options for reporting. Among the most effective ways are reporting portals, allowing self-service i.e. giving (limited) permissions to access the reporting system or additionally compile plus distribute regular reports automatically. The self-service option is highly effective when com-

bined with dynamic reporting tools with variable parameters, such as time period and sorting. If the system allows creating manual reports on ad hoc basis, it's recommendable to track the regularly used parameters and create a default report base instead. (Lahti & Salminen 2014, 184–186.) The most common payroll system reports are summaries for purposes of the Finnish Tax Administration or insurance companies (Halonen & Steiner 2010, 372). Since 2016, no accounting data is obligated to be in a paper form (Accounting Act). Additionally, as explained in Chapter 2.2, Katre could significantly facilitate reporting and diminish the administrative burden as early as the beginning of 2019.

Information to be included in payroll cards and payroll sheets is stipulated under the Preliminary Tax Withholding Decree. Simply put, payroll cards are per employee and by a calendar year and their function is to work as a summary on how the employee's wages have accumulated, whereas payroll sheets summarise individual payrolls per payment time (Hakonen & al. 2016, 186; Syvänperä & Turunen 2014, 178–180). Furthermore, Chapter 2, Section 16 of the Act on Employment Contracts (55/2001) imposes an obligation on the employer to give the employee a calculation showing the grounds for payment and the ensuing sum payable. This calculation per pay period is called a payslip. For a reference for exact content of a payslip, a standard published by the Finnish Standardisation Committee is often recommend, including by the Occupational Safety and Health Administration (2015), despite the fact the particular standard was withdrawn already in 2002 (Finnish Standards Association SFS 2016). In other words, the standard is still commonly applied and hence Finns are accustomed to payslips with certain information.

In addition to these mandatory documents, employers have to fill in statements for the Finnish Tax Administration and insurance companies. A regular employer must fill the monthly Self-assessment tax return and an annual employer's return. In addition, insurance companies require annually the total sum of gross wages and possibly additional information so they're able to calculate the insurance contributions for the following year. (Hakonen & al. 2016, 185–189; Syvänperä & Turunen 2014, 177.)

4 Thesis process and working methods

A project is a unique, one-time process with a predefined objective and limited by timetable and budget (Ruuska 2012, 24), such as a practice-based thesis. In general, project management consists of stages, task packages and assignments, yet experts have varying views on the subject (Honka 13 April 2016). For example, Ruuska (2012, 22) defines four stages: foundation, design, execution and closure. Breaking a project down into steps has been successful if every stage results in a tangible result, the resources required to complete each activity are easy to define, both the beginning and the end are set plus the progress is measurable (Honka 13 April 2016). These four stages of the thesis process are explained in detail in this chapter and summarized in a simplified flowchart in Appendix 1. For the evaluation of the project management, see Chapter 6.1.

In the thesis plan, the work was originally scheduled to be completed in April. However, the timetable was again discussed with the commissioning party when it had become clear the high-quality result would require re-thinking the entire module instead of merely suggesting Finnish-specific additions as originally discussed, which would naturally increase the work load. Project management requires anticipation, so the project adapts to the changing situation (Ruuska 2012, 30). Therefore, it was decided in unison to extend the timetable. Hence, the thesis was completed in May. Nonetheless, the realized monetary costs for the author were well below the original budget of 30 euros. The costs had been estimated to be mainly from telephone costs, and no unexpected expenses occurred during the project. The commissioning party provided the basic software (without API) free of charge for the entire project and thought without a doubt the added value of the produce would cover the incurred costs, including the extension of the timetable.

4.1 Foundation

The assignment was originally introduced by a colleague who had worked with SimplBooks on his thesis. The author had already used several accounting softwares in her work and also taken the course on payroll calculation. Combining these two felt tempting. At that time, the objective of the project was defined in a very general manner: the purpose of the thesis would be to help in the development of the wages module. The colleague arranged a dummy account for exploring the software independently to desired extent before any commitment to the project was required. Although the thesis would be on the payroll module alone, the investigation also included editing company information, creating some basic entries, invoicing a new customer and trying the modules for non-current assets and stocks. With the wages module, new employees were created for trying basic

accounting process for salary, wages and compensations. As the software hadn't any wages types predetermined, the testing also required establishing some of them. The settings were largely based on a memory of the past payroll course that had focused on a manual calculation process. The absence of support for progressive taxation was observed, as well as some functions in Estonian. Testing every module, not only wages, gave a more comprehensive understanding of the software and its logic. This was the feasibility study that should always precede a project: its purpose is to determine if there's premises for a new project (Ruuska 2012, 35).

Based on the impression, CEO Jaanus Reismaa was contacted in late July via email. It was suggested to Reismaa the thesis could be from the point-of-view of customizing the module in accordance with the Finnish legislation, to which Reismaa answered they would be interested in so-called default settings they already had for their Estonian customers. The timetable and the extent of the thesis itself, the workload equal to 12 credit points, set some limitations to the project. Due to summer holiday season and such, the correspondence took place mostly in September, including specifying the concrete objectives for the development task. Therefore, the stage mostly took place in September 2016.

As the end result of the Foundation stage, a project plan is created. The objective for the plan is to guide trough the project by outlining the means and practices with which the desired outcome will be achieved. (Newton 2016, 64; Ruuska 2012, 178.) In this case, in addition to the commissioning agreement, the tangible result was the thesis plan. Because the deadline for plan was already in the beginning of October, the plan was written while negotiating on the terms of the commission agreement at the same time. For this reason, the thesis plan itself didn't include much of specific information on delimitations, references and the like, only guidelines based on the still-going negotiations.

4.2 Design

The Foundation stage was followed with the Design stage, for which the objective is to decide the method of implementation (Ruuska 2012, 34). For this, both theoretical and practical knowledge was gathered. Additionally, tools and working methods were selected. Since the thesis process took place alongside course studies and tutoring activities in autumn 2016 and a full-time work in spring 2017, it was crucial to maximise the output. For this purpose, 'a thesis nest' was created by emptying a large desk from everything that wasn't necessary for the creating and writing process. Thus, there was a workstation for the thesis only, ready for use at any given time.

Finalized with a comfortable chair and a proper light source, the nest held

- laptop with essential software programs for actual work
- additional screen for simultaneous work, including reading e-books while writing
- every piece of printed material, such as literature
- notebook plus a functioning pen and a dustbin
- multifunction printer with copier-scanner capabilities
- an English grammar plus dictionaries for current English and accounting.

Later, when moving on from structuring the theoretical framework to the empirical part, another screen was added and dedicated to the SimplBooks software. The multiscreen set-up had been proved to be a great advantage while working in accounting as it reduces time-consuming toggling among softwares and documents. Hence, a multiscreen solution was inherent. For facilitating time management, positive experiences in earlier projects encouraged to create a Wunderlist assignment to track progression. Wunderlist is a task management application for all the major devices (Wunderlist 2016). Task allocation in Wunderlist was loosely based on the table of contents: intended illustrations, subsections without third level headings and the like were added as subtasks, the rest as main tasks. Furthermore, Wunderlist syncs across devices and commenting tasks is possible (Wunderlist 2016) and thus also served as an always-at-hand notebook and a progress diary. The task applications was especially helpful, because it allowed updating the plan, setting milestones and the like. The progress must be measurable (Newton 2016, 118). Wunderlist made working more dynamic, because plans needs to be real-time and updatable, as it's impossible to plan every detail in the very beginning (Ruuska 2012, 177). Other utilised software programs consisted of office suite applications.

4.2.1 Building of theoretical framework

During the foundation stage presented in Chapter 4.1, literature and other potential references were explored superficially and hence the submitted thesis plan was merely a general direction painted with a broad brush. Typical to projects (Ruuska 2012, 29), the final outcome was yet to be revealed. As agreeing on the development objectives was anticipated to send back to square one, the actual planning was consciously commenced only after returning the first version to the thesis advisor, as there was a deadline to meet. During preoccupying oneself with source material in-depth, both literature, earlier researches and online sources were familiarized for the literature review. To avoid information overload, conceivable resources were listed by themes, such as 'National incomes register', 'Theses and researches' and 'Digital vs electronic financial management', and these themes were examined more carefully later with fresh eyes.

For Chapter 3 on payroll administration, Stenbacka and Söderström (2015) and Syvänperä and Turunen (2014) became the base literature source in their own right as a primary learning material widely used among Finnish universities of applied sciences, including Haaga-Helia (2016), Laurea (2016) and OAMK (2015). Supplementing literature choices were listed as a recommended learning material as well. As the object of interest was especially on the statutory requirements yet the literature was at more general level, the literature references were expanded with the original Acts and Decrees.

Since modern financial management is constantly in change as new technologies are invented and applied to the field, having up-to-date references was essential. Lahti and Salminen's (2014, 23–24) discussion on differing concepts and criteria for digital, electronic and paperless financial management had been noted as a warning sign, yet this heterogeneity was still almost overpowering when gathering source material for Chapter 2. This resulted in forming the very own glossary that was adjusted, broadened and refined in the course of the writing process and finally recapped into the central terms presented in Introduction (Chapter 1.2). The literature selected as central references had been published not earlier than 2014, and it was upgraded even further with reliable Internet sources mainly consisting of websites of the Finnish authorities and head organisations. The exceptions to the rule of a releasing year were deliberate decisions, for example with literature on the development of financial management.

4.2.2 Email correspondence for in-sight

To complement the publicly available information collected from the company's website and social media channels, the author had correspondence with CEO, Founder Member Jaanus Reismaa of SimplBooks principally via email. Due to living in different countries, scheduling reasons and English being a foreign language for both, emailing was chosen, as emails are bound neither to a place nor to a certain time. In comparison, organising a face-to-face meeting and having telephone conversations frequently, both of which would have created costs as well as required recording and transcribing for proper documentation in addition to the reasons mentioned, were seen as less purpose-based solutions in this case. However, telephone was used during the Foundation stage to establish a more personal connection. Besides, there was a separate questionnaire (Appendix 2) in the latter half of November 2016 on general information and SimplBooks OÜ's expansion to Finland. This was to gather information in a centralised, purposeful manner about the direction in which the project should be taken. Having a separate questionnaire was seen as

an expedient precaution, as if questions were included in the normal email correspondence, the answers could have been less thoughtful or, alternatively, some aspects essential for the work could have been ignored.

As defined by Sanders, Lewis and Thornhill (2016, 440–442), characteristically to self-administered questionnaires

- the respondent completed the questionnaire autonomously
- the questions were set in the predetermined order
- no questions could be omitted or altered without separate consultation
- the answers (results) may be contaminated by, for instance, lack of commitment, uninformed responses or representing the view of someone else than intended.

For securing the validity of the conclusions ergo to avoid contamination, several measures were taken. To begin with, questions were formulated with consideration for low quantity yet simultaneously high quality. As CEO and Founder of a small company, Reismaa had all the information required, and he was contacted personally to complement the correspondence. Additionally, had focusing certain answers been necessary, supplementary questions would have been sent. The proposed response time of approximately two weeks was accepted and followed by Reismaa. In addition to forming an advanced comprehension of plausible particular characteristics of the Finnish clients of SimplBooks, the answers received were applied to introducing the commissioning party and the case software. Documenting practices were inherently applied from work experience in the assurance services of an accounting firm. Analysing the results completed the design stage. At the time, the author had an understanding of the expectations for the outcome of the work and a preliminary view of how the produce could been carried out.

4.3 Execution

The execution stage was about conducting the produce (Appendix 6) and was carried out in 2017. In the beginning of this stage, the author had a good grasp of the theory but the understanding of the case software was still based on the preliminary testing completed in the Foundation stage (Chapter 4.1). Furthermore, there was still room for refinement on vision of essential functions.

4.3.1 Pursuit for hands-on information

The execution stage was commenced by documenting the current situation within SimplBooks and how the statutory requirements were met at the time. The documentation process took place predominantly in January 2017. Compared to testing performed during

the Foundation stage, the approach was more analytical, since the objective was to determine the actions necessary for completing the work. As the result, it was noticed the software had more deficiencies than originally detected and correcting their combined effect would require more effort. The findings are discussed in more detail in Chapter 5.2.4 and fully documented in Appendix 4.

