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Management Accounting in Early-Stage Growth Companies - A comparative case study of 5 Finnish early-stage growth companies

Accounting

Master's thesis

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Abstract

The purpose of this study was to investigate how early-stage growth companies take advantage of management accounting and which factors influence its development on a general level as well as in terms of specific management accounting segments. The study contributes in particular to management accounting literature but also to literature on new venture development.

The study was conducted as a comparative case study of five Finnish early-stage growth companies. Four of the case companies were chosen from the software industry in order to gain insight into how management accounting develops in companies from similar industries. The final case company was chosen from the nanotechnology industry, which allowed investigation also across industry borders.

The theoretical part of the study mainly consists of international academic journals and the empirical material was mainly gathered using theme interviews with the managers of the case companies, but also other sources were used. The empirical material was constantly reflected against existing theory and after all the material had been gathered, it was organized into company and management accounting segment specific categories and contrasted with existing theory.

The results of the study are revealing as to which management accounting systems are used and which factors affect the development of management accounting in early-stage companies both at the general level but also in terms of specific systems. Budgeting was found to be particularly widely adopted and important. The most important roles that management accounting has were informing where the company is and where it is going, cash management, coordinating operations and planning for growth.

Whereas support was found concerning the importance of many factors for management accounting development, particularly industry and the characteristics of management were found to have an effect. Industry and business model level characteristics were found to have an especially strong impact on the initial accounting needs of a business, that is, accounting needs that exist even when a company is very small. As the company grows control aspects become more important. Management characteristics on the other hand were especially important in determining how the management accounting systems develop, or how these management accounting needs are executed upon.

Keywords Management accounting, growth, growth company, MAS, management control, early-stage company

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Tiivistelmä

Tämän tutkimuksen tavoitteena oli selvittää, miten alkuvaiheen kasvuyritykset hyödyntävät johdon laskentatoimea ja mitkä tekijät vaikuttavat johdon laskentatoimen kehitykseen yleisellä tasolla sekä tiettyihin johdon laskentatoimen segmentteihin. Tutkimus myötävaikuttaa erityisesti johdon laskentatoimen kirjallisuuteen, mutta myös alkuvaiheen yritysten kehitykseen liittyvään kirjallisuuteen.

Tutkimus toteutettiin viiden suomalaisen alkuvaiheen yrityksen case-tutkimuksena. Yrityksistä neljä oli ohjelmistoalalta, joka mahdollisti vertailun samankaltaisilla toimialoilla olevien yritysten kesken. Viides yritys oli puolestaan nanoteknologia-alalta, joka puolestaan mahdollisti vertailun eri toimialojen välillä.

Tutkimuksen teoreettinen osuus koostuu erityisesti kansainvälisistä akateemisista tieteellisistä julkaisuista. Tutkimuksen empiirinen aineisto puolestaan kerättiin pääosin teemahaastatteluin case-yritysten johdon kanssa, mutta myös muuta aineistoa hyödynnettiin. Kerättyä aineistoa verrattiin jatkuvasti aikaisempaan kirjallisuuteen tutkimuksen aikana. Kun kaikki aineisto oli kerätty, se koostettiin yritys- ja laskentatoimen osa-aluekohtaisiksi kokonaisuuksiksi. Tämän jälkeen aineistoa vertailtiin lisää aikaisempaan kirjallisuuteen etsien yhtymäkohtia ja poikkeuksia.

Tutkimuksen tulokset tukevat johdon laskentatoimen merkitystä alkuvaiheen kasvuyrityksille ja kasvattivat ymmärrystä siitä, mitkä tekijät vaikuttavat johdon laskentatoimen kehitykseen yleisellä tasolla, mutta myös koskien tiettyjä johdon laskentatoimen menetelmiä. Erityisesti budjetoinnin havaittiin olevan tärkeää alkuvaiheen yrityksissä. Tärkeimmät johdon laskentatoimen roolit, jotka tutkimuksessa havaittiin, olivat yrityksen informointi siitä, missä se on ja mihin se on menossa, kassanhallinta, toiminnan koordinointi ja kasvun suunnittelu.

Tutkimus löysi tukea useiden tekijöiden merkitykselle johdon laskentatoimen kehitykseen liittyen, mutta erityisesti toimialan ja johdon ominaispiirteet havaittiin olevan tärkeitä. Toimialalla ja liiketoimintamallilla havaittiin olevan vahva vaikutus yrityksen perustavanlaatuisiin johdon laskentatoimen tarpeisiin, eli toisin sanoen niihin tarpeisiin, jotka yrityksellä on jo silloin kun se on erityisen pieni. Johdon ominaispiirteet puolestaan vaikuttivat erityisen vahvasti siihen, miten nämä tarpeet ratkaistiin ja miten johdon laskentatoimen menetelmät kehittyivät.

Avainsanat Johdon laskentatoimi, kasvu, kasvuyritys, toiminnanohjaus, alkuvaiheen yritys

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1. Introduction

1.1. Motivation

Management accounting has been studied extensively for decades; however, the majority of management accounting research has concentrated on large established companies rather than smaller entrepreneurial companies (Davila & Foster, 2007, 2009; Sandino, 2007; Cardinal et al., 2004). According to Chapman et al. (2009), it is important to study the functioning and design of management accounting in particular contexts. Accounting has traditionally been seen as something that makes a company bureaucratic and stifles innovation and so it has been considered irrelevant or even harmful in a dynamic growth context (Adizes, 1990; Davila & Foster, 2009). Evidence from recent literature however hints that the opposite is true, that these systems are essential for these companies to achieve their growth potential (Davila & Foster, 2009). Only recently has management accounting researchers started to address the origins and role of management accounting in early-stage companies (Davila & Foster, 2009). Davila and Oyon (2009) suggest that many promising new companies fail at the growth stage precisely when managerial accounting becomes important for the success of the company. Existing literature on management accounting and control in early stage companies has so far only provided rather superficial results, for instance by researching if companies have adopted certain systems or not without giving much evidence on how the systems develop and why they are used the way they are. Davila and Foster (2007) suggest that future research could study the variation between depth and quality of certain categories of systems. The subject is however still very under researched and thus it provides a lucrative research space.

Acs & Audretsch (2005) call for more cross-disciplinary research across entrepreneurship and other disciples. They point out that a lot of the best research in entrepreneurship is done in other disciplinary journals, however, many of the research questions discussed in these disciples are marginal for the disciple but central for entrepreneurship. Therefore creating stronger links between these disciples would greatly strenghten the field of entrepreneurship. According to Gilbert et al. (2006), in the past new venture growth literature has concentrated on why new ventures grow instead of addressing the questions of how and where they grow. Studying management accounting in early-stage companies may provide answers to the question of how new ventures grow.

Therefore, this study links two literatures. The main contribution of the study will be to the management accounting literature and more specifically to literature on management accounting in early-stage growth companies. Secondly, this study will contribute to the field of entrepreneurship, or more precicely to new venture growth literature, which is an integral part of entrepreneurship literature. However, new venture growth literature mainly provides the context for the study.

There has been an increased interest in entrepreneurship in recent years and it is regarded as an engine of economic and social development all over the world (Acs & Audretsch, 2005). One possible reason for this is that the time from start-up to maturity of companies has reduced in recent years, with companies such as Google and Facebook becoming key industry players in under a decade (Davila & Foster, 2009).

Small companies are a major force in economies around the world. According to Mitchell and Reid (2009) small companies make up over 90% of all companies in the U.K. and provide almost two thirds of national employment. According to a report by the Finish Ministry of Employment and the Economy, 96% of new jobs are created in companies with less than 100 employees (Koponen & Räisänen, 2013).The importance of small growing companies has also been noticed by various governments around the world. According to Davila and Oyon (2009), governments are trying to create Silicon Valley's all over the world because they have acknowledged the importance of entrepreneurship and innovation for the success of their countries.

1.2. Statement of research problem

This paper studies what the role of management accounting is in early-stage companies, what management accounting systems they use and what factors influence the development of management accounting both generally and in terms of specific categories of systems. Therefore the research questions that this study attempts to answer are the following:

1) What is the role of management accounting in early-stage growth companies?
2) Which management accounting systems (MAS) do early-stage growth companies use?
3) How does management accounting develop and what factors influence its development?

1.3. Methodology

This study was conducted as a qualitative comparative case study of five early-stage growth companies. The study attempts to describe how management accounting is used in the case companies and is therefore descriptive as described by Scapens (1990). However, it is also exploratory. Firstly because we attempt to explain why management accounting is used the way it is and secondly because of the novelty of the research subject.

The empirical material was mainly gathered using theme interviews with the managers of the companies, but also case company internal material and public sources were used. The interviewees include all the CEOs of the case companies and if a case company had a financial manager or a CFO present then also he or she was interviewed. A total of 8 interviews were conducted with 9 interviewees. One of the interviews included two participants from the case company.

1.4. Relevant concepts

Many of the concepts discussed in this paper are not self-explanatory and often do not have an unambiguous definition. This section introduces the most important concepts as they are understood in this paper.

Management accounting

Management accounting is about facilitating economic decision making and organizational planning and control (Chapman et al., 2007). According to Bhimani et al. (2008) management accounting is concerned with measuring and reporting financial and non-financial information primarily for the use of management.

Management control system (MCS)

Management control systems in this study are defined after Simmons (1995, 5) as "formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities". Management also uses these systems to gather information for their own decision making. MCS are not exactly what this study researches however it is necessary to also take other control systems into account in order to understand management accounting systems (MAS) in their context.

Management accounting systems (MAS)

Management accounting systems (MAS) are understood as a subcategory of management control systems (MCS).

Early-Stage Growth Company

In this study an early-stage growth company is a company that has grown rapidly in recent years, is independent, has less than 200 employees and is around 10 years old at maximum.

1.5. Structure

The structure of this study is as follows. The paper begins by discussing relevant theory first from the perspective of new venture growth literature (Section 2) and then from a management accounting viewpoint (Section 3). After the theoretical framework has been introduced, the methodological decisions used in this study will be presented and justified (Section 4). Then the paper proceeds to the empirical section where the empirical material gathered for the study is presented (Section 5). Finally, empirical data is analyzed against theory (Section 6) and conclusion and results are provided along with implications for managers and policy makers and suggestions for further research (Section 7).

2. Entrepreneurship and growth

This study is primarily interested in how early-stage growth companies use management accounting and how management accounting develops within that context. In order to understand this context it is necessary to understand growth and growth theory. Understanding the context where these companies operate makes it possible to better interpret the role and development of management accounting. Therefore this paper starts by discussing growth theory.

Entrepreneurship is as old as human history. However, as an academic field it is relatively young (Cooper, 2005). According to Acs and Audretsch (2005), the role of entrepreneurship has changed considerably over the last half a century. After World War II the focus of economic development shifted to large established companies as the driver of development. The situation has however changed in recent years and there has been renewed interest in the role of entrepreneurship.

There is no unambiguous definition for the term entrepreneurship (Koppl & Minniti, 2005). Entrepreneurship is often associated with innovation and identifying and taking advantage of opportunities. A major part of entrepreneurship literature concentrates on the traits and abilities of the entrepreneur and how these individuals find and take advantage of opportunities. Other viewpoints of entrepreneurship are more concerned with the creation of organizations. For example, Gartner and Carter (2005) see entrepreneurship as an organizational phenomenon, that is, as a process of organization where the individuals involved are crucial for the process. They see the creation of an organization as the principal outcome of entrepreneurial behaviour. In this study entrepreneurship is understood as defined by Davila and Foster (2009):

"Entrepreneurship is a process of growth from the founding of the company until it reaches the behavior of a large company with its structures, processes and systems".

In this definition growth is an essential characteristic of entrepreneurship. Davila et al. (2009) also offer a definition of entrepreneurship and innovation that is extremely revealing of the special characteristics of that context.

"Entrepreneurship and innovation are about taking advantage of exceptions; experimenting, failing and succeeding; uncertainty and volatility; inefficiencies; adapting to unforeseen opportunities; and foremost creativity. Yet control is a fundamental aspect in this environment."

This quote highlights many of the characteristics often associated with entrepreneurship, innovation and new ventures, including the often chaotic nature of the environment they do operate in. Control of the organization is usually very informal, there are high levels of uncertainty and often the only guide the organization has is the vision of the entrepreneur and often even that vision is questioned. The definition also highlights one characteristics that has not traditionally been associated with entrepreneurship and innovation. Davila et. al (2009) emphasize that control is essential in an environment such as this. This is one of the central ideas and motivators behind this study.

2.1. Introduction to growth theory

Firm growth is a central element of entrepreneurship research (McKelvie & Wiklund, 2010). There has not been much development in the field of growth research despite the large amount of research conducted on the topic (Leitch et al., 2010; McKelvie & Wiklund, 2010; Dobbs & Hamilton, 2007; Coad, 2007). Traditionally, a lot of firm growth research has concentrated on trying to explain differences in the amount of growth with a quantitative research methodology. Recent literature has however called for focusing on growth as a process instead of attempting to explain differences in growth rates (Leitch et al., 2010; McKelvie & Wiklund, 2010; Gilbert et al., 2006).

McKelvie and Wiklund (2010) divide growth research into three streams in their literature review. The first stream, *Growth as an Outcome*, includes literature where researchers have attempted to explain varying growth rates with a variety of individual, firm and industry level characteristics by taking advantage of a quantitative methodology. In this stream growth is seen as an outcome of certain variables and is by far the largest stream of growth literature to date. The studies have offered mixed results. Gilbert et al. (2006) however conclude in their extensive literature review of new venture growth that the most important predictors for the growth of new ventures are the characteristics of the entrepreneur, resources, strategy, industry, and organizational structure and systems. These factors will be discussed in a bit more detail later in this section.

The second category in McKelvie and Wiklund's (2010) study is called the *Outcome of Growth* stream of literature. Research in this stream attempts to study how growth affects growing organizations. Therefore growth is seen as the cause of certain phenomena instead of as a result of something. Particular attention is paid to the challenges that management faces in managing a growing organization. Research in this stream often takes advantage of various life-cycle or stage-of-development models where companies grow through a set of predictable stages of development. Although there are some differences between life-cycle and stages of development models, the terms are often used interchangeably (McKelvie & Wiklund, 2010) and thus for the purposes of this paper it is sufficient to discuss them as a group.

Life-cycle models have faced a lot of critisism for their lack of theoretical foundations and conceptualization (McKelvie & Wiklund, 2010). Most models of this kind are based on experience instead of empirical data. The models also often suggests that all firms have a similar growth trajectory, the evidence here is however lacking (Brush et al., 2009). Perhaps the most popular and well known life-cycle model is the model by Miller and Friesen (1984), where companies grow through five stages; birth, growth, maturity, revival and decline with each stage having its own special characteristics. Kazanjian (1988) however argues that a major advantage of life-cycle models is that they explain how growth happens and what effects growth has on the organization.

The first life-cycle model introduced was most likely a model by Greiner (1972, 1998), where companies grow in stages of evolution and revolution. In the model companies go from stages of prolonged growth that end up in a crisis caused by the insufficiency of old management practices. The old management practices no longer work because the company has grown too big for them to handle effectively. Hence companies have to adopt new management practices that are suitable for the larger organization. Those companies that succeed in installing new management practices that are appropriate for the new conditions may survive to the next evolutionary period.

Kazinjian (1988) describes in his case study how two companies evolved through periods of crises. These crises were located in functional areas of the companies. He describes an engineering crisis where product development struggled to make their product work as promised, a marketing crisis caused by insufficient selling capacity and a manufacturing crisis caused by lack of manufacturing capacity. Most of the crises were solved by hiring new employees and formalizing positions and systems. According to Flamholtz (1995) and Flamholtz and Hua (2002) organizations suffer organizational “growing pains” if the internal operational and management systems cannot cope with the size of firm.

At the very early-stages of a company’s development formal controls are not needed because small groups of people can coordinate and control their efforts with informal management practices and norms (Davila et al., 2009). This form of control is called “clan control” (Ouchi, 1979).

Clan control is appropriate when a company is still small and informal networks are sufficient to control the company. However, as companies grow and the number of employees increases it becomes harder and harder to sustain this informal way of managing the organization and thus a need to formalize management practices arises. There is no one point where informal practices become insufficient to control an organization because it is determined by a number of firm, individual and industry level characteristics. For instance, some managers are simply better at handling large amounts of information and can therefore keep the company under control informally for longer periods of time. Another example is the fact that companies can grow in a variety of ways. For example outsourcing certain activities instead of handling them internally will have very different consequences for the management of the company.

The third and last stream of literature outlined by McKelvie and Wiklund (2010) is the *Growth as a Process* stream of literature. Whereas the two previous literature streams consider growth as an outcome of certain variables or as a given, this stream is concerned with the actual growth process, or in other words, how companies grow and what happens in companies during the growth process. Interestingly this stream is the smallest one of the three, even though it includes the most well known theory of growth. The theory of the growth of the firm by Edith Penrose (1959) is still the most all-inclusive, adequate and popular theory of company growth (McKelvie & Wiklund, 2010).

The theory of the growth of the firm is based on her case study on the Hercules Powder Corporation (1960), which was originally meant to be included in the book but was in the end released separately to keep the length of the book shorter (Penrose, 1960). Unlike the majority of research on growth, her theory is concerned with the actual growth process and formulated using a qualitative methodology. She discusses different ways companies can grow (acquisition and organic), barriers to growth and other aspects of the internal workings of growth. Although the theory itself was developed largely based on a large manufacturing firm a lot of the concepts will be applicable to other companies as well.

The key idea of Penrose's theory is that companies are administrative entities that consist of resources that are potentially valuable (McKelvie & Wiklund, 2010). The main difference between economic activities within the firm in contrast to those outside the firm is that inside the firm the activities are carried out within an administrative organization (Penrose, 1959, 13). However, firms are not simply administrative entities but also a collection of productive resources the use of which is determined by administrative decision (Penrose, 1959, 21). The main function of managers in companies is to decide what activities to carry out and what resources to deploy.

Penrose identifies two types of capabilities; managerial and entrepreneurial capabilities (McKelvie & Wiklund, 2010). Entrepreneurial capabilities refer to the abilities of managers in seeing business opportunities and ways of taking advantage of them. Managerial capabilities on the other hand refer to the ability of managers in executing on those opportunities. The managerial services that a firm has at its disposal for growing are partly constrained by the need to run the company at its current level of operations (Kor & Mahoney, 2000).

In Penrose's theory the focus is on the internal forces of the firm and especially on the resources and the services that those resources can render. The resources of a firm consist of tangible resources such as plant, natural resources, raw materials, equipment and so forth and also of human resources of different kinds; for instance administrative, technical, legal, financial, skilled or unskilled staff. Also some employees are employed for short periods and some on a long-term basis, so employees can represent a major investment for a firm. However, Penrose does not hold the resources as critical per se, but rather it is the services that a resource or a collection of resources can render. A single resource can be used to provide multiple different types of services, whereas a service already implies a certain activity. Penrose defines the firm as follows:

"The business firm, as we have defined it, is both an administrative organization and a collection of productive resources; its general purpose is to organize the use of its 'own' resources together with other resources acquired outside the firm for the production and sale of goods and services at a profit; its physical resources yield services essential for the execution of the plans of its personnel, whose activities are bound together by the administrative framework within which they are carried on". (Penrose, 1959, 28)

The ability of a firm to grow depends on its productive opportunity set, which in part depends on the multitude of ways it can use its resources. The assumption is that the resources of the firm are never used to their full potential and therefore the primary way of growth is to find novel ways of combining existing resources of the firm. Secondly, the growth of a firm depends on the entrepreneurial capabilities of management, that is, how much of the productive opportunity or growth potential the management of the company is able to perceive and act upon.

McKelvie and Wiklund (2010) argue that growth research has prematurely tried to answer the question of how much a company grows before sufficiently answering the question of how a company grows. They suggest that growth research should focus its attention on mode of growth. Companies can grow organically, through acquisition or by using a mixed strategy such as licencing or franchising. Stuidying management accounting in early-stage growth company settings may provide futher insight in to “how” firms grow.

2.2. Indicators of growth

Growth is not an unambiguous term nor is it a clear phenomenon. Edith Penrose (1959) defines growth as follows:

“The term ‘growth’ is used in ordinary discourse with two different connotations. It sometimes denotes merely increase in amount; for example, when one speaks of ‘growth’ in output, export, and sales. At other times, however, it is used in its primary meaning implying an increase in size or improvement in quality as a result of a process of development, akin to natural biological processes in which an interacting series of internal changes leads to increases in size accompanied by changes in the characteristics of the growing object” (Penrose, 1959, 1)

According to Gilbert et al. (2006), growth has different implications for established companies and new ventures. First, new ventures are burdened by their newness and small size, where lack of growth may reduce their chances of survival. Whereas new ventures are about achieving viability, established companies on the other hand are about sustaining viability. Additionally, previous literature has found that growth rates are a lot more volatile for new ventures compared with established companies. There are also differences in how large and small businesses grow. Small companies tend to grow organically whereas large companies often grow through acquisitions (Davidsson et al, 2005)

There are a myriad of variables that have been used as an indicator of growth (Delmar et al, 2003) and it is not self-explanatory which indicator should be used. For instance, Increased performance in one measure might hinder performance in another one (Murphy et al. 1996). There are however three indicators that are most often used in growth research; sales growth, employment growth (Chandler et al., 2009; Gilbert et al., 2006) and market share growth (Gilbert et al., 2006). Other indicators that are sometimes used include the amount of assets and profitability. Each of these growth measures however reflects different aspects of firm growth. Growth in sales is the most commonly used and most universally applicable indicator of growth (Davidsson et al., 2005; Chandler et al., 2009). However, there is no single measure of growth that is not open to serious conceptual objections (Penrose, 1959: 199).

Growth measures are not interchangeable indicators of new venture growth. Sales growth that is accompanied with employment growth will have very different implications for management than mere sales growth. In some cases for instance companies can support sales growth by acquiring more advanced technology and systems instead of employing more personnel. Nevertheless most studies treat this as a methodological technicality (Chandler et al., 2009) even though it has been found to affect the results of the study (Shepherd & Wiklund, 2009).

Sales growth indicates to what extent customers are accepting the products of the company. When a company is growing in sales the company receives resources which it can re-invest in to its business. However, not all companies even have a product or sales for many years. Companies in the biotechnology industry for instance may spend years and years in development before any profits/revenue are realized. These companies may however still have considerable amounts of employees. Also market share growth indicates that the company has gained acceptance among potential customers. It is however an indicator that is external to the firm and is also dependent on a number of other variables. For instance a company can gain market share due to a competitor's problems. Similarly, profitability or sales growth may not mean that the market share or sales of the company have increased.

Davidsson et al. (2009) use resource-based reasoning to study the relationship between sales growth and profitability growth and find that profitable low growth firms are more likely to achieve high growth and high profitability in future periods. They also have a smaller chance of ending up with poor performance on both indicators in the future. This is an interesting insight, since in early-stage companies sales growth is often been seen as the main driver of success instead of profitability. Davidsson et al. (2009) argue based on their research that before firms go for significant growth they should first develop some kind of competitive advantage based on identifying and successfully exploiting the uniqueness of their resource bundles. In other words, companies should first confirm their market and how to reach that market before they start scaling their operations. It is possible for a firm to grow to a substantial size without ever making any revenue given that they have sufficient financing to do so. A case in point is the dot-com bubble in the turn of the millenia where companies scaled up their operations in the belief that they have get big fast in order to discourage competitiors from entering the market.

Growth in the amount of employees on the other hand provides the company with additional human capital which it can use to execute its objectives (Gilbert et al., 2006). However, a firm that is growing in the amount of employees may not be growing in sales. Employment growth seems to be a particularly tough issue to handle for business owners because of various pros and cons that come with it (Chandler et al., 2009). On the one hand employing provides the company with the chance of increasing their speed of expansion and also a chance to provide employment to the community but on the other hand there is a lot of administrative hassle, responsibility and front-loaded costs (Chandler et al., 2009). A company can also grow in assets without experiencing sales or other growth. For instance an industrial company that conducts a major plant investment might experience significant sales growth once the plant is ready and only increase in assets while it is constructing the plant.

Chandler et al. (2009) studied the relationship between sales and employment growth with a transaction cost economics perspective. They find that employment growth is more likely to accompany sales growth the higher the human asset specificity of the company is and the lower the costs and uncertainty related to screening and monitoring employees is compared to that of using external contracting. Human asset specificity measures how specialized the knowledge and skill needs of the company are from their employees. When the company's knowledge and skill needs from its employees are high and specific, then they seem to find it preferable to handle hiring themselves in order to be sure that the employees have sufficient skill levels. However, if the skill needs are less specific then it is safer for the company to use an external provider. Outsourcing reduces screening and monitoring costs due to the fact that then they only have to screen for a good partner once, which will then handle the screening of individual employees. When companies are resource constrained they seek other ways of getting things done than employing more people given that screening and monitoring costs of employees are high.

Firm growth is almost universally seen as a sign of the success of a company (Davidsson et al., 2009). According to Davidsson et al.(2005) recent evidence shows that the firms that are able to grow successfully usually do so by first securing profitability and only after that go for growth.

History is filled with examples of companies that have scaled prematurely in expectation of a huge market only to end up finding out that no such market exists.

2.3. Factors of growth

Growth is heterogeneous in nature. A major part of growth literature has concentrated on finding out what indicators lead to growth, however, all the variables that have been found do not always correlate well. The growth process is different for different firms (Brush et al., 2009) and thus the actions and indicators that are relevant vary from company to company (McKelvie & Wiklund, 2010). However, there are a number of factors that have consistently been found to have an effect on company growth.

Gilbert et al. (2006) identify in their literature review six factors that have been found in previous literature to influence growth rates of new ventures; the characteristics of the entrepreneur, resources, geographic location, strategy, industry context and organizational structures and systems. According to Delmar et al. (2003) organizations can achieve growth in a number of ways and that the growth paths of firms can look very different. Studying the drivers behind different factors of growth has the potential to lead to better decision making in the future (Chandler et al., 2009). Next we will review these factors in some more detail.

