



The implementation of financial planning and cost accounting instruments in startups

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Abstract

This master thesis examines the question of how financial planning and cost accounting instruments are implemented in startups depending on their development stages. For this purpose, eleven semi-structured interviews were conducted with executives of startups in different development stages and an external expert. The results of this study show that startups follow a uniform approach along the development stages when implementing financial planning. Regarding the implementation of the individual financial planning instruments and cost accounting, various implementation differences and development steps between the development stages were identified. These differences and development steps are related to the industry, company growth, and business model expansion of the startups. Overall, this master thesis provides new and valuable insights for startups and scientists. For startups, the results are indications for the implementation and expansion of financial planning and cost accounting. For the scientific community, the results of this thesis represent the first cross-stage investigation of the implementation of specific management control systems.

Keywords: Startups; Financial planning; Cost accounting; Management control systems.

1. Introduction

1.1. Motivation

Startups are crucial for stable economic growth, innovative strength, and the long-term competitiveness of an economy.¹ Examples such as N26 or Delivery Hero show how startups create new jobs with disruptive business models, put established companies under pressure to remain innovative, and improve the everyday lives of their business partners or customers. However, before startups reach such a level of maturity as N26 or Delivery Hero, they undergo numerous transformation processes during their growth, in which they must overcome many internal and external challenges.² The internal challenges of growing startups include increasing problems in coordination and communication, the emergence of new functionalities and more interrelated jobs, and the multiplication of management hierarchy levels.³ In addition, startups are confronted with increasing

competitive pressure, environmental uncertainties, and constantly changing technologies.⁴ To deal with these increasing challenges, managers regularly adopt Management Control Systems (MCSs), such as financial, human resource or strategic planning tools, in the early development stage of their startup.⁵ Such MCSs help startups to professionalize by making the necessary transformation from an informal to a formal, information-based management approach.⁶ In this way, MCSs support the management, for example, by supplying the information needed for decision making, but also by preventing a loss of control due to a lack of monitoring.⁷ Consequently, MCSs are considered as an important instrument to promote company growth.⁸

Given the positive impact of MCSs on the development of startups, numerous scientists have examined MCSs in startups in greater depth over the past decades. These studies can be summarized into three overarching lines of research.

¹Cf. Zinke et al., 2018, p.20.

²Cf. Greiner, 1998, p.56; Bourne, 2014, p.97. When indicating several sources, the order of the sources depends on their importance for the respective subject matter.

³Cf. Greiner, 1998, p.56.

⁴Cf. Bourne, 2014, p.97.

⁵Cf. Davila & Foster, 2007, p.907; Sandino, 2007, p.265.

⁶Cf. Davila (2005), p.224.

⁷Cf. Davila & Foster, 2007, p.908; Sandino, 2007, pp.265f..

⁸Cf. Davila & Foster, 2007, p.930; Davila & Foster, 2005, p.1041; Davila, Foster, & Jia, 2010, p.87.

A first set of studies examined the relevant MCSs in startups. Here, Davila and Foster have shown that financial planning represents the earliest and most frequently adopted MCS category, followed by human resource and strategic planning.⁹ In contrast, cost accounting, as a subset of MCSs¹⁰, receives less attention in new economy firms, according to Granlund and Taipaleenmäki.¹¹

A further set of studies has examined numerous variables that influence the adoption of MCSs. For example, Davila and Foster found associations between the adoption rate and venture capital financing or the number of employees.¹²

A last set of studies has investigated the impact of MCSs on the development of startups. These studies have identified, for instance, improved performance¹³ and higher company valuations¹⁴ of startups through the integration of MCSs.

However, these studies have disregarded the qualitative implementation of MCSs. Since the implementation also potentially influences the company's development, there is still a need for further research in this area. Davila and Foster identified initial qualitative differences in the implementation of MCSs as part of a field study, without further investigating this issue.¹⁵ Accordingly, the qualitative implementation of MCSs, especially with regard to the different development stages of startups, is still unclear and calls for further research.

1.2. Objectives and methodology

Against this background, this master's thesis aims to address this research gap and examines the implementation of specific MCS instruments, using the example of financial planning and cost accounting tools, in startups, depending on their development stages (early, expansion, and later stage). Accordingly, the primary objective of this thesis is to answer the following research question:

How do startups implement financial planning and cost accounting instruments, depending on their development stages?