However, the author found the theoretical framework and the software knowledge weren't enough to complete the project successfully and thus decided to strengthen the understanding of the subject. Described by Vilkka (2015, 18–19), a subject of a work-oriented research may be, for example, a practice in working life that is currently in need of development, change or creation of new practices, because the needs for a work-oriented research are governed by practicality and timeliness. The goal may be to improve an already existing service, which may require research information on other service providers, customers and their practices and cooperation opportunities, inter alia. Deepening the perception of potential customers, as well as other suppliers' software solutions, was necessary in this case. Because of the most of 1700 customers were Estonian entities and the wages module wasn't available for Finns, creating a questionnaire for Finnish users on their needs for the wages module was considered irrational. It was assumed the response rate would have been low (i.e. a small sample size) and the answers wouldn't have included much of concrete examples, because they couldn't have taken a stand on the current status of the module, as it wasn't available at all.

Therefore, to clarify understanding of what payroll functions would be truly of use for a Finnish SME, an interview was arranged through personal relationships. Interviewing is a flexible qualitative method that works particularly well if the objective is to gain as much information on the subject as possible (Tuomi & Sarajärvi 2013, 73). The interviewee was an entrepreneur positioned as CEO of a micro-sized limited public company employing a permanent personnel of four plus summer workers. In other words, the company was a regular employer, as the primary target had been defined (Introduction). Therefore, the interviewee had personal experience on the subject, which is the key criteria for selecting interviewees if the objective is to deepen the understanding (Tuomi & Sarajärvi 2013, 83; Vilkka 2015, 135). For maximum benefit, it's recommended to equip interviewees beforehand with interview questions, so they are able to prepare (Tuomi & Sarajärvi 2013, 73). In this case, the objective of the interview was told and also a preliminary list on topics to be covered was sent. It was also agreed to combine the interview with observing the filing process of employer's annual statements.

The interview took place on the company's premises on January 29, 2017. The filing process of the Employer's Annual Return for the Finnish Tax Administration and separate employer statements the Unemployment Insurance Fund (TVR) and Elo Mutual Pension Insurance Company was observed and partially participated. Participatory observation is the more justified the more operative the perspective is (Vilkka 2015, 143). In this case, a clear understanding of the process of filing the annual employer statements was the objective. The participation was mostly asking focused questions or searching the required information from the files. Characteristically to semi-structured interviews (Saunders & al. 2016, 391), the conversation followed an 'interview guide' consisting of themes and questions that must be covered during the conversation (Appendix 3). This qualitative method of inquiry was selected, as semi-structured interviews allow broadening the discussion beyond the pre-determined questions and thus are a powerful tool for developing a keen understanding of the topic of interest (Saunders & al. 2016, 390). Since jotting notes may distract and thus detract the dialogue, tape-recording and later transcribing the tapes is generally recommended (Vilkka 2015, 137). It was decided against tape-recording in this case, because the interview was built around the filing process and documenting the measures would have required narration, a solution equally perplexing. Having a note-taker was considered but found exaggerated.

Instead of the size of a sample, qualitative research material is based on the quality. Thus, the objective of the study can be achieved with a relatively small sample. (Tuomi & Sarajärvi 2013, 85–86; Vilkka 2015, 150–151.) However, it's not necessary meaningful to establish conclusions on, for instance, interviews or documents, but rather combine a variety of research materials. (Vilkka 2015, 150–151.) To the author's judgement, enough information was already received when the interview was combined with the earlier work-oriented experiences and the theoretical framework, and therefore no other parties felling into the criteria for SimplBooks' target customers were interviewed.

On payroll processes within an accounting software, only a few literature references were obtainable. Instead of inventing a wheel again, other accounting softwares were examined and the observation findings were used as a supplemental source. The competitor analyse in 2014 had defined Zervant, Merit and Briox as the main competitors for SimplBooks based on advertised features and prices, though "the list of competitors and potential competitors was much longer however" (Reismaa 6 December 2016). Because the author did not have access to these softwares, the practical concept was processed with observing Netvisor (n.d.) and ProCountor (n.d.) instead, as they were available. Both software applications are widely used by Finnish accounting firms (Association of Finnish Accounting Firms 2015, 3; TietoAkseli & JAMK 2015, 8). Additionally, the demo version of

Palkka.fi (n.d.) intended for educational use was selected for the examination, because it's designed for small businesses and households for free of charge (Lahti & Salminen 2014, 147; Palkka.fi 2015) and thus resembles the case software. Notes on the functions of these software applications were made while observing, after which the softwares were compared with each other by studying the notes. The most striking similarities are summarized in Appendix 5. The case software was included for comparison.

4.3.2 Carrying out the produce

Contemplating the practical implementation required more effort than had been expected, because during the thoroughgoing testing (Chapter 4.3.1), the software had revealed some deficiencies both with progressive taxation and statutory documents and options to set accounting entries (Appendix 4). As the result, creating the default settings using the software, as originally planned, would have been challenging and the usability of the end result could not have been verified without extensive testing. Moreover, the result would have been inevitably clumsy. Therefore, the author decided not to jam with the already existing functions, which was in accordance with the commissioning agreement.

The nature of the detected deficiencies was consistent with Reismaa's (6 December 2016) post-judgement that "we probably did less than we should have". Therefore, a summary on the Finnish payrolls and calculation examples and alike were included in the produce as an introduction to the topic. Their mutual objective was to demonstrate the gist in Finnish payroll accounting and visualize the customary implementations, thus providing ready-made tools for software developers. Furthermore, a summary on the recent development in Finnish payrolls and the upcoming national incomes register was included, as during the correspondence it became clear the commissioning party was unaware of these factors but was interested in hearing more. However, the core task of the report was to introduce the suggestions on which way the software could be taken.

The development proposals were eventually divided into two categories: recommended and optional. When the alteration was considered as crucial, it was labelled as recommended. Mostly these recommendations were related to progressive taxation, mandatory documents or creating default settings. For the first two cases, the background information that led to the development proposals was included in the report, together with illustrative examples, to ensure the desired outcome would be clear. The default settings for reductions and accounting entries were executed with listing typical wages and the like (Image 1) and presenting whether they're, for instance, subject to withholding and how they

should be recorded with the chart of accounts used in SimplBooks. The settings were limited to names in Finnish and English, applicable taxes and other reductions plus accounts used for booking, based on the perception on the software's operating mechanism formed earlier.

Wages and compensations			Subject to... (x = yes)						Entries	
type / name		class	withholding	pension insurance contribution	accident insurance contribution	life insurance contribution	health insurance contribution	unemployment insurance contribution	debit	credit
Kokopäiväraha, ulkomaat (verotettava)	Daily allowance, abroad (taxable)	Allowance	x	x	x	x	x	x	5114	2946
Ateriakorvaus (verovapaa)	Meal allowance (tax-exempt)	Allowance							7825	2946
Ateriakorvaus (verotettava)	Meal allowance (taxable)	Allowance	x	x	x	x	x	x	7825	2946
Vuosilomapalkka	Annual holiday pay	Wages from non-working time	x	x	x	x	x	x	5312	2946
Lomaraha	Holiday bonus	Wages from non-working time	x	x	x	x	x	x	5312	2946
Irtisanomisajan palkka	Notice salary	Wages from non-working time	x	x	x	x	x	x	5115	2946

Image 1. Examples of individual rows in the wages listing (Appendix A in the produce)

The final layout of the wages and compensations list (Image 1) evolved as work progressed. Column 'Entries' followed collecting the pay items from the theoretical framework. Because SimplBooks didn't comply with Raportointikoodisto (Chapter 2.1), the chart of accounts was exported as a excel from the software (Image 2) and used instead. Otherwise the author had used Raportointikoodisto and its extension for wages known as Palkkakoodisto. Along with the beforehand accumulated accounting experience, Syvänperä and Turunen's (2014, 183–184) example was applied, in addition to Leppiniemi and Leppiniemi (2007, 135–141) and Hakonen, Eklund and Roos (2016, 190). For this purpose, identifying personnel-related accounts and their location in the structure of balance sheet and income statement was required. The categorizing was executed manually by the author, as the export file included only the Finnish names and numbers for accounts.

Account		Balance sheet / Income statement		
2932	Ennakonpidätysvelka	BS	Creditors	
2946	Velat työntekijöille	BS	Creditors	
5012	Työntekijäpalkat	IS	Personnel expenses	Wages and salaries
5415	Puhelinedut	IS	Personnel expenses	Wages and salaries
5419	Muut luontoisedut	IS	Personnel expenses	Wages and salaries
6312	Sosiaaliturvamaksut	IS	Personnel expenses	Other social security expenses

Image 2. Categorizing personnel-related accounts in progress

For applicable taxes and other reductions, it was simply marked with 'x' if the item would be subject to the specific reduction, as shown in Image 1. In order to ensure correct application, the information used in this work phase was directly provided by the authorities: the Finnish Tax Administration (2016b) on payroll tax; Etera Mutual Pension Insurance Company (n.d.) on TyEL contributions; the Unemployment Insurance Fund (2015) on unemployment insurance contributions. As it was found that the TSD settings and calculation

formulas given as default neither entirely fit with Finnish payrolls nor were customizable (Appendix 4), proposals on substitute implementations were necessary. Alternative calculation formulas were drafted based on the theoretical framework and items were labeled in Column 'Class' accordingly. With TSD settings, the original idea was to suggest using the fields of the Employer's Annual Return, as it had been noted the software hadn't already an option to file in the said return. The idea was abandoned when the Tax Finnish Administration (2017b) announced the interface descriptions of Katre would be published in summer 2017. Therefore, it was suggested to follow the situation, because it would be logical that Katre will use a SBR code set similar to Raportointikoodisto. With the list on reductions (Appendix B in the produce), the process was largely identical. Other suggestions focused mostly on increasing data migration and hence reducing the amount of manual imputation, which would help to keep all information up-to-date. This would serve the software better, especially because tax cards, contribution rates and several other pieces of information tend to change annually. These suggestions would also increase functionality e.g. automatic data processing, such as background calculations.

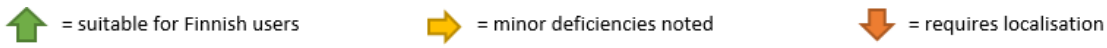

Image 3. Legend on localisation level symbols

To summarize the findings on the software and give an unambiguous view of the content of the report, a matrix was located in the introduction. The examined software functions were listed, in addition to illustrative conclusions on their localisation level (Image 3) and references to related chapters and appendices. The report was completed with the layout. Because the produce was intended to be emphasized with the commissioning party and the case software, it was decided against using Haaga-Helia reporting guidelines. Therefore, a Microsoft template was selected and edited to resemble the layout of the SimplBooks software. The similitude was mostly created with colours and other simple means, such as the logo.

4.4 Closure

In the last stage, the project is completed and the final report is conducted. The report should include both self-evaluation on the outcome of the project, as well as present potential objects for new projects and developments together with an assessment of their importance. (Ruuska 2012, 266, 271–272.) The finishing stage was carried out from April to May and included both going through the produce, e.g. testing its suggestions via manual

calculation or comparing to the theoretical framework, and touching up the work. Furthermore, the produce was handed to the commissioning party for commenting. The author had prepared to make adjustments and clarifications to the work, but eventually the commissioning party didn't have any special remarks regarding the content. Instead, to correspondence focused on agreeing on cooperation in the future. Evaluation of the work as well as self-assessment are presented in Chapters 5 and 6.

5 Discussion

In this chapter, the produce (Appendix 6) is discussed. First, the validity and usability of the work are reviewed. Subsequently, the key conclusions on theoretical framework are approached through the sub-questions presented in Introduction and then mirrored to the understanding gained on the software (Appendix 4). The produce has been built on the basis of these conclusions. Finally, it's pondered how the work could be supplemented. The self-assessment of working methods and the author's performance and learning during the thesis process is separated into Chapter 6.

5.1 Validity and usability

The appropriateness of research methods is often measured with validity and reliability. A valid research examines the promised subject, whereas reliability means that the results are reproducible. (Tuomi & Sarajärvi 2013, 136.) Usability indicates the results are suitable for the intended use (Newton 2016, 168). These three criteria are discussed in this section.