Characteristics of the entrepreneur and management

Any investigation into growth in early-stage companies has to begin with the entrepreneur. If the owner-manager of the company is unwilling to grow, then growth is highly unlikely to happen at all. There are clear indications in literature that some managers consciously refrain from growing their companies (Wiklund et al., 2003). This is especially true for mom and pop type businesses but also for companies that would otherwise have a lot of growth potential. Some owners may not be willing to take on the perceived riskiness of growing even though not growing may be an even bigger threat for their survival.

There has been a belief among entrepreneurship researchers that the firm is an extension of the founder which has sprung a large amount of research on the characteristics of the entrepreneur (Gilbert et al., 2006). Especially prior experience and educational background have been found to be important for growth. Prior experience in the industry or in early-stage companies in general helps the entrepreneur in obtaining resources and information and managing the company.

Experience is especially important because many of the skills required in making business decisions are tacit in nature and are therefore hard to learn in other manners. Companies are also often founded by teams and therefore team composition has been found to have an effect on new venture performance.

In Penrose's theory of growth high importance is placed on the entrepreneurial and managerial capabilities of management. She argues that this can represent a major limit to company growth. All expansion requires that new managers are brought into the company and trained properly to make sure they do their jobs as expected (McKelvie & Wiklund, 2010). Managers that are familiar with how to act and work in a specific company are not a resource that is readily available in the market. Therefore in addition to finding these managers and hiring them it also takes time and resources for them to get used to working in a company.

Resources

New companies are constrained in resources. The three most important resources for new venture growth often cited in literature are financial resources, human capital and outside resources such as the board of directors and consultants (Gilbert et al., 2006). Obtaining resources can be a very hard endeavor for an early-stage growth company. Financial resources are needed to execute on plans and to obtain the right kind of resources the company needs in order to execute on its business plan. According to Cardon (2003) start-up companies often need very specific kind of knowledge from their employees compared to a company at a mature stage. When the company starts its expansion however it may be able to also use employees of lower skill levels. Davila et al. (2003) find that the number of employees in early-stage companies tends to increase during the months before they receive venture capital funding and further speeds up in the months after such funding is received.

According to Bradley et al. (2011) the theory by Penrose (1959) suggests that resource slack would drive company growth because managers are eager to take advantage of those additional resources. However, according to Bradley at al. (2011) the case may actually be the opposite, that lack of financial resources entices entrepreneurial activity and in that way supports growth. It is however obvious that resources are needed in order to execute the business plan of the company.

Geographic location

Geographic location has been found to be an important factor for new venture growth due to the differing amounts of resources available in different locations. Companies cannot grow if they do not have access to sufficient amounts of resources. Some locations like Silicon Valley have vast amounts of risk capital available. These startup hubs also have superior employee talent available which is especially crucial for high technology companies and other companies that need high level specialized skills. A second thing to consider is the amount of competition for those scarce resources. If the region a company is full of similar companies looking for resources then it will be a lot harder to get funding or talent to the company. Existing literature is extensive on the matter of why growth rates vary across new ventures but at the same time literature has largely neglected how and where these companies should grow (Gilbert et al., 2006).

Geographic growth also creates challenges in terms of control. For example, it is a lot easier to control a workforce that is in its entirety under the same roof, but once the company opens up new offices direct communication and control becomes more challenging.

Strategy

The link between strategy and growth is a highly researched subject. The results have however been rather mixed (Gilbert et al., 2006). Baum et al. (2001) find that low-cost and focused strategies had a negative correlation sales and employment growth. In contrast, differentiation through having high quality products and innovation were found to have a positive relationship. The authors however speculate that this might be related to the specific industry that they study. Siegel et al. (1993) however find the opposite, that companies with a focused strategy had higher sales growth rates. This may reflect that those companies that chose the correct strategy for the given industry context also were more successful.

Penrose (1959) identifies two modes of growing a company; organic growth and growth through acquisition. McKelvie and Wiklund (2010) also introduce a number of “Hybrid modes” of growth. The rationale hybrid modes of growth is that it falls somewhere in between organic growth and growth through acquisitions. Hybrid modes of growth include a number of contractual relationships that bind external actors to the growing firm. This includes franchising, licensing, joint ventures and strategic alliances. The mode of growth that a firm takes advantage of significantly influences how the firm grows. For instance, a company that outsources and uses strategic alliances to a great extent does not necessarily need as much employees in contrast to a company that handles all operations internally. Davidsson and Delmar (1998) study the entire population of Swedish firms that have 20 or more employees. They find that small firms tend to grow organically whereas larger firms grow more through acquisitions. The larger the firm the more it uses acquisitions to grow.

Industry context

The founding conditions of a new venture have been found to have an effect on how new ventures develop (Eisenhardt & Schoonhoven, 1990) and therefore industry context is relevant for the growth of new ventures. First of all, companies are more likely to experience growth in an industry which in itself is already growing. Industries like this are also more likely to have an abundance of resources available for growth which further enhances the growth opportunities in the industry.

In addition to the availability of capital and the number of opportunities available in given industry context, also factors such as the level of competition (Baum et al., 2001), industry life-cycle stage and capital requirements (Robinson & McDougall, 2001) have been found to affect the development of new ventures. Environmental hostility has also been found to have an effect on sales and market share growth (Gilbert et al., 2006).

Organizational structures and systems

This category is of course central to this study because our main focus is in management accounting which is very closely related to organizational structures and systems. In order for a firm to keep on growing beyond the early stages of development, it is necessary for management to put sufficient organizational structures and systems in place so that growth can take place (Gilbert et al., 2006). Literature related to this category will be discussed in more detail in the management accounting chapter.

3. Management accounting

This section will provide an introduction to management accounting and what it consists of and also review previous literature on management accounting in early-stage companies.

3.1. Management accounting defined

It is not always clear what is meant with the concept of management accounting. According to Bhimani et al. (2008) management accounting is concerned with measuring and reporting financial and non-financial information primarily for the use of management. Management accounting is also very important for overall control of the organization. According to Chapman et al. (2007) management accounting is about facilitating economic decision making and organizational planning and control. However, the different practices that constitute management accounting have often developed separately and thus management accounting is a loosely coupled set of different practices.

However, management accounting does not simply include formal systems like budgeting, costing or pricing systems but it is also to a large extent a social phenomenon. There are few rules as to how management accounting should be constructed but rather it depends on the specific organization, specific point in time and the special needs for control and decision support the company has (Anderson & Widener, 2007).

The Chartered Institute of Management Accountants in the UK define management accounting as follows:

"Management accounting is an integral part of management. It requires the identification, generation, presentation, interpretation and use of relevant information to:

- *Inform strategic decisions and formulate business strategy*
- *Plan long, medium and short-run operations*
- *Determine capital structure and fund that structure*
- *Design reward strategies for executives and shareholders*
- *Inform operational decisions*
- *Control operations and ensure the efficient use of resources*
- *Measure and report financial and non-financial performance to management and other shareholders*

- *Safeguard tangible and intangible assets*
- *Implement corporate governance procedures, risk management and internal controls"*

(CIMA Official Terminology, 2005: 54)

Management accounting systems (MAS) are closely related with the concept of management control systems (MCS) and a large amount of the previous literature relevant to management accounting in early-stage companies is in fact on management control systems. Management accounting however is a major part of management control. In established companies the traditional view of MCS has been a feedback mechanism that is designed to keep the organization on track to achieving pre-defined objectives (Davila & Foster, 2009). The term management control systems (MCS) is sometimes even used interchangeably with the term management accounting systems (MAS) (Chendall, 2003)

Some researchers understand MAS as a subcategory MCS (e.g. Davila, 2005). This study takes a similar approach and defines MCS after Simons (1995, 5), mainly as "formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities". It is however worthwhile to note that MAS are not simply methods or procedures that management uses to affect behaviour but also use them to gather information for their own decision making. Informal means of control and accounting are also taken into account in this study because of their importance in early-stage companies and to get a clear picture of how certain processes are arranged in the absense of formality. The focus however is on formal systems.

In this study the main point of interest is in management accounting and management accounting systems (MAS). Management accounting is the discipline that includes all the techniques, systems and procedures included in the field. A management accounting system is a specific technique, system or procedure.

In management accounting literature the distinction between formal and informal has not been chrystal clear (Pitkänen & Lukka, 2011). Pitkänen and Lukka (2011) intorduce three dimensions of determining what is formal and what is informal previously used in literature. The first is the *source* of the feedback. In other words, if it is system-based or interpersonal. Second is the *time* dimension or is the feedback regular or unplanned. Last is the rule dimension, is it mandatory or not.

3.2. Management accounting in themes

As was stated above management accounting is a loosely coupled set of systems and it is often hard to define exactly what constitutes management accounting and what does not. Therefore it is also a difficult task to categorize management accounting in distinct categories that capture the richness and diversity of the field. However, using a variety of popular textbooks (e.g. Bhimani et al., 2008; Drury, 2008) and scientific research (e.g. Davila, 2005; Granlund and Taipaleenmäki, 2005; Lehmuskoski, 2006; Karimaa, 2007) this study categorizes management accounting into five categories as follows:

1. Cost accounting and profitability analysis
2. Short-term planning and budgeting
3. Investment planning and monitoring
4. Strategic management accounting and long-term planning
5. Management control

The guiding principle behind this segmentation is chronological. Whereas cost accounting, profitability analysis are in this study mainly viewed as backward looking, the three planning categories are forward looking and varying in time frames. According to Bhimani et al. (2008, 9) there are a multitude of definitions for planning and control. They however define planning as the process of choosing goals, formulating ways of achieving those goals, predicting the outcomes of different ways and deciding how to achieve the desired goals. Control on the other hand is defined as the action that implements the planning decision and the following implementation, performance evaluation and feedback.

Strategic management accounting also has an important focus on external accounting information to the organization such as information about competitors. This division is not the only possible way of segmenting management accounting but it was chosen for this study because it was seen to provide a relevant categorization of the concepts and a relatively purpose driven segmentation of the concepts. Sandino (2007) for instance finds in her study that managers often see management control systems in terms of what can be achieved by them instead of as some distinct systems.

As is often the case in early-stage companies, the orientation of this categorization is in the future. Previous literature has found that planning is especially important for early-stage growth companies (Davila & Foster, 2007). It is also worthwhile to mention that this categorization is not clear cut as is the case with any other way of categorizing management accounting. The concepts overlap and the purpose of this division is to provide a framework for the research and facilitate discussion of management accounting concepts in early-stage growth companies. For instance budgeting can be understood as a part of management control. However, its high importance previous literature on early-stage companies justifies its own category. The categorization also serves as a frame for the theme interviews.

Cost accounting and profitability analysis

Cost accounting consists of a variety of different methods and techniques used to calculate and analyze historical information. According to Horngren et al. (2009, 30) cost accounting is about measuring, analyzing and reporting financial as well as non-financial information related to acquiring or using resources in an organization. This might for instance mean calculating how much it costs to produce a single product. Cost accounting provides data for management accounting as well as financial accounting. However, term cost accounting is sometimes even used interchangeably with the term management accounting (Horngren et al., 2009). Cost accounting includes methods such as activity-based costing and standard costing.

Profitability accounting is closely related to cost accounting. Profitability accounting is about determining the profitability of customers, products, divisions and other parts of the organizations and is closely intertwined with cost accounting. Cost and profitability accounting is also highly related to pricing considerations.

Short-term planning and budgeting

Short-term planning and budgeting can be seen as part of management control but it has been granted its own category in this study due to its high importance in previous studies. Budgets have been found to usually be the first MAS to be adopted (Granlund and Taipaleenmäki, 2005; Davila, 2005). Some studies of early-stage companies have also found early-stage companies to be very short-term oriented due in part to the high uncertainty which makes long-term planning especially uncertain. Short-term in this study generally refers to planning with a time frame of a year or less. Budgeting systems have a long research tradition but almost all of it is in large established companies (Davila, 2005).

Bhimani et al. (2008, 467) define budgeting as follows:

"A budget is a quantitative expression of a proposed plan of action by management for a future time period and is an aid to the coordination and implementation of the plan. It can cover both financial and non-financial aspects of these plans and acts as a blueprint for the company to follow in the forthcoming period."

Early-stage companies do not necessarily have budgets at all or if they do it is often a simple spreadsheet based cash budget with a purpose of making sure that the company stays solvent and to inform when new financing is needed. A cash budget projects the expected cash balance of the company based on expected cash receipts and disbursements. There are also established companies that do not have budgeting but it is far more usual in early-stage companies.

According to Drury (2008, 355) budgets have many purposes, including:

1. Planning operations
2. Coordinating the organization
3. Communicating the company's plans within the company
4. Motivating managers
5. Controlling activities
6. Evaluating performance

A budget can fulfill a number of purposes and there are also different types of budgets. According to Drury (2008, 369) a **cash budget's** objective is to is to make sure that there is enough cash available to make sure that the company has enough cash available at all times. The **operating budget** on the other hand is the budgeted income statement and its sub-budgets (Bhimani et al., 2008, 475)

Investment planning and monitoring

Investment planning and monitoring have not received a lot of research attention in early-stage companies. Some studies on early-stage companies suggest however that investment planning and monitoring do not play a major role. Capital (long-term) investment means committing resources now in order to gain a stream of benefits in future years (Drury, 2008, 291). The factor that draws the line between short-term decisions and capital investment is time (Drury, 2008, 291). This category comprises of investments in physical assets such as equipment, buildings and so forth but can also include investments in intangible assets such as patents; training and R&D. Common methods in investment planning include Return on Investment (ROI), Internal Rate of Return (IRR) and payback periods.

Strategic management accounting and long-term planning

The term strategic management accounting was coined by Simmonds (1981). There is no all-inclusive conceptual framework as to what strategic management accounting is (Drury, 2008, 569). Creating clear boundaries for strategic management accounting is difficult because of the loosely-linked nature of techniques associated with strategic management accounting (Nixon & Burns, 2012). Cadez and Guilding (2008) referred to 16 strategically oriented accounting techniques which they categorized into five groups:

1. Costing
2. Planning and control and performance measurement
3. Strategic decision making
4. Competitor accounting
5. Customer accounting

As can be seen from above, strategic management accounting spreads to a myriad of accounting domains. There are however two special dimensions of strategic management accounting often presented in literature (Cadez & Guilding, 2008; Drury, 2008, 569-571) that serve as guidelines for the definition used in this study. The first one is that strategic management accounting is concerned with providing the organization with information to support strategic decision making and therefore it often has a *long-term focus*. In Cadez and Guilding's (2008) segmentation this would include strategic decision making.

The second guideline is that strategic management accounting has an *external focus* to the firm. In the UK, The Chartered Institute of Management Accountants (CIMA) defines strategic management accounting as follows:

"Form of management accounting in which emphasis is placed on information which relates to factors external to the entity, as well as non-financial information and internally generated information"(CIMA official terminology, 2005: 54).

In other words strategic management accounting in this study is long-term and/or external to the firm. External factors in Cadez and Guilding's (2008) segmentation are competitor accounting and customer accounting.

Management control

Management control is a very important function of management accounting and is therefore granted its own segment in this study. Merchant and Van der Stede (2003) distinguish different types of control into three categories which are based on the object that is being controlled. The categories are results controls, action controls and personnel/cultural control. Drury (2008) also notes that management accounting systems are often mainly but not exlusively associated with results controls. While the focus here is on management accounting based control, this study is also interested in other control types in order to get a clear picture of the control in the organization.

Results controls control employees by rewarding good behavior and punishing undesired behavior. The rewards need not be monetary but also rewards such as job security, recognition, promotions and so forth. With rewards controls the organization does not tell its employees how to achieve results but rather the employees are empowered to figure out for themselves what the best course of action is to achieve the desired results. Results controls are especially dominant as a way of controlling professional employees. Most management accounting related controls are related to results controls. Results controls include financial reporting, performance measures and targets and compensation.

Action controls are concerned with making sure, that employees perform certain desirable actions and that they do not act in a way that is known to be harmful for the organization. They are only usable when management knows what actions are desirable and what actions are not. Action controls can either be behavioral constraints, pre-action reviews, action accountability or redundancy related.

Personnel controls aim to help and support the tendency of employees to control and motivate themselves. Personnel control can either help make sure that the employee knows what the organization expects of him; make sure that employees have the tools and knowledge to do a good job or to increase the odds that employees will self-monitor their actions.

Cultural controls are norms, beliefs, values, ideologies, attitudes, ways of behaving and shared traditions that the employees of a company share and which dictate what is acceptable or unacceptable, durable or undesirable. Cultural norms are written and unwritten rules that govern the behavior of the employees within the company.

According to Kärreman and Alvesson (2004), management control is mainly an activity that is carried out by a powerful social group that organizes and has definitive power over other groups in the organization. It normally includes specifying, monitoring, and evaluating individual and collective action and it focuses on affecting the behavior, output and/or the minds of the employees (Alvesson & Kärreman, 2004). Alvessson and Kärreman (2004) define management control that attempts to affect the minds of the employees as socio-ideological and control that directly affects employee behavior as technocratic. Technocratic control is mainly concerned with plans, arrangements and systems whereas socio-ideological control is about social relations, identity formation and ideology. This study is mainly concerned with technocratic and formal modes of control.

3.3. Management accounting in early-stage growth companies

The bulk of the research papers on management accounting in early-stage companies are actually on management control systems (MCS). However, management accounting is a very important part of MCS and therefore research on MCS is also relevant for this study. Here we will review what the role of management accounting and control is in early-stage companies based on previous literature. Later in this section we will also discuss what specific systems early-stage companies use and what factors influence their adoption.

Sandino (2007) identifies three reasons why choices of MCS differ in early-stage companies in contrast to established ones:

I. Mature companies already have extensive amounts of formal systems in place and are therefore less concerned with losing control of the company (See also Davila and Foster, 2005, 2007; Perren et al., 1998).
II. The first MCS provide the basis for the future development of the MCS of the company. An established firm is more concerned about interoperability issues with current systems, whereas an early-stage company does not yet have a lot of legacy systems in place and will

therefore be more interested in how well future systems will integrate with the initial systems.

III. Formal control is usually very important for established firms. In contrast, in early-stage firms informal forms of control often have a major role.

Most research in the field of management accounting has concentrated on large established companies instead of young and smaller ones so the subject has been relatively under-researched until recently (Sandino, 2007). In recent years there has been increased interest in studying management accounting and control in early-stage growth companies (Davila, 2005; Davila and Foster, 2005; Sandino, 2007). MCS and formalization of processes have often been seen as a hindrance to the innovative and dynamic spirit that often characterizes early-stage companies (Granlund & Taipaleenmäki, 2005; Adizes, 1988) and indeed if MCS are not designed in a way that is appropriate for an uncertain context, they may stifle the company (Davila et al., 2009).

The initial conclusions from recent studies however indicate that management control systems are in fact necessary for start-up companies to achieve their growth potential (Davila and Foster, 2009; Sandino, 2007). It seems that it is not unclear if MCS are needed but rather which MCS are needed in different situations (Sandino, 2007). It is interesting that the importance of management accounting and control was predicted already by Greiner (1972) and accepted by many scholars yet no research was done to confirm the prediction (Davila, 2009).

Owner-managers of companies that are at a very early-stage of development tend to use informal mechanisms for acquiring information and controlling the organizations. Informal control and information does not necessarily mean that control is poor, merely that such means are appropriate for companies of that scale (Perren et al., 1998). Once the business grows and the number of transactions increases the owner-manager no longer has time to be that involved in the day to day activities of the firm and therefore formalization of processes is needed (Perren et al., 1998; Davila & Foster, 2009). Moores and Yuen (2001) describe a high-growth firm in their study where increasing formality was a necessity in responding to the rapid growth that the company was experiencing.

MCS provide early-stage companies with structure to facilitate coordination of activities and to help them make sense of the fast changing environment that characterize early-stage growth companies. They enable the company with flexible and dynamic frames that evolve with the changing conditions yet they are also stable enough to enable the company to use common cognitive models, communication patterns and actions (Davila & Foster, 2009). In other words MCS in early-stage companies give managers insight into what is happening in the company without making the company too stiff so as to lose their dynamism and agility. MCS help companies in balancing sustained growth by solving problems in coordination (information sharing) and control (information monitoring) when informal means of control are insufficient (Davila & Foster, 2009)

A large number of new ventures that have potential fail at the growth stage exactly when management systems start being relevant (Davila & Oyon, 2009). Management systems are adopted in order to overcome the limitations of managing an organization in an informal fashion that requires regular personal interaction (Davila & Foster, 2007). MCS are however often expensive and time consuming to adopt and therefore it is likely that early-stage firms will choose the initial systems carefully (Sandino, 2007).

Granlund and Taipaleenmäki (2005) study management accounting and control in eight New Economy Firms (NEFs). A NEF is not necessarily a small or a young company but almost all of the companies in their study are of similar size to the companies in this study. In addition, many the case companies in this study can also be categorized as NEF's and NEF's share many characteristics with the early-stage company definition used in this study and therefore the study by Granlund and Taipaleenmäki (2005) is highly relevant. It is typical in small companies that financial reporting and analysis only get a limited amount of resources (Granlund & Taipaleenmäki, 2005). Early-stage companies typically focus their resources in other areas such as R&D and sales operations. However, Granlund and Taipaleenmäki (2005) find that in NEFs it is not always due to resource constraints that the accounting function does not receive resources but simply because the focus of the organization is on other aspects of the business. At first the focus is in R&D and somewhat later also in sales and marketing.

Granlund and Taipaleenmäki (2005) observe that role of the accounting function changes along the life cycle of a NEF. In their paper, the smallest NEFs had typically outsourced bookkeeping and did not have a CFO. The entrepreneur/CEO was usually responsible for financial calculations but sometimes they were not seen as necessary at all. Once the companies grew, those companies that took care of statutory task themselves hired a CFO to take care of these needs and to act in controlling tasks when time permits. When the capacity of the CFO was not sufficient anymore a separate controller was hired to free the CFO's time to other tasks. The authors also emphasize that even in some of the more mature NEF's the controllers have to participate in many financial accounting and statutory tasks and more business oriented roles can only be found if time permits.

According to Davila and Foster's (2007) findings company growth requires the management infrastructure that MCS can provide. They also investigate further the finding that the replacement of the original CEO is associated with company growth. They find that CEO turnover is also associated with how many MCS the CEO adopts. CEOs that adopt more MCS are less likely to be replaced.

Moores and Yuen (2001) suggest in their life-cycle based study that management control starts formalizing when companies transition from the birth stage to the growth stage. Control formality may even get higher during the growth phase of companies than during maturity. The alternative to formalizing the processes of the company is limiting the size of the company and keeping the information processing capacity of the company within the limits of informal management (Davila & Foster, 2009).

According to Davila and Foster (2007) the need for management control systems has in previous literature been explained with two concepts; agency theory and information processing needs. The latter means that as the company grows in employees it becomes costlier to move information around the company to those who need it because the number of interaction required to do so grows exponentially as new employees join the company. This internal pressure reflects the traditional need why management controls are adopted; so that companies are not managed solely on intuition and an experience but also information based on facts (Granlund & Taipaleenmäki, 2005). The agency theoretic approach means that observing the agent's efforts becomes too costly as the firm grows and therefore motivation and monitoring have to be dealt with by introducing management systems. Once a management system has been adopted, it is rarely abandoned in the future but rather almost without exception it continues to develop (Davila et al., 2009).

Recent evidence has started to show that companies often have a dominant mode of control (Alvesson & Kärreman, 2004; Sandelin, 2008). For instance the dominant form of control could be related to structural arrangements which could be complemented by cultural and social controls.

Sandelin (2008) also finds some support that similar control outcomes can be achieved with different control components given similar contingencies.

According a number of CEOs the capacity of informal management is somewhere between 40 and 100 employees with the more specific number depending on the geographic spread of the company (Davila & Foster (2005). The transition from informal to formal processes is not a clear step. Also, not all processes are formalized and some remain informally controlled (Perren et al., 1998).

3.4. Management accounting systems adopted in early-stage companies

This section present previous theory on which systems early-stage tend to adopt. Davila and Foster (2007) highlight the lack of theory on in what sequence different control systems are adopted. There is some support in literature of budgets being the first management accounting tool that is adopted, however, more research has to be done to understand these adoption decisions further. Open is also the question if certain controls complement each other. Davila and Foster (2007) find that the adoption of financial planning systems is associated with longer time to adoption of HR and strategic planning. In contrast, HR and strategic planning seemed to complement each other.

Davila and Foster (2007) examine management control systems in early-stage startup companies. They find that financial planning and financial evaluation systems have well above average adoption rates in comparison to other categories of MCS measured against time and the amount of employees. This was especially true for financial planning systems. In general planning systems seemed to be particularly important for early-stage companies since the three most adopted MCS categories all involved planning (i.e. financial planning, HR planning and strategic planning). Altogether the authors studied eight different MCS categories which included 46 individual management control systems. Figure 1 plots the adoption rates of different MCS categories over time and Figure 2 does the same against the amount of employees a company has.