By investigating this research question, this study also aims to identify commonalities and differences in the development stage-specific implementation of financial planning and cost accounting instruments. Finally, this study has the objective of elaborating an overview in which the qualitative development steps of financial planning and cost accounting between the development stages are illustrated.

In order to examine the research question, a qualitative field study was conducted. Field studies aim to gain a deeper understanding of a research topic and are suitable for obtaining explanations and justifications from the practical environment.¹⁶ Considering the still unexplored research area to be

investigated, this approach is appropriate in order to generate initial results in a startup setting. For this purpose, a total of eleven semi-structured interviews were conducted with executives from startups of different development stages and industries as well as an external expert, from whom more in-depth explanations of the startups' approaches to implementing financial planning and cost accounting could be obtained.

1.3. Structure

This master's thesis is structured into six chapters. In order to ensure an adequate theoretical understanding, the second chapter of this thesis defines relevant terms, presents the current state of research on MCSs, and introduces the relevant concepts of financial planning and cost accounting. Subsequently, chapter three justifies the choice of the qualitative research approach in more detail, before describing the selection and sample of the interview partners and the procedure for the analysis of the semi-structured interviews. In chapter four, the results of the data analysis on the implementation of financial planning and cost accounting instruments in startups are presented according to the specific development phases. These results are discussed in the fifth chapter of this thesis, where they are compared and contrasted with the existing literature and expectations. Finally, the conclusion of this thesis answers the research question and offers outlooks for future research.

2. Theoretical foundations

In order to ensure a comprehensive understanding of the present thesis, this chapter introduces the necessary theoretical framework concepts concerning the research question. In the opening section of this chapter, the essential characteristics of a startup company will be described in more detail. Subsequently, the second section introduces the fundamentals of MCSs and the current state of research on MCSs. In the following two sections, the basics of financial planning and cost accounting, as the two authoritative control systems for this thesis, will be presented. Finally, a brief summary will outline the current state of research and justify the necessity of the research subject.

2.1. Characteristics of a startup

In the context of this thesis, startup companies from different development stages will be considered. To ensure a consistent conceptual understanding, this section defines the term startup and introduces the relevant development stages.

2.1.1. Definition of a startup

The literature contains many definitions for startup companies, of which none has yet proven to be authoritative or universally valid.¹⁷ Therefore, it is even more important to

⁹Cf. Davila & Foster, 2007, p.907.

¹⁰Cf. Chenhall, 2003, p.129; Davila & Foster, 2005, p.1040.

¹¹Cf. Granlund & Taipaleenmäki, 2005, p.34.

¹²Cf. Davila & Foster, 2007, p.907.

¹³Cf. Sandino, 2007, p.265.

¹⁴Cf. Davila, Foster, & Jia, 2015, p.207.

¹⁵Cf. Davila & Foster, 2007, p.934.

¹⁶Cf. Yin, 2009, p.9; Miles, Huberman, & Saldaña, 2014, p.11.

¹⁷Cf. Weber, 2016, p.12; Luger & Koo, 2005, p.17; Zaech & Baldegger, 2017, p.158.

define a precise terminology of a startup for the following thesis.

Initially, the term startup was associated with a company in its early development stage.¹⁸ Since this definition includes all types of new businesses, it was further specified to distinguish between general business foundations and startup companies.¹⁹ The most common definition of a startup in academic literature is provided by Blank²⁰, who defined a startup as “a temporary organization designed to search for a repeatable and scalable business model.”²¹ Skala examined Blank’s definition more closely and identified two key characteristics of a startup company in his definition. First, startups look for a business model characterized by uncertain market demand, and second, the startup’s business model must be able to scale. As part of her study, Skala examined numerous other startup definitions from scientists, institutions, and entrepreneurs and identified a total of four critical characteristics of a startup company, as follows:

- A startup is a young company and has limited resources;
- It offers innovative solutions in an innovative way;
- It is ambitious and fast-growing, and
- It operates in the digital industry.²²