According to Vilkka (2015, 196–197), results obtained using a qualitative method are reliable if the case subject and the interpreted material are compatible and miscellaneous or irrelevant circumstances haven't affected the conclusions. Described in the commissioning agreement, the objectives for the thesis were "suggestions/descriptions of necessary additional developments" and to create "salary module preset settings for Finnish companies according to Finnish laws so it would be easier to start and implement salary calculations within SimplBooks". Furthermore, it was agreed the focus would be on routine-natured wages paid to employees and the usability of the module would be taken into account. The first part of the theoretical framework discusses modern financial management that uses computer software applications, whereas the latter focuses on calculating and recording wages, payroll taxes and various personnel-related expenses. The extent of the section on payroll calculation complies with the literature used as course material in the basics of payroll calculation. Therefore, the case and the material are compatible and the theoretical framework doesn't have themes irrelevant to the subject. Furthermore, the work is based on a broad, versatile theoretical framework consisting of literature, information provided by the authorities and the original acts and decrees. Hence, the theoretical framework is reliable and up-to-date.

However, it is necessary to be able to describe and justify in the text the choices made during the process: what these solutions have been and from which alternatives and how

the final solutions have been made. Also the appropriateness of the solutions must be able to evaluate. (Tuomi & Sarajärvi 2013, 140; Vilkka 2015, 197.) The principal qualitative method used in the thesis was observing the case software: a profound understanding was a prerequisite for both default settings and mapping development needs. The documentation contains all the observations that were the base for the development suggestions presented in the produce. In turn, the steps for creating the default settings are documented in Chapter 4.3.2. A detailed documentation enables evaluating the conclusions and thus strengthens their reliability.

The project included several qualitative methods to gain an understanding of the case software's current functions and define the essential functions. Qualitative methods are used to understand the subject and thus the quality of the research material matters instead of its quantity (Tuomi & Sarajärvi 2013, 85–86; Vilkka 2015, 150–151). However, combining a variety of different research materials is one way to increase quality (Vilkka 2015, 151). In this case, the 'sample size' was rather small: one questionnaire, one interview and observing three software applications along with the case software and the filing process of employer's annual statements. The interviewee was selected based on her experience on the subject and because her micro-sized company fit the profile of a Finnish regular employer. The questions were sent beforehand and the objective of the interview was told, so she had an opportunity to prepare. Jotting notes instead of recording the interview was selected, because the main focus was on observing the filling process of employer's annual statements. The interviewee also gave permission to get copies of the filled forms. The observed softwares were selected based on availability. One was designed for micro-sized companies and the other two were major softwares. Hence, comparing their functions gave additional information: their common functions helped to establish the impression on essential payroll accounting functions. Together these measures were enough to get a comprehensive understanding of the case software – both current functions and to whom the software is meant for –, the filling process of employer's annual statements and the essential functions. Therefore, the quality of the material was appropriate.

Observation was supplemented by the questionnaire to the commissioning party, because if questions were included in the normal email correspondence, the answers could have been less thoughtful or, alternatively, some aspects essential for the work could have been ignored. The questionnaire provided a more detailed internal view of the company's customer base and what measures the company had already taken towards localisation, which were utilized to determinate the necessary actions. The validity was ensured by

forming the questions with care and having an option for focused questions if the respondent had understood the question in a different way than intended.

In this case, the key evaluation criterion for the work is a subjective perception of its usability. The results of this work are the conclusions included in the produce. As already demonstrated, the theory behind the practice was valid. Therefore, the usability of the produce depends on whether the produce is able to fulfil its objectives. With the produce, the commissioning party is able to create accounting entry defaults and set applied taxes for common pay items. In addition, the produce includes description on progressive taxation with calculation examples, practically bilingual draft templates for payslip, payroll sheet and payroll card and some other suggestions. Calculation examples and templates are tangible and thus illustrate the desired outcome well.

The commissioning party stated they wouldn't only make use of the results but also to greater extent than had been expected: optional measures were found to include several solutions that would "create a more universal yet easier to use salaries system". This was a welcomed by-product, because they had planned to develop the Estonian version of the wages module as well. A universal module would also benefit plans on going global. Furthermore, the thesis serves as a guide on the basics of Finnish payrolls. Most of the official information and literature is available only in Finnish and possibly Swedish, thus the thesis creates added value also via its valid, English-written theoretical framework and calculation examples. With basic knowledge under control, it's easier to search for further information. E.g. aspiring employers with a foreign background, such as immigrants and asylum seekers, could benefit from it.

5.2 Key conclusions

For clarity, the section is divided based on the sub-questions presented in Introduction. In addition, findings on the starting point of the case software are represented. Assembled these conclusions determined the content of the produce.

5.2.1 General rule base

The regulations on payroll administration may be organized in a hierarchical order in which there are three levels, from top to bottom: national, industrial and company. The lower levels are required to be in harmony with regulations of the levels above them. Therefore, the national legislation sets the baseline by giving either the only admissible

solution via indispositive precepts or the minimum execution via dispositive precepts, since the latter allows agreeing on more advantageous terms and conditions of employment, provided the hierarchical order is followed. These precepts are supplemented by, for instance, the annual rates for rateable values of fringe benefits and collective bargaining. From an accounting software, this requires that the data is correctly applied in the calculation process.

Consequently, payroll calculation is largely regulated by law, decrees and authorities' instructions. Some of these precepts are dispositive, such as compensations for over-time, though. However, these regulations give some universal calculation rules (Chapter 'Editable calculation rules' in the produce), for instance the number of holiday days. The common calculation includes determining the subject to withholding i.e. gross income that consists of monies and fringe benefits. The payroll tax to withhold is calculated from that, based on employee's tax card. There are four five payroll tax calculation ways in total: if the valid tax card isn't available, the flat rate of 60 % should be applied; both tax cards for freelancing and side-line job have a flat rate that is always applied, no matter the amount of income; with the tax card for main occupation, there are two options in total to carry other the progressive taxation: with Option A, the used threshold is for a pay period, whereas with Option B, the income threshold is for the whole period of validity of the tax card. In progressive taxation, the base rate is applied until the threshold and the added rate is applied to the amount of income exceeding the limit. Other most common reductions from employee's wage are their TyEL and unemployment insurance contributions. Other reductions, such as union membership fees, are possible, and their calculation bases vary. There's a special priority order according to which these reductions should be carried out. Also the employer is obligated to significantly contribute to employees' pension and unemployment insurance, as well as to health and life insurances. These contributions are employer's side costs.

5.2.2 Mandatory documents

The number of mandatory documents depends whether a company is a regular or casual employer. In the first case, the reporting obligation is greater and includes payslips to employee on the grounds of wages determination, payroll cards per employee for a calendar year and payroll sheets showing every individual employee's wages per payment time. The exact contents of the latter two are stipulated in the Preliminary Withholding Decree.

In addition, an employer must fill out statements for the Finnish Tax Administration and insurance companies. The frequency of reporting depends on the situation. It was observed

during the interview that the Annual Information Return: Employer Payroll Report for the Finnish Tax Administration requires detailed information similar to payroll cards, whereas on the Self-assessed Taxes Return, only the following employer contributions are included from a reporting period: wages and other payments subject to withholding, tax withheld, tax at source on wages etc., wages and other payments subject to tax at source, wages subject to the employer's health insurance contribution and employer's health insurance contribution payable.

Insurance companies are mostly interested in the accumulated amount of wages from a calendar year. When filing in the statement for an accident insurance company, the following information by an occupational group is required: gross incomes, amount of working hours and if there's a group leisure insurance to be applied. The occupational groups are based on the insurance agreement. TVR needs only the amount of gross wages divided between employees and partial owners from a calendar year. In fact, the most laborious part with the annual employer statements was observed to be collecting and calculating wages information per different groups (occupational groups, employees versus partial owners) for insurance companies due to a lack of a report template with required information. The observation was verified by the interviewee.

5.2.3 Digital payroll accounting

Nowadays modern financial management is living the digital era, which means that information is in a form that enables immediate further use. In digital financial management, data migration between separate modules and functions plays a key role. The more efficiently the software is able to use once imputed information, the better is data migration. Furthermore, this facilitates keeping the data up-to-date. Creating default settings for accounting entries advances systematic classification in which all transactions are recorded according to their nature, which also serves for reporting purposes. Digital financial management is fairly standardized in Finland, especially reporting, as can be said on the bases of XBRL taxonomy and Raportointikoodisto.

While observing two major accounting software applications and one software designed especially for micro companies, it was noted they had the following functions in common: support for progressive taxation, automated calculation for both employee's and employer's contributions, advanced holiday calculation and handling expense claims as well as tracking working time. They all were also able to create a payslip, in addition to e-filing different statements for authorities. Probably because Palkka.fi for micro entities isn't an actual accounting software, it lacked default accounting entries, editable calculation rules

and some documents the other two had. All three had supportive calculators for distrainment and the major accounting software applications provided one also for determination of rateable values of fringe benefits, in addition to having a quite automated calculation method.

Based on these observation findings and the theoretical knowledge, a wages module should support progressive taxation, have templates for statutory documents and be able to calculate automatically basic payroll items, such as contributions and compensations that are based on percentage calculation. These are the most essential functions. From point-of-view of data migration, a software should also be able to interpret digital working time records and, for instance, calculate the amount of overtime in hours and not only in currency. Supporting e-filing of employer statements would be convenient. However, as observed during the interview, those statements may be filed in also in other means: the Finnish Tax Administration has the MyTax portal and insurance companies have their own portals. Therefore, the priority should be that a software is able to give the required information in the first place.

5.2.4 Case software

The case software included eight modules in addition to the wages module that executes the payroll process as described in Chapter 3.3. The software calculates new wages based on employee's salary settings and then creates default entries automatically and included them in the general ledger. The new wages is then transferred to outgoing payments and shown on TSD reports. Although SimplBooks doesn't have independent modules for the background processes, working time records should be transferable via API. Employment data is already included in the wages module as part of the employee data.

However, the software showed several deficiencies compared to the other three. The lack of support for progressive taxation was found to be the most critical shortcoming, because it made it unfit for Finns and thus basically crippled the whole module. Though, reductions calculated with fixed rates, such as TyEL contributions and payroll tax for freelancing, were fully supported. The second major deficiency was with reporting, because the software neither had templates for payrolls cards or payroll sheets nor was able to provide required data for statements. Furthermore, some parts were still in Estonian. The software included calculation rules but they were lacking typical Finnish rules, such as the amount of hourly pay. Setting default accounting entries was enabled only with taxes. In general, the applied taxes section was the main source for settings.

Still, generally the module was clear e.g. the absence of user instructions didn't hinder. However, the module required a lot of manual imputation. For example, if the lack of required tax, such as a specific rate for a TyEL contribution, was noticed in the middle of calculating a new wages, the process had to be suspended. Therefore, other suggestions focused mostly on increasing data migration and hence reducing the amount of manual imputation, which would help to keep all information up-to-date. This would serve the software better, especially because tax cards, contribution rates and several other pieces of information tend to change annually. These suggestions would also increase functionality e.g. automatic data processing, such as background calculations.

5.3 Suggestions for further work

During the thesis process, it became clear modern financial management keeps on developing, which on the one hand sets constantly changing requirements for accounting software applications but, on the other hand, provides endless opportunities. While collecting background information on previous theses with similar subject, it was noted theses about payroll processes mainly focus on developing the case company's internal processes, such as intensifying the handling process of expense claims, whereas theses about accounting software applications mostly study which software would best fit the needs of a case company. No thesis on developing the processes in an accounting software was found, let alone from a point-of-view of payroll accounting. Therefore, a thesis, for instance a sample-based research, about effective (payroll) processes in an accounting software would generalize the subject, thus providing new information.

This thesis enables adapting the case software to comply with Finnish practices in basic employee payrolls. Carrying out the recommendations and other suggestions included in the produce would create a solid base for further developments within the wages module, such as calculators for common fringe benefits and a sum to distrain. Naturally, compatibility with Katre would be ideal for a Finnish customer, as well as the support for e-filling the statements for the Finnish Tax Administration and insurance companies. Furthermore, the scope excluded e.g. holiday calculation, income of a limited taxpayer and payroll tax on the work invoiced by a private trader or a community without affiliation to the Prepayment Register. All of these are potential follow-up projects.