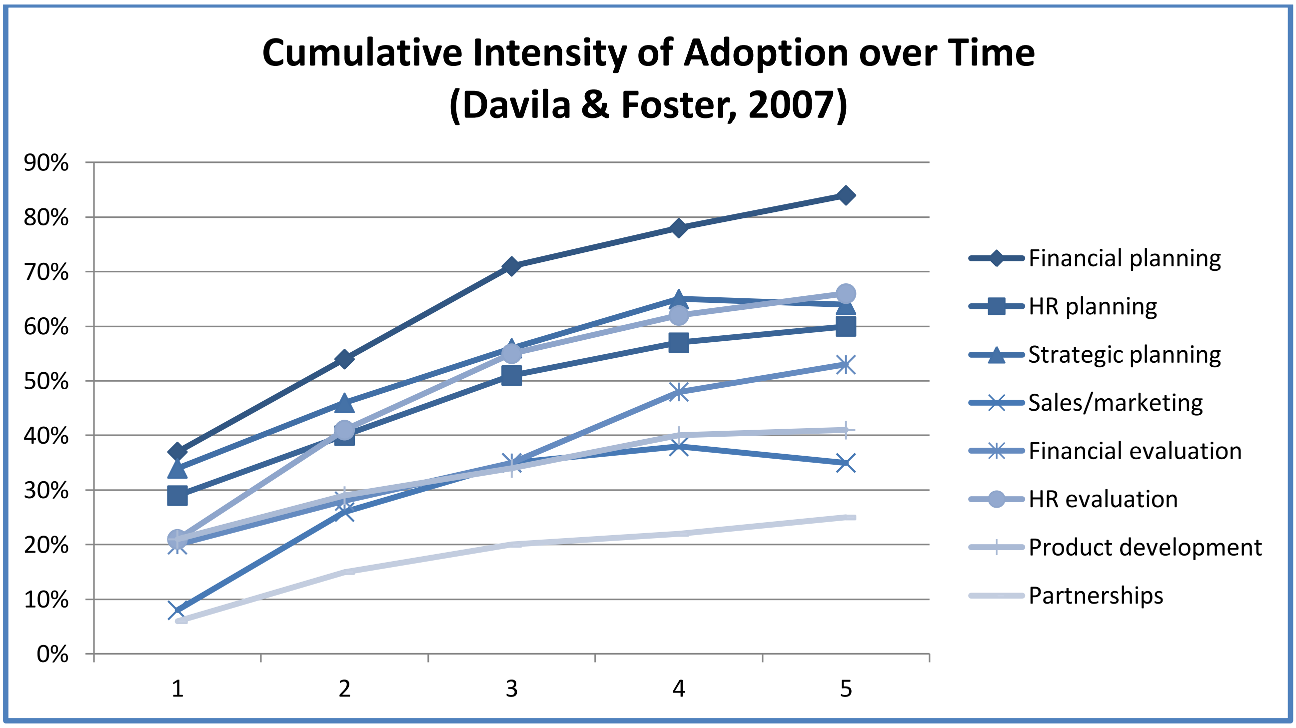

Figure 1: Cumulative Intensity of MCS adoption over Time (in Years)

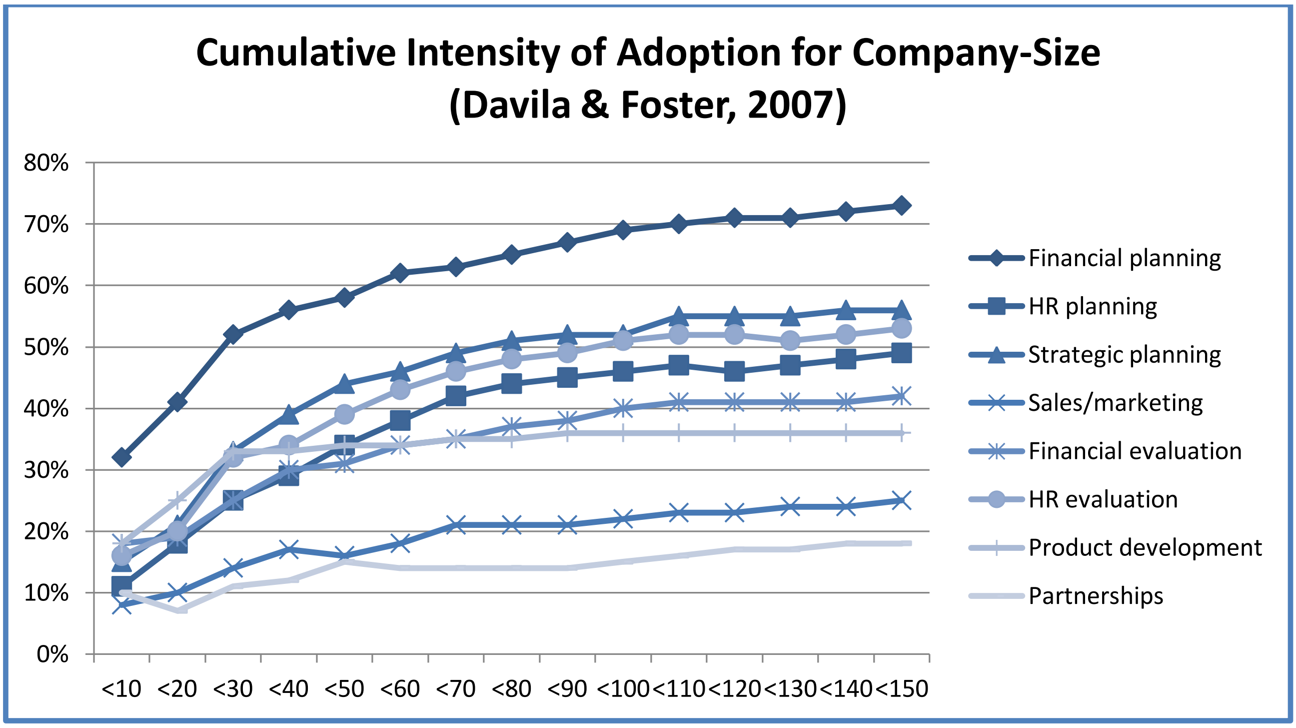

Figure 2: Cumulative Intensity of Adoption for Company Size (Amount of Employees)

The fourth and fifth most adopted categories were financial evaluation and HR evaluation. These are rather insignificant during the first three years of operation but during the fourth year of operation start increasing in importance. Even though financial evaluation systems were not among the most adopted systems they still had above average adoption rates. The Sales/marketing and partnership categories are rather insignificant throughtout the first five years of operation.

Davila and Foster (2007) also created a “Top Ten” list of different systems adopted for each year of operation. They also have separate lists for VC-Backed and Non-VC-Backed companies. The list provides support for the importance of planning especially during the three first years of operations. At year 4 financial evaluation starts increasing in importance and at year 5 the two most adopted categories are financial planning and financial evaluation. HR planning and evaluation are also significant MCS categories. The table also reveals the importance of venture capitalists for the adoption of MCS and the composition of systems adopted. VC-Backed companies had a significantly higher focus on financial planning and evaluation systems.

Below are the individual systems included in the financial planning and financial evaluation categories:

Financial planning:

- Operating budget
- Cash flow projections
- Sales projections

Financial evaluation

- Capital investment approval procedures
- Operating expense approval procedures
- Routine analysis of performance against target
- Product profitability analysis
- Customer profitability analysis
- Customer acquisition cost analysis

In a similar study published a couple of years earlier, Davila and Foster (2005) study the adoption of MAS in particular and the sequence at which different MAS are adopted. The individual MAS included in the study are mostly the same as the systems identified above. Figure 3 plots the adoption rates of different MAS during the first five years of operations. Figure 4 on the other hand plots the adoption rates against the size of the company as measured in the amount of employees.

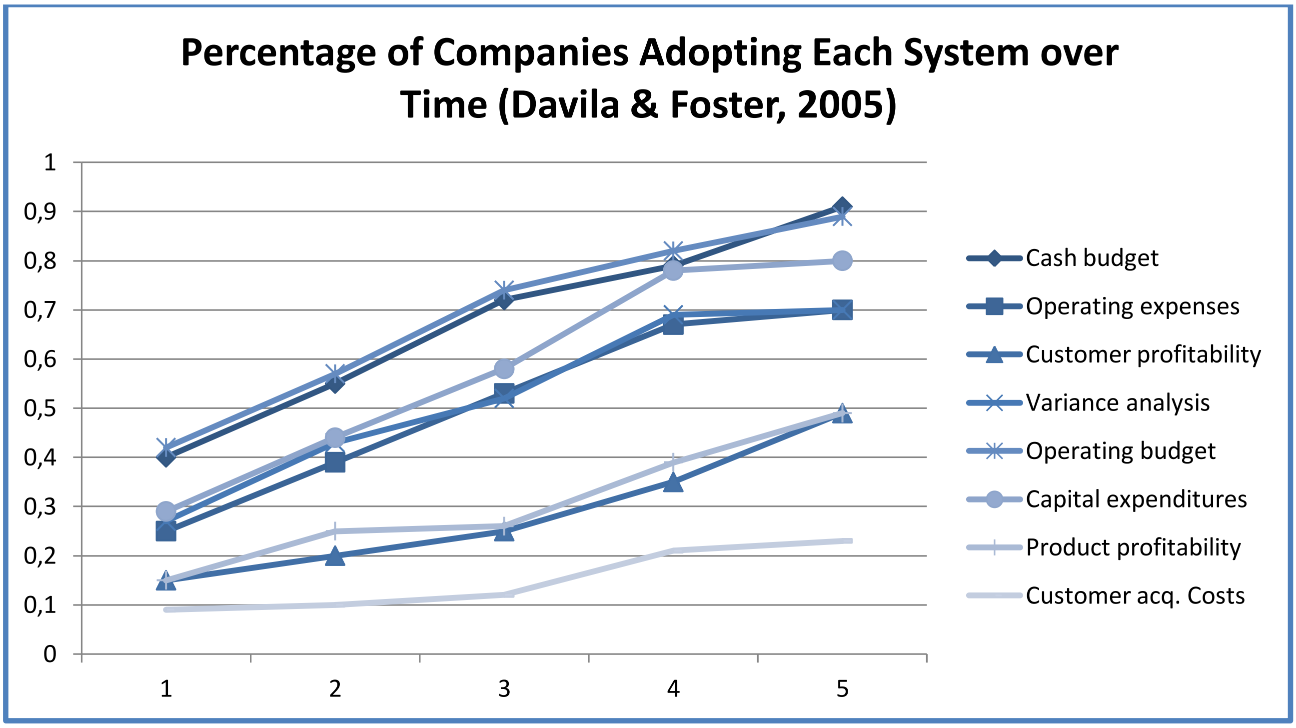

Figure 3: Percentage of Companies Adopting Each System over Time

As can be seen in the table above, forward-looking systems such as cash and operating budgets were adopted first and in a similar pace. Across the full sample of companies operating budgets were the first system to be adopted. However, in venture backed companies, cash budgets were adopted earlier. The reason for this might be that cash flow burn is extremely important in terms of planning when the next round of venture financing is needed.

Product profitability, customer profitability and customer acquisition costs were adopted much slower than any of the other systems. This is consistent with the expectation that it takes longer for these systems to be relevant because it takes time for companies to have revenues that are significant enough to justify these systems. The authors also document a very large variation between the adoption rates of individual companies.

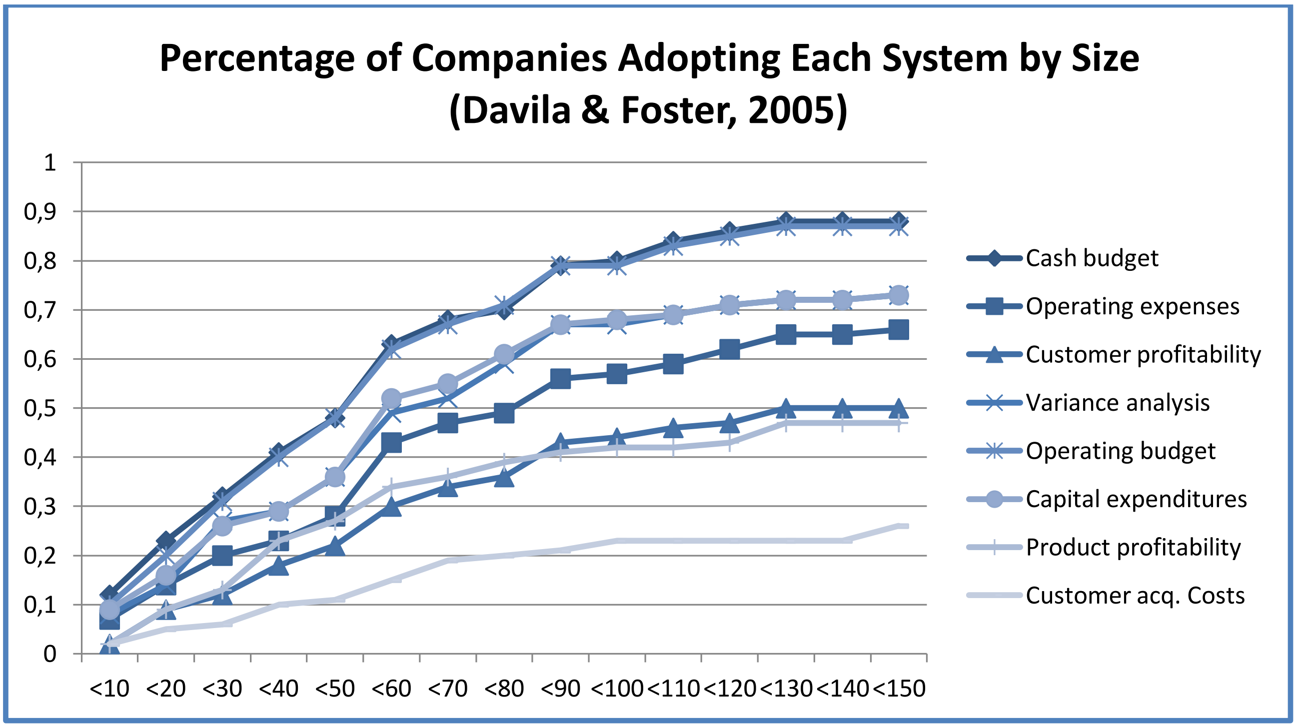

Figure 4: Percentage of Companies Adopting Each System by Size

According to Granlund and Taipaleenmäki (2005) in NEFs the limited resources that the accounting function has at its disposal are often directed to statutory accounting tasks and in terms of management accounting to future oriented financial controls. At the growth phase the focus is on planning and budgetary controls while profitability accounting and other ad hoc calculations receive less attention. According to a controller in their study, the role of management accounting is in making growth possible with ex-ante planning systems and once growth has stabilized he expects that there will be a need for more ex-post analysis of operations.

Granlund and Taipaleenmäki (2005) find that the most preferred management accounting tasks in the companies were rolling budgeting and reporting activities and budgets. Budgets were the first MAS that were adopted. Davila and Foster (2005) also found that budgets were the first MAS adopted. In Sandino's (2007) study, budgets were categorised as "Basic MCS". In fact, budgets seem to be the most common management accounting system that early-stage growth businesses adopt. In general, financial planning seems to be more important for early-stage companies than other areas of systems.

Sandino (2007) divides the MCS that early-stage companies adopt into four categories: "Basic MCS" which were common across all the companies (i.e the minimum set of MCS adopted). These were used to establish basic operations and to collect information for decision making purposes. Basic

MCS includes budgeting, inventory controls and pricing systems. However, it is worthwhile to note that her study was in the retail sector so it is unlikely that these same MCS would be as relevant in all industries. For instance a software company does not need to have inventory controls in place especially in the early-stages.

Sandino (2007) categorized “Cost MCS” as MCS that are used to increase operational efficiency and “Revenue MCS” as systems used to achieve growth and to increase responsiveness to the market. Finally, “Risk MCS” were used to protect assets and reduce risks. Sandino also found that Cost MCS and Risk MCS were adopted more broadly than Revenue MCS. Her rationale for this was that they are needed to reduce the high risk of failure that is inherent of early-stage companies or that they are needed to free managers time to concentrate on strategic issues. Davila and Foster (2007) also suggest that MCS have a role in controlling risks and especially major risks that might endanger the existence of the company. Additionally, Sandino (2007) found support for the notion that the better the fit between the initial MCS adopted and firm strategy, the higher the business performance of the company.

Granlund and Taipaleenmäki (2005) were surprised how small a role performance measurement, strategic planning and internal financial analysis played in their case companies. The main reason for these findings seemed to be the lack of time to produce accounting information. Yet, according to Mitchell anb Reid (2000) it is crucial for a small firm to manage information if it is to avert poor performance and failure.

Granlund and Taipaleenmäki (2005) divide the the typical tasks of CFOs and controllers in NEF’s into three categories; highly preferred (vital) tasks, MAC-tasks (mergers, acquisitions and competitor analysis) and least preferred tasks. Highly preferred tasks include the routine operations that formed the foundation of management accounting in their case companies. They are the tasks that simply have to get done even when time is in short supply. As was also evident in the discussion above, budgeting plays a key role in this category. According to the authors budgeting is seen as the starting point for financial control and therefore is adopted first. A second reason for its importance might be that the budget can also be used as the foundation for producing financial forecasts to interest groups external to the company such as venture capitalists. Budgeting appeared either in the form of a tradional annual budget or as a rolling forecast. Budgeting also seems to have performance implications. Davila and Foster (2005) document an increase in growth when a company adopts operating budgets. This adoption decision is also related to increased future growth. However, it should be noted that the study does not address whether MAS adoption provides a basis for further growth or if managers that expect future growth adopt these systems in anticipation.

The second group in Granlund and Taipaleenmäki (2005) is MAS-tasks. These tasks can in some instances take a lot of the accounting function's time and resources for instance if the company is in the middle of an acquisition. Accountants are responsible for providing management with the relevant information about companies that are involved in possible mergers and acquisitions. The authors also include continuous monitoring of the business environment and in particular the analysis of competitors to the MAC-task group. Competitor accounting seemed to be unique for management accounting in NEFs in particular. The authors explain this unique role with the fast paced competitive environment that NEFs are in. They are constantly under threat that a competitor or a new entrant drives them out of business.

The third and last group identified by Grandlund and Taipaleenmäki (2005) is the least preferred tasks. Interestingly this group consists of management accounting techniques that are traditionally thought of as being central to management accounting, such as cost accounting, performance measurement, long-term financial planning and capital budgeting. According to the authors these receive only minor attention in NEFs especially when a company is growing very rapidly (or when the company is aiming for such growth).

In terms of cost and profitability accounting, NEFs often have a simple cost structure because they are so R&D intensive, which means that the major cost driver for them is the amount of employees and can represent the bulk of a company's expenses. Consequently there is limited need for cost or profitability analysis. This high environmental uncertainty also causes forecasts to be highly focused on sales components (price & volume).

Grandlund and Taipaleenmäki (2005) explain the lack of performance measurement as being caused by the fact that there is not enough time or willingness to develop and use the information derived from such procedures. Capital budgeting and long-term strategic financial planning did not play a major role in the NEFs. The authors explain this to be due to the short-term orientation of NEFs caused by uncertainty in their operating environments. NEFs rarely have any tangible investments and investments are usually intangible and strategic in nature. The absence of these accounting categories was particularly evident in companies that were experiencing or aiming at rapid growth.

Granlund and Taipaleenmäki (2005) found scant evidence of the use of modern accounting tools such as activity-based costing, balanced scorecard or measurement of intangibles. One case company had such tools but it was a large global company and therefore not relevant for this study. Even Granlund and Taipaleenmäki considered it to be “anomalous”. The authors argue that NEFs face *fundamental accounting problems* related to measurement, allocation, accruing and valuation in cost accounting. Accounting was developed for tangible operation and therefore intangible resources cause problems from an accounting viewpoint. For instance introducing an ABC system to a software company would require rigorous control of working hours which could have consequences for the culture of innovation and fun that often characterizes NEFs.

3.5. Determinants of management accounting system adoption in early-stage companies

This section discusses the factors that have been found to have an effect on the development of MAS and MCS. Growth in size has for instance been found to have an effect, however, since growth has been discussed extensively in previous sections this section will concentrate on other aspects. We will also discuss specific reasons for adoption.

Theory suggests that there are specific reasons that make companies adopt management systems. Existing theory has divided the reasons for adoption of MCS into internal and external reasons (eg. Davila & Foster, 2007; Amat et al., 1994). Davila et al. (2009) examine seven different product development related systems and why they are adopted and identify two external reasons for adoption and four internal reasons for adoption. The internal reasons for adoption are further divided into proactive and reactive reasons for adoption. According to the authors the internal reasons are often related to specific events which then trigger the adoption of a MCS and the external reasons on the other hand are often related to the specific role that the MCS is adopted to fulfill.

The external reasons for adoption are labeled *contracting* and *legitimizing*. *Contracting* means that MCS are adopted in order to make it possible to co-operate with external stakeholders such as partners or sub-contractors. Davila et al. (2009) point out that informal means may not be sufficient to manage relationships between organizations because of the constant need for informal interaction. *Legitimizing* on the other hand means that a company adopts management systems in order to make the company look more credible in the eyes of external parties. It is a common problem among small companies to assure possible clients and partners that they are a reliable partner that will survive in the long term.

The internal reasons were divided into proactive and reactive reasons for adoption. *Management background* was the most common reason for adoption in the study. *Management background* refers to situations where MCS are adopted when a certain manager joins the company or in other words, when that manager's knowledge is imported to the company. The second proactive reason for adoption is the *need to focus*. This in turn refers to the situation where a manager perceives a need for a system and adopts it in response.

The reactive internal reasons for adoption are reactive to *chaos* or reactive to *learning. Chaos* means MCS are adopted in response to a situation that was not expected, for instance if there is a problem or a malfunction in a business process or system. In their 10-year longitudinal case study of a new company, Cardinal et al. (2004) find that control crises can trigger a dramatic shift in the control orientation of the company. In other words a company that is managed over informally and runs in to a crisis of control may trigger the company to start favoring formal control and even take formality too far. According to them there has to be a balance between formal and informal control. *Reactive to learning* on the other hand means that a system has been created during a long period of time because of a gradual learning process. The company slowly learns the best practices to use for some process or situation and slowly it becomes a formal process. In some situations the company had however consciously decided that it does not want to implement formal processes, because:

- Management fears that formality would kill creativity in the company
- The company was perceived as too small to warrant the adoption of MCS
- Management team lacked the knowledge how to implement MCS
- The team has worked a long time together so everyone knows their place and role in the organization

The different reasons for adoption are not associated with a faster adoption of MCS (Davila et al., 2009). The reason for this is either that the different reasons for adoption are random or that the sample size in the study is not large enough to be statistically significant (Davila et al., 2009). They also find support for the notion that informal management is not always a bad thing but rather it performs better than formal management when companies have adopted systems for reactive reasons or in order to facilitate contracting. The authors argue that this is probably due to the fact that the companies that have adopted systems for reactive reasons had previously used informal means, then reached the limitations of informal management and were at the time of study still learning how to use their new systems. Therefore these companies would perform even worse if they had kept on using informal management.

Funding

Funding has been found to be an important influencer in the development of management accounting. Funding influences early-stage companies for instance in terms of liquidity considerations. Early-stage companies are often resource constrained (Granlund & Taipaleenmäki, 2005) and often fighting for their very survival. Therefore planning cash flows is important. Many early-stage companies need external capital in order to fulfill their business model. Venture capital has been found to have a particularly strong impact on early-stage companies.

Small companies are often resource constrained and the limited resources available are often directed at activities other than financial reporting and analysis (Granlund & Taipaleenmäki, 2005). In their study Granlund and Taipaleenmäki (2005) had eight case companies, all of which suffered from a constant lack of resources for the accounting function. The authors also emphasize that in addition to the resource constraints of the accounting function, operational emphasis in the very early stages of NEFs is in R&D after which focus shifts on sales and marketing. Therefore administrative functions tend to get limited resources at these stages of development. Controllers were expected to actively develop the accounting processes, however due to time constraints caused by the constantly changing operative environment they never had time to do so.

In the study by Granlund and Taipaleenmäki (2005) one CFO in their sample said that there simply was not enough time for profitability analysis. Sales were the only thing that mattered. In fact, it seemed that sales growth was especially important for future funding prospects since venture capitalists value sales as a key variable of performance.

In a study by Reid and Smith (2000) MAS adoption was significantly correlated with the time at which the company had experienced a cash flow crisis, a funding shortage or an innovation. In particular, this was true for cost accounting methods and computer applications. In other words, MAS adoption is often triggered by a specific event like a crisis or a malfunction in some process or system. In particular the authors emphasize that cost accounting methods are those that are adopted in times of change (Reid & Smith, 2000).

Venture capital has been found to have a professionalizing impact on start-up companies (Hellmann & Puri, 2002) and it has been found to be associated with higher MCS intensity in early-stage firms (Davila & Foster, 2005, 2007; Granlund & Taipaleenmäki, 2005). Venture capitalists are an important source of financing for early-stage growth firms (Davila & Foster, 2005). At the very early stages the companies are often owned by the founders and other investors are usually friends and family that are happy with an informal way of control. Therefore the entrance of the first venture capitalists is usually the first time there is a separation of ownership and control that has to be dealt with with formal monitoring methods (Davila & Foster, 2005). Davila and Foster (2007) find that venture capital backed companies seem to not only adopt more MCS than non-VC-backed companies but the composition of MCS that they adopt are also different. For instance, VC-backed companies place a lot more emphasis on financial planning and evaluation systems than do non-VC-backed companies. The authors provide three possible reasons for this:

- Venture capitalists have a lot of experience in creating companies and therefore and based on that experience tend to favor accounting based systems
- It is possible that VC backed companies require more funding rounds before achieving positive cash flow. Companies that are cash flow negative may require more careful monitoring of financial aspects compared to companies that are less constrained in terms of cash flow
- VC-backed entrepreneurs may think that achieving positive cash flow as soon as possible is more important compared to non-VC-backed entrepreneurs for instance in order to avoid new funding rounds and the resulting equity ownership dilution.

According to Granlund and Taipaleenmäki (2005) venture capitalists have a tendency to encourage a speedier reporting cycle on companies due to their own pursuit for short-term porfits and due to the uncertainty that characterizes many of the companies that venture capitalists invest in. Venture capitalists also tend to place a lot of emphasis on sales growth rather than profitability growth so there is an incentive for companies that wish to receive venture capital in the future to focus on showing growth rates that are as fast as possible at the expense of showing large profits. Grandlund and Taipaleenmäki (2005) also suggest that traditionally venture capitalists were interested in financial reports but nowadays they are also interested in the processes and reporting systems where the supposedly reliable and timely reports are derived from. In the study by Davila and Foster (2005) the presence of venture capital was associated with a faster adoption of cash budgets, variance analysis, operating and capital expenditures approval procedures and product profitability. However, there was no evidence of it influencing the adoption of customer profitability and customer acquisition costs. Venture capital backed companies are also more likely to replace the original CEO (Hellman & Puri, 2002).