Kollmann et al. have taken up the criteria listed above in the German Startup Monitor and defined a startup as a company that is “younger than ten years, [is] growth-oriented in terms of [its] employees/sales and/or (highly) innovative in terms of [its] products/services, business models and/ or technologies.”²³ Therefore, to be classified as a startup company according to their definition, the company must fulfill the first criterion (younger than ten years) and at least one of the last two criteria (growth-oriented and/or innovative). Thus, the German Startup Monitor understands a startup as a young company with an innovative and/or scalable business model.²⁴ The operating industry as a further classification criterion was deliberately omitted from this definition.²⁵ Consequently, Kollmann et al. included startup companies from all sectors in their study. They revealed that overall, 90% of the startups studied had business models that were digital (e.g., IT solutions) or hybrid (mixture of digital and analog, such as technology development and production), and the remaining 10% of the startups had an analog business model (e.g., stationary commerce).²⁶ Accordingly, most

startups originate from the digital industry, despite the deliberate omission of the industry classification criterion.

This thesis links the definition of the German Startup Monitor with the startup characteristics by Skala. Thus, a startup in the context of this thesis is defined as a company that is “younger than ten years, [...] growth-oriented in terms of [its] employees/sales [...], (highly) innovative in terms of [its] products/services, business models and/or technologies”²⁷ and operates in the digital industry.²⁸

2.1.2. Development stages of a startup

During their growth, startup companies go through different development stages, characterized by diverging goals, tasks, and challenges. Three overarching stages – the early, expansion, and later stage – have been established as decisive in the literature.²⁹ Sometimes these stages are further fragmented to characterize the startup’s development state more in-depth.³⁰ In the following, these development stages are described in more detail with regard to their further subdivision, tasks, goals, and challenges.

Early stage

Startup companies begin their development process in the so-called early stage. The early stage starts with the development of an idea for a potential product/ service, business model or technology and ends with the founding of the startup and generating the first revenues.³¹ According to the German Startup Monitor, 73.1% of the examined startups are in the early stage, which therefore represents the quantitatively largest development phase.³² In the literature, this stage is often further subdivided into the pre-Seed-, seed-, startup- and occasionally also into the first stage.³³

In the pre-Seed stage, the idea generation and feasibility analysis are the focus of activities.³⁴ The future founders analyze in this context the market potential and acceptance of future users of their business idea, the resource requirements and availability, and evaluate their idea with other founders. At the end of this stage, a rough concept of the business idea should be defined.³⁵

¹⁸Cf. Csaszar, Nussbaum, & Sepulveda, 2006, p.151; Zaech & Baldegger, 2017, p.158.

¹⁹Cf. Kollmann, Jung, Kleine-Stegemann, Atae, & de Cruppe, 2020, p.18.

²⁰Cf. Spender, Corvello, Grimaldi, & Rippa, 2017, p.4; Skala, 2019, p.15.

²¹Blank, 2013, p.67.

²²Cf. Skala, 2019, pp.16-21.

²³Kollmann et al., 2020, p.14.

²⁴Cf. *ibid.*, p.18.

²⁵Cf. Kollmann, Stöckmann, Hensellek, & Kensbock, 2016, p.14.

²⁶Cf. Kollmann et al., 2020, p.24.

²⁷*Ibid.*, p.14.

²⁸Cf. Skala, 2019, p.21.

²⁹Cf. Schachel, Lachmann, Endenich, & Breucker, 2021, p.682; Kollmann, 2019, p.135; Tech, 2014, p.3.

³⁰Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.5; Passaro, Rippa, & Quinto, 2016, p.8; Tech, 2014, p.3.

³¹Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, pp.5f.; Kollmann, 2019, p.134; Passaro et al., 2016, p.8; Tech, 2014, p.3.

³²Cf. Kollmann et al., 2020, p.21. In this context, the German Startup Monitor divides the early stage into the seed- and startup stage. In total, 1,946 startup companies (without industry restrictions) were analyzed in the study (cf. Kollmann et al., 2020, p.21).

³³Cf. Kollmann, 2019, p.134; Sammer, 2021. Salamzadeh and Kesim (2015), Passaro et al. (2016) and Tech (2014) use other nomenclatures for the stages; however, their term explanations are synonymous with the mentioned phases (Cf. Salamzadeh & Kesim, 2015, pp.5f.; Passaro et al., 2016, pp.9ff.; Tech, 2014, p.3).

³⁴Cf. Kollmann (2019) p.134; Passaro et al., 2016, p.8.

³⁵Cf. Sammer, 2021; Passaro et al., 2016, p.8.