Nonetheless, following the development of the wages module, concentrating next on universal functions instead of Finnish specialties would be more realistic, because such projects would benefit also the largest customer segment consisting of Estonian entities and

simultaneously support the company's intentions to "extend to majority of Europe in coming years" (Reismaa 6 December 2016). For instance, the software doesn't currently support either handling expense claims or tracking working hours, even though these would be a natural extension to the wages module. When extending to the whole software i.e. the consortium of several modules, internal controls as well as the implementation of the audit trail could provide an interesting approach. However, users' views and needs should be the main basis for further actions.

6 Evaluation

This final chapter is about self-assessment. The section covers both the project management aspect and what the author has learned during the thesis process.

6.1 Working methods and project management

The objectives and the scope dictated the working methods. Because payroll calculation alone is extensive and versatile as a subject, not to mention payroll administration in overall, being particularly careful with the delimitations was required. As noted in Chapter 5.3 on suggestions for further work, working with an accounting software would had enabled a considerably wider project. The scope of the thesis, however, forced to focus on the most essential factors and ignore the rest. On the other hand, choosing a theoretical implementation wouldn't had allowed a particularly wide scope: if the created solution suggestions had been directly used as the ground for a more far-reaching scenario, the end result would be highly speculative and thus the validity and the usability could be questioned. This isn't the case here, because suggestions are all based on functions that already exists. Though, it would have been indelibly interesting if the project could have been implemented as a development study in collaboration with a co-student from the degree program of information technology or the commissioning party's software developers.

The working methods included building of a theoretical framework, questionnaire to the commissioning party to supplement the correspondence, observing three softwares in addition to the case software and interviewing a regular employer while participatory observing the filling process of annual employer statements. As rationalized in Chapter 5.1, these methods gave a comprehensive understanding of the subject and covered only relevant aspects. The utilization of the data was contributed by a rich discussion between sources, input into documentation and summarizing e.g. figures and the like. The selected tools included office suite applications, mainly Microsoft Excel and Visio, and Wunderlist. Working with these applications was smooth and efficacious and, therefore, they served their purpose well.

As mentioned, the timetable of the project was modified during the thesis process. Changing instead of forcing the timetable was considered to be the optimal option and a quality guarantee. The solution was sensible and beneficial to the work. Nonetheless, the project was successfully completed and also broken down into steps, as every stage had a tangible result (commissioning agreement and thesis plan; theoretical framework; produce; discussion), required resources for every stage were possible to identify and the progression

during the stage was trackable with Wunderlist. The original timetable excluded, the project achieved other objectives that indicate successful project. These indicators are content and qualitative objectives, implementation objectives and financial objectives (Ruuska 2012, 274).

When comparing the starting point i.e. the thesis plan and the actual thesis, the final outcome is pretty much what I had imagined it to be, even better than expected. The plan could have been more throughout, though as noted, it had to draw up in the middle of the negotiations. Personally, I don't feel that a more-detailed plan would have made any difference. However, the guideline during the process wasn't even the official thesis plan but the Wunderlist assignment that was based on the plan yet lived with the thesis. Without a doubt, Wunderlist was an excellent tool choice to track progression and plan the next step: seeing the current status with a glance benefited significantly. I strongly recommended Wunderlist and will also use it in future projects.

6.2 Reflection on own learning and performance

All in all, this project has been very fascinating, as well as instructive. Because similar theses weren't found and no other examples were available, the project has provided an excellent opportunity to develop problem-solving skills in a pragmatic way from the perspective of working life needs. Occasionally, some issues seemed nearly impossible to solve, for instance how to explain progressive taxation or defining a simple solution to create settings for applicable taxes, thought finding a solution was all the more rewarding and got the motivation level to rise even further. This thesis has been a real pleasure: the ratio between challenges and successes was fitting throughout the process.

Since the foreign commissioning party wasn't particularly familiar with Finnish practices, the project has also been a good opportunity to prepare myself to work as a consulting professional. On the other hand, for the same reason all solutions had to be made practically alone. Hence, I paid particular attention in documenting my work as carefully as possible, so the grounds of the solutions would be clearly presented. I feel I succeeded in the documentation: the explanations are quite detailed and include, for example, screenshots that allow an outsider, such as the person reading this thesis, to make their own conclusions and therefore evaluate my solutions with approximately same information. Furthermore, I'm especially satisfied with the amount of dialogue between the references. The theoretical framework is not only valid but also backed up by several sources, which gives even more creditability and depth to the text.

Creating development proposals is dependent on mastering the subject. Consequently, I've especially learned about payroll calculation and payroll accounting. At the beginning of the thesis process, I was capable to calculate payrolls manually and record personnel expenses with a note. In addition, I had used several accounting software applications for work purposes but had only some experience with wages modules. Therefore, I knew the basics. As the result of all the work done for the thesis, I've accomplished a solid, wide-spread understanding of the subject: I'm nowadays not only able to use a wages module and tell whether it works or not, but also to determine what the matter is and how the situation could be fixed. Furthermore, I've a better grasp on the reporting aspect of payrolls, including both the annual employer statements for authorities and the mandatory documents, such as the content of a payroll card. The thesis process also taught about the importance of localisation. To sum up, the thesis has been an inspiring yet demanding teacher. I'm grateful that SimplBooks OÜ trusted me with this project and more than happy that they've asked if I'm available also in the future.

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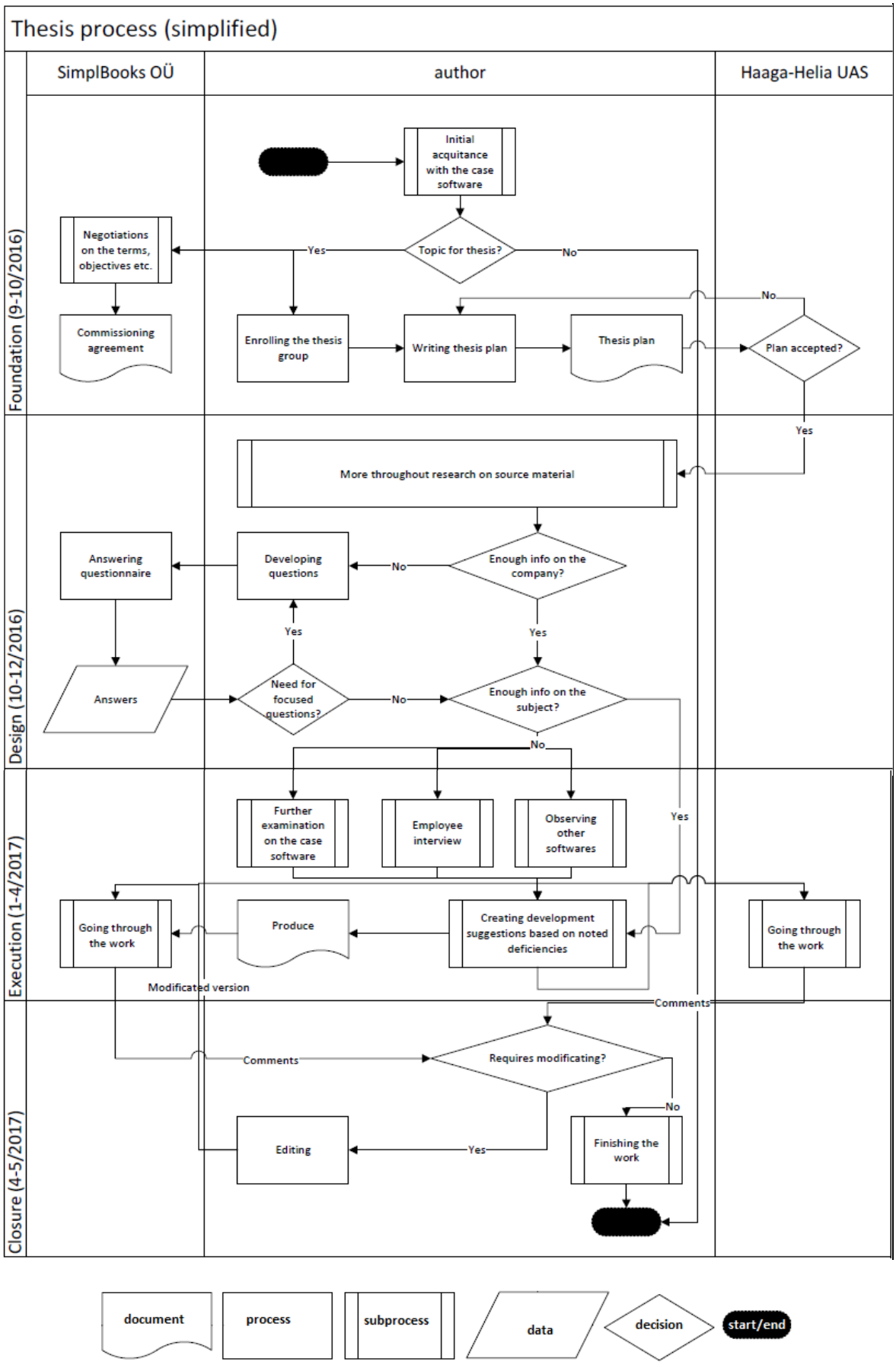
Appendices

Appendix 1. Flowchart about the thesis process



Appendix 2. Questionnaire on SimplBooks OÜ

Questionnaire	1 (1)
Respondent	Jaanus Reismaa, CEO of SimplBooks, via email
Key Dates	– Questions developed: week 46 (2016) – Questions sent: 21 November 2016 – Response time: circa 2 weeks (after 2 December 2016) – Answers received: 6 December 2016 – Focused questions: -
Themes	general information, expanding to Finland

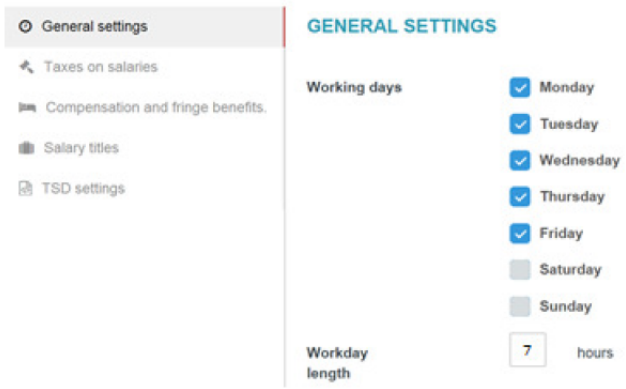
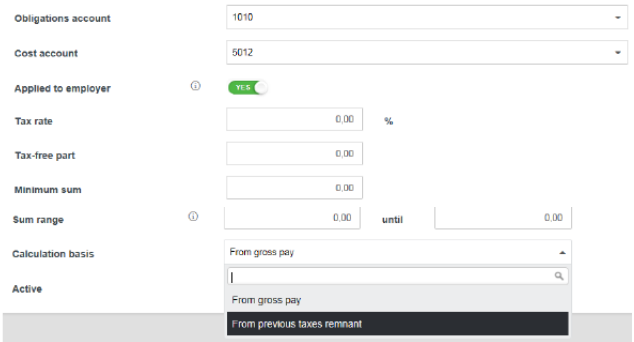
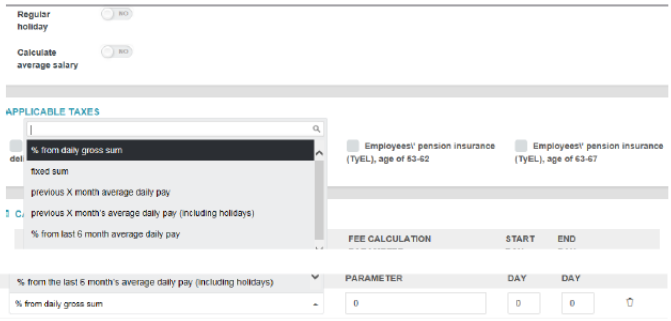
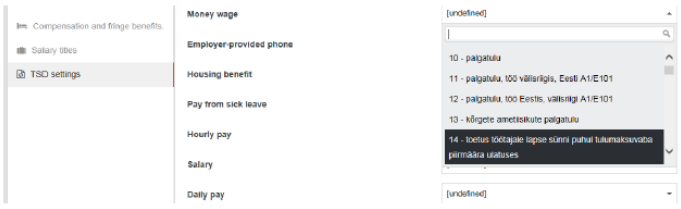
Questions by Theme	
In general	1. According to LinkedIn, the corporation was founded in 2012. When was the software launched? 2. What is the current number of clients, and in which countries is the software available? How is the clientele divided geographically? 3. How would you describe the primarily targeted customer segment? 4. What is your vision? Where will SimplBooks be in 5 years?
SimplBooks in Finland	5. In June 2015, it was tweeted SimplBooks is 'finally out in Finland :)'. Back in the day, when considering expanding, what factors made you see Finland as a potential target market for SimplBooks? 6. What were the results of the competitor analysis? Could you name the accounting softwares that are the main competitors? 7. To what extent did you orientate into the Finnish legislation, accounting customs etc. during the export process? How was the software adapted before its launch in Finland? 8. What kind of feedback have you received from Finnish clients? 9. Have you elicited any key differences between your Estonian and Finnish customers? If so, what have these differences been? (For example, resulting from dissimilarities in legislation or business culture.)