Environmental uncertainty

Environmental uncertainty has an effect on MCS composition. According to one controller in the study by Grandlund and Taipaleenmäki (2005), environmental uncertainty causes companies to have a short-term orientation which emphasizes the role of budgeting, rolling forecasts and a low reporting time lag. The constantly changing business environment also causes certain challenges for the accounting function. The organization and its processes are under constant change through generic growth and mergers and acquisitions and therefore there is rarely time for the accounting function to actively develop finance and control processes and existing information systems even though it is often expected of them. This same uncertainty also leads the companies to be reluctant to invest in advanced accounting technology because the possibility of a merger or an acquisiton in the future can cause expensive problems such as interoperability issues. An exception in the study by Granlund and Taipaleenmäki (2005) were companies that had a very strong belief in their future success and a sound financial position. For these companies advanced systems were the solution to handling the growing financial and control needs of the future. The objective for them was scalable information systems and a flat finance organization.

Granlund and Taipaleenmäkin (2005) argue that the short-term orientation caused by environmental uncertainty causes to scope of planning in NEFs to be so short and that there is not much need for long-term strategic financial planning. They also attributed the gradual loss of relevance of traditional annual budgets to this short-term orientation. In stead, they saw that short-term latest estimates that are updated at least quarterly were becoming more popular. Gul (1991) studied the peformance implications of MAS in small Australian manufacturing firms and found that in the presence of high environmental uncertainty sophisticated MAS had a positive effect on performance.

Management characteristics

Management characteristics have been found to have a significant effect in multiple studies (e.g. Davila & Foster, 2005, 2007; Davila et al., 2009). Davila and Foster (2005) find support for CEO experience, CEO beliefs about management accounting systems and the presence of a financial manager of being associated with the faster adoption of MAS. CEO experience is associated with the adoption of all the eight systems in the study except for product profitability and customer acquisition costs. In fact, previous experience from a similar context has been found to be particularly important for managers of early-stage companies (Romano & Ratnatunga, 1994). CEO beliefs on the other hand are associated with the faster adoption of cash budgets, variance analysis and operating expense approval procedures. Davila et al., (2009) find similar results in a product development setting. Those companies that adopt systems because of management background perform significantly better (measured in on-time product development) than those that adopt as a reaction to something (chaos or need to focus).

Davila and Foster (2005) also find support for the “import-in” concept of MCS adoption. This means that early-stage companies tend to hire new managers and related systems as a bundle. This bundled hiring is also more likely to happen sooner if there is venture capital present in the company, the CEO is favorable towards planning, the more experience the CEO has, the bigger the company is and if there is only low systems infrastructure already in place. The CEO has considerable influence on the organization of startup firms but also on how the financial manager conducts their jobs.

The replacement of the founder as CEO has also been expected to be related to MCS adoption, which was already pointed out by Greiner (1972). The rationale behind this is the perception that founders are often unable to make the transition to a manager. Entrepreneurs thrive in the creative somewhat chaotic environment of a small startup but often fail to conform in to more formalized routine ways of managing.

Alvesson and Kärreman (2004) study four consultancy firms in their case study of management control systems. In one of the case companies there was a strong belief in the benefits of formal systems in controlling employees. However, the researchers noted that there was considerable ambiguity as to what these systems can really accomplish. Early-stage companies are resource constrained and therefore it is likely that even if management is favorable towards management accounting and formal systems, they might lack the skills and knowledge to effectively implement such systems.

Small companies do not often have any professional accounting knowledge in the company (Reid et al., 1999). According to Perren et al. (1998) the sophistication of the systems being used in an early-stage company is not as important as the owner-manager's understanding of the systems and what is possible to achieve with them. Introducing sophisticated systems that the owner-manager does not understand are likely to fail.

Sandino (2007) found in her study that entrepreneurs tend to classify MCS in terms of their purpose rather than in terms of specific control systems such as budgets or inventory controls. This can for instance be due to the fact that different control systems can be used for different purposes. Some companies may use inventory controls to prevent theft of merhandice whereas other may use it to learn about customer preferences. Similarly budgets can be used to guide employee behavior or as a resource planning tool.

Perren and Grant (2000) study the evolution of management accounting routines in small businesses with a social construction perspective. They find that the owner-manager creates a 'micro-world' which he has considerable control over. This does not mean that the owner-manager is able to block all outside influence but rather that the entry of such knowledge happens on his terms. The owner-manager is able to filter what influences come into the micro-world from the outside. Even when a new employee that has management accounting knowledge enters the company the owner-manager has to empower the employee before that knowledge can be taken advantage of. This highlights the importance and influence of the owner-managers of early-stage firms and how critical they are for the development of the company. Cardinal et al. (2004) find in their case study that managers often favor either informal or formal control, even when a more balanced appoach might be the best option. They tend to stick with the way a control that is most natural to them and cannot take advantage of controls that are unfamiliar to them.

Industry

Industry has been found to have an influence on MCS adoption. Davila and Foster (2007) find that the industry that a company is in has an effect on how fast MCS are adopted. In their sample information technology firms adopted MCS faster than firms in the biotechnology industry. In biotechnology companies the product development times may be very long which in part explains the slower adoption speed. Davila and Foster (2007) also find evidence that companies that have revenue also have more MCS in place. Similarly in Sandino's (2007) study in the retail sector inventory controls and pricing systems were among the most widely adopted systems, yet it seems obvious that these systems would be less important in other industries. It is hard to imagine a consulting that has significant need for an inventory system for instance. The influence of industry on MCS adoption has also been found in a human resource formalizing context (Davila, 2005). The level of competition in an industry is also a contributing factor. Amat et al. (1994) describe in their case study how the intensification of competition triggered the formalization of management accounting.

Strategy

Strategy has also been found to be relevant for the development of MCS in early-stage companies. It seems logical that a company that is aiming for cost leadership would concertrate more on MCS that allow it to understand their costs better and to control margins more efficiently. Sandino (2007) however only found weak support for it. She explains that it might be due to the set of Basic MCS that she identified may give enough cost/risk control and calls for further study on the matter. On the other hand, she found stronger support that companies that follow a differentiation strategy adopt more MCS for understanding customers and for identifying new opportunities than other companies do.

Therefore Sandino (2007) finds some support that there is an association between strategy and MCS also in early-stage companies and that a better fit between strategy and MCS design results in better performance. However, she also argues that the initial MCS introduced to an early-stage company will not reflect the strategy of the company if they are adopted merely to liberate the time of management to focus informally on strategic issues or if the MCS are adopted in order to reduce or monitor risks.

Geographic scale and internationality

Davila and Foster (2005) find that international presense of a company is positively related to MAS adoption. International presence of the company on the other hand was insignificant in explaining the pace of adoption of most systems and contrary to their expectations was even associated with a longer pace of adoption in the case of product profitability and customer acquisition costs.

4. Methodology

This section will present the research method and provide justification for the methodological decisions made; present case company requirements and material used and discuss the limitations of the study. This study was conducted as a qualitative comparative case study of five early-stage growth companies. In the categorization of Scapens (1990), this study falls between descriptive and explorative case studies. Four of the case companies are from the software industry and one from nanotechnology. These companies were chosen in order to facilitate comparison and analysis within an industry, as well as between industries. Most of the empirical material was gathered with theme-interviews but also publicly available information was used. 1-2 interviews were conducted in each of the case companies. This includes the CEO of every case company and a possible financial manager or a CFO. A total of 8 interviews were conducted, of which one included two interviewees.

Methodology is not a synonym to method of study. Interviews, questionnaires etc. are methods whereas methodology is the general approach taken by the researcher to a research topic (Silverman, 1993; in Ahrens & Chapman, 2007). Qualitative research methodology provides an alternative to positivist methodology. Positivist theorists believe that it is possible to achieve perfect objectivity in research, whereas qualitative theorists accept that a totally unbiased picture of reality can never be achieve and that there is always exists a subjective element (Ahrens & Chapman, 2007).

4.1. Case study

In management accounting case and field studies are both often used to refer to management accounting in its organizational context (Scapens, 1990). In qualitative field studies the researcher has to constantly compare data and theory and to reflect them upon the chosen research questions (Anderson & Widener, 2007). According to Eisenhardt (1989), the case study is a research strategy which concentrates on studying the dynamics that are present in specific settings.

Nowadays case studies are a popular form of doing research in management accounting. It allows the researcher to study the phenomenon under interest in more detail and to analyze it in its social context. Case studies allow us to understand how management accounting is used in practice. This includes what systems are in use and how they are used (Scapens, 1990). Case studies can be conducted in a single company or in multiple firms (Scapens, 1990; Eisenhardt, 1989). However, they often involve a sole unit of analysis (Scapens, 1990). For instance, management accounting could be studied in a particular industry. In this study the common unit of analysis is the early-stage growth company.

This study is interested in management accounting in early-stage companies. The primary interest is in formal systems, however since informal means are especially important in early-stage companies and there may not even be formal systems in place at all, we also have to take informal means in to account. According to Scapens (1990) it is problematic to study only formal systems in a case study because then the researcher runs the risk of failing to understand the systems in their organizational context. Case studies make it possible for the researcher to understand management accounting how it is actually used in practice.

Scapens (1990) divides case-studies into five categories; descriptive, illustrative, experimental, exploratory and explanatory case studies. The classification is not unambiguous. This study has descriptive and exploratory qualities. Descriptive case studies attempt describe how accounting systems, techniques and procedures are used in practice, whereas exploratory case studies explore the reasons why certain accounting practices are used. This study is descriptive in the sense that it tries to portray how management accounting is used in early-stage growth companies but it is also exploratory because we also try to explore the reasons why these systems are used the way they are.

This study is also exploratory because management accounting in early-stage companies is a fairly under-researched subject. Case studies are especially useful for theory building, that is in areas of research where existing theory is inadequate or non-existent (Eisenhardt, 1989). When the researcher wants to find out the limits of a certain theory it may be appropriate to select extreme case situations. This rationale can also be extended to apply in cases where existing literature is limited (Scapens, 1990) as is the case in this study.

According to Scapens (1990) multiple case studies can be used for two purposes. Either the researcher can select rather similar cases to replicate findings or the aim may be to develop theory. In situations such as in this study where the researcher is trying to develop theory the researcher is looking for patterns that explain the situation in question instead of searching for factors that could be generalized. When the aim of the researcher is to develop theory then it may be in order to select dissimilar cases. For this reason this study includes early-stage companies of various sizes and business models. The study also has empirical material within and industry and across industries.

4.2. Empirical material and the research process

The empirical material in this study was mainly gathered with theme-interviews but also by reviewing internal company material as well as material available through public sources. From each company the CEO was interviewed and if a company had a financial manager or a CFO then also they were interviewed. The goal was to interview all managers that are involved with management accounting and control in the companies. A total of 8 interviews were conducted with a total of 9 managers. The disparity is due to one interview having two interviewees. While the goal was to gather data from as many sources as possible to reduce the bias caused by having a single source of information, in some companies this was impossible because the CEO was the only one involved in management accounting and control.

The interviews were conducted as theme interviews to gain a broad understanding of management accounting in the case companies. The theme interview structure was sent to the interviewees a few days in advance so that they had some idea what the interviews will be about. The interview structure can be found in Appendix 1. The interviews were recorded on tape and transcribed. The empirical material read multiple times and was constantly contrasted with existing theory and the research questions of this study.

4.3. Case company conditions

Because of the research methodology chose, the goal was to find companies that vary from each other to some extent. Some similarities were also chosen, for instance in terms of industry, in order to facilitate analysis within an industry. The software companies however vary significantly within the software company context. Because companies can grow in a number of different ways and growth paths, the attempt was to get case companies that are very different from each other in terms of growth paths and business models. This increases the richness of the empirical material. It is likely that companies that focus on licensing their products grow differently than companies from that focus on manufacturing for instance.

The criteria for the case companies were as follows:

i. The companies have to be growing fast. No single measure will be used. Significant growth in revenue or employees over multiple years were however the main criteria for selection.
ii. The size of the companies has to be under 200 employees
iii. The companies have to be around 10 years old at maximum so that they do not have a great deal of legacy systems in place. Secondly because this case study uses experience based information to a great extent choosing relatively young firms increases the likelihood that the current managers were there when certain systems were adopted.
iv. The case companies have to be independent (e.g. subsidiaries are not acceptable)

The companies were identified through various public sources and contacted via e-mail or by telephone. The researcher had no previous experience of any of the case companies. All the companies have been growing fast in terms of employees and in revenue with the exception of one company, which was at the time of study launching its product. They had however grown significantly in the amount of employees.

5. Empirical data

This section of the thesis presents the empirical data gathered during the research process. Each case company is presented separately. First the business and history of the company are presented to give the reader an idea of the business context that the company is in. Then the role and development of management accounting in the case companies will be discussed.

5.1. Tuxera

Tuxera Ltd. is a software company that licenses and develops file management software for various devices. Although they are a software company, their business is fairly different than that of Kiosked's. Whereas Kiosked is an internet company and works with brands as well as bloggers and other content managers online, Tuxera licenses its software straight to its clients which are mainly large international hardware manufacturers. Their clients manufacture a wide variety of gadgets and other products such as mobile phones, tablets, cars and other automobiles, televisions and so forth. Tuxera licenses file management software for hardware manufactures to use in their products but even though it is fairly easy for their clients to use their software, the sales process is heavy and time consuming.

Tuxera has its roots in open source NTFS (New Technology File System) development in the late 1990's where many of its key developers were involved. NTFS is a file system originally developed for Windows by Microsoft. In the 2000's the current CTO of the company was leading the open source NTFS project and realized a business opportunity when he started receiving more and more requests to license the software. In 2008 the company was incorporated under the name NTFS-3G Technology. In 2009 the current CEO and other key employees joined the company and the company continued its operations under the name Tuxera Inc. Since then the company has grown rapidly in revenue as well as in terms of employees. Last year the company achieved 2,5 million euros in revenue and was expecting revenue to grow up to 4 million for the ongoing year. At the time of study the company employs around 30 people mostly in R&D and sales and has opened operations in Asia, Europe and the US. Most development is done in Finland and affiliates outside Finland are mostly sales related.

The company is owned by acting management and a few key developers. It has no external capital apart from public support and loans and has so far only grown organically. They have however considered expanding with acquisitions as well in the future. In 2011 the company was awarded the Red Herring Global 100 award in recognition of the leading private companies in North America, Europe and Asia.

Management accounting

At the time of study Tuxera had no accounting personnel on its payroll. Everything on the financial side of the business was the responsibility of the owner-managers, who mainly had technical and legal backgrounds. Standard book keeping was outsourced to an accounting company. The founders have been involved in tech startups before although Tuxera is the most successful one so far.

The management's perception of formal accounting and reporting is rather skeptic and at least for the time being they have not had much need for formal systems.

"This company is in the growth phase but if the company over grows and there is no responsibility for reporting I say it is not going to happen because it may not be worth it. It takes time and money and it does not take us forward. I'd rather use my time talking to these guys what is happening in Taiwan and what in China... reporting is not a goal in itself, the goal is to make products and sell them. This is a production and sales machine. There aren't any other functions really." (CEO, Tuxera)

The CEO however does recognize that management systems are needed as the growth of the company continues:

"At some point there will come a time when there is not time for sales calls anymore and even now when I'm leaving for Germany I have no idea what is happening around here. It is completely clear that at some point there has to be more management tools and control but a company of this size, when you have clear products and clear clients, can still go on pretty well." (CEO, Tuxera)

Cost and profitability accounting

Tuxera's cost and profitability accounting was largely limited to standard book keeping, reporting to public funding institutions and ad hoc profitability analysis of clients. Management can access accounting information through an online system provided by the accounting company. The information includes data for instance on largest customers and which markets generate the most revenue. In general however, cost information was not seen as very important for the company. The CEO illustrates the relevance of cost information:

"Revenue streams are easier for us to project. We do not think about cost streams that much as long as this stays clearly profitable. It of course grows all the time. It's less volatile. It just grows all the time. We haven't given it that much attention. We haven't had to because this is a shoestring business and we don't have any investors or anything so we just don't pay for anything that we don't need." (CEO, Tuxera)

Historical information is mainly used to get a sense of market trends, which in turn is a major component in their pricing:

"Mostly from history we look at market trends and of course our contracts are in to the future and based on market trends we can evaluate if we for instance have a contract with company X and they think that they'll ship Y amount of devices next year we'll get some feeling as to how much our revenue might grow next year. (CEO, Tuxera)

The company mainly uses financial information that they can take advantage of in their pricing decisions and sales processes.

"Numbers and financial information that we use is heavily related to our pricing. If we have a good argument to explain our clients how much blood and sweat and money we have put into this then of course we will use it." (CEO, Tuxera)

A major reason why the managers have not seen much need for more formal cost optimization or analysis is that the company has been very profitable so far.

"Our profitability percentage, the relationship of profits to revenue has been around 40-50 percent. It has of course been pretty large here at the early-stage. We have had many deals with small resources and of course since this is license-based it can go that way. As long as our margin is so good we have not paid much attention to the cost structure" (CEO, Tuxera)

It is relatively easy for Tuxera to get an intuitive sense of their business informally because of the relatively small size of the company and the relatively small number of products and clients.

"We have historical information from accounting and then you get a pretty good idea of market trends from sales calls. Obviously when you have a limited number of clients and only one product per client you can pretty easily estimate how the trend will continue. For instance for next year I

can with reasonable certainty say that we will grow and our revenues will be around 3-4 million." (CEO, Tuxera)

Tuxera's clientele comprises of large device manufacturers and a single client can represent a significant portion of their revenues. Tuxera does evaluate the profitability of clients and potential clients but it is not done in any formal way:

"We do estimate customer profitability but we don't have a formula for it or anything…we mostly just wing it…you'll eventually see how much time it takes and at some point we see that we are using too much resources and that they are not going to pay." (CEO, Tuxera)

The only instance where costs are calculated for specific projects are when reporting has to be done for public funding sources.

"We do not really calculate costs for specific projects. It is not useful because the client does not pay us based on that. We cannot report that to anyone. It is internal reporting and that does not help us. The only one we have reported to is Tekes." (CEO, Tuxera)

Budgeting and short-term planning

Tuxera did not have a budget nor did they have any financial planning systems in place. They had considered if they should adopt a budget but had not seen the value in it.

"We have actually thought that we should have a budget… We have had a sort of travel budget… well the kind that, how should I say it…not like a fixed amount of euros but we have watched that traveling expenses aren't way too high and that you don't go to Asia every single month but every other month. Tickets can only cost 1500 for a return ticket and so forth. It is monitored simply because it is a cost item that can burn through a lot of money very quickly" (CEO, Tuxera)

Therefore no formal budgeting was conducted. One reason for the lack of control systems was in management's fear that stricter control would distract employees from their actual jobs. A second reason was the aforementioned fact that there was no acute need for tight cost control. The company was doing great and was very profitable.

"We have considered if we should give a budget to someone that is responsible for sales for instance to Asia. But then again it limits them too much. Then he won't concentrate on his work

but instead he'll start thinking about optimizing his flights. As long as this is really profitable we probably shouldn't do stuff like that… (CEO, Tuxera)

Another reason for not having any budgets or cash flow projections was the simple fact that cost items are relatively insignificant. The company had in fact experimented with having sales projections a couple of times.

"We have asked our sales people a couple of times to create a sales forecast for the coming year or half a year but we never had time to monitor it" (CEO, Tuxera)

Investment calculation and monitoring

Tuxera had considered the possibility of diversifying their product portfolio by purchasing technologies that that would support their current offering which they could then license to their existing customers. The CEO pointed out that this is an instance where closer financial analysis could be necessary. However, there were no formal processes in place for evaluating investment opportunities. Investing in other technologies was perceived as very risky and therefore Tuxera had not yet purchased any outside technologies. The CEO however acknowledges that more detailed investment calculation might be in order:

"We have inquired on a specific technology from a couple of parties and thought about hiring a guru for that and reviewed the numbers and come to the conclusion that it's not worth it. It just costs like hell and there's a big chance that we're not going to get anything. It takes time, at least 6 months and even up to a year. Money gets burned, at least 100 000. We might not even get it finished and even if we do, is it possible to sell it? Even though many customers say that they could buy it from us there is already a lot of supply in the market. But this is an issue where someone could analyze the numbers in more detail."

Strategic management accounting

Tuxera was interested in external information for two reasons. First of all, they used financial information about their clients or potential clients and their industries in their pricing decisions. This information was mainly acquired from the media, from industry reports and from discussions with existing and potential clients. Secondly, Tuxera had one direct competitor at the time of study so management was very interested in how they were doing. Their sources to get such information were however limited. There was no formal process for acquiring this information but rather it was acquired informally as need arises.

The pricing of their licenses were based on a combination of advance payment and royalties. In order to price profitably they need information on industry trends in order to estimate how many devices their potential client is likely to ship. For devices that were likely to ship in large volumes they could adjust their pricing so that more emphasis was put on the royalties instead of advance payment. Tuxera only has a limited amount of very large clients and therefore it is easier for management to keep track of sales processes personally.

Management control

Management control at Tuxera was informal particularly in terms of management accounting. Management control was largely based on product development and sales related controls. The company had also considered setting sales targets for sales people but due to difficulties in target setting had never adopted them. Sales teams abroad did however have a weekly reporting cycle where they report what they have done and achieved for the week. The company had a general expenditure limit at 500 euros. All purchases over that required the approval of the CEO.

5.2. Kiosked

Kiosked Ltd. was registered in 2010. Since then the company has been recruiting new employees in a very rapid pace. So far the focus of the company has been on product development and the service had just been launched at its intended scale when the interviews were conducted. Therefore the company had not had enough time for substantial revenue growth. The company has enormous growth expectations and management expects the company to have hundreds of employees within a couple of years. Even though Kiosked does not have much revenue yet it has already reached a size of 40 employees and is on average growing by 4-5 employees per month. The CEO says that the company would hire more employees even faster but finding qualified personnel has proven difficult and has slowed down growth.

The majority of the ownership of the company is in the hands of active management and private investor Kaj Hed who led a $5,75 million seed funding round to the company in the summer of 2012 (Kiosked Nabs, 2012). The company has also received some funding from public sources. To date all expansion has been organic and no acquisitions have been made. Kiosked won the Red

Herring Top 100 Europe award in 2012, which is awarded for the most promising private ventures around the world.

Kiosked is attempting introduce a whole new paradigm into how online commerce works. E-commerce today and in the past has concentrated on certain large and small online stores, where the consumer has to go to the merchant's website to make a purchase. Kiosked wants to change this by bringing the online stores to the consumer, that is, to any website online. In other words, Kiosked is making it possible for consumers to buy anything they find or see online right on the spot. Online content owners such as bloggers, news media and other website owners can tag content on their websites with a "Kiosk". For instance, a blogger that that has a picture of Lionel Messi on his blog could tag the shoes that Messi is wearing in the picture, so that anyone who is reading his blog can purchase the same shoes by clicking on the shoes in the picture. The blogger and Kiosked receive a commission from each purchase made.

Management accounting

The accounting tasks at Kiosked were mainly handled by the financial manager and the CEO. Instead of outsourcing standard book keeping, the financial manager was hired early on to take care of the accounting function and HR. Her education is in finance and she has previous work experience as a financial manager in other companies. The prospect of hiring a CFO had already been discussed but had not been deemed necessary at a size of 40 employees. The CEO of the company also has a long career in financial management, including CFO experience from large companies.

According to the CEO the most important role of management accounting in growth companies is in spreading information throughout the company:

"The most important thing is the efficient sharing of all information in the organization, so that everyone has the same image of where we are. The largest problems in a growth company are caused by people having different ideas of where we are and where we are going… and management accounting is absolutely critical in telling us where we are. Where we are and where we are going, those are the two most important things in managing a growth company... and then there is also the other side of the same thing, where we are and what risks we have." (CEO, Kiosked)

From the perspective of the financial manager, the role main role of management accounting at this stage was in making sure the company does not run out of financing.

"Well perhaps that we have enough money. At the moment it is basically the only thing. It might sound funny but at the moment it is about using our money wisely." (Financial manager, Kiosked)

A key moment in the development of management accounting is when revenue growth picks up. The CEO illustrates:

"I don't think it (management accounting) gets more complex but it goes to a new level and understanding revenue streams is a whole new game. The first phase is costs and their control and understanding and then the next phase is about revenue streams. You put revenue streams on the top and most often they come 12-18 months behind (costs) in a good software firm."

The moment when revenue starts coming in is also a moment that increases the need to have a CFO in the company:

"It is easy when it is just costs and then a financial manager will go a pretty long way but when the top line starts coming in so do risks, you start talking about risks and the need for a CFO. That is also when law related tasks enter the picture; contracts have to be checked and optimized and so forth…" (CEO, Kiosked)

Cost and profitability accounting

Cost and profitability accounting systems were less important for Kiosked. There were several reasons for this, one of which was the simple cost structure of the company:

"We do like all growth entrepreneurs do, we look how much money we have and the biggest cost item is salaries and additional costs related to employment. And and…also external personnel, usually consultants. That's 90% of all costs." (CEO, Kiosked)

A simple cost structure makes it easier to keep track of your costs intuitively. One occasion where some cost accounting was needed was when preparing reports for public funding sources. The funding is related to specific projects and therefore specific project related costs have to be clearly specified. The CEO described the reporting as light however compared to the gain they receive from public funding, especially when compared to venture capital. Another reason for the relative insignificance of cost and profitability accounting was the uncertainty of the operating environment and the difficulty of forecasting.

"At the moment we have no profitability calculations because we just do not know how this is going to progress" (Financial manager, Kiosked)

Management saw no need to determine the costs of specific customers, although the CEO left open the possibility of calculating the costs of major accounts if need arises:

"We do not have it. We do not have need for it since we already have around 5000 accounts. We can measure some key account if need arises but at the moment it is not important for us. What is important for us is avg. revenue per user. (CEO, Kiosked)

The cost of an additional customer was so low that it was seen as fairly insignificant at the time of study.

"A paying customer is a satisfied customer and the more that customer pays the happier he is. We have such a high margin that customer acquisition cost is so very low." (CEO, Kiosked)

Budgeting and short-term planning

At the core of short-term planning at Kiosked were product and sales roadmaps which are constantly iterated to reflect changing conditions. Financial planning was secondary as long as you knew your cash flows.