The rough concept is further developed in the subsequent seed stage to create the business plan at the end of this phase.³⁶ Furthermore, the prototype and a detailed foundation plan are developed, including decisions like the choice of the legal form, the accounting system, and the definition of the strategy, goals, and unique selling proposition.³⁷ Salamzadeh and Kesim emphasize that the seed stage is characterized by a great financial requirement, for instance, for developing and refining the prototype. Therefore, the search for accelerators, incubators or angel investors is essential in this development stage to become a profitable company in a later phase due to the assistance of supporters.³⁸ Since these startup-supporting organizations and individuals play a subordinate role for this thesis, a more in-depth explanation of these supporters will be omitted.³⁹ However, it should be noted that many founders do not find any supporters in this phase and thus fail.⁴⁰

Once the business plan is defined, the prototype developed, and a detailed foundation plan established, the startup stage begins. During the startup phase, the company is founded, and the product's market launch is prepared.⁴¹ In addition to numerous legal activities (such as business registration or shareholder agreement), production planning and preparation, supplier acquisition and the establishment of a distribution network are also conducted during this stage.⁴² As soon as the preparations for market launch are complete, customer acquisition through marketing campaigns will be essential to generate the first sales.⁴³ Once the first customers have been acquired, the first stage begins.⁴⁴ The literature often considers the first stage as part of the startup stage and makes no further distinction between these phases.⁴⁵ In the first stage, the founded startup commences its operational business activity and generates its first revenues.⁴⁶ Furthermore, the first employees are hired, and the processes and structures in the company become more professional.⁴⁷ Due to the high financial requirements for the foundation process and the market launch, startup companies often resort to venture capital financing during the startup- and first stage.⁴⁸ This type of financing is explained in more detail below.

³⁶Cf. Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, pp.8f.; Kollmann (2019), p.134.

³⁷Cf. Passaro et al., 2016, pp.8f.; Sammer, 2021.

³⁸Cf. Salamzadeh & Kesim, 2015, p.6.

³⁹For a deeper understanding regarding incubator and accelerator programs Lange and Johnston (2020, p.1563) and Cohen (2013, pp.20ff.) provide a good overview. Regarding the support of business angels, Morrissette, 2007, pp.52ff. offers more in-depth explanations for further reading.

⁴⁰Cf. Salamzadeh and Kesim (2015, p.6).

⁴¹Cf. Sammer, 2021.

⁴²Cf. *ibid.*; Passaro et al., 2016, p.9.

⁴³Cf. Sammer, 2021.

⁴⁴Cf. *ibid.*.

⁴⁵Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, p.9; Tech, 2014, p.3.

⁴⁶Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, pp.9f.; Sammer, 2021.

⁴⁷Cf. Salamzadeh & Kesim, 2015, p.6; Sammer, 2021.

⁴⁸Cf. *ibid.*; Passaro et al., 2016, p.9.

Startups are associated with a high level of risk for external financiers due to their innovative business model and significant information asymmetries, primarily caused by the novelty of their product and limited revenue and profit history.⁴⁹ Therefore, they usually have no access to credits from debt financiers.⁵⁰ Venture capital organizations are equity financiers who invest considerable resources into the understanding of new technologies and markets on the one hand⁵¹, and secure control and participation rights over strategic decisions at the startups when investing on the other hand⁵², which allows them to handle the risk of their investment. Therefore, they support the startups as active investors, not only by providing equity for rapid growth but also their expertise in hiring new executives, their access to networks or their management experience in return for a stake in the company.⁵³

Thus, the early stage concludes with the generation of the first sales and the hiring of employees. Giardino et al. investigated in a survey the key challenges of software startup companies in the early stage. They concluded that the development of innovative products is the greatest challenge in the early stage, followed by the acquisition of the first paying customers, the acquisition of the initial funding and the formation of motivated teams.⁵⁴ Wang et al. reached similar conclusions in their study regarding the key challenges of software startups.⁵⁵ Salamzadeh and Kesim added that besides the challenges mentioned above, environmental influences like existing trends or market limitations are also among the main challenges in the early stage.⁵⁶

Expansion stage

As soon as the startup company has successfully passed the early stage, it enters the so-called expansion stage. According to the German Startup Monitor, 23.6% of the startups examined are in the expansion stage, representing the second-largest development phase.⁵⁷ During the expansion stage, the startup pursues an aggressive growth strategy, especially in its sales and number of users.⁵⁸ For the successful and stringent pursuit of this strategy, the primary tasks include massive customer acquisition, personnel recruitment, including management staff, as well as the internationalization of the company.⁵⁹ The founders have to develop themselves strongly in this phase, especially on a strategic level, to assume a leadership position that focuses for instance on

⁴⁹Cf. Davila et al., 2015, p.209.