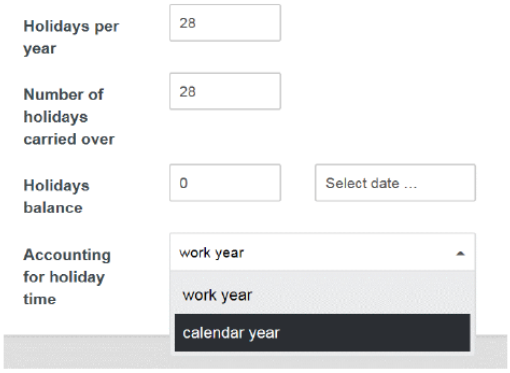
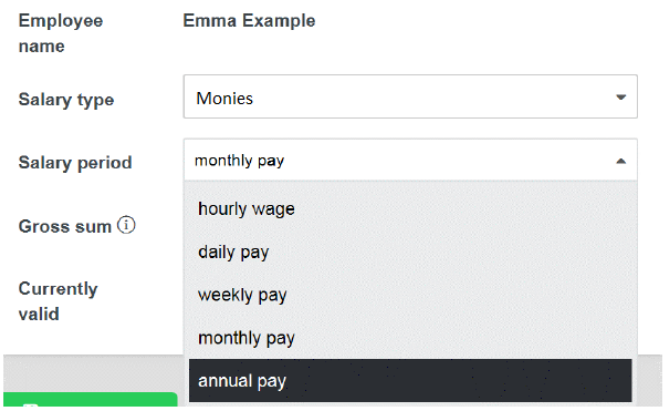
Appendix 3. Employer Interview on Annual Payroll Statements

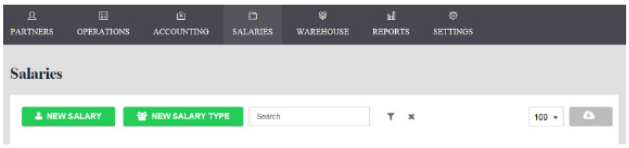
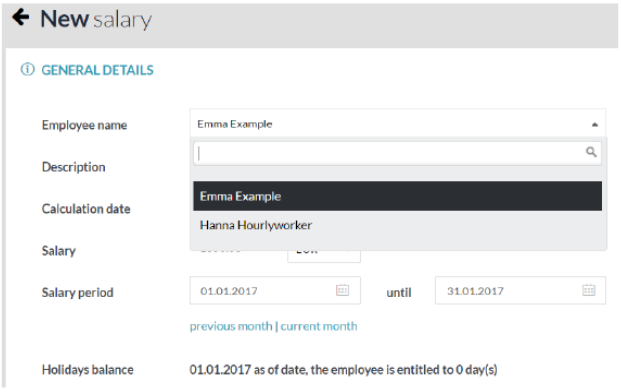
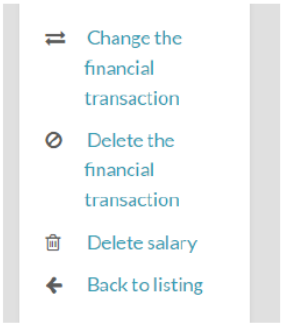
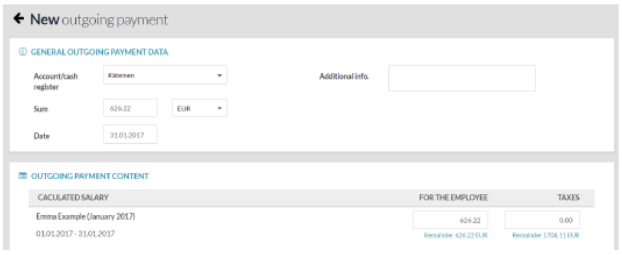
Interview	1 (1)
Interviewer	Rina Hallaperä
Interviewee	Marjukka Mäkinen, CEO of Espoon Ratsastustalli Oy (ERT)
Location and Date	At ERT, Espoo, 29 January 2017

Information to be covered (interview/observation)	
Background	1. How is the company's financial administration organized? (Outsourcing, why/not?) 2. What kind of educational backgrounds do you have? (Business education?) 3. How many employees do you have? With what kind of employment relationships and terms? (Full-time/part-time, regular/temp, office hours / shift work, …?)
Payrolls	4. What components do wages consist of? (Fringe benefits, compensations etc?) 5. What is the current payroll process? (Calculation, documentation?) 6. What is the most challenging part with payrolls? Why? What could facilitate the matter? 7. What do you think about using a software in payroll calculation? What kind of features are (/ would be) important?
Reporting	8. If the Finnish Tax Administration conducted a payroll investigation, what would you do? (Required documents?) 9. How the information is gathered when filling the annual statements? 10. What information is required in the annual statements?

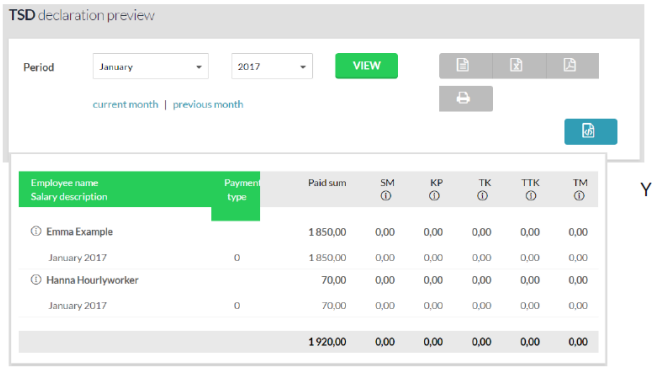
Appendix 4. Starting point with the wages module in SimplBooks

Salary Settings	Exceptions?	Notes, understanding
Overall view of the settings section  		Located in SB: Settings > Salary settings Accepts only round figures Recommendation: 8 as new default (lenght stipuleted by the Finnish legislation)
Taxes on salaries "Payments are accounted for in the same order as they are displayed in this list."		Dragging option, easy to change order
Starting point when creating a new tax type:  Default accounts are 'Perustamismenot' and 'Työntekijäpalkat'; Chart of accounts is only in Finnish, therefore only account numbers are shown in the English version. Obligation account = credit, Cost account = debit	Y	Recommandation: Option to define a tax class, such as withholding, pension contribution Expection: Info specifies "Tax applicable to the employer, added to the gross salary" -> In Finland, gross salary is monies + fringe benefits Control: minimum sum, sum range Could be of use with union membership fee, sickness fund payment, distraint and the like Recommendation: could create and edit calculation rules, would also enable checking the calculation rules are indeed suitable with the company practice
Compensations and fringe benefits  	Y	Recommendation: Could also classify by salary type and set default accounts (similar to taxes) Lists taxes already created Recommendation: instead of individual taxes, choosing tax types => updating easier, more suitable for progressive taxation Exception: for instance, can't create an automaticly calculated overtime compensation
Salary titles Includes only an option to create new salary types and edit their names.		Recommendation: Could also classify by type and set default accounts (similar to taxes)
TSD settings "Setting up of outgoing payment types / … taxation"  	Y	Exception: in Estonian unmodifidable by user

Employee Data	Exceptions?	Notes
		Located in SB: Salaries > Employees > New employee
Main details, Address and bank details, Employment details Mandatory fields: First name, Last name, Starting day of employment.		**Control:** mandatory fields
Optional fields: Employee ID, Date of Birth, Home Address, Email address, Bank account, Job Title, Ending date of employment		**Lack of control / Suggestion:** Can't set a default payment period -> paying with complitely random density possible
Optional features: adding a photo, uploading files (Agreements section)		**Recommendation:** Defining the type of employment (full-time/part-time/other)
	Y	**Control:** 'holiday balance day' is mandatory **Exception** Holiday accrual period: 1.4.-31.3. in Finland
		Number of holiday days, maximum accrual: a) employment lasted less than a year per 31.3.: max. 2 days/month ie. 24/year b) employment lasted more than a year per 31.3.: max. 2,5 days/month ie. 30 days/year
		Employee is entitled to holiday from a calendar month IF a) there's at least 14 work days or the like (the lenght of days is irrelevant) b) there's at least 35 hours of work (or the like) In principle, only A or B is applied.
"Save" => SB shows options to set salaries and taxes		Setting 'the normal situation' for employee i.e. the starting point with creating a new payment
Salary settings 		Lists wage types created in Settings > Salary settings > Salary titles Period options un-editable
Applied taxes selected from a dropdown menu, rates are fixed	Y	Created in Settings > Salary settings > Taxes on salaries **Exception:** doesn't support progressive taxation

Payroll process	Exceptions?	Notes
Salaries > Salaries  		Located in SB: Salaries > Salaries
Selected: New Salary  		Lists employees Default: [Month] [Year] Default: current day Transferred from employee's salary settings **Control:** Prevents paying holiday compensatios if employee isn't entitled to holiday
Operations > Create automatic transactions  		Transactions are created automatically based on taxation settings. **Exception:** When setting accounting entries for taxes, it's impossible to leave an account as blank. Therefore, automatic calculations will always create an unnecessary After entries are made, Operations menu is updated. New options: changing and deleting entries
View after selecting Operations > Mark as paid  		
Payment information updated after saving the new payment:  		
Salaries > Outgoing payments		Payment is also updated in Salaries > Outgoing payments. The function allows creating default transactions (an bank account, per wages payable)

Reporting (TSD-Data)	Exceptions?	Notes



Located in SB: Reports > TSD report

Reporting period: a month (uneditable)

Supports the following file forms: .csv, .xlx, .pdf + printing

Can't sort or otherwise modify the data

Y

Uses the TSD Settings

Exception: Additional information is in Estonian.