"It's (roadmap) on a feature level. We iterate on a weekly basis. We have an agile product development method which is in sprints of two weeks. We have a relatively clear picture of what we have to do during the next 6 months. The order however changes and new things are added all the time." (CEO, Kiosked)

At the time of study the company did not have a budget yet but because they revenue was expected to start coming in faster in the near future a budget would also become more important.

"It is about cash flows. We are constantly iterating roadmaps on the product development and sales sides. Now again when we are moving on to the revenue phase we are going to start planning revenue streams in a lot more detail and that is when budgeting and stuff like that become a lot more important." (CEO, Kiosked)

Short-term financial planning was based on spreadsheet based financial projections that the CEO and financial manager had created themselves. It was deemed as enough to know the burn rate of the company and to have an estimate of when new financing is needed.

"No (we have no budget), but we know roughly what our burn rate is… obviously it goes over every month because we are growing all the time but just so that we know when we need to get more financing in."(Financial manager, Kiosked)

The novelty of the business and environmental uncertainty make it hard to forecast costs accurately:

"I have done some forecasting with spreadsheets so that I see how we are doing, but you just can't know what our costs will be even in two months… There is nothing to forecast from… sales have also done some forecasts that are based on their own judgment but you just cannot know. A company like this has never existed before." (Financial manager, Kiosked)

Investment calculation and monitoring

At Kiosked investments were evaluated in a very informal fashion. No formal processes for it were in place. When asked if they do any investment calculations, the CEO explains:

"No, it is all based on experience. We have a definition what's core and what is non-core and this is something that we revisit all the time. And in each of the cores we have to have the best possible resources available." (CEO, Kiosked)

The CEO left the door open for future strategic investments or acquisitions but elaborated that an acquisition would be too heavy a process at this stage of the company's development.

Strategic management accounting

In this study the focus of strategic management accounting is in its long-term orientation and external focus to the company. Kiosked had no direct competitors at the time of study but the CEO emphasized they do monitor the business environment and possible entrants closely. However, generally information about competitors was not thought to be in the domain of management accounting and not a responsibility of the accounting function. Product managers are responsible for monitoring the respective business environments of the products that they are responsible for.

"We have an employee that continuously monitors our competitive environment, sort of in the role of a product manager. The traditional role of a product manager is to be responsible for the profitability of a product but here the role of the product manager is to be responsible for the top line of the product and therefore also for competitor analysis" (CEO, Kiosked)

Management control

Management control was the most important aspect of management accounting at Kiosked. The key idea behind their management control is the clearness of all communication. As the CEO explains when asked how they control their employees:

"By giving clear goals and giving clear… clearness of communication is the most important thing…we have clear job descriptions, clear goals and they have all the tools needed to reach those goals" (CEO, Kiosked)

The financial manager and CEO thought that unless they create an organization that is able to scale from the very beginning, the extremely high growth that they are expecting and planning for will cause serious problems ahead and those problems can be very difficult to fix after the fact. Their goal is to be three times larger, as measured in the amount of employees, by end of 2013, which represents an increase of 80 new employees. A growth pace such as this obviously has some unique challenges:

"Everything we build has to scale, be it so called back end or front end the whole organization has to scale and you have to think about scalability all the time. So at different stages of firm development different types of scalabilities are important and this must also be taken into account in recruitment as well. The scalability of people, the scalability of software, the scalability of the business, the scalability of the business model. Scalability is in everything so that when you press the gas pedal everything has to keep intact." (CEO, Kiosked)

Management believes that extremely high growth requires that there are appropriate processes in place from the very beginning to handle that growth. Making sure that employees are careful with the company's money was seen as extremely important:

"That (management control) is pretty rigorous here. Because we grow so fast we have to have very precise processes how we do things. We just created an HR handbook that lists every action and how to do it… how you record travel expenses… when you go on a trip how much the trip can cost

and how much your hotel can cost. The point is that at some point if you do not have that control it is going to get out of hand." (Financial manager, Kiosked)

A lot of emphasis was placed on cost control and in making sure employees do not waste money on anything unnecessary and therefore expenditure approval procedures were relatively rigorous. Only for some very routine purchases the approval of the financial manager was sufficient. For instance, if a new employee is hired and new equipment such as a computer which can be bought without the CEO's approval because all employees need a computer to do their jobs. However, all non-routine purchases require the approval of the CEO. This applies even for relatively small purchases. Partly it is about creating a certain kind of culture for the company from the very beginning:

"…but all consultants, all business card purchases, everything goes through the CEO at the moment. Well papers and such do not go but we are really rigorous you have no idea. Even all the coffees that we buy here are marked down… but it is so that if you're not mega attentive it just starts slipping. When you've got 500 employees and everyone takes some extra then it starts to be quite a lot cost-wise as well." (Financial manager, Kiosked)

The financial manager also emphasizes the high uncertainty concerning the future:

"It is also important that everyone has the same way of thinking. Many Finnish companies I have seen are like: 'hey, we have a lot of money so we can just spend', but that is not true. If you do not take care of your finances you won't have money soon. You cannot know, you might have to subsist for a year or two and you do not know when money will start coming in. If you are not careful with your money you cannot subsist for two years. (Financial manager, Kiosked)

In addition to the high growth expectations, another reason for the tight cost control lay in the ownership structure of the company. At the time of study the company was owned by the founders, some business angels and employees, the CEO explains:

"We only play with our own money, not with anyone else's…when you have your own money at stake then there will be...I would rather put that 100 euros on Christmas presents than on some useless taxi trip, although you always do have to make sure that people don't sub-optimize. You can sit in a taxi for an hour if there's a client. It is unnecessary costs that we try to get rid of and

the focus is always on making sure that people understand to act like their using their own money." (CEO, Kiosked)

All invoices are also content checked before approval. Previously it had been enough for the financial manager to simply visit the employee responsible for the invoice but recently the volumes had become so high that the process had to be made more efficient. Now the invoices are sent for content checking through their accounting software.

In addition to expense approval procedures, an important aspect of management control at Kiosked were Key Performance Indicators (KPIs) which they had adopted three months before the time of study. They had also hired an employee that's sole responsibility was developing and managing those metrics. As was the case with many other things in the company, the adoption was related to the start of the revenue phase.

"It was adopted probably because we started having more business. Before that we had just done the background work so we did not really need them. " (Financial manager, Kiosked)

The KPIs were under constant development but at the time of study they had 3-5 metrics per business process; sales, accounting, R&D and so forth. Each department had quarterly goals for each metric. This was a part of the roadmap process mentioned earlier. The metrics were mainly monitored on a weekly basis but sometimes even daily and the goal was to iterate even faster in the future. The CEO had wanted KPIs from the very beginning but no one had time to go through the data until recently:

"Micke (The CEO) had wanted them all along but no one had had the time or resources to start going through the data. Micke just said that now we simply have to get it done.. Before this the traffic levels were so low that you wouldn't even have had to look at those (metrics)." (Financial manager, Kiosked)

The financial manager also has a bi-weekly formal reporting cycle to the CEO but recently they moved into a weekly reporting cycle. Additionally, the income statement and balance sheet are reported monthly.

5.3. Arcusys

Arcusys Oy is an IT services company, so although it is a software company its business differs from that of Tuxera and Kiosked in many ways. Whereas Tuxera and Kiosked are in new markets, have products which they have developed and sell themselves and at the time of research had close to nonexistent competition, Arcusys builds custom software for their clients in an industry where competition is harsh. Arcusys has clients both in the public and private sectors and from various different industries.

Arcusys was founded in 2003 by four engineers from the ruins of a company that they used to work for, which went bankrupt when the IT industry collapsed in the turn of the millennia. The early days of a company are often hard and so it was for Arcusys. It is hard for an unknown company to convince potential clients that they are reliable and that they will exist in the long term. Finally they managed to get the business growing during the year 2004 by acting as a sub-contractor for larger companies. Still, they did not achieve profitability until the fourth year of operation (2007). Then when things had started to look up for the company, the financial crisis hit in 2008. Most of their existing customers suffered setbacks and also Arcusys was affected. The company decided to pivot to service cities and the health care industry, which turned out to be a good strategic move and the company managed to continue on its growth path. Since year 2010 the company has expanded geographically and now has four offices; in Helsinki, Oulu, Joensuu and in the Russian city of Petrozavodsk.

In terms of growth, the company recorded 3,9 million euros in sales during its latest financial year and due to a recent acquisition it expects sales of over 6 million for the ongoing year. During the company's 9 years of operations, it has recorded a minimum yearly sales growth rate of 10%, even in tough macroeconomics times. In recent years, its worst growth percentage has been 70% a year. The company currently employs 75 people and is attempting to reach a headcount of a 100 before the end of 2013. Last year they recruited 17 new employees.

The company is owned by five individuals, including four majority shareholders and one minority shareholder. All the original founders still work in the company and participate in day to day operations. Three of the majority shareholders are original founders of the company and the fourth majority shareholder acts as the chairman of the board. There is no venture capital invested in the company but a recent acquisition was funded with a loan which has some influence on their operations through loan covenants.

Management accounting

The company had hired a CFO two months before the time of research. The newly recruited CFO is the first manager in the company with formal accounting education and relevant previous work experience. She also has previous experience from similar positions in other growth companies. The hiring has had a positive effect on the development of the accounting function.

Before the CFO was hired, accounting related tasks were the responsibility of the CEO and a controller, both of which had learned accounting on the job. Routine book keeping is outsourced to an accounting company but many management accounting tasks are handled internally. The company also has an ERP system called Planmill, which handles many of their management accounting processes.

For Arcusys perhaps the most important role of management accounting was related to managing cash flows.

"I think it's about yes we can grow, but so that the growth happens profitably and so that we are not in a situation where we are out of cash just because we did not monitor it enough." (CFO, Arcusys)

"In managing growth the most important thing is in managing your cash flows. If you have a weak cash situation you cannot grow. That is the important thing. And your expenses cannot grow faster than your revenues. Monitoring that relationship." (CEO, Arcusys)

The CFO does however emphasize that the earnings of the company can drop when are aiming for growth.

"Yes it is most important (cash management), of course earnings can dip when you are reaching for growth but your cash situation is especially important because it's a bit of a no can do situation if you cannot pay your employees." (CFO, Arcusys)

Another role of management accounting was to give the managers a better understanding of the big picture of what is happening in the company.

"…finance gives you that big picture of the company easier, especially management accounting so that management knows where we are and where we are going as a whole." (CFO, Arcusys)

It is also about coordinating activities and making sure that the company does not over extend its capabilities.

"I myself think that this is about collecting strings into one pile… so that everyone is going in the same direction and with projections we can see that now we have to slow down a bit, that we cannot get involved in everything. Similarly we can say that no problem the projections look good so go on. And for Jussi (CEO) it is especially important that when he makes decisions he knows what kind of consequences they will have and even though they are forecasts and accurate as weather forecasts at least there is some kind of a financial foundation." (CFO, Arcusys)

Especially in a company that grows very fast it is easy to lose that sense of the big picture. The CEO illustrates:

"I once asked a sales manager as a control question how much our monthly burn rate is. He told me it is 100000 when actually it was 190000 at that point. He had not synched his information in 9 months, so you kind of lose your internal mindset of how much you have to sell." (CEO, Arcusys)

The CFO is solely responsible for financial matters in the company, however, this is not the case in companies of similar size:

"My role has largely been external and internal accounting, so I am purely doing finance related tasks. In many companies of this size the CFO has many other roles as well but I have been able to concentrate on accounting and I have to say that that there really is a lot of work in a company like this that has mergers and acquisitions." (CFO, Arcusys)

Cost and profitability accounting

There is cost and profitability accounting in Arcusys at two levels, at the project/client level an at the business level. Since Arcusys is a software company, the bulk of their costs are related to employees which simplifies their cost structure and makes it more manageable, as was the case in the other software companies in this study.

"Mostly it is actual income statements that we monitor, profit projections that we prepare, and important indicators that we follow pretty closely and compare those to the numbers of other players in the industry. (CFO, Arcusys)

An important reason why the indicators are routinely followed is that a financier has set covenants that have to fulfilled.

"Well of profitability we follow our profit margin, return on investment, equity ratio. We have all the same indicators that are for instance followed in companies' credit ratings… the most important indicators that we follow are equity ratio and gross margin. So those are important because we have external funding and the financiers have set certain covenants that we have to fulfill. (CFO, Arcusys)

An important aspect of cost accounting is also related to pricing. In order to price their projects Arcusys needs to prepare work time estimates and then allocate developer time accordingly. The time estimates are prepared by senior software architects. Employees are grouped based on their seniority and therefore their cost for the company. The time of a senior project manager is more valuable than a student's. Since the company is in a project business they are often bidding against multiple other companies that are trying to get the same deals, which puts a lot of pressure on pricing.

The first years of the company were tough, and the CEO explained that at that time there was not much understanding of costs in the company.

"In the beginning it was much based on luck and we made a lot of offers with a fixed price that had no room for flexibility. We did not even calculate will we make a profit or a loss. We did not know that for a specific client. It was more of as feeling based thing… and for the first three years we did make losses." (CEO, Arcusys)

The CEO says there was not specific event or point in time that led to the development of the current way of doing things but rather these practices have slowly developed. Nowadays the company follows the profitability of different clients through their ERP system, which has been in use for a couple of years. During the first few years there was no systematic profitability analysis of projects/clients but rather it was more based on management's intuition of which clients were creating the most profits and revenue. In 2007, the first year the company was profitable, they adopted systematic profitability analysis.

"Well we have gradually developed it. Cash flow projections have been there all the time and we kind of lost that intuitive sense that we get a lot of money here and less money here and here we seem to be doing more work than here and in 2007 we started moving into systematic project profitability analysis so that after a project we looked how well we hit our targets and also switched into hourly work in our offers so that the risk got mitigated to some extent." (CEO, Arcusys)

Budgeting and short-term planning

Budgeting at Arcusys has in recent years taken big leaps forward. An operating budget was initially adopted in 2010 and has since developed gradually.

"it began so that we started thinking based on old income statements and growth, where these could settle in the future and slowly we have developed it and now we are at the point where we have budget owners and monthly monitoring." (CEO, Arcusys)

A reason for the budget adoption was that sums of money were starting to get so large that it was getting hard to have an intuitive sense of what was happening in the company.

"The sums of money grew to the point that we had to start monitoring. Our revenue was somewhere between a million and two million and it might happen that woops, an invoice of 60000. What does this include? Have we expected that this is coming? I wonder how much we are using on computer purchases this year. Before that it was like 2000 euros for a computer which does not matter that much but when you make a leasing agreement for 50 computers it starts to be such a long term cost that you have to start tendering and the like." (CEO, Arcusys)

When the company's revenue was still below a million euros their cost control was very ad hoc and invoices were simply paid when they arrived. This caused surprises later on in the income statement. In the very early days the focus was in liquidity and in monitoring cash balance.

"Yes cash balance was monitored, especially in the beginning, at the invoice level when our revenues were under a million. At some point we simply switched to monitoring the cash balance levels so that it could vary in a certain level. For instance that it could not go under 200000. And

now that Kaisu (CFO) has started she has taken it to a new level and now we know with a lot more certainty what our monthly expenses will be." (CEO, Arcusys)

In the beginning of the ongoing financial year the company took their budget a step further by introducing sub-budgets. The budget is prepared once a year and approved by the board of directors and then updated every quarter. Only the yearly budget is however approved by the board of directors.

"Yes every quarter we check how we are doing compared to the budget and of course we have people who are responsible for their own sub-budgets and with them we check that if someone has needs to exceed their budget or another does not need the whole budget then we modify the estimates so that we stay at the budgeted results. If there's an important situation that has to be taken care of then we get approval that the budget can deviate from what was budgeted. (CFO, Arcusys)

The budget consisted of the following sub-budgets: Employee budget (training etc.), sales and representation budget, marketing budget and software and hardware budget. Each sub-budget has a budget owner who is responsible for the budget. In addition to the budget the HR manager is responsible for monitoring larger cost items such as salaries. The most important of the sub budgets was the sales budget.

"we have a sales budget which is actually the most important budget. We make an invoice estimate with which we can see some months ahead with pretty high certainty and we can determine a range where it deviates and where the minimums and maximums are. And then the budget owners are told, especially if we have go down, that now sales looks so weak that you should refrain from using the budget now." (CEO, Arcusys)

The budget is prepared in a top-down fashion. Management prepares the initial budget which is then fine tuned with comments from the budget owners.

"Well it is prepared from the top down the budget and then the budget owners have of course been given the chance to comment on what it looks like.. We have had a certain revenue target and a certain earnings target and based on that we have started thinking where that money is spent." (CFO, Arcusys)

The CFO monitors the sub budgets on a monthly basis. She reports the actual costs on each sub budget to the budget owners on a top line basis and if need arises then investigates the line items further. This is however unlikely to happen since each invoice is content checked before it is paid.

The main purpose of the budget is to control the organization and guide employee behavior. The company does not however want to control its employees too strictly so each budget owner can use their budget as they best see fit.

"Mostly the purpose of the budget is to guide and we have not defined what the budget responsible employees have to do with the money. For instance if there is a certain amount of money for marketing then the marketing manager decides based on his own judgment how he uses that money. He knows the goals of the company and where we need to go and he decides the best marketing methods to reach those goals." (CFO, Arcusys)

The budget is prepared to support the growth vision of the company:

"…the budget that we prepare is made for the whole year and we try to make it so that it supports our growth objectives and here it is not a virtue if you have not used up your budget if it means that you have not taken the necessary steps that have to be done to make the growth possible." (CFO, Arcusys)

There are three versions of the budget; worst case, optimal case and best case scenarios and the budget is updated every quarter.

Investment calculation and monitoring

The only operations at the company that they think of as investments are acquisitions which are an important part of the company's growth strategy.

"Well for us, what is traditionally understood as investments, are mostly acquisitions since we do not have any machine investments, or of course we need computers but those aren't really thought of as investments." (CFO, Arcusys)

It cannot really be expected that a company of this size would have any very formal investment processes in place. However, at Arcusys investment calculations will have a larger role in the future because of the new CFO's background in investment calculation. The company had also done one acquisition before the current CFO joined the company but back then the financial side was handled by external consultants.The company has also acquired acquisition expertise to their board of directors.

Strategic management accounting

Arcusys operates in a competitive industry; there are many similar software houses in Finland. So far the company has only done minor monitoring and benchmarking of competitors. What they have done has mainly related to the revenue and earnings levels and growth rates of competitors.

"We have not really done any cost structure analysis of our competitors but I do have a lot of income statements on my table here so we do follow revenue and earnings levels. Each year we find out have we grown faster or slower than competitors and have our earnings been better or worse." (CEO, Arcusys)

Basic monitoring of profit and revenue levels of competitors started years ago.

"Well revenue and profit levels of competitors have been monitored at least 4 years but closer analysis of how they use their funds and do they have fixed or variable costs or depreciation has not been done. It is fairly recent." (CEO, Arcusys)

The arrival of the new CFO has affected this function as well and recently the company has started analyzing the financial statements of competitors in some more detail. However, it has not been a priority the development of this area has been overrun by more pressing accounting needs.

Management control

Currently the main formal method of management control in the company is the budget. Since the new operational budget is a fairly new thing for the company the focus in terms of management control has been in making sure that it works well and everybody in the company understands what it means.

"As I said at the moment this budget monitoring and responsibility is a new thing so we have started by making sure everyone understand what that own budget and budgeting means and that everyone takes responsibility for the costs that are incurred under that budget. We have not developed any other indicators yet but concentrated on making sure that we get this budgeting tool so that it is more than just numbers and really works as a controlling tool." (CFO, Arcusys)

Nowadays the company has expenditure approval procedures in place including content checks. This has not always been the case. The company adopted these at a fairly late stage in their development.

"Well in the beginning it was easy because there was no money so you could not buy anything but when we could the invoices simply went by me and I paid the bills myself, so we did not have any formal processes in place for it. But when we adopted digital book keeping a couple of years ago the content checks and approvals came with it. Then we developed it in to a two phase process where the content checker and the approver are a different person." (CEO, Arcusys)

The company has some employee compensation schemes in place. Sales has its own compensation scheme but for the rest of the company it is a companywide system because it is hard to make cause and effect relationships for many employees.

"We have a yearly bonus system in place, we have employee yearly bonus and also management yearly bonus but nothing based on accounting… A success of a single coder may show somewhere else than in money made. Some guy teaches another and does a lot of couching which takes us forward a lot even though he has not made many billable hours." (CEO, Arcusys)

Stock bonuses are common way of compensating and motivating employees but at Arcusys they are not in use. In fact they believe that they have the opposite effect.

"The chairman of our board just told us that for them the exact opposite happened when they had such a thing and he was the group CEO of a large international company and they had 120 partners and those 120 people thought that now that they are partners they don't have to work as much and that they can move more freely and that they don't have to listen to anyone" (CEO, Arcusys)

5.4. M-Files

M-Files is a software company that develops and sells document management software for companies of various sizes. M-files is the largest and oldest software company in this study. Their main competition comes from large established companies such as Microsoft and Oracle. However, the CEO points out that their largest competitor is non-adoption rather than another company.

The company's roots are in an architect/engineering office in the 1980's. The current CTO of M-Files was working for the company back then and developed a plotting software application for

AutoCAD users. Clients of the architect office heard about the software and were interested in purchasing it. Things picked up and eventually the company was in a situation where they clearly had two distinct business areas. A decision was made to divide to two businesses in to separate companies. In 2002 the development of the current main business, the document management software began and its first version was released in 2005. Nowadays most of the revenue the company creates is somehow related to the M-files document management software.

In recent years the revenue and employment growth of the company have been relatively steady. All available resources and profits are invested back into growing the business. The result has been that the company has recorded a loss in past couple of financial years. However, this has been a direct result of their expansionary strategy in that sense planned unprofitability. In 2012 the company recorded sales of 9 million and employed a bit over 100 employees. The company has also expanded geographically and internationally by opening new offices in Finland and by founding a subsidiary in the United States. In addition to direct sales the company also leverages a wide international network of distributors.

M-Files is still mainly owned by the same people that initially founded the company and the software business. Additionally in the spring of year 2013 the company acquired its first rounds of venture capital with a venture round of 6 million Euros. The investors included a british Venture Capitalist called DFJ Espirit and Finland’s industry investment fund Suomen Teollisuussijoitus.

Management Accounting

At the time of study, the accounting function was mainly handled by the CEO and in addition to that there are a couple of employees that have some financial administration related tasks. Standard book keeping is outsourced to an accounting company. The company was however at the time of study in the process of searching for a CFO. The CEO emphasizes that their employment costs are starting to reach a level where a CFO is needed. However, the realization that a CFO is needed was the result of multiple separate things.

The current CEO of the company was originally hired to take responsibility for strategy work, finance and administration and at the time of study had been the CEO for one and a half years. Managing growth has been the main focus of financial management for the company.

"So far financial management here has been more about managing growth and creating the structure for growth. Now we are starting to reach a size where… monitoring costs more carefully and more precise management accounting are needed at another level" (CEO, M-Files)

When asked about the importance of management accounting for managing growth, he responds:

"I'll answer by asking can the other exist without the other. In my opinion they are so tightly related that managing growth is precisely creating that growth, monitoring growth and interfering in situations where management accounting is that central tool. You cannot create growth or know where you are going if management accounting is not handled well." (CEO, M-Files)

The CEO admits that he would have liked to place more emphasis on this even earlier but there simply is not time to do everything.

"There are things that you want to do but you simply do not have time to… Nowadays our costs are starting to be so high at these employment levels that it is starting to require more calculation work so that we can predict and anticipate our profitability levels at different recruitment levels like if we have this much revenue, how does it affect our cash flow and balance sheet." (CEO, M-Files)

Cost and profitability accounting

As was the case in the other software companies in this study, cost and profitability accounting played a fairly minor role at M-Files.

"For us cost and profitability accounting, let's say until fairly recently has been pretty minor, since we are a software house 75% of our costs are employment costs so basically the speed at which we recruit people determines our cost structure." (CEO, M-Files)

Profitability accounting has been especially secondary because of the company's growth strategy

"Profitability has been especially secondary compared to growth. The valuation of IT companies is comprised mainly or even fully, especially for growth companies, of the speed of growth and revenue and in that sense profitability has no direct impact." (CEO, M-Files)

According to the CEO, profitability will become important once growth starts to saturate.

"Of course when growth saturates and the revenues level of the company stabilizes then we start talking more about normal valuation principles where profitability has a large role but as long as our growth is around something like 30% profitability does not have so much influence." (CEO, M-Files)

He also elaborates that they do of course want to avoid large losses and that the situation is different when you do not have funding to finance your growth and solely grow organically.

"Obviously we do want to avoid large losses... without investment financing we lived off our profits and therefore we have also paid attention to that too. These have perhaps played a smaller role because of the small size of the company and because our priority has been in building growth. (CEO, M-Files)

The cost accounting that they are currently doing is related to budgeting, which they have recently started paying more attention to.

Budgeting and short-term planning

At the time of study M-Files had a yearly budget that is created at the end of the fiscal year for the following year. Follow-up control is done once a month to see how the business has actually developed in contrast to budgeted numbers. When significant deviations are identified management can consider adjusting the budget to reflect changing circumstances.

"We create the budget at years end for the coming fiscal year. It is a sufficient level and then during the year each month we monitor where we are going… each month we compare actuals to budgeted and of course if the situation demands it, that something has happened we can create a new estimate during the year for a single unit or for the whole company. (CEO, M-Files)

The budget consists of sub-budgets and each department head is responsible for his/her respective part of the budget. The management team however is responsible for monitoring costs at the company level. The purpose of the budget is in planning and executing the strategic plan of the company.

"We have thought beforehand what we want to achieve, we have in our strategy/vision work determined the guidelines and level that we want to achieve and then we think what we have to

do next year to achieve those goals. So we do not look in the rear view mirror that we grew this much last year so perhaps we can do that minus 10 percent or something. (CEO, M-Files)

The process starts by determining the revenue levels that the company wants to achieve and then from that they can derive their cost budget, how many employees they have to hire and so forth. The budget has developed gradually as the company has grown. Originally the sales units simply tried to sell more than they did the previous year.