SM = health insurance contribution, KP = pension contribution, TK = employee's unemployment contribution, TTK = employer's unemployment contribution, TM = payroll tax

Lists wages that are paid during the reporting period

Resembles payroll sheet

Salaries taxes report

FIN Palkat
January 2017

Employee name	Employee id code	Salary description	Payment type	Paid sum	SM	KP	TK	TTK	TM
					1100	1110	1130	1140	1170
Emma Example	1	January 2017	0	1850.00	0.00	0.00	0.00	0.00	0.00
Hanna Hourlyworker		January 2017	0	70.00	0.00	0.00	0.00	0.00	0.00
				1920					

Payroll sheet: report on all payrolls per payment time, determined under the Preliminary Tax Witholding Degree:	Y	**Exception**
Shown per employee:		
employee's name		ok
pay period	Y	no dates
date of payment	Y	
amount of monies (+ all employees in total)	Y (Y)	
insurance wages, used in connection with pensions while working abroad (+	Y (Y)	
amount deducted before tax (+ all employees in total)	Y (Y)	
pay subject to withholding (+ all employees in total)	Y (Y)	
tax withheld (+ all employees in total)		ok
compensations for work-related expenses (+ all employees in total)	Y (Y)	
reductions after withholding (+ all employees in total)	Y (Y)	some are included
paid sum (+ all employees in total)		ok
Payroll card: Report on paid salaries per employee by a calendar year, determined under the Preliminary Tax Witholding Degree	Y	**Exception:** Software doesn't have a report or any view that would serve as a payroll card.
employee's name		
employee's address		
employee's social security number		
The following per payment time + cumulative information from a calendar year		
pay periods with dates		
amount of monies		
rateable values of fringe benefits		Calculation basis and the nature of benefit must be either on the payroll card or attached
amount reducted before withholding		
pay subject to withholding		
tax withheld		
compensations for work-related expenses		
Payslip: Document to an employee per payment time, determined under The Employment Contracts Act		
Minimum: includes the grounds for pay's determination and the amount of pay		Ok

Pay slip

Emma Example
01.01.2017 - 31.01.2017
January 2017

Salary type	No. of days	Sum
Salary	21	1750.00
Meeting reward (employee)	1	100.00
		1850.00

Tax type	Sum
Withholding (tax card not delivered)	1050.00
Withholding (tax card not delivered)	60.00
Employees' pension insurance (TyEL), age of 17-52	107.63
Employees' pension insurance (TyEL), age of 17-52	6.15
	1223.78

Information to include (suggestor: the Finnish Stardardisation Committee):

employer's name		Company info at the bottom (similar to invoice)
location of the unit	Y	
employee's name		ok
employee's occupation	Y	
employee's date of birth	Y	
start date of the employment relationship (if relevant: also end date)	Y	
the pay period		ok
cumulative pay subject to withholding (previous calendar year, current calendar year, the most recent pay period)	Y, Y, ok	
tax withheld for the most recent pay period		ok
compensations paid in the most recent pay period		ok
cumulative tax withheld	Y	
holiday pay, annual holiday compensation paid in connection with wage payment		ok

Recommandation: Payslip with more details

Appendix 5. Common payroll functions in observed softwares

Function	Netvisor	Pro-Countor	Palkka.fi	Case software
Support for progressive taxation	X	X	X	O
Default accounting entries	X	X		X
Unit calculation	X	X		O
Automatic employee's contributions	X	X	X	X
Automatic employer's contributions	X	X	X	X
Editable calculation rules	X	X		O
Employee's expense claims	X	X	X	V
Employee's working time records	X	X	X	V
Advanced holiday calculation	X	X	X	V
Payslip	X	X	X	X
Payroll sheet & payroll cards	X	X		O
Statements for authorities	X	X	X	O
Other document templates	X	X	X	X
Calculators for fringe benefits	X	X		
Calculator for distrainment	X	X	X	

Legend

X = the software has the said function

O = included in the described development suggestions

V = mentioned as a possibility

Appendix 6. The produce

SimplBooks

FINNISH PAYROLLS

Rina Hallaperä
2017

Contents

Introduction

This report is the final produce created as the part of the Bachelor's Thesis in the degree program of Business Management and Administration at Haaga-Helia University of Applied Sciences, Finland. The work shall be published in open repository Theseus and thus be commonly available at www.theseus.fi under the tittle 'Finnish payroll accounting and essential functions in an accounting software'. The academic part of the thesis contains a detailed description on working methods and theoretical framework used in the process, whereas this report is designed to suit the needs of SimplBooks OÜ respectively and present the development recommendations based on the exceptions detected and other findings.

The following on employee payrolls was examined and conclusions on the localisation level was as follows:

	Localisation	Reference
Payroll calculation		
Withholding / payroll tax	↓	Progressive payroll tax, Appendix B
Compensations	→	More automated computation, Appendix A
Fringe benefits	→	More automated computation, Appendix A
Common allowances	→	More automated computation, Appendix A
Employee's contributions	↑	Finnish payrolls in brief, Appendix B
Employer's contributions	↑	Finnish payrolls in brief, Appendix B
Mandatory documents		
Pay slip	→	Localised statements, Appendix C
Payroll card	↓	Localised statements, Appendix D
Payroll sheet	↓	Localised statements, Appendix E
Payroll accounting process		
Calculation of wages	→	Customizable calculation rules, Units as the bases in calculation, More automated computation
E-filing Self-assessed tax return	↓	MyTax has replaced the Tax Account Online, Localised statements
Filling other employer statements	↓	Localised statements

↑ = suitable for Finnish users → = minor deficiencies noted ↓ = requires localisation

Descriptions on suggested actions to localise the software are presented in this report, in addition to the basic knowledge of Finnish payrolls and the most recent and still upcoming changes. As agreed, the scope excludes e.g. holiday compensation calculation, long sick leaves and the like. It should be noted that the coverage rate of collective bargaining is significantly high, around 98 %, in Finland, and hence one future development could include an option to create and select applied 'agreement profiles'.

Finnish payrolls in brief

The basic calculation process for wages and salaries is:

+ monies, such as salary, hourly pay, fees, compensations for overtime and the like
+ fringe benefits
+ taxable allowances
- reductions before withholding
= gross income, subject to withholding
- rateable values of fringe benefits
+ tax-exempt allowances
- payroll tax (based on the subject to withholding)
- employee's pension and unemployment insurance contributions
- other reductions
= net income paid on employee's bank account

Finland has a progressive taxation system, more information in Chapter 'Progressive payroll tax'. It should be noted that a payroll tax can be reducted only from monetary compensations i.e. not from fringe benefits. There are two statutory reductions to be carried out in addition to payroll tax: the employee's pension contribution (TyEL) and the employee's unemployment insurance contribution. These are calculated as percentage rates based on employee's age, please refer to the table below.

Including the actual wages, the employer's total costs consist of

Employer's side costs	Applied to	Amount in 2017
Health insurance contribution *Työnantajan sairausvakuutusmaksu*	Employees 16-67 years	1,08 % from wages subject to withholding (excludes one-time fees, such as meeting rewards)
Pension contribution *Työeläkevakuutusmaksu (TyEL)*	Employees 17-67 years	(21,5 % - employee's contribution of wages) subject to withholding
Accident insurance contribution *Tapaturmavakuutusmaksu*	Required if an employee's total wages exceed 1200 € (2017). The final cost is defined by work's accident rate and other factors.	
Life insurance contribution *Ryhmähenkivakuutusmaksu*	Announced by the insurance company	
Unemployment insurance contribution *Työttömyysvakuutusmaksu*	Employees 17-64 years	Total wages ≤ 2 059 500 €: (1,60 % – employee's contribution 0,80 %) from wages subject to withholding
	Partial owner	(1,60 % – employee's contribution 0,80 %) from wages subject to withholding

List on common wages types, fees and allowances and information if they're subject to withholding and insurance contributions is included in Appendix A. SimplBooks's settings to define applied taxes serve the purpose well, apart from the notification that taxes applied to the employer are added to gross incomes.

Recent and upcoming changes in Finland

The digital development of financial management has accelerated in recent years towards real-time management, in which data is almost instantly at disposal for several stakeholders, whether for internal or external purposes. This progression includes actions such as creating a Standard Business Reporting Code Set (Raportointikoodisto, site in Finnish only) and establishing XBRL Finland (site in Finnish only). It is advisable to familiarize yourself with these. The upcoming national incomes register will continue the real-time trend in 2019 and thus reform the wages reporting thoroughly. Other recent, already executed changes in Finnish payrolls both took place in January 2017 when the pension reform came into effect and MyTax was launched.

Pension reform

The pension system was fully reformed in January 2017 in order to link the retirement age to the extending life expectancy. During the transition period in 2017–2025, the retirement age will be raised to 65 years (by two years) and after that linked to life expectancy. From the point of view of monthly payroll accounting, the reform influences the rates of employee's pension contributions (työntekijän TyEL-maksu).

Until the end of 2025, the TyEL contribution will be 1.5% higher for employees of age 53–62 years compared to employees of age 17–52 or 63–67 years. Annual rates for pension insurance and unemployment insurance contributions are published, for instance, on the website of the Finnish Tax Administration (www.vero.fi > Syventävät vero-ohjeet > Henkilöasiakkaan tuloverotus > Ansiotulot; information is not available in English). As these rates should be updated annually, having a notification on the updating need would be advisable.

MyTax has replaced the Tax Account Online

Filing the return for self-assessed taxes and VAT recapitulative statement was remodelled in the beginning of 2017, as the former e-service portal of the Finnish Tax Administration was replaced with MyTax (OmaVero), available at www.vero.fi/mytax. Additionally, in connection with the transition, electronical filing returns became mandatory for VAT taxpayers, employers and other parties liable to self-assessment; paper-printed tax returns are no longer accepted except for special reasons. The Finnish Tax Administration has created the data format specifications to transmit the necessary data directly from the software. In cases where the accounting software doesn't support the data format specifications, the employer is able to log in MyTax and file a return manually. In that case, it would be recommendable to get the needed payroll data in paper form, similar to the current VAT report.

National incomes register Katre 2019–

The next major change is expected already in 2019, as the national income register (kansallinen tulorekisteri, Katre) will supersede the current reporting practice from January 2019 onwards. The project, announced in October 2016, is coordinated by the Ministry of Finance and executed by the Finnish Tax Administration. The electronical register will be beneficial for companies, authorities and individuals alike, and reduce the administrational burden significantly, as the payroll data will be collected directly from accounting software in connection with wages payments and then instantaneously accessible via portal. In the light of current knowledge, the income register is expected to launch in January 2019 with salaries paid and associated transactions, then expand to paid pensions and benefits in January 2020 and continue expanding in the following years. There isn't much information available at the moment, as the Finnish Tax Administration hasn't yet published the interface descriptions. However, it's already known that the data format of choice is XML and the technical interface will be in English. More information will become available at www.tulorekisteri.fi in summer 2017.

How to localise the Wages Module

The suggestions are divided into recommended and optional measures based on their significance in adjusting SimplBooks to meet the needs of an average Finnish, SME-sized regular employer. However, it should be noted that with the exceptions of progressive taxation and some deficiencies in the mandatory documents, no serious insufficiencies were observed. Other deficiencies can be circumvented, yet since it isn't in accordance with the intended use, also those observations are presented.

Recommended actions

Progressive payroll tax

The software showed some deficiencies with withholding tax. In its current version, SimplBooks supports three out of four typical circumstances. These supported situations are either having a tax card for freelancing (freelanceverokortti) or a side-line job (sivutuloverokortti) or if the employee hasn't delivered their tax card, as in these cases the withholding rate is flat and thus similar to the Estonian system. However, in case of main occupation (päätoimen verokortti), progressive taxation is applied and hence needs to be supported in addition to the fixed rate.

With progressive taxation, the tax percentage to withhold is tied to income thresholds. The tax card announces two alternative payroll tax percentages called 'the base rate' (perusprosentti) and 'the added rate' (lisäprosentti) and some pre-calculated income thresholds (day, week, fortnight, month, year and one for software calculation). If the income paid exceeds a threshold, the added rate shall be applied to the amount of income exceeding the said threshold. There're two alternative progressive calculation options, A and B. The latter is recommended for employees in an employment ship lasting less than a year orif their income varies heavily during a year, whereas the former is recommended for employees working for only one employer whole year and/or if their income varies only a little. The employee announces which alternative is applied. Therefore, the software should support both and be able to tell the difference between them.

When calculating the payroll tax for the main occupation with the Option A, accounting software commonly uses the cumulative computation. For this reason, the main occupation tax card gives a calculatory annual income threshold to determine the threshold for any period of time. For this reason, computational tax days are used as follows: 7 per week, 14 per fortnight, 15.16 per half a month, 30.33 per month (regardless of the number of actual days) and 364 per year. The base formula for threshold calculation is

$$threshold\ for\ the\ period = \frac{number\ of\ tax\ days\ in\ the\ period\ \times annual\ income\ threshold}{364}$$

The employment relationship is effective until further notice from February. The base rate is 15 %, the added rate 42 % and the annual threshold 27 000 €. The employee's gross income is 2550.00 € in February.

$$income\ threshold\ (Feb) = \frac{\left(\frac{364}{12}\right) \times 27\ 000\ €}{364} = \frac{30.33 \times 27000\ €}{364} = 2245.79\ €$$

Base rate applied until the threshold: 15% × 2245.79 € = 337.47 €
Added rate applied to income exceeding the threshold: 42% × (2550.00 – 2245.79) € = 127.77 €
Tax withheld in February: 337.47 € + 127.77 € = 465.24 €

In March, the employee's gross income is 1930.00 €.

$$income\ threshold\ (Feb\ and\ March) = \frac{60{,}66 \times 27000\ €}{364} = 4491.51\ €$$

The cumulative income is 4480.00 € i.e. below the threshold, hence only the base rate is applied.
Cumulative tax to withheld Feb–March: 15% × 4480.00 € = 672.00 €
Tax already withheld: 465.24 €
Tax to withheld in March: 672.00 € - 465.24 € = 206.76 €

It should be noted that the cumulative income is calculated from a calendar year and the calculation period is also cut off when a new tax card becomes valid for any reason. The cumulative calculation may be applied only to wages from one employer. However, if the tax withheld is calculated manually with the Option A, periodic computation is applied instead of the cumulative way explained above. In that case, each pay period is treated separately, similar to the example with February alone but using the pre-calculated thresholds included in the tax card. Therefore, until the cumulative option would be supported in the software, the temporary solution could be the user would, in connection with calculating new wages, manually select the threshold applied to that payment. (Supposition: The base rate and the added rate would be already included in the employee data, possibly together with the pre-calculated thresholds.)

With the Option B, only one threshold is applied during the period the tax card is valid. Up to the income threshold, only the base rate is applied, and after the threshold is exceeded, only the added rate is applied.

The tax card gives a threshold of 25 000.00 € for the Option B and is applied February 1 – December 31. The employee's salary, subject to withholding, is 2600.00 €. Therefore, the threshold is met during November:

Salaries in February-October: 2600.00 € × 9 = 23400.00 € (below the threshold i.e. the base rate added)
In November, the base rate is applied until the threshold (25 000.00 € - 23 400.00 € = 1 600.00 €) and the added rate to the rest (2600.00 € - 1 600.00 € = 1000 €).
In December, only the added rate is applied.

To sum up, the Finnish payroll tax may be based on a fixed rate, but it's more likely that progressive taxation is applied. There're two alternative calculation ways for progressive tax, A and B, and the Option A may be executed either periodically with pre-calculated thresholds (recommend for manual calculation) or using cumulative computation (recommended for software).

Since the payroll withholding rate consists of state tax, community charge and health insurance payment and, would an employee belong to a religious community, church tax, the payroll tax rate is highly personal. For this reason, it would be recommendable to consider moving the withholding settings from their current universal location directly under individual employees, except for the default flat rate of 60 % that should remain in the Salary Settings. Additionally, creating a new field for the time interval in which the tax card is applied (voimassaoloaika) would also be advisable, in addition to the period the cumulative income is calculated from. Finnish tax cards are valid from February to January (1.2.-31.1.) and are delivered in January. Having a notification and/or an icon to warn about the approaching expiration of the tax card would be helpful for the employer. When the tax card has expired, the software could automatically switch to using the flat rate of 60 %, unless the tax information for the employee is updated, as the said withholding rate should be applied if the employee hasn't delivered their valid tax card.

Customizable calculation rules

It would be recommendable to be able to personalize calculation rules, as this way the rules would definitely be suitable for the company. The key calculation rules for the Finnish employers are:

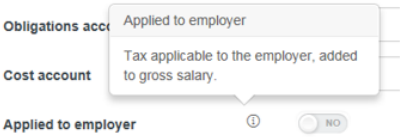
Target of calculation		Formula	Reference
Gross income *Bruttopalkka*		monies + fringe benefits + wages for non-working time + taxable allowances	Appendix A
Subject to withholding *Ennakonpidätyksen alainen palkka*		gross income – reductions before withholding	
Hourly pay *Tuntipalkka*	*	gross income from pay period / agreed regular working hours	
Daily pay *Päiväpalkka*	*	hourly pay * agreed regular working hours per day	
Tax-exempt allowances *Verovapaat korvaukset*		allowances	Appendix A
Employee's contributions *Työntekijän maksut*	**	pension contribution + unemployment insurance contribution	Appendix B
Net income *Nettopalkka*		gross income – tax withheld + tax-exempt allowances– employee's contributions	
Amount of additional work *Lisätyön määrä*		statutory working hours – agreed regular working hours	More automated computation
Holidays *Lomapäivät*	***	a) employment ship has lasted less than a year: 2 * number of months fulfilling the conditions of assessment b) employment ship has lasted a year or longer 2.5 * number of months fulfilling the conditions of assessment	

* Due to their nature, these calculation formulas should always take into account the situation of an individual employee. It should also be noted that the legislation allows agreeing on dividers that differ from the ones represented above, as long as the score is of the same magnitude; practically, collective bargaining agreements may set their own dividers to be applied. Therefore, it's recommendable to include the corresponding setting fields directly under individual employees' Employment data. The divider fields could be named, for instance, as 'päiväpalkkajakaja' (divider for daily pay) and 'tuntipalkkajakaja' (divider for hourly pay) and have attached a piece of information reminding to take into account the collective bargaining agreement if relevant.

** Related to employee's age, please refer to 'Finnish payrolls in brief'.

*** It should be noted the holiday accumulates from a time period of April 1 – March 31, which is not currently available in the Employment Details, and that the number of holidays per month fulfilling the conditions of assessment may vary, depending on collective bargaining agreements. The calculation process with annual holiday pay and holiday bonus is rather complex, therefore it could have a separate calculator to help the user. For further information on the subject, please refer to, for instance, Guide to Work in Finland: Annual holiday.

Regarding current calculation rules available, in Finland, 'gross income' doesn't include taxes applied to the employer. Therefore, the current tax settings are in a small conflict with the Finnish practice.



Units as the bases in calculation

In digital payroll accounting, the basic unit of calculation with Finnish payrolls is traditionally a unit (kappale); a computation approach based on number of days is unknown. Practically, Finnish wages and salaries are calculated digitally by adding and reducing pieces of wages, compensations, taxes and other payroll items. The system allows highly automated computation (see below), which makes it cost-effective and simple.

A full-time employee works regularly 7.5 hours a day and is paid 2750.00 €. She takes a leave without pay for one afternoon, this resulting in having 2 working hours less than usual. Her monies from the pay period, when other items aren't taken into account, would be:

Wage	Unit	À	Total
salary	1	2750.00	2750.00
hourly pay	-2	18.33	-36.66
			2713.64

As explained earlier, hourly pay is calculated with the following formula:

$$\begin{aligned} hourly\ pay \quad &= regular\ working\ hours\ \ per\ days\ \times [salary\ \div\ working\ hours\ per\ month] \\ &= [2750.00\ \div\ (7.5 \times 5 \times 4)]\ = 18.33 \end{aligned}$$

Currently, the calculation system basically allows this, though using 'days' instead of 'units' makes the section misleading to some extent.

Localised statements

Finnish employers are obliged to compile three types of documents on wages and salaries: payslip (palkkalaskelma), payroll card (palkkakortti) and payroll sheet (palkkayhteenveto). Additionally, employees are entitled to have a specific cumulative calculation on their year's earnings for reviewing their tax decisions. Pay slips would serve as these documents if cumulative payroll data from the current calendar year would be included. Otherwise, SimplBooks-generated payslips serve their purpose as calculations showing the grounds for payment and the ensuing sum payable. However, their information is at a significantly more general level than the average Finnish payslips. For this reason, checking the calculation is more demanding. Please see Attachment C for a template suggestion based on a standard by the Finnish Standardisation Committee.

With payroll cards and payroll sheets, there were some weaknesses in fulfilling the statutory requirements determined under the Preliminary Tax Withholding Degree. Payroll cards should serve as summaries per employee for a calendar year including the grounds for pay per payment period, in addition to the cumulative data for the calendar year. Unlike payroll cards, payroll sheets are presented per payment time and hold information on every employee paid at the time. It would be recommendable to create separate templates and set them to a clearly visible location, such as the Reports section. Please see Appendices D and E for draft templates that include every piece of required information.

In addition to these statutory documents, employers have to fill out several statements for the Finnish Tax Administration and insurance companies. It would benefit the user, if the software could either e-file these statements or provide custom reports presenting the required data.

The most frequently filled out statement is the Self-assessed Tax Return. The Finnish Tax Administration's other statement form is the Annual Information Return – Employer Payroll Report. Instructions of filling out the form are available here for self-assessed taxes and here for the annual information and data records here. Insurance companies are interested in the accumulated amount of wages from a calendar year. The Unemployment Insurance Fund required announcing wages for employees separated from wages for partial owners. Therefore, it would facilitate reporting if the employee data included a checkbox about to which group an employee belongs to. In addition, insurance companies require stating the following information per occupational groups: gross incomes, amount of working hours and if a group leisure insurance is applied. Hence, it would be recommendable that the software enabled adding employees to custom occupational groups.

The TSD settings

Currently, the TSD settings are in Estonian and hence confusing for a non-Estonian-speaking user in their current state. One option would be to create a Finnish settings list that would follow the fields of the Annual Employer Return of the Finnish Tax Administration. However, Katre's technical interface descriptions will be published in summer 2017. Therefore, it would probably be better to wait and see if those descriptions include something similar to the Estonian TSD settings.

Optional measures

More automated computation

To reduce the risk of human error, the calculation process could rely more on automation. For instance the following measures, together with earlier suggestions, would reduce the administrational burden:

1) **Categorizing taxes by class**
   When creating new salary titles or compensations and fringe benefits, instead of selecting individual taxes to be applied, applied tax classes would be selected. As follows, the software would be more compatible with Finnish payroll taxation and updating taxes would be less time-consuming. Classes would be created and edited in Salary settings and selected in Taxes on salaries. Tax class suggestions are included in Appendix B.

2) **Period of validity on taxes**
   To facilitate calculating. The default period is a calendar year, except for tax cards with which the default period of validity is 1.2.-1.1.

3) **Default entries for wages and compensations and the like**
   Currently, it's possible to set default entry accounts only for taxes in the Salary settings. Please see Appendix A for entry suggestions.

4) **Period of validity on fringe benefits and allowances**
The Finnish Tax Administration announces rateable values for fringe benefits and allowances annually for a calendar year. Hence, setting the period of validity for these would benefit the user, as obsolete rates couldn't be used by mistake.

5) **Classifying wages by class**
Classification would facilitate creating calculation rules, more in Calculation rules section. For class suggestions, please see Appendix A. These classes could replace the current 'salary period' setting.

6) **Calculation rules for compensations**
Thus compensations and the like could be calculated automatically. More on the topic below.

7) **E-filing return on self-assessed taxes**
Employers are required to report wages subject to withholding, the amount of tax withheld and the amount of employer's health insurance contribution in connection with VAT, as they all are self-assessed taxes. For this reason, a support for e-filing the return would be ideal. For the data format specification instructions by the Finnish Tax Administration, please see the previous chapter.

Compensations with factors

Finland has a strict legislation on working hours and names several minimum compensations that are, in principle, percentages of hourly pay either set directly in the contract or can be calculated, please see Calculation rules. These contributions are:

Compensation	Calculation rule	Amount
Additional work (lisätyö), the difference between the agreed working hours and statutory working hours of 8	% of hourly pay	at minimum, the same as per agreed working hour
Overtime compensation, the first 2 hours exceeding the daily working time of 8 hours (ylityö +50%)	% of hourly pay	+50 % per hour
Overtime compensation, the extra working hours exceeding the first two (ylityö +100%)	% of hourly pay	+100% per hour
Sunday work allowance (sunnuntailisä +100%)	% of hourly pay	+100% per hour

For instance, an employee is paid 15.00 €/h and it's agreed his regular work day is 6.5 hours. One Monday, he works for a solid 10.5 hours. His day's pay (gross) is calculated as follows:

a) manually

Work hours and type		Calculation	Amount (total)
6.5	Regular hours	6.5 * hourly pay	6.5 * 15.00 € = 97.50 €
1.5	Additional work	(8 – 6.5) * hourly pay	1.5 * 15.00 € = 22.50 €
2.0	Overtime, +50 %	2 * (0.5 * hourly pay)	2 * (0.5 * 15.00 €) = 15.00 €
0.5	Overtime, +100 %	0.5 * (1 * hourly pay)	0.5 * 15.00 = 7.50 €
10.5			142.50 €

b) digitally

Type	Factor	Unit	À	Total
hourly pay		6.5	15.00	97.50
additional work		1.5	15.00	22.50
overtime compensation	50 %	2	7.50	15.00
overtime compensation	100 %	0.5	15.00	7.50
				142.50

If there's going to be a module to track working hours, the module should support the calculation process explained above. In Finland, the regular statutory working hours total 8, hence replacing the current default setting of 7 hours in the Salary settings is recommendable.