"When I joined the company, sales units had their own targets but there were no company level targets. So it did not start at the company level but rather so that sales units tried to sell more than the previous year... Admittedly the size of the company was small back then so there was not any need for more but now we have clear and strong budgeting principles which we go by. (CEO, M-Files)

Theory often emphasizes the importance of cash management for early-stage companies, at M-Files it has not however been particularly important.

"Well it is of course a practical reality that your cash balance affects all planning and is one influencing factor… for us the situation has however traditionally been so good that our liquidity situation has not caused a lot of pressures on planning our operations." (CEO, M-Files)

Investment planning and monitoring

Similarly to the other software companies in this study, M-Files did not think they have investments in the traditional sense. However, closest to what they have to investments are when they hire new employees and the successfulness of new employees is monitored closely.

"We do not have this sort of investments. For us investments are more like individual new salesmen or employees... of course in that sense the successfulness of recruitments is monitored and then we consider what to do if it is not working out but we do not have other kinds of investments like machinery purchases or the like. (CEO, M-Files)

The company has not done any acquisitions although the CEO does leave the door open for it if interesting opportunities arise. In terms of technology investments such activities have been so minor to date and only comprise of minor licensing fees so there is no need for investment calculation in that sense.

Strategic management accounting

At M-Files strategy work was not closely related to the accounting function. As with many of the other case companies it was more related to marketing.

"what comes to competitors there probably is no direct link to accounting but of course through positioning to our competitors it is important that we know the environment that we do business in and of course monitor our competitors." (CEO, M-Files)

The CEO does however identify one aspect of it that does have a link to accounting. They need to know their costs in their pricing process.

"Perhaps one link to accounting is when we consider our own pricing in the short and long term… since we are in the market a challenger to established dinosaur companies we do not have the possibility of setting high prices… we monitor what our competitors do about their pricing and in comparison to us and what we should do and that has its effect on our profit expectations through the price elasticity of demand." (CEO, M-Files)

Management control

The budget plays a critical role in terms of management control at M-Files. However, in addition they have adopted capital expenditure approval procedures and Key Performance Indicators (KPI). The KPI's are a complementary system to the budget since many of the indicators are derived from the budgeting process.

"..we do follow and monitor what we do very closely, actually in everything that we do; R&D, sales and service.. for instance sales people have this normal lead-flow management." (CEO, M-Files)

The KPI system has developed gradually with the company.

"Well certain kinds of KPIs are needed in management, I'd say that some sort of KPI has probably always been in place since we hired our first sales people and consultants so we have wanted to measure how work is monitored and targets are set. (CEO, M-Files)

The CEO also highlights that management control is not that much perceived as belonging to the domain of accounting.

"In my opinion this is more about management structures rather than accounting. Maybe the link to accounting is not there or the link is that the targets are of course derived from the budgets but perhaps other kinds of links are not there." (CEO, M-Files)

The company does not have any companywide compensation systems in place.

5.5. Beneq

Beneq is a nano technology company that was founded in 2005 as a spin-off from a company called Nextrom. Nextrom was in the fiber and fiber cable business and the management of the company saw opportunities in taking the core competences of the company to new areas of application. In 2004 Nextrom was sold to a new owner which was not interested in the new business opportunities that some of the managers of the company had. This is why they decided to spin off their ideas from Nextrom and took 10 employees with them.

The company did not have a clear focus in the very beginning but soon the company decided to focus on two technologies: atom layer deposition (ALD) and an aerosol coating technology developed by a Finnish company called ABR Innova. The idea was to take these two technologies to new areas of application. In the beginning the company partnered with ABR Innova, the owner of the aerosol coating technology, and ended up acquiring the technology in 2006. There was more to come and in 2007 they acquired the ALD business from Planar. Afterwards the company experienced very high growth in terms of sales and the amount of employees and in 2012 the size of the company doubled when they acquired yet another part of Planar; their electroluminescence display business which is based on ALD technology. This was in many ways a defining moment for the company because previously they had only been in a project business but now they were entering a totally new kind of business where they manufacture devices themselves.

The company has grown very rapidly; on average the company has doubled its revenue every year. In 2010 the company reached double digit revenues by hitting the 10 million euros mark. In 2011 they made 18 million in revenue but the year 2012 was the first year when they did not experience any revenue growth, instead their revenue dropped slightly. This was due to a sudden crash in demand. Nevertheless the company performed better than its competitors. The company has operations on a global scale, but the core of the company resides in Finland. In addition to their Finnish offices they have sales operations in Russia, China, USA and Germany. At the time of study the company employed 160 employees. The company has not been profitable for most of its history. This has however been planned.

"In that sense we are a very exceptional company. We are venture capital funded and aspire for growth where the venture capital has been specifically used to fund that growth and if you look at how our profits have developed you'll see that we have always been making clear losses. However, excluding last year it has been planned losses." (CEO, Beneq)

The majority shareholders in the company are venture capitalists, which have entered the company at different funding rounds. A total of four venture capitalists have invested in the company. The rest of the ownership is in the hands of management and some employees of the company.

Management accounting

Beneq has the largest accounting function of all the companies in this study. The current CFO is one of the founders and was CFO at Nextrom before Beneq was started. They have also had a controller for a couple of years and recently hired a book keeper to help with routine tasks. Book keeping is handled internally instead of outsourcing.

When discussing Beneq and its accounting function it is worthwhile to note here at the very beginning that there are two main business areas that are responsible for the bulk of its revenue; the machine business and the device business. The device business was recently acquired so the accounting function at Beneq was in the middle of radical change at the time of study. The reason why the acquisition is so significant is that the business that they acquired was of similar size to their own existing business and on top of that the new business has very different accounting needs compared to the traditional project based business that they were in. The accounting for the new business has to be rebuilt from the very start since the business used to be a part of a large multinational company and hence in that environment the reporting needs were different.

The machine business was what the company had done since its founding and is where the core competences of the company lay. The CFO illustrates the special characteristics of the machine business:

"This machine business, it is at its nature project business, and there it is always important to understand when talking about control and reporting etc. that it has its own nature project

business. It means that there are no inventories. The construction of our product, the machine, begins only after we get the order from the client and there is always some customization, and therefore in terms of control and management accounting at the core there is cost monitoring and project budgeting." (CFO, Beneq)

As can be seen from the quote, on the project business side project control was based on project budgets and then monitoring the cost of the project based on the budget. This will be discussed in more detail in the budgeting section. The device business on the other hand had different rules in terms of control and monitoring, as the CFO illustrates:

"The important thing there is that, yes there are inventories, materials and finished both are in the inventory and there controlling the load of manufacturing is important so that we control that we do not make too much in to inventory and yes in terms of cost accounting we have a standard cost model since we have quite a few products after all." (CFO, Beneq)

Another special characteristic of Beneq's business that has implications also for their accounting function is that the company leverages partnerships to a very great extent, in fact, on the machine business side they do not build any parts of the machines they design.

"We do design work, project management and sales, and spare part service. But after design, even part of the design work is outsourced, all services including assembly is done in our sub-contractor network. It creates one further special characteristic to this accounting or management reporting also how to estimate costs of production when it is in the hands of subcontractors to create the machine." (CEO, Beneq)

At Beneq, forecasting the future is seen as a major role of management accounting.

"…as in any type of business, management accounting and reporting is critically important in order to manage growth but of course in company such as this that is growing extremely fast its role is emphasized. Forecasting the future has a central role. Reflecting on history is of course important and that we have an understanding of what has happened… but I would say that the challenge of forecasting the future gets emphasized when you are reaching for 30 or 50 percent growth, not to mention growing a 100 percent." (CEO, Beneq)

Also, the project nature of their business makes it even harder than normal. The low number of revenue sources makes revenue levels very volatile.

"Then there is this project aspect when 10 or 20 percent of revenue comes from a single project, at worst even more. It is extremely difficult." (CEO, Beneq)

While a single project can have a very significant effect on the company's cash flows, a further difficulty is that terms of payment vary a lot across projects.

"Another special characteristic of this dimension is related to cash flows… here cash inflows vary a lot, the terms of payment related to client contracts; how much the client pays in the beginning, in the middle and in the end. There can be a lot of variation so reporting and forecasting this is its own dimension in itself, our own special characteristic and an important thing for management. At the moment we have done this with spreadsheets since our ERP does not support it at the moment. "(CFO, Beneq)

A special feature of management accounting in growth companies is also that forecasting the future is highly related to planning for cash flows and financing. This is especially true for a company such as Beneq that requires multiple rounds of financing.

Cost and profitability accounting

Also when talking about cost and profitability accounting at Beneq, one has to keep in mind the differing needs of the two main business areas and their distinct needs. However, the two business areas are not completely different but share similar ways of accounting for fixed costs:

"*and then we have these actual operational costs or fixed costs that are under the margin. Well that is pretty much with similar techniques and with pretty traditional techniques both there at the machine business and here (device business). There are certain cost centers and some team leader that is responsible for his cost center and the IT guy is responsible for his cost center and the sales team leader is responsible for his. (CFO, Beneq)*

Continuing on to the special characteristics of the two business areas, as mentioned previously, on the device business side Beneq has a standard cost model. Since the device business was still a very new thing for the company and the accounting function, the CEO and CFO admitted that they are still on the learning curve in that sense. The company has calculated a standard cost for all the products that they have, around 60, but for a company that has previously earned its stripes in a project business learning a totally new kind of business is challenging:

"and we have calculated a standard cost for each one (product), like so that how long, say 15 minutes, it takes for a factory employee to do that phase… It is very different to controlling a project business and of course in a way sensitive to the production volume so that this standard costing thing requires quite a lot of allocation of indirect costs to the product, so how much of a factory's fixed costs or different kinds of overhead you allocate to the product, the impact of that is central. The production overhead element is absolutely central to how you monitor the margin and of course it is critical that you know how to monitor the load of production." (CFO, Beneq)

You need to know your costs to price your products properly and make sure that the company gets a decent margin on sales. This seemed to be one of the driving needs behind the company's cost accounting development.

"Yes and pricing is also based on that… the load on production has a big impact on what the cost structure per product will turn out to be and put the product mix on top of that and then you can somewhat rationally do so that you end up with a decent margin" (CEO, Beneq)

A further difficulty in Beneq's business is that although they want to be dynamic and flexible, in their industry you cannot change you prices all the time and have to keep them fixed for long periods of time.

"After all we are in a business where you cannot change your prices every day. We should be able to be dynamic but at the same time we have to live with standard costs, when you have sales networks and distribution networks for which you give fixed prices for relatively long periods of time and I can say that our end customers would not take it very well if prices fluctuated a lot." (CEO, Beneq)

The company was experiencing challenges in deciding how to allocate overheads to the products.

"we have people who cause both variable and fixed costs in their work and who participate in R&D projects and client projects and it creates this challenge that really is quite a big one that on what basis do we allocate, what keys do we use to allocate and how many hours do we allocate to variable and fixed costs." (CEO, Beneq)

A major difference between accounting for the two business areas is also the fact that in a project business you can require employees to manually record the time they have spent on specific projects whereas in the device business you cannot do that. In the device business you have to define that you are a certain kind of employee and therefore the costs you incur belong to this and this category.

When discussing how cost accounting had developed in the company during the years, the CEO highlighted the fact that the founding team came from a similar business together and took a certain kind of way of working with them.

"Well it's probably partly been that there are those certain methods that we have in project business, in that way we have of course come from a similar sort of business and kind of inherited a certain kind of way of doing things from Nextrom, and fundamentally accounting and reporting is very similar since it was project business there too." (CEO, Beneq)

Since then they saw that management accounting in the company had developed little by little, based on some information getting outdated or a change in the needs of management.

"It has developed little by little, exactly the way that perhaps something works but it does not give us enough information or the information is outdated or misleading so little by little it has been developed based on what the needs of management are and those needs slightly change in time." (CEO, Beneq)

Budgeting and short-term planning

Budgeting was an important part of operations at Beneq, in particular for the machine business. Project control was based on a project budget, which was then monitored in a formal fashion. At the company level, Beneq had also a couple of years ago moved to rolling budgeting instead of a yearly budget.

"One substantial development and in my opinion a central thing is that we have moved from a yearly budget to rolling budgeting. It has been an exercise that we have taken through and I can say that every project businesses should make a rolling budget, or actually all businesses should preferably use rolling budgeting." (CEO, Beneq)"

At the company level the budget consisted of two parts; one for accounting for the fixed costs and the second part for forecasting sales and margins.

"In budget methodological terms it (the budget) consists of two parts, monitoring fixed costs per cost centers and sales and margins budget which is per project and is based on the sales forecast." (CFO, Beneq)

A rolling budget is important for Beneq because planning and especially resource planning is very important for their operations. The old budget was a traditional yearly budget, which was also updated with a latest estimate every quarter but in the end of the year there simply was not enough months left in the year to plan properly. This was the main reason for switching to rolling budgeting.

"*Planning needs. Especially resource planning. We are in a business where we buy a lot of from outside so we have to be able to see a lot further than two months. 12 months is in a way the minimum that we should be able to forecast for our whole network fairly reliably. The development of our sourcing activities is pretty much based on what we forecast. Our own resource planning, our planning of external resources, it is all based on what the world looks like for the next 12 months in the light of financial numbers." (CEO, Beneq)*

The CFO puts special emphasis on the significance of sales forecasting. The sales forecast is the starting point for budgeting and therefore it has great significance, especially for a high growth company.

"We have been a growth company and hopefully still are one… A very very significant element of management reporting is this sales forecasting because that is in a way what everything starts with." (CFO, Beneq)

The special characteristics of project business also show in sales forecasting. In project business the companies often only have a small limited number of projects at the same time and the sales cycle is very long, typically 12 months. At Beneq they had around 15 active projects on the way at the time of interview.

"In project business you negotiate for 12 months, you negotiate for a long time on some projects. They are known in our pipeline, there may even be very detailed information that there are these kind of projects under negotiation and they might come in three months, a year, a month and then what we take into our forecast or budget is an absolutely central thing. This is more stable this device business." (CFO, Beneq)

Unlike in many other businesses, in a project business you know what deals might be happening during the next 12 months and you have relatively specific and accurate information about possible deals in the future.

"But in fact this is in a way a very characteristic aspect of project business this sales forecasting, forecasting new sales, unlike many other businesses here we know the projects, which consist of specific projects that have a price and we really do not estimate here if we sell 100 units of this at that price… we have a year's window ahead where we have certain projects, client names, prices, rough specifications and then we just decide which projects we dare to take into the forecast." (CFO. Beneq)

Due to the fact that there are only a limited amount of projects at one given time, it is difficult to forecast because the significance of one project is so large for the whole outcome. It is also difficult to estimate the likelihood that a specific project will actually happen. One major deal that fails to realize might cause significant deviation from what was forecasted.

"If we for instance think of sales as a measure, we are on a measure of one meter somewhere around 10 centimeters when we are making the specifications for the client. At half a meter we know are we in or not and the last half a meter is stuff that is so much more in the hands of the client and not in ours that we cannot expedite it according to our own schedules but instead we have to commit to the client's schedule." (CEO, Beneq)

The project budgets were initially done with spreadsheets but then the company adopted an ERP system called LEAN which allows a better way of preparing and managing the budgets. The guideline for updating the project budgets is that it has to be done all the time, however, there is also a more formal monthly reporting cycle.

Investment calculation and monitoring

Beneq's investments are mainly investments in R&D, especially on the machine business side. Yet again it is important to keep in mind the differences of the two business areas and the history of the company, which is mainly in the project based machine business. In the machine business Beneq designs machines but does not manufacture them, this is done by their subcontractor network, which allows them to avoid investments in production capacity. The CFO explains investments in the machine business:

"Ok, well in classical terms we do not have investments, we have R&D, resource and development investments, we have no investments in factories or production because we do not have any production of our own so we have no production capacity investments, which when you read a textbook of investments this is what is usually meant by them. Our capex which is our investments is R&D." (CFO, Beneq)

The process behind investments decisions is fairly ad hoc. The company does not use investment calculation methods such as payback periods or internal rate of returns. The management of the company has not seen this sort of investment calculations as relevant for their aspirations. Partly because it is part of longer term development path.

"We do not think it is very relevant since these are not distinct projects but rather a continuum of things that we develop. We do not think it is relevant to start calculating payback periods." (CEO, Beneq)

Investments are based on the growth strategy and vision that management has laid out. Growth is the main driver behind the decisions.

"We are a very expansive company that all our investment plans are based on, have based in the machine business on the roadmap which leads to massive growth potential, the kind of things that go from a million to hundred million. These steps have to be taken, does not matter if we do it by ourselves, with a client or another way these things got to happen so that we get this business in three years, or in five years or in seven years." (CEO, Beneq)

The markets that the company is reaching for are so large that the investments that they make today are so small that management believes it is insignificant to calculate the profitability of an investment. The overall potential is so great.

"Payback accounting has not been essential for us but instead it has been essential for us to find investments that make it possible for us to grow." (CEO, Beneq)

Growth is the driving factor between investing and it is not gradual growth that they are looking for. Beneq is looking for opportunities that can make returns that are many times your investment.

"What this also means of course is that the investments now, when you believe good business plans it is useless to calculate a ROI or a Payback period because the growths are obviously amazing" (CFO, Beneq)

"And that is another of our things, the opportunism that we have in our business, that we are pretty much after mega trends and there can be a delay of a half a year or a year's delay or another can suddenly start flying a lot earlier than we think.. When we invest it is more about achieving a certain time window and then it just explodes or doesn't." (CEO, Beneq)

Strategic management accounting

As in many of the other case companies, also Beneq monitors and studies its environment to some extent. However, the external environment is usually the responsibility of the marketing department or more precisely of product managers. The main tool of strategic work is long term roadmaps that also include long term sales projections.

Beneq was also using a Balanced Scorecard to aid in strategic planning. Each of the four dimensions have a few meters assigned to them of which some are linked to bonus arrangements. At the moment Beneq has a bonus system that involves everyone in the company because management has wanted to keep it simple.

Theory suggests that young growth companies would not use Balanced Scorecard to a great extent which makes the fact that Beneq does somewhat surprising. The company adopted it during the very early years of the company's life. According to the CEO and CFO the knowledge of Balanced Scorecard was in the company from the very beginning and its adoption was the result of an identified need for a strategic framework.

"It came from the need that we should have some frame. Pretty much the same indicators would probably have been born even without the Balanced Scorecard but in my experience the four dimension work. We are for instance doing strategic work from four dimensions at the moment, from Balanced Scorecard's dimensions. And it does include internal development, there are customers, there are financial indicators and they are nicely balanced as the name implies and in my opinion it works very well in a business like ours." (CEO, Beneq)

Monitoring the external environment is however mainly seen as being in the domain of technical salesmen.

"…it is technical sales people that are mainly responsible for this product roadmap work, that are are responsible for marketing a specific product segment, monitoring the competitive environment of their own product and making sure their product is competitive. Following the performance of competitors is a part of that… but honestly we have noticed that there is a lot of room for improvement and that we should develop methodology since it is too ad hoc at the moment." (CEO, Beneq)

Management control

Many of the systems already discussed have a management control function as well; however, the managers raise the balanced scorecard as an especially important tool in that respect. A couple of indicators have been derived for each of the four balanced scorecard's dimensions.

"That is in effect the method and then we have applied bonus arrangements for each year. At the moment we common targets for the whole company which then leads to bonuses or doesn't." (CEO, Beneq)

There are also other tools but the balanced scorecard is central.

"Of course we do have other means of daily management control like project management and things related to that. But for management in particular it is the indicators." (CEO, Beneq)

The indicators are set simply based on what information management has available and what supports the strategy and goals of the company.

6. Analysis

In this section we will analyze the empirical data against previous theory. First we will discuss the factors that affected the overall development of management accounting in the case companies. Secondly, we will discuss the role of management accounting and development of the accounting function. Finally, we will discuss individual segments of systems and what factors had specific influence on their development.

6.1. Factors that influence development

Theory suggests multiple factors that influence the development of management accounting and control in early-stage companies, which were outlined in the theoretical section of this thesis. Perhaps the most influential factors identified in previous theory are related to size, funding, management characteristics, environment uncertainty, strategy and industry (eg. Davila & Foster, 2005, 2007; Sandino, 2007; Granlund & Taipaleenmäki, 2005). This study finds a relationship between many of these factors and certain management accounting system developments. It is however also clear that there are multiple factors that influence how management accounting develops.

The size of the company seems has an impact based on the evidence, although it is clear that size only explains a part of their development. Another aspect of size are the growth expectations of the company. Kiosked was very conscious of creating a sound foundation for future growth because of its extremely high growth aspirations. Generally speaking, the larger the company is in terms of employees the more the company placed emphasis on management accounting and control. For instance, the smallest company in the study (Tuxera) placed less emphasis on management accounting and formal systems than did the other companies in the study. The difference was less clear between the larger companies so there appears other factors have a significant influence on development. Beneq, the only non-software company in the study for instance placed a lot more emphasis on management accounting than any of the other companies did. Beneq was also the largest company in the study yet this was a fairly recent development because of a massive acquisition that doubled the size of the company.

The most noticeable difference between Beneq and the other companies is of course the industry and type of business that they are in so the industry and business model that a company applies has significant influence. However, there were also clear differences across the software companies in the study that can be explained with industry characteristics. For instance, the MAS composition of a project based business such as Arcusys was fairly different than in other companies. Beneq was also largely a project based business and similarities could be found between these two companies although their industries are different (software/nanotechnology). Beneq however used MAS to a much greater extent. A likely explanation for the special characteristics of project businesses is the fact that their client base consists of a limited amount of clients that represent a significant individual risk for the company. In other words, a single client is much more significant for them in contrast to companies that for instance have thousands of clients like M-Files does. Where the importance of a single customer is rather insignificant the company can concentrate on aggregates rather than controlling interactions with individual clients. Interestingly, the revenue of Tuxera also came mostly from a limited number of significant clients but for them only the sales process took a lot of time and resources. Because they simply license their software the actual implementation was very straightforward.

Baum et al. (2001) and Amat et al. (1994) found that competition in an industry also has an effect on management accounting and growth. This study finds similar results. Competition in an industry seems to have an effect, especially in industries where the product/service offerings were relatively homogeneous as was the case with Arcusys. In industries such as this the competition is more focused on pricing and therefore it is more important to control your costs to stay competitive.

Capital requirements of an industry have in previous literature been found to affect growth (Robinson & McDougall, 2001). This study finds partial support in the sense that the company that neede MAS to the greatest extent (Beneq) had a total of four funding rounds. The managers at the company also highlighted this fact as having an effect on their operations since new funding rounds have to be planned closely. Also other funding related considerations have an effect based on the results of this study. Venture capital has in previous literature been found to be related to MCS and especially MAS adoption, yet it is unclear to what extent this is due to the influence of venture capitalists or the capital requirements of the industry. In essence the fact that those companies that take venture capital tend to be in more MCS heavy industries. The influence of venture capitalists received minimal attention in this study because it is relatively highly researched in contrast to other areas. It however seems clear that the capital requirements of an industry have an effect.

Related to industry effects is also the environmental uncertainty that characterizes early-stage companies. Grandlund and Taipaleenmäki (2005), environmental uncertainty causes companies to have a short-term orientation which emphasizes the role of budgeting, rolling forecasts and a low reporting time lag. This study finds similar results. All the companies that had a budget also updated the budget frequently. Beneq had a rolling budged and M-Files and Arcusys prepared latest estimates. Granlund and Taipleenmäki (2005) also suggest that environmental uncertainty causes companies to be worried about interoperability issues. This study finds no evidence of such considerations although no evidence was either found to the contrary. Similar findings were however found on the fact that companies that have a good funding position and extremely high growth expectations see formal systems as the solution from the very beginning (Kiosked).

In terms of funding this study concentrated more on how resource contrained a company is and how it affects MAS composition. Early-stage companies are often resource constrained (Granlund & Taipaleenmäki, 2005) The CEO of M-Files for instance highlighted that a reason they have not placed that much emphasis on cost accounting is that their funding position has been so good. Similarly, the CEO of Tuxera mentioned that as long as the company is extremely profitable, they do not see much need for more cost control.

Another aspect of resource constraints is that even if the company has resources available the focus of early-stage companies is on other aspects of the business than in accounting, for instance in NEFs first in R&D after which focus shifts on sales and marketing (Granlund and Taipaleenmäki, 2005). Therefore accounting may not receive the resources it needs to develop. Focus is in many ways linked to the management of the company, which has in previous literature (e.g. Gilbert et al., 2006; Penrose, 1959; Davila and Foster, 2005; Alvesson & Kärreman, 2004) been found to have a significant effect on management accounting and growth. Management characteristics are perhaps the most important aspect of MAS development.

Previous experience from a similar context has been found to be particularly important for managers of early-stage companies (Romano & Ratnatunga, 1994). Findings by Davila et al., (2009) also indicate that when systems are adopted due to experience it is more likely that the systems will have positive performance implications. This study also finds some support specificly for the importance of experience in the context of spin-off companies. The founding team of Beneq came as a spinoff from a similar company that operated a similar business and thefore they had a blueprint ready how such a business should be operated. Many of them were also in management positions in the previous company.

The beliefs that management has towards planning and control systems have also been found to be associated with MAS adoption (Davila and Foster, 2005). All companies in this study recognized that some systems are needed as a company grows, however, the managers' attitude towards formal systems was also associated with how many formal systems are adopted. Kiosked for instance had a totally different view of formal systems than Tuxera did even though they were of relatively similar size. The findings of Davila and Foster (2005) also indicate that MAS is often adopted at the same time as a CFO is hired. This study finds support that the arrival of a new CFO indeed has a positive impact on MAS adoption, as was the case in Arcusys. Similarly, already Greiner (1972) predicted that the replacement of the founder as CEO would have a formalizing effect on the company. However, Davila and Foster (2005) found that CEO replacement is insignificant except for the adoption of product profitability where it was associated with faster adoption. In contrast this study indicates that the replacement of the CEO indeed has a formalizing effect. Additionally, it is worthwhile to note that Beneq, which had the most advanced management accounting systems, had a CFO from the very founding of the company.

As Alvesson and Kärreman (2004) suggest small companies may not have the knowledge about MAS in the company and therefore may not know what is possible to achieve with them. According to Sandino (2007) owners-managers often see the systems in terms of the purposes that they can fulfill instead of as specific systems. Those companies that had such knowledge adopted MAS to a greater extent. Overall, it is clear that the characteristics of the entrepreneur and management have a significant effect on company growth and MAS development.

Strategy has been found to have an influence on growth and MAS development (Sandino, 2007) although with mixed results (Gilbert et al., 2006). This study finds support that MCS have to fit the company's operating model. For instance that a company that has intense cost competition would place more emphasis on cost related MCS. More importantly, MCS were seen to be important in planning the growth of the company, if growth can be seen as a strategy. M-Files, Arcusys and Beneq emphasized this planning for growth aspect and budgeting was an important tool in this respect.

This section discussed the factors that influence the growth and development of MAS in early-stage growth companies. Next we will discuss the role that MAS plays in this context and the role and development of the accounting function.

6.2. Role and development of management accounting

According to previous literature the growth process is different for different companies (McKelvie & Wiklund, 2010) and therefore MCS in early-stage companies have to be designed in a way that is appropriate in an uncertain context (Davila et al., 2009) and fitting for the specific needs of the company (Sandino, 2007). This study however found that early-stage companies do adopt many similar MAS. The differences arise in how the systems are used.

The most important roles of management accounting found in this study were:

- Inform where the company is and where it is going
- Cash management and planning funding
- Planning and focusing the organization
- Creating structure for growth
- Cost control and creating formulating culture

The most important of these roles seemed the role of informing where the company is and where it is going. This is also supported in literature. According to Davila and Foster (2009) MCS provide early-stage companies with structure to facilitate the coordination of their activities and help them in making sense of where the company is and where it is going.

Secondly, cash management and planning for funding were important. Whereas informing where the company is and where it is going was a rather universal role, cash management was more emphasized in those companies that were the most resource constrained and that had to plan for their future funding rounds. Those companies that had an abundance of funding did not place that much emphasis on this role since other areas were prioritized instead. If funding is needed in the future it was critical for management to know when it has to be obtained.

Third was the role of creating an organization that can handle the growth of the company. Informal management is not necessarily a sign of poor control, but rather it may be appropriate for a company of such scale (Perren et al., 1998). Indeed, also in this study it appeared that informal management is sufficient when a company has tens of employees. Once a company grows, informal means of control become insufficient in controlling the larger organization (Davila & Foster, 2007). This study found support for this notion.

Fourthly, it was apparent that MAS have a role in making sure that information is available across the organization so that the organization is aligned towards its common goals. Davila and Foster (2009) also emphasize the role of management accounting in information sharing, focusing the organization and giving the company tools that allow a common way of thinking.

Davila and Foster (2007) also emphasize the role of planning in early-stage companies, particularly short-term planning. The coordination and especially planning of growth was also important in the case companies of this study. Planning growth was an important role of MAS also in this study.

The last role of MAS in early-stage growth companies was related to cost control and creating a culture of cost control. The role of creating a certain kind of culture came up only in the discussions with Kiosked and to the knowledge of the researcher this has not been discussed in previous literature on early-stage companies. It has however been discussed in other streams of management accounting literature (e.g. Dent, 1991). This role may be especially relevant for those companies that are planning for extremely high growth as was the case at Kiosked.

Granlund and Taipaleenmäki (2005) observe that the role of the accounting function changes along the life cycle of a New Economy Firm (NEF). In their paper, the smallest NEF's had typically outsourced bookkeeping and did not have a CFO. This study finds similar results in the sense that bookkeeping was often outsourced; however, it was not as related to size as Granlund and Taipaleenmäki (2005) suggest. M-Files for instance had outsourced their bookkeeping and they had over 100 employees. Of the software companies, only Kiosked had hired a financial manager early on.

Granlund and Taipaleenmäki (2005) also find that the entrepreneur/CEO was usually responsible for financial calculations but sometimes they were not seen as necessary at all. This study reports similar findings, in the absence of a CFO or a financial manager the CEO is most often responsible for financial calculation. However, sometimes also other employees are involved even when there is no formal financial education in the company. For instance, this was the case in Arcusys but the CEO and another employee had attempted to learn the financial aspects of the business as it grew. In the study by Granlund and Taipaleenmäki (2005), the companies that took care of statutory task themselves hired a CFO to take care of these needs and to act in controlling tasks when time permits. When the capacity of the CFO was not sufficient anymore a separate controller was hired to free the CFO's time to other tasks. However, in this study none of the companies hired a CFO first (at Beneq one of the founders was a CFO). Either a financial manager was hired first, some existing employee took responsibility for accounting tasks as a controller or a manager was hired that took on other aspects of the business as well. It was common that managers had also other areas of responsibility in addition their core expertise.

Granlund and Taipaleenmäki (2005) divide the the typical tasks of CFOs and controllers in NEF's into three categories; highly preferred (vital) tasks, MAC-tasks (mergers, acquisitions and competitor analysis) and least preferred tasks. Highly preferred tasks include the routine operations that formed the foundation of management accounting in their case companies. They are the tasks that simply have to get done even when time is in short supply such as budgeting and statutory accounting tasks. The importance of statutory tasks is self-explanatory and was also important in this study. Also budgeting played an important role.

The second group in Granlund and Taipaleenmäki (2005) is MAS-tasks. These tasks can in some instances take a lot of the accounting function's time and resources for instance if the company is in the middle of an acquisition. Accountants are responsible for providing management with the relevant information about companies that are involved in possible mergers and acquisitions. The authors also include continuous monitoring of the business environment and in particular analyzing competitors to the MAC-task group. Also in this study MAC-tasks were important for accounting at times when acquisitions had happened. However, not all companies even had an employee that was solely involved with accounting when they had their first acquisitions. External consultants also seem to have an important role where resources permit. Competitor analysis on the other hand was mostly absent from the responsibilities of the accounting functions in this study. This was usually handled by product managers and was a more marketing oriented role.

The third and last group identified by Grandlund and Taipaleenmäki (2005) is the least preferred tasks. Interestingly this group consists of management accounting techniques that are traditionally thought of as being central to management accounting, such as cost accounting, performance measurement, long-term financial planning and capital budgeting. According to the authors these receive only minor attention in NEFs especially when a company is growing very rapidly (or when the company is aiming for such growth). In this study however performance measurement was fairly important. Otherwise the findings were mainly similar for the software companies in this study.

This study suggests that industry and business model characteristics determine the initial MAS needs of a company. For instance, a manufacturing company may require cost accounting from the founding of a company whereas a software company can get by for a relatively long period of time without it. As a company grows these initial MAS need to develop to handle the larger scale of operations and also management control related MAS becomes more important. Management characteristics determine how these MAS needs are identified and executed upon and funding whether it is possible to fulfill those MAS needs. Companies with less management accounting knowledge tend to develop their MAS more through trial and error compared to those that have more such experience. Companies that have managers that have more management systems knowledge and experience tend to anticipate administrative needs to a greater extent than others. Also companies with a high level of management knowledge and experience have to develop through trial and error but less so than others.

6.3. Management accounting systems adopted and determinants of adoption

This section analyzes how the accounting functions and different management accounting segments have developed in the case companies and what factors have influenced their development. First, under the title management accounting we will give a general analysis of how the accounting functions developed and what influenced their development and then move on to discuss specific management accounting segments and the factors that influence their development.

Cost and profitability accounting

Existing theory is contradictory on the cost accounting practices of early-stage companies. Research done in the IT and biotech industries (e.g. Granlund and Taipaleenmäki, 2005; Davila & Foster, 2005, 2007) predicts that cost accounting would not play a major role. Granlund and Taipaleenmäki (2005) for instance list cost accounting among the "least preferred tasks" and find that profitability accounting receives less attention due to the focus being in planning and budgeting controls. Davila and Foster (2007) find that financial evaluation systems tend to be adopted later than financial planning systems. A study in the retail industry (Sandino, 2007) lists pricing systems as “Basic MCS” adopted by early-stage companies. Basic MCS are the systems that are adopted almost across the board of companies. Indeed, the industry and business model of a company seem to have a significant effect on the cost accounting practices of a company. Similarly to Granlund and Taipaleenmäki (2005) and the studies by Davila and Foster, the software companies in this study do not place a lot of emphasis on cost accounting, with a minor exception in Arcusys. Even Arcusys can however get by with relatively light cost accounting practices. Granlund and Taipaleenmäki (2005) suggest that NEFs often have such a simple cost structure that they do not need cost accounting. Employees represent the bulk of expenses.

In contrast to the software companies, Beneq, which is a nanotech company, employed a standard costing methodology in their device business and project budgets in the machine business and therefore placed a lot more emphasis on cost accounting than the other companies did. Similarly the software company that put the most focus on cost accounting was Arcusys, which is also a project based business. Therefore it would seem that it is a characteristic of project based businesses that more cost accounting is needed. Cost accounting at Beneq was however more advanced. A number of reasons can be identified:

1. Beneq has had an experienced CFO from the founding of the company. Therefore they have had the knowledge of these systems in place and also a spokesperson for the use of those methods for the entire lifespan of the company.
2. Beneq is a spinoff from another company where the founding team had worked together for a long time in a similar type of business (many of them in top management) and therefore knew how to build an organization in that space.
3. Arcusys has a fairly simple cost structure (mainly employment related costs) compared to Beneq. Beneq has a vast network of partners that are responsible for many aspects of their projects whereas the main cost driver for Arcusys was developer time.

Whereas Beneq knew pretty clearly from the beginning what the accounting needs of the business are, Arcusys learned its importance more through trial and error and consequently also made losses during the first three years of operation.

The relatively small importance of cost accounting at Kiosked, Tuxera and M-Files can partly be explained with the fact that an additional customer only incurs marginal additional costs to them and therefore they have less incentive to invest in cost accounting. Additionally the companies have a very simple cost structure so it is easier to have an intuitive sense of your costs. A contributing factor for Kiosked and Tuxera was also their small size, the novelty of their business and the fact that they had close to nonexistent competition in their respective markets at the time of study. In contrast Arcusys and Beneq operated in heavily competed markets so they had more incentive to optimize their margins. It is also worthwhile to note that those companies that have other systems in place, such as budgeting, may get enough cost information from those systems and therefore it is possible for them to delay the adoption of more formal cost accounting.

Theory suggests that profitability accounting would not play a major role in early-stage growth companies (Davila & Foster, 2007; Granlund & Taipaleenmäki, 2005). This study finds similar results. However, it also seems that profitability accounting is more important for project-based businesses (Beneq & Arcusys). Intuitively it makes sense that project businesses would place more emphasis on monitoring single clients or projects since the risk and upside involved in a single client or project is much larger than for the other companies. Tuxera was interesting in that respect since although they are not strictly a project business, they still have very long sales cycles and a single client can represent a major transaction for them. Consequently the most notable process they had in terms of management accounting was their pricing process. They collected information informally from the clients and also from public sources in order to get the most out of their licensing contracts. For companies with a larger customer base that have less risk involved in a single customer can place more emphasis on aggregates. For instance the CEO of Kiosked mentioned that avg. revenue per user is a very important metric for them. At M-Files and Kiosked these were a part of their Key Performance Indicators (KPI).

Granlund and Taipaleenmäki (2005) argue that at the growth stage the focus of the company is in planning and budgeting, and profitability accounting and ad hoc calculation receive less attention. This study finds support for this, for instance, the CEO of M-Files highlighted that a reason for the lack of profitability accounting in their company was that the focus was simply in creating growth and that the valuation of growth companies is largely comprised of the speed of growth rather than profitability. Profitability enters the big picture once the business starts maturing. The findings of Davidsson et al. (2009) are interesting in this respect. They use resource-based reasoning to study the relationship between sales growth and profitability growth and find that profitable low growth firms are more likely to achieve high growth and high profitability in future periods. They also have a smaller chance of ending up with poor performance on both indicators in the future. However, many of the companies in this study were not profitable. This was however planned unprofitability rather than poor performance since resources were used to fund growth.

According to Davila and Foster (2007) it takes time for profitability accounting to become relevant because it takes time for companies to achieve revenues that are significant enough to justify the systems. In this study the CEO of Kiosked emphasized strongly the importance of the point where the company starts collecting more revenue. It has a profound effect on the accounting function. According to him a company can get by with relatively light accounting as long it is simply about costs.

Budgeting and short-term planning

According to previous literature, budgeting is usually the first MCS adopted (Granlund & Taipaleenmäki, 2005; Davila & Foster, 2005; Sandino, 2007). Theory also emphasizes the importance of short-term planning for early-stage growth companies (Davila and Foster, 2007) Theory is relatively consistent concerning the adoption and the importance of budgets and similar results have been found in different industries. This study reports similar results. Operating budgets were found at Arcusys, Beneq and M-Files, the largest companies in the study. Kiosked and Tuxera did not have budgets at the time of study; although at Kiosked management did some ad hoc spreadsheet based cash flow projections.

Theory is fairly silent on the extent of the budgets adopted. Granlund and Taipaleenmäki (2005) emphasize the importance of rolling budgeting in NEFs. However, the only company that had adopted rolling budgeting in this study was Beneq. Budgeting at Beneq had started from the very founding of the company. The other two companies had a yearly budget with formal monitoring. Arcusys had a yearly budget with quarterly latest estimates and monthly comparisons of budgeted to actuals. M-Files on the other hand had yearly budgets with monthly monitoring and revision if conditions change.

The purposes of the budgets also varied between the companies. For Arcusys the motivation behind budgeting was mainly in controlling employee behavior, whereas for Beneq the most important *raison d'etre* of budgeting was resource planning, since it was the basis for their purchasing activities.

According to Granlund and Taipaleenmäki (2005) budgeting is seen as the starting point for financial control and therefore it is adopted first. This study finds supporting evidence. For the companies that had a budget it seemed to represent the backbone of financial planning and was often closely intertwined with other control systems such as compensation schemes or performance indicators. The CEO of Kiosked highlighted the point where a company starts getting revenue as very important for budgeting.

In conclusion, this study found support for the importance of budgeting in early-stage companies. In the majority of cases the question is not if a budget is adopted but rather when it is adopted and how it develops.

Investment calculation and monitoring

Theory is silent on the extent to which young growth companies use investment calculation. Granlund and Taipaleenmäki (2005) find that capital budgeting is among the least preferred tasks of the accounting function in NEFs. It was to be expected that investment calculation and monitoring would not play a major role at this stage of development and the results are in that sense fairly consistent with our expectations. All of the companies even had difficulty thinking about investments in the context of their own business, which is telling about the role that investment calculation plays in the case companies. Investments were often perceived in their traditional textbook sense as investments in plants or machinery, yet none of the companies had need for large tangible investments in their business. There were however three areas that the companies saw as investments; employees, acquisitions and R&D.

For most of the companies in this study, employees represent the bulk of their costs. This is especially true for the software companies in this study. Therefore employees were seen as an important area of investing. Consequently the companies placed a lot of emphasis on their recruitment processes and the successfulness of recruitments was monitored closely.

In addition to employees, acquisitions were also an important area of investing. Two case companies (Arcusys, Beneq) had acquired another company before and the others left the door open for acquisitions in the future. Acquisition decisions were often based on the companies' strategy and how well the potential acquisition target supports their existing business. Only one of the case companies (Arcusys) was planning on putting more emphasis on investment calculations like ROI or payback period estimate. This was not in a way the result of an identified need but rather due to the background of the newly hired CFO who had several years of work experience from the field. Arcusys had also carried through acquisitions before the CFO joined the company but then calculations were made by external consultants.

The third and last area of investing was R&D. For Beneq for instance, R&D was at the core of their investing activities. However, calculating ROI's or payback periods were not seen as necessary since the expected paybacks on projects were so large that it is irrelevant to calculate specific returns. The projects either took flights or did not. R&D is at the very core of all the case companies so in that sense it is not viewed as a single investment but rather as a part of their vision and roadmap of how to fulfill that vision.

None of the case companies had formal investment calculation. Investments were instead evaluated from a strategic perspective. What this means is that investment decisions were often based on the long-term vision and strategy of the company. At Kiosked, investments were decided based on what is core and what is non-core for their operations. For Beneq and Arcusys investment were very much based on their growth strategy.

It seems likely that companies that are at such an early-stage rarely do major investments, yet clearly this is the stage of development where investments in the form of acquisitions and technology investments are starting to enter the big picture. This is consistent with Davidsson and Delmar's (1998) argument that small companies usually grow organically and larger companies use acquisitions to a greater extent. Therefore it looks like the first major investments are done in a fairly ad hoc fashion and possibly once the companies grow further a more formal process will develop. The investment decisions are often based on the judgment of management and the strategy of the company.

One reason why investing was so informal at these case companies was that since growth companies are often very growth oriented and opportunistic in that sense, the possible returns of an investment are so large that there is no need for investment calculation. A second reason is that there may not be sufficient knowledge in the company. Arcusys was the only company that was planning on focusing more on investment calculations and this was largely due to the CFO's background in investment calculation. However, having accounting knowledge in the company does not mean that investment calculations will be made as was the case in Beneq.

Strategic management accounting and long-term planning

Existing theory is mixed on the importance of strategic management accounting for early-stage growth companies. According to Granlund and Taipaleenmäki (2005), competitor accounting is extremely important for NEFs because they are constantly under threat of new entrants to their industry. They classify competitor accounting as a highly preferred task in their classification. This study finds some support for the importance of competitor accounting, yet with some notable exceptions. All the companies in the study were very interested in their competitors and possible entrants to their industries, however, this role was usually not in the domain of accounting but rather it was the responsibility of product managers.

Even though formal strategic management accounting procedures were rare, most of the companies did need external information but simply acquired it in an ad hoc fashion. For instance Tuxera used information about its customers for pricing reasons. Depending on the expected volume of the product they could decide if they favor per device based licensing fees or if they need a larger payment up front.

A large portion of strategic management accounting is aimed at monitoring competitors and therefore the expectation was that the competitive environment would have an effect on adoption and the results support this hypothesis. The companies that had the most competition in this study also monitored their environment more closely. For instance, Arcusys did some ad hoc cost structure analysis of competitors and also followed how its competitors price their offers in auctions.

In conclusion the companies are extremely interested in their environment and competitors. However, these activities are usually not in the domain of accounting in early-stage companies but rather they are handled by product managers for instance.

Management control

Management control was expected to be very important for the case companies based on existing literature, especially for the larger case companies. The results indicate similar findings to theory. The most important management accounting related control systems found were expense approval procedures, Key Performance Indicators (KPIs) and a balanced scorecard. In addition, some other systems discussed in previous sections had relevance for management control.

In the study by Davila and Foster (2007), expense approval procedures were the fourth most adopted MAS after planning systems. All the case companies had some sort of expense approval procedures in place, although the extent of the procedures varied. At Arcusys, M-Files, Beneq and Kiosked all invoices had a separate approver and content checker. At Tuxera the general rule was that only invoices that exceeded 500 euros required management approval. The interviews at Kiosked suggest a gradual development path of expense approval procedures. The financial manager described how she gradually formalized processes once the volume of invoices became too great.

Another interesting feature of expense approval procedures was revealed at Kiosked, which has not been discussed in previous literature on management accounting in early-stage companies. Although arguably Kiosked could have managed without very formal procedures, adopting formal processes were also a way of creating a certain kind of culture to the organization. The fact that accounting influences company culture is well established in the accounting literature (eg. Dent, 1991). One reason for this is the strong financial management background of management but another important reason for it was the extremely high growth expectations of the company. They expect to be a company of several hundred employees in the near future and therefore they saw it as important to create a culture where employees use funds carefully from the very beginning. They argued that it is very hard to change that culture later on so it has to be there from the start. Previous literature has however pointed out that companies with the highest growth expectations tend to adopt systems faster (Granlund & Taipaleenmäki, 2005).

Key Performance Indicators (KPIs) were also relatively widely used in the case companies. The only company that did not have any kind of financial performance indicators in place was Tuxera. The results suggest a gradual path of development for KPIs. This may also reflect the rapidly changing conditions that the companies operate in. As with expense approval procedures, Kiosked saw it as a way of laying the management foundation for a larger company and were under constant development. At M-Files the emphasis was especially on customer facing functions. The arrival of the current CEO had also had a positive effect of their development.

Beneq on the other hand was using a Balanced Scorecard, which management had adopted in order to aid in the strategic planning process. Additionally, many of the case companies had product roadmaps for planning purposes which included quantified targets. With a very broad definition of management accounting these roadmaps would also be in the domain of management accounting but in the case companies the accounting function was not very involved in this process. The roadmaps were the responsibility of product managers that were often also responsible for external matters of interest to the firm like competition in the context of their own product.

It seems that management control is especially influenced by the size and scale of the company. Once processes become too large to control informally they are formalized. With experience managers can also adopt a more proactive way of adopting systems in contrast to reacting to problems.

7. Conclusions

The purpose of this study was to investigate management accounting in early-stage growth companies. Growth theory on new ventures provided the context for the study but the main focus of the research was in management accounting systems (MAS) and their development. Firstly, this study explored what the role of management accounting is in the case companies and which MAS the case companies have in place. Secondly the study attempted to answer how management accounting develops and what factors affect its development. Therefore the main contributions of the study are to the management accounting and new venture literatures. The research questions of this study were:

1) What is the role of management accounting in early-stage growth companies?
2) Which management accounting systems (MAS) do early-stage growth companies use?
3) How does management accounting develop and what factors influence its development?

This study was conducted as a qualitative comparative case study of five Finnish early-stage growth companies. As defined by Scapens (1990), this study has descriptive and explorative characteristics. It is descriptive because we attempt to describe how and what management accounting systems are used and explorative because of the lack of theory on the subject and also due to the fact that the goal was to build theory on the subject. The case companies were of various sizes and include four software companies and one nanotechnology company. The main method of research was theme interviews conducted with the CEO's, CFO's and financial managers of the case companies, although also internal company material and public information sources were used. Management accounting was divided into five segments that provided the structure for the interviews and for the following analysis. However, this segmentation is not definitive and the different management accounting systems could potentially have been categorized differently. A total of 8 interviews were conducted with a total of 9 managers. One of the interviews included two managers.

7.1. Results

This section will provide a summary of the research results. Section 7.1.1 provides findings on the role of management accounting and its overall development and section 7.1.2 discusses findings on specific system categories and the factors that affect their development. Section 7.1.3 presents implications that the findings have for managers and policy makers.

7.1.1. The role and development of management accounting

According to previous literature the growth process is different for different companies (McKelvie & Wiklund, 2010) and therefore management control systems (MCS) in early-stage companies have to be designed in a way that is appropriate in an uncertain context (Davila et al., 2009) and fitting for the specific needs of the company (Sandino, 2007). This study finds similar results; however, this does not necessarily mean that the systems that are adopted are different but rather the differences arise in how the systems are used.

The most important roles of management accounting found in this study were:

- Inform where the company is and where it is going
- Cash management and planning funding
- Planning and focusing the organization
- Creating structure for growth
- Cost control and creating formulating culture

These roles are largely supported by previous literature on management accounting in early-stage companies (e.g. Davila & Foster, 2009; Granlund and Taipaleenmäki, 2005), except for the culture formulating role. The importance of management accounting for company culture is however known (e.g. Dent, 1991). This role may be particularly relevant for companies that have extremely high growth expectations. Informing where the company is and where it is going seemed to be the most important role that MAS have, at least in a general sense. The role that gets particularly emphasized seems to be dependent on the specific contingencies of a company. For instance, a resource constrained company will place more emphasis on cash management.

Granlund and Taipaleenmäki (2005) found that the entrepreneur/CEO was usually responsible for financial calculations but sometimes they were not seen as necessary at all. This study reports similar findings, in the absence of a CFO or a financial manager the CEO is most often responsible for financial calculation. However, sometimes also other employees are involved even when there is no formal financial education in the company. For instance, this was the case in Arcusys but the CEO and another employee had learned the financial aspects of the business as it grew. In the study by Granlund and Taipaleenmäki (2005), the companies that took care of statutory task themselves hired a CFO to take care of these needs and to act in controlling tasks when time permits. When the capacity of the CFO was not sufficient anymore a separate controller was hired to free the CFO's time to other tasks. However, in this study none of the companies hired a CFO first, either a financial manager/controller was hired first, some existing employee took responsibility for accounting tasks as a controller or a manager was hired that took on other aspects of the business as well. It was common that managers had also other areas of responsibility in addition to their core expertise.

Granlund and Taipaleenmäki (2005) divide the the typical tasks of CFOs and controllers in NEF's into three categories; highly preferred (vital) tasks, MAC-tasks (mergers, acquisitions and competitor analysis) and least preferred tasks. This study finds fairly similar results in the companies that correspond to the definition of a NEF, however with one exception. In this study performance measurement seemed to have a more important role than in their study.

Literature has identified different ways that management systems in companies develop. Some of them suggest an evolutionary way of development or that companies go through periods of crisis in different parts of their management systems (eg. Greiner, 1998). The most influential determinants of management accounting development in previous theory are size, funding, management characteristics, environmental uncertainty, strategy, and industry (eg. Davila & Foster, 2005, 2007; Sandino, 2007; Granlund & Taipaleenmäki, 2005). This study found evidence for the relevance of all the above factors, some more than others. The impact of each factor depends on the MAS in question and company contingencies.

This study suggests that industry and business model characteristics determine the initial MAS needs of a company. For instance, a manufacturing company may require cost accounting from the founding of a company whereas a software company can get by for a relatively long period of time without it. As a company grows these initial MAS need to develop to handle the larger scale of operations and also management control related MAS becomes more important. Management characteristics determine how successfully these MAS needs are identified and executed upon. Companies with less management accounting knowledge tend to develop their MAS more through trial and error compared to those that have more such experience. Companies that have managers that have more management systems knowledge and experience tend to anticipate administrative needs to a greater extent than others. Also companies with a high level of management knowledge and experience have to develop through trial and error but less so than others. The lack of time for accounting tasks also limits its development. This is however a matter of managerial capacity, as defined by Penrose (1959), so this lack of time can be avoided given sufficient financial resources to do so. Funding dictates the extent to which managers can give resources for the development of management accounting.