In addition, other compensations are possible, either based on applied collective bargaining agreements or company policies. Since they're mostly calculated as percentages of hourly pay, having a calculation rule for the hourly pay would be essential for this to work automatically. Please see Appendix A for commonly applied compensations.

Digital payroll computation process with units, in brief

Creating a new salary payment executed in its simplest form, basically the same as now:

1) Created in connection with adding a new employee, the salary details would include the default values (à) for the most common wages types for that employee. This practice would be applied also to fringe benefits.

2) When creating a new wages payment for an employee, the user would set the number of units for wages, compensations and allowances and add rows if necessary. The software would fill the currency values (à, total) routinely.

3) Taxes and the like would be calculated automatically, based on calculation rules and other settings.

4) Software would suggest the accounting entries based on the settings and, after the user's possible modifications and the final acceptation, would generate them.

Suggestions on accounting entries and tax settings are presented in Appendices A and B.

Other

Other suggestions for possible developments:

1) **Notifications**
   SimplBooks could give a heads-up if information is going to, or already has, expired. The periods of validity would be the following: Tax card Feb 1 – Jan 31 and Jan 1 – Dec 31 Employee's and employer's contributions, rateable values of fringe benefits and tax-exempt allowances.

2) **Employees' expense claims**
   Such as travelling costs. This could be a separate module that would exploit the option to have multiple users per company and thus allow the handling process (accepting etc.)

3) **Advanced holiday calculation**
   Finland has quite a complex way to calculate accrued holidays, hence if a software could calculate them for the user, it would give a significant benefit. For more information, please refer, for instance, Guide to Working in Finland: Annual holiday.

Appendices

Wages and compensations			Subject to... (x = yes)						Entries	
type / name		class	withholding	pension insurance contribution	accident insurance contribution	life insurance contribution	health insurance contribution	unemployment insurance contribution	debit	credit
Kuukausipalkka	Salary	Monies	x	x	x	x	x	x	5012	2946
Tuntipalkka	Hourly wage	Monies	x	x	x	x	x	x	5012	2946
Päiväpalkka	Daily pay	Monies	x	x	x	x	x	x	5012	2946
Henkilökohtainen lisä	Personal bonus	Monies	x	x	x	x	x	x	5212	2946
Olosuhdelisä	Working condition compensation	Monies	x	x	x	x	x	x	5212	2946
Urakkapalkka	Piece rate	Monies	x	x	x	x	x	x	5012	2946
Tuotantopalkkio	Production wage	Monies	x	x	x	x	x	x	5012	2946
Hälytyslisä	Emergency work compensation	Monies	x	x	x	x	x	x	5115	2946
Lisätyö	Additional work	Monies	x	x	x	x	x	x	5115	2946
Ylityö +50%	Overtime +50%	Monies	x	x	x	x	x	x	5115	2946
Ylityö +100%	Overtime +100%	Monies	x	x	x	x	x	x	5115	2946
Iltavuorolisä	Evening work compensation	Monies	x	x	x	x	x	x	5115	2946
Yötyölisä	Night work compensation	Monies	x	x	x	x	x	x	5115	2946
Lauantailisä	Saturday work compensation	Monies	x	x	x	x	x	x	5115	2946
Sunnuntailisä (pyhälisä)	Sunday work compensation	Monies	x	x	x	x	x	x	5115	2946
Luottamusmiespalkkio (työsuhteessa)	Elected official reward (employee)	Monies	x	x	x	x	x	x	5212	2946
Luentopalkkio (työsuhteessa)	Lecture reward (employee)	Monies	x	x	x	x	x	x	5212	2946
Kokouspalkkio (työsuhteessa)	Meeting reward (employee)	Monies	x	x	x	x	x	x	5212	2946
Lausuntopalkkio (työsuhteessa)	Statement allowance (employee)	Monies	x	x	x	x	x	x	5212	2946
Autoetu	Car benefit	Fringe benefit	x	x	x	x	x	x	5414	5981
Asuntoetu	Housing benefit	Fringe benefit	x	x	x	x	x	x	5412	5981
Lounassetelit	Lunch vouchers	Fringe benefit	x	x	x	x	x	x	7022	7025
Ravintoetu	Meal benefit	Fringe benefit	x	x	x	x	x	x	5413	5981
Matkapuhelinetu	Mobile phone benefit	Fringe benefit	x	x	x	x	x	x	5415	5981

Wages and compensations			Subject to... (x = yes)						Entries	
type / name		class	withholding	pension insurance contribution	accident insurance contribution	life insurance contribution	health insurance contribution	unemployment insurance contribution	debit	credit
Kilometrikorvaus (verovapaa)	Kilometer allowance (tax-exempt)	Allowance							7819	2946
Puolipäiväraha, kotimaa (verovapaa)	Daily allowance (half day), homeland, tax-exempt	Allowance							7822	2946
Kokopäiväraha, kotimaa (verovapaa)	Daily allowance, homeland, tax-exempt	Allowance							7822	2946
Puolipäiväraha, ulkomaat (verovapaa)	Daily allowance (half day), abroad, tax-exempt	Allowance							7823	2946
Kokopäiväraha, ulkomaat (verovapaa)	Daily allowance, abroad, tax-exempt	Allowance							7823	2946
Kilometrikorvaus (verotettava)	Kilometer allowance (taxable)	Allowance	x	x	x	x	x	x	5115	2946
Puolipäiväraha, kotimaa (verotettava)	Daily allowance (half day), homeland (taxable)	Allowance	x	x	x	x	x	x	5114	2946
Kokopäiväraha, kotimaa (verotettava)	Daily allowance, homeland (taxable)	Allowance	x	x	x	x	x	x	5114	2946
Puolipäiväraha, ulkomaat (verotettava)	Daily allowance (half day), abroad (taxable)	Allowance	x	x	x	x	x	x	5114	2946
Kokopäiväraha, ulkomaat (verotettava)	Daily allowance, abroad (taxable)	Allowance	x	x	x	x	x	x	5114	2946
Ateriakorvaus (verovapaa)	Meal allowance (tax-exempt)	Allowance							7825	2946
Ateriakorvaus (verotettava)	Meal allowance (taxable)	Allowance	x	x	x	x	x	x	7825	2946
Vuosilomapalkka	Annual holiday pay	Wages from non-working time	x	x	x	x	x	x	5312	2946
Lomaraha	Holiday bonus	Wages from non-working time	x	x	x	x	x	x	5312	2946
Irtisanomisajan palkka	Notice salary	Wages from non-working time	x	x	x	x	x	x	5115	2946

Appendix B. Reductions by type

Contributions and the like			Entries		Applied to...	
type / name		class	debit	credit	employer	employee
Ennakonpidätys	Tax withheld	Payroll tax		2932		x
Työeläkevakuutusmaksu	Pension contribution (employer)	Employee pension (TyEL)	6122	2938	x	
Työntekijän työeläkevakuutusmaksu	Pension contribution (employee)	Employee pension (TyEL)	2938	6123		x
Työttömyysvakuutusmaksu	Unemployment insurance contribution (employee)	Unemployment insurance	6413	2972		x
Työntekijän työttömyysvakuutusmaksu	Unemployment insurance contribution (employer)	Unemployment insurance	2972	6414	x	
Tapaturmavakuutusmaksu	Accident insurance contribution	Other insurances	6412	2972	x	
Ryhmähenkivakuutusmaksu	Life insurance contribution	Other insurances	6415	2972	x	
Sairausvakuutusmaksu	Health insurance contribution	Other insurances	6312	2933	x	
Ulosmittaus	Distraint	Miscellanious		2939		x
Ammattiyhdistysmaksu	Trade union membership fee	Miscellanious		2934		x

Appendix C. Payslip template

[employer's name]

Palkkalaskelma (Payslip)
[date of payment]

Nimi	[employee's name]
Henkilötunnus	[person ID]

Työsuhde (Employmentship)

Tehtävänimike	[job title]
Työsuhde alkanut	[start date of employment]
Työsuhde päättyy	[end date of employment]

Ennakonpidätyksen määräytyminen (Withholding basis)

Verokorttityyppi	[type of tax card]
Laskentatapa	[if main occupation: A/B]
Tuloraja	[income threshold]
Perusprosentti	[base rate]
Lisäprosentti	[added rate]

Kumulatiivinen ennakonpidätyksenalainen	[cumulative subject to withholding]
Kumulatiivinen ennakonpidätys	[cumulative tax withheld]

[pay period]	**Kerroin**	**Yksikkö**	**Arvo**	**Yhteensä**
[wage type]	[factor]	[unit]	[à]	[total]
[wage type]	[factor]	[unit]	[à]	[total]
[fringe benefit]	[factor]	[unit]	[à]	[total]
Ennakonpidätyksenalaiset tulot				**[subject to withholding]**
[tax type]	[factor]	[unit]	[à]	[total]
Suoritettu ennakonpidätys				**[tax withheld in total]**
[employee's contribution]	[factor]	[unit]	[à]	[total]
[employee's contribution]	[factor]	[unit]	[à]	[total]
Vähennykset				**[reductions]**
[allowance]	[factor]	[unit]	[à]	[total]
Verovapaat korvaukset				**[tax-exempt allowances]**
Maksetaan				**[net income]**

[employer's name] **Palkkakortti [Payroll card]** **Vuosi:** [Year]

Name [employee's name]
Osoite [employee's address]
Henkilötunn [personal ID]
Ammatti [job title]
Työsuhde alkanut [start date of employment]
Työsuhteen loppumispv [end date of employment]

Perusprosentti [base rate]
Lisäprosentti [added rate]
Vuosituloraja [annual income threshold]
Valittu ennakonpidätystapa [selected withholding option i.e. A or B]

Palkkakausi	Kuukausi-/tuntipalkka	Lisät	Rahapalkka yhteensä	Luontoisedut	Vähennykset ennen veroja	Ennakonpidätyksen alainen palkka	Vähennykset [reductions]					Kustannusten korvaukset	Nettopalkka
							ennakonpidätys	TyEL	Työttömyysvakuutusmaksu	Ay-maksu	Muu		
[pay period with dates]	[salary, hourly pays etc.]	[compensations for overtime etc.]	[monies, total]	[fringe benefits]	[amount reducted before withholding]	[income subject to withholding, total]	[tax withheld]	[employee's pension contrib.]	[employee's unemployment contrib.]	[trade union membership fee]	[other]	[cost compensations]	[net income]
[pay period with dates]	[salary, hourly pays etc.]	[compensations for overtime etc.]	[monies, total]	[fringe benefits]	[amount reducted before withholding]	[income subject to withholding, total]	[tax withheld]	[employee's pension contrib.]	[employee's unemployment contrib.]	[trade union membership fee]	[other]	[cost compensations]	[net income]
	[total]	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**

[employer's name] **Palkkalista [payroll sheet]** **Palkkakausi** [pay period with dates]

Palkkakausi	Palkansaaja	Rahapalkka yhteensä	Vakuutuspalkka	Luontoisedut	Vähennykset ennen ennakonpidätystä	Ennakonpidätyksen alainen palkka	Vähennykset [reductions]				Kustannusten korvaukset	Nettopalkka	Maksettu
							ennakonpidätys	TyEL	Työttömyysvakuutusmaksu	Ay-maksu			
[pay period with dates]	[employee]	[monies, total]	[insurance wages]	[fringe benefits]	[amount reducted before withholding]	[income subject to withholding, total]	[tax withheld]	[employee's pension contrib.]	[employee's unemployment contrib.]	[trade union membership fee]	[cost compensations]	[wages paid]	[date of payment]
[pay period with dates]	[employee]	[monies, total]	[insurance wages]	[fringe benefits]	[amount reducted before withholding]	[income subject to withholding, total]	[tax withheld]	[employee's pension contrib.]	[employee's unemployment contrib.]	[trade union membership fee]	[cost compensations]	[wages paid]	[date of payment]
		[total]	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**	**[total]**