7.1.2. Management accounting systems adopted and determinants of development

Here we present the findings of this study concerning specific segments of management accounting systems. Also the factors that were particularly important for each segment will be discussed.

Cost and profitability accounting

Previous theory was contradictory on the importance of cost and profitability accounting in early-stage companies. A study by Granlund and Taipaleenmäki (2005) finds that they are not very important in New Economy Firms (NEF) and Sandino (2007) found some support for their importance in a retail context. In this study, particularly the software companies had little if any need for it. This can be explained with the simple cost structure of software companies and the fact that budgeting may provide enough cost information at the early-stage when present. Beneq, the nanotech company, however used cost accounting methods to a great extent. Therefore it seems cost accounting needs are very dependent on industry characteristics.

A second important factor is the business model that a company applies. The project based businesses (Arcusys and Beneq) had different cost and profitability accounting needs and compositions than the other companies in the study. An additional component of relevant industry level characteristics is the competitive environment that a company is in, which has been found to have an effect on early-stage companies (Baum et al., 2001). Similar findings were found in this study. Arcusys for intance was in a highly competitive industry which put pressure on their margins, which means that they have to know their costs well. At the other end of the spectrum was Tuxera where margins were high and competition was minimal and consequently management saw less need for understanding costs and controlling margins.

Another important determinant of cost and profitability accounting development was management characteristics. Beneq had a CFO from the founding of the company and also significant previous industry experience because they were a spinoff from a company that was also a project based business. Findings from Arcusys however suggest that when there is less management accounting knowledge in the company it develops more through trial and error.

Companies with more MAS experience can avoid some of the pitfalls associated with learning how to take advantage of MAS.

Budgeting and short-term planning

Previous theory suggests that short-term planning and budgeting are extremely important for early-stage growth companies and that budgets are often the first MAS adopted (Davila and Foster, 2005; Granlund and Taipaleenmäki, 2005; Sandino, 2007). Granlund and Taipaleenmäki (2005) also suggest that budgeting forms the basis for management accounting. This study found support for these findings. The three largest companies in this study had adopted an operating budget and it was arguably the most important formal tool of resource planning and management control in the largest case companies. The budgets also had a short-term orientation since all companies had a rolling budget or a yearly budget with latest estimates. The smaller companies did not have operating budgets; both had however planned or considered adopting it. Budgeting seems to be especially important in terms of controlling the organization and seems to provide the core of management accounting once the company gets closer 100 employees. Budgeting was closely intertwined with other systems such as KPIs as well as product roadmaps. It may also provide sufficient cost information for software companies in particular.

The most important factors that affect budgeting in early-stage companies seem to be size (revenue and employees), industry and management characteristics. In smaller companies it seemed to be sufficient to know the burn rate of the company, which is fairly easy to determine in software companies because the bulk of expenses are employment related. Indeed, for Beneq resource planning was more complicated and consequently they had a budget basically from the founding of the company. The managers at Beneq also emphasized that since they are in an investment heavy industry they have to plan funding rounds very closely. As for management characteristics the amount of management accounting knowledge had an impact. Another interesting finding was that managers may realize its importance once individual purchases get so large that it is hard to evaluate their overall impact on the company as a whole.

Investment planning and monitoring

The amount of previous theory on investment planning and monitoring in early-stage companies is very low. Granlund and Taipaleenmäki (2005) found that capital budgeting was insignificant for

NEFs. None of the companies in this study even thought that they have investments in the traditional sense. Recruitment, acquisitions and technology investments were seen as closest to investing. The case companies often saw investments as strategic and Beneq for instance mentioned that investments are simply a part of executing on the overall vision of the company and that the returns on the investments are simply so large that they do not warrant calculating ROI or payback periods.

Therefore it would seem likely that the areas that managers see as investments can be largely determined by the cost structure of the companies. For instance in the software industry it is largely a matter of recruitment. The companies in this study also placed a lot of emphasis on recruitment; however, management accounting did not have a role in that process. Recruitment is an ongoing process which is controlled through other means. Similarly, R&D investments are often part of a bigger picture and therefore an ongoing process. Generally it seems management accounting may have a bigger role when investments are done that are external to the company, such as acquisitions or technologies. The evidence from Arcusys also suggests that the arrival of a manager with investment calculation experience may trigger the company to adopt such systems.

Strategic management accounting and long-term planning

There is not much existing theory on strategic management accounting in early-stage companies. However, according to Granlund and Taipaleenmäki (2005), competitor accounting is extremely important for NEFs because they are constantly under threat of new entrants to their industry. This study finds mixed results. All the companies in this study were extremely interested in their competitors; however, monitoring competitors was usually the responsibility of product managers and not thought as being in the domain of accountants. However, it is worthwhile to note that most companies in this study did not have clear competitors in the traditional sense. Most companies were more worried of possible entrants to their market. Arcusys had the most mature competitive environment and they were also the only company that had done some cost structure analysis and benchmarking of competitors. The cost structure analysis was very informal and related to the arrival of the new CFO. They were however planning on placing more emphasis on it in the future.

Management control

Existing theory suggests management control to be extremely important for early-stage growth companies (Davila & Foster, 2009). The main formal MAS tools for management control found in this study were budgeting, KPIs, expense approval procedures and a Balanced Scorecard and the scale of the company seemed to be the most important factor of management control.

In the study by Davila and Foster (2005), expense approval procedures were the second most adopted system after budgeting. They were also common in this study. The evidence suggests a gradual path of development, mainly related to the scale of operations. The financial manager at Kiosked for instance explained how she had gradually developed the system when the scale of invoices grew too big. Another interesting finding was that cost control was seen as part of creating a culture in the company where everyone is careful about spending money.

KPIs or a Balanced Scorecard were also found in almost every company. Surprisingly few previous studies have discussed performance measurement. Granlund and Taipaleenmäki (2005) were surprised how small a role performance measurement played in their case companies. This is a surprising finding since in this study performance measurement was perhaps the most important control system along budgeting. Beneq on the other hand had adopted a Balanced Scorecard mainly because management had seen it fit to provide a framework for strategic work.

The amount of customers and the significance of a single customer seemed to have a large impact on how management control was arranged. Companies that had a lot of customers placed more emphasis on performance indicators and aggregates (e.g. Kiosked, M-Files). On the other hand, the companies that had a limited number of important clients tended to favor other means of control, such as project budgets.

If a company had a compensation system it was frequently closely tied with KPIs and budgeting. The presence of compensations systems seemed to be highly contingent on the views of management.

7.1.3. Implications for managers and policy makers

The results of this study have implications for managers in early-stage companies and also policy makers. First of all, managers should realize that management accounting is extremely important for an early-stage growth company and that the initial management accounting needs of early-stage companies are largely determined by the industry that a company is in and the business model that it applies in that industry. A software company can manage without major investments in management accounting for a relatively long period of time, whereas a manufacturing company has a much greater need for MAS from the very beginning. However, management accounting is important in the software industry as well.

The industry and business model of a company are particularly influential in terms of cost accounting, profitability accounting and pricing since a company has to be able to price its products profitably and to make sure it does not run out of cash. As the company grows planning for scale becomes more and more important and this is also where the control aspects of MAS increase in importance. Budgeting seems to be a system that all companies adopt at some point in the early-stage and therefore is a critical component in overall control.

In addition to knowing the particular MAS needs of their industries and businesses, managers have to make sure that there is sufficient management accounting knowledge in the company to take advantage of these systems properly. This way companies can avoid many of the pitfalls associated with learning these requirements the hard way. Therefore early-stage companies should have a clear plan as to what MAS will be needed during the early-stage growth period and when the systems need to be adopted. It is important to plan for specific systems but also to plan for the recruitment of sufficient management accounting knowledge and managerial capacity to take advantage of and implement those systems.

The implications of the findings for policy makers on the other hand are related to making sure that there is management accounting knowledge available for early-stage companies. This is especially true in countries such as Finland where the public sector is an important player in startup financing. Early-stage companies may not have the resources to hire a full-time management accountant when the companies are still small so making sure these services are available for instance on a consulting basis would be very beneficial. This also represents an opportunity for accounting firms.

7.2. Limitations

There are a number of limitations relevant to this study. Firstly, the comparative case study method implies a number of limitations. Since there were multiple case companies in this study, it was not possible to research the companies as in depth as it would have been had there been only a single case company. Therefore it is possible that some important information has been missed. Similarly, although the amount of companies is rather large for a case study, the sample is so small that it influences the generalizability of the findings. In addition, especially since there is a single researcher, this study is subject to *researcher bias*. The case study research provides and interpretation of the social system being studied instead of a pure objective representation (Scapens, 1990). In some instances the researcher may have interpreted the empirical material incorrectly. Case studies are also characterized by the vast amounts of material available which makes it difficult to give an all-encompassing objective representation of the social system being studied.

There are also limitations concerning the theme interview method. The answers given by the interviewees may have been affected by their personal opinions, prejudices and the desire to give the interviewer positive answers. The interviewees are also subject to *recall bias*, which means that since a lot of the discussion was based on events that have taken place in the past they may recall those events incorrectly. Additionally, in some cases only one interview was conducted and therefore it was impossible to verify the data from multiple sources.

7.3. Further research

Studies have shown that management accounting is critical for early-stage growth companies. In addition, the area is still relatively under-researched and therefore provides a very fruitful research space. Scholars in the entrepreneurship literature have also called for more multidisciplinary research between entrepreneurship and other disciplines (e.g. Acs & Audretsch, 2005).

This study revealed many avenues for further research. Firstly, since the characteristics of management and the founding team have been found to be so significant for the development of management accounting, it would be important to conduct more in-depth studies on what factors influence the behavior of early-stage company management. The characteristics have been extensively researched in the field of entrepreneurship but less so by accounting scholars. Also other factors that have been found to influence the development of management accounting, such as industry characteristics, might warrant more in-depth study.

Recent research on management accounting in early-stage growth companies has mainly been quantitative in nature providing only broad relationships between different factors. It would be interesting to study a single management accounting category or system with higher precision, for instance by doing a similar study to this one yet concentrating on cost accounting and its development for instance.

A problem with a study such as this one is that the researcher in effect goes in to the case companies and takes a picture of what things look like. Then, he tries to figure out how things developed to their present state. This exposes the study to recall bias among other limitations. Therefore it would be extremely interesting conduct a longitudinal study on management accounting development to get an even clearer picture of what factors influence adoption.

This study found evidence that management accounting systems are closely related to each other and also other control systems. Therefore a more in depth study into how different control systems interoperate would be extremely beneficial. This would provide valuable information for managers in designing their control systems.

Finally, interesting findings may be found by conducting a similar study in companies that are slightly older and larger, for instance from 100 to 500 employees. What are the problems that they face and the determinants of management accounting adoption and development?

References

Acs, Z., & Audretsch, D. (2005). Introduction to the Handbook of Entrepreneurship Research. In Z. Acs, & D. Audretsch, *Handbook of Entrepreneurship Research* (pp. 3-20). New York: Springer Science+Business Media, Inc.

Ahrens, T., & Chapman, C. S. (2007). Doing Qualitative Field Research in Management Accounting: Positioning Data to Contribute to Theory. In C. S. Chapman, A. G. Hopwood, & M. D. Shields, *Handbook of Management Accounting Research* (pp. 299-318). Amsterdam: Elsevier Ltd.

Alvesson, M., & Kärreman, D. (2004). Interfaces of control. Technocratic and socio-ideological control in a global management consultancy firm. *Accounting, Organizations and Society*, 29, pp. 423-444.

Amat, J., Carmona, S., & Roberts, H. (1994). Context and change in management accounting systems: a Spanish case study. *Management Accounting Research*, 5, pp. 107-122.

Anderson, S. W., & Widener, S. K. (2007). Doing Qualitative Field Research in Management Accounting. In C. S. Chapman, A. G. Hopwood, & M. D. Shields, *Handbook of Management Accounting Research* (pp. 319-341). Amsterdam: Elsevier Ltd.

Baum, R. J., Locke, E. A., & Smith, K. G. (2001). A Multidimensional Model of Venture Growth. *Academy of Management Journal*, Vol. 44, No. 2, 292-303.

Bhimani, A., Horngren, C., Datar, S., & Foster, G. (2008). *Management and Cost Accounting.* Harlow: Pearson Education Limited.

Bradley, S. W., Wiklund, J., & Shepherd, D. A. (2011). Swinging a double edged-sword: The effect of slack on entrepreneurial management and growth. *Journal of Business Venturing*, 26, 537-554.

Brush, C. G., Ceru, D. J., & Blackburn, R. (2009). Pathways to entrepreneurial growth: The influence of management, marketing, and money. *Business Horizons*, 52, 481-491.

Cadez, S., & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, 33, 836-863.

Cardinal, B., Sitkin, S., & Long, C. (2004). Balancing and Rebalancing in the Creation and Evolution of Organizational Control. *Organization Science*, Vol. 15, No. 4, July-August, pp. 411-431.

Cardon, M. S. (2003). Contingent labor as an enabler of entrepreneurial growth. *Human Resource Management*, Winter, Vol. 42, No. 4, pp. 357-373.

Chandler, G. N., McKelvie, A., & Davidsson, P. (2009). Asset specificity and behavioral uncertainty as moderators of the sales growth - Employment growth relationship in emerging ventures. *Journal of Business Venturing*, 373-387.

Chapman, C., Hopwood, A., & Shields, M. (2007). Preface. In C. Chapman, A. Hopwood, & M. Shields, *Handbook of Management Accounting Research: Volume 1* (pp. ix-xi). Oxford: Elsevier Ltd.

Chapman, C., Hopwood, A., & Shields, M. (2009). Preface. In C. Chapman, A. Hopwood, & M. Shields, *Handbook of Management Accounting Research: Volume 3* (pp. ix-xi). Oxford: Elsevier Ltd.

Chartered Institute of Management Accountants. (2005). *Management Accounting: Official Terminology.* Jordan Hill, Oxford: CIMA Publishing.

Chendall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, pp. 127-168.

Coad, A. (2007). Firm Growth: A Survey. *Papers on Economics and Evolution 2007-03.* Jena, Germany: Max Planck Institute of Economics, Evolutionary Economics Group.

Cooper, A. (2005). Entrepreneurship: The Past, the Present, the Future. In Z. Acs, & D. Audretsch, *Handbook of Entrepreneurship Research* (pp. 21-34). New York: Springer Science+Business Media, Inc.

Davidsson, P., & Delmar, F. (1998). Some Important Observations Concerning Job Creation by Firm Size and Age. *Rencontres St. Gall.* Gallen Switzerland.

Davidsson, P., Achtenhangen, L., & Naldi, L. (2005). Research on Small Firm Growth: A Review. *Proceedings of the European Institute of Small Business.*

Davidsson, P., Steffens, P., & Fitzsimmons, J. (2009). Growing profitable or growing from profits: Putting the horse in front of the cart? *Journal of Business Venturing*, 24, 388-406.

Davila, A., & Foster, G. (2005). Management accounting systems adoption decisions: evidence and performance implications from early-stage/startup companies,. *The Accounting Review*, 80(4), pp. 1039–1068.

Davila, A., & Foster, G. (2007). Management Control Systems in Early-Stage Startup Companies. *Accounting, Organizations and Society*, Vol. 82, No. 4, pp. 907-937.

Davila, A., & Foster, G. (2009). The Adoption and Evolution of Management Control Systems in Entrepreneurial Companies: Evidence and a Promising Future. In C. Chapman, A. Hopwood, & M. Shields, *Handbook of Management Accounting Research Vol. 3* (pp. 1323 -1336). Oxford: Elsevier Ltd.

Davila, A., & Oyon, D. (2009). Introduction to the Special Section on Accounting, Innovation and Entrepreneurship. *European Accounting Review*, Vol. 18, No. 2, pp. 277-280.

Davila, A., Foster, G., & Gupta, M. (2003). Venture capital financing and the growth of startup firms. *Journal of Business Venturing*, 18, pp. 689-708.

Davila, A., Foster, G., & Li, M. (2007). Reasons for management control systems adoption: Insights from product development systems choice by early-stage entrepreneurial companies. *Accounting, Organizations and Society*, 34, pp. 322-347.

Davila, A., Foster, G., & Oyon, D. (2009). Accounting and Control, Entrepreneurship and Innovation: Venturing into New Research Opportunities. *European Accounting Review*, Vol. 18, No. 2, 281-311.

Davila, T. (2005). An exploratory study on the emergence of management control systems: formalizing human resources in small growing firms. *Accounting, Organizations and Society*, 30, 223-248.

Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, 189-216.

Dent, J. F. (1991). Accounting and organizational cultures: A field study of the emergence of a new organizational reality. *Accounting, Organizations and Society*, Vol. 15, issue 8, pp. 705-732.

Dobbs, M., & Hamilton, R. (2007). Small business growth: recent evidence and new directions. *International Journal of Entrepreneurial Behaviour & Research*, Vol. 13 Iss: 5 pp. 296-322.

Drury, C. (2008). *Management and Cost Accounting.* Hampshire: Cengage Learning.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, Vol. 14, No. 4, 532-550.

Eisenhardt, K. M., & Schoonhoven, C. (1990). Organizational Growth: Linking Founding Team, Strategy, Environment, and Growth Among U.S. Semiconductor Ventures, 1978-1988. *Administrative Science Quarterly*, Vol. 35, No. 3, 504-529.

Flamholtz, E. (1995). Managing organizational Transitions: Implications for Corporate and Human Resource Management. *European Management Journal*, Vol. 13, No. 1, pp. 39-51.

Flamholtz, E., & Hua, W. (2002). Strategic Organizational Development, Growing Pains and Corporate Financial Performance: An Empirical Test. *European Management Journal*, Vol. 20, No. 5, pp.527-536.

Gartner, W., & Carter, N. (2005). Entrepreneurial Behaviour and Firm Organizing Processes. In Z. Acs, & D. Audretsch, *Handbook of Entrepreneurship Research* (pp. 195-221). New York: Springer Science+Business Media, Inc.

Gilbert, B., McDougall, P., & Audretsch, D. (2006). New Venture Growth: A Review and Extension. *Journal of Management*, Vol. 32 No. 6, December, 926-950.

Granlund, M., & Taipaleenmäki, J. (2005). Management control and controllership in new economy firms - a life cycle perspective. *Management Accounting Research*, 16, 21-57.

Greiner, L. (1972). Evolution and Revolution as Organizations Grow. *Harvard Business Review*, July-August, pp. 37-46.

Greiner, L. (1998). Evolution and Revolution as Organizations Grow. *Harward Business Review*, May-June, pp. 55-67.

Gul, F. (1991). The Effects of Managament Accounting Systems and Environmental Uncertainty on Small Business Managers' Performance. *Accounting and Business Research*, Vol. 22, No. 85, 57-61.

Hellmann, T., & Puri, M. (2002). Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence. *The Journal of Finance*, Vol. LVII, NO. 1.

Horngren, C. T., Datar, S. M., Foster, G., Rajan, M., & Ittner, C. (2009). *Cost accounting: a managerial emphasis.* New Jersey: Pearson Education, Inc.

Karimaa, H. (2007). *Nuoren kasvuyrityksen johdon laskentatoimi ja sen kehittyminen. Vertaileva case-tutkimus.* Helsingin kauppakorkeakoulu, Pro Gradu, 10548.

Kazanjian, R. (1988). Relation of Dominant Problems to Stages of Growth in Technology-Based New Ventures. *Academy of Management Jounal*, Vol. 31, No. 2, 257-279.

Koponen, E.-L., & Räisänen, H. (2013). *MINNE JA MITEN UUDET TYÖPAIKAT SYNTYVÄT?* Helsinki: Finnish Ministry of Employment and the Economy.

Koppl, R., & Minniti, M. (2005). Market Processes and Entrepreneurial Studies. In Z. Acs, & D. Audretsch, *Handbook of Entrepreneurship Research* (pp. 81-102). New York: Springer Science+Business Media, Inc.

Kor, Y. Y., & Mahoney, J. T. (2000). Penrose's resource-based approach: the process and product of research creativity. *Journal of Management Studies*, 37:1 January.

Kärreman, D., & Alvesson, M. (2004). Cages in Tandem: Management Control, Social Identity, and Identification in a Knowledge-Intensive Firm. *Organization*, Volume 11(1), pp. 149-175.

Lehmuskoski, M. (2006). *Johdon laskentatoimen kehittyminen sekä toiminnan byrokratisoituminen tietointensiivisissä pienissä ja pk-yrityksissä. Komparatiivinen case mainostoimistoista.* Helsingin kauppakorkeakoulu, Pro Gradu, 9957.

Leitch, C., Hill, F., & Neergaard, H. (2010). Entrepreneurial and Business Growth and the Quest for a "Comprehensive Theory": Tilting at Windmills? *Entrepreneurship Theory and Practice*, March, pp. 249-260.

McKelvie, A., & Wiklund, J. (2010). Advancing Firm Growth Research: A Focus on Growth Mode Instead of Growth Rate. *Entrepreneurship Theory and Practice*, March, pp. 261-288.

Merchant, K. A., & Van der Stede, W. A. (2003). *Management Control Systems: Performance Measurement, Evaluation and Incentives.* Harlow, England: Pearson Education Limited.

Miller, D., & Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. *Management Science*, Vol. 30, No. 10, October 1984.

Mitchell, F., & Reid, G. C. (2000). Editorial: Problems, challenges and opportunities: the small business as a setting for management accounting research. *Management Accounting Research*, 11, 385-390.

Moores, K., & Yuen, S. (2001). Management accounting systems and organizational configuration: a life-cycle perspective. *Accounting, Organizations and Society*, 26, 351-389.

Morris, M. H., & Trotter, J. D. (1990). Institutionalizing Entrepreneurship in a Large Company: A Case Study at AT&T. *Industrial Marketing Management*, 19, 131-139.

Murphy, G. B., Trailer, J. W., & Hill, R. C. (1996). Measuring Performance in Entrepreneurship Research. *Journal of Business Research*, 36, pp. 15-23.

Nixon, B., & Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research*, 23, 229-244.

Ouchi, W. (1979). A conceptual framework for the design of organization control mechanisms. *Management Science*, 25(9), 833-848.

Penrose, E. (1959). *The Theory of the Growth of the Firm.* Oxford: Oxford University Press.

Penrose, E. T. (1960). The growth of the firm. A case study: The Hercules Powder Company. *Business History Review*, 34, 1, 1-23.

Perren, L., & Grant, P. (2000). The evolution of management accounting routines in small businesses: a social construction perspective. *Management Accounting Research*, 11, pp. 391-411.

Perren, L., Berry, A., & Partridge, M. (1998). The evolution of managerial information, control and decision-making processes in small growth-oriented service sector businesses: exploratory lessons from four cases of success. *Journal of Small Business and Enterprise Development*, Vol. 5, Iss: 4, pp. 351-361.

Pitkänen, H., & Lukka, K. (2011). Three dimensions of formal and informal feedback in management accounting. *Management Accounting Research*, 22, pp. 125-137.

Reid, G. C., Mitchell, F., & Smith, J. A. (1999). *Framework for Addressing Hypotheses Concerning Information System Development in Small Firms.* St. Andrews: Centre for Research into Industry, Enterprise, Finance and the Firm.

Reid, G., & Smith, J. (2000). The impact of contingencies on management accounting systems development. *Management Accounting Research*, 11, pp. 427-450.

Robinson, K. J., & McDougall, P. (2001). Entry barriers and new venture performance: a comparison of universal and contingency approaches. *Strategic Management Journal*, Vol. 22, 659-685.

Romano, C. A., & Ratnatunga, J. (1994). Growth stages of small manufacturing firms: the relationship with planning and control. *British Accounting Review*, 26, pp. 173-195.

Sandelin, M. (2008). Operation of management control practices as a package - A case study on control system variety in a growth firm context. *Management Accounting Research*, 19, pp. 324-343.

Sandino, T. (2007). Introducing the Dirst Management Control Systems: Evidence from the Retail Sector. *The Accounting Review*, Vol. 82, No. 1, pp. 265-293.

Scapens, R. W. (1990). Researching Management Accounting Practice: The Role of Case Study Methods. *British Accounting Review*, 22, 259-281.

Shepherd, D., & Wiklund, J. (2009). Are We Comparing Apples With Apples or Apples With Oranges? Appropriateness of Knowledge Accumulation Across Growth Studies. *Entrepreneurship: Theory & Practice*, Jan, pp. 105 - 123.

Siegel, R., Siegel, E., & MacMillan, I. C. (1993). Characteristics distinguishing high-growth ventures. *Journal of Business Venturing*, 8, 169-180.

Simmonds, K. (1981). Strategic management accounting. *Management Accounting*, 59(4), 26-9.

Simons, R. (1995). *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal.* Boston: MA, Harvard Business School Press.

Wiklund, J., Davidsson, P., & Delmar, F. (2003). What Do They Think and Feel about Growth? An Expectancy-Value Approach to Small Business Managers' Attitudes Toward Growth. *Entrepreneurship Theory & Practice*, Spring, 247-270.

List of Figures

Online sources:

Kiosked Nabs $5.75M From Rovio Chairman To Give Publishers An Alternative To Banner Ads

http://techcrunch.com/2012/06/20/kiosked-funding-plus-rovio/, 16.11.2012

Interviews

Interview 1: Financial Manager, Kiosked	9.11.2012	duration 1h
Interview 2: Owner-CEO, Tuxera	12.11.2012	duration 1h 10min
Interview 3: Financial Manager, Company X	23.11.2012	duration 35min
Interview 4: Owner-CEO, Kiosked	4.12.2012	duration 45min
Interview 5: Owner-CEO, Arcusys	2.5.2013	duration 51min
Interview 6: CFO, Arcusys	7.5.2013	duration 1h 12min
Interview 7: Owner-CEO & Owner- CFO, Beneq	22.5.2013	duration 1h 25min
Interview 8: CEO, M-files	26.6.2013	duration 1h

Appendix 1 – Theme interview structure

General

Definitions

Interviewee background

Company background

Management accounting in the case company

Cost accounting and profitability analysis

Short-term planning and budgeting

Investment planning and monitoring

Strategic management accounting and long-term planning

Management control (toiminnanohjaus)

Company growth and management accounting

Some final practicalities of the study