⁵⁰Cf. Davila, Foster, & Gupta, 2003, p.691.

⁵¹Cf. *ibid.*.

⁵²Cf. Kaplan & Strömberg, 2001, p.426.

⁵³Cf. Amornsiripanitch, Gompers, & Xuan, 2019, pp.539f.

⁵⁴Cf. Giardino, Bajwa, Wang, & Abrahamsson, 2015, p.55.

⁵⁵Cf. Wang, Edison, Bajwa, Giardino, & Abrahamsson, 2016, p.176.

⁵⁶Cf. Salamzadeh & Kesim, 2015, p.7.

⁵⁷Cf. Kollmann et al., 2020, p.21. The German Startup Monitor defines the expansion stage as the growth stage.

⁵⁸Cf. *ibid.*.

⁵⁹Cf. Passaro et al., 2016, p.10.

employee motivation and leadership, sales growth, customer and supplier acquisition, and the search for new markets and partners.⁶⁰ During this stage, the expanding startup companies often rely on funding from venture capital organizations, which also support the startup's growth with their expertise in management decisions.⁶¹

As the central challenges of this phase, Greiner identifies the problems in coordination and communication, the emergence of new functionalities, the multiplication of management hierarchy levels, and the emergence of interrelated jobs as a consequence of the large employee and revenue growth.⁶² Davila et al. added that "the number of interactions required to [impart information to the right employee] increases exponentially [as] the number of employees grows"⁶³, resulting in significant additional time and costs. This leaves limited time for the managers to make essential strategic decisions.

Later stage

In the final stage of development, the so-called later stage, the startup has become an established market player and modifies its strategy from aggressive to sustainable growth with reliable revenues.⁶⁴ According to the German Startup Monitor, 3.3% of the startups examined are in the later stage, which quantitatively represents the smallest development phase.⁶⁵ During this stage, the company structures and processes become further professionalized, the company goals redefined, and the product range further diversified.⁶⁶ The founders and investors often intend to exit from the company during this phase, regularly as part of a trade sale or an initial public offering (IPO).⁶⁷ For both parties, an exit represents a liquidity event in which they usually sell their shares profitably and pursue new challenges and opportunities.⁶⁸ At a trade sale, a strategic investor purchases the company and thus the company shares of the founders and investors, provided it strategically fits the investor's existing company to achieve cost savings, operational synergies, and generally competitive advantages.⁶⁹ The IPO is the preferred exit mechanism for highly valued companies, as the highest yields can usually be achieved in this way.⁷⁰ Here, venture capitalists and founders sell their shares on the stock market, generally over a long period.⁷¹ The preparation and realization of the trade sale or IPO require a large

amount of capital, which investment banks typically provide in the form of short-term bridge loans.⁷²

Due to the slower but sustained growth, the key challenges in the later stage do not differ from those in the expansion stage. However, further financial and structural challenges due to the trade sale or IPO arise in the later stage.

2.2. Fundamentals of management control systems

As described in the previous chapter, managers of startup companies must overcome numerous challenges during the company's growth. The failure of the management team to overcome these challenges "can lead to large financial losses, reputation[al] damage, and possibly even organizational failure."⁷³ Therefore, many scientists have searched for approaches to manage these challenges in the past. In this regard, so-called MCSs have proven to be particularly effective. The implementation of MCSs, such as financial planning, changes the management infrastructure of the startup company from an informal, personal management style to a formal management control (MC).⁷⁴ This control system professionalizes the startup on the one hand and supports the management in a multitude of decisions on the other hand⁷⁵, as will be explained in more detail in this chapter.

This chapter starts with a definition of the term MCS before introducing the categorization of MCSs according to Davila and Foster. Subsequently, the current state of research on MCSs in startups will be presented before deriving the necessary research needs from this.

2.2.1. Definition of management control systems

Various definitions of MCSs⁷⁶ have developed over time in the academic literature, which partly differ considerably.⁷⁷ In the following, the divergent conceptual understandings will be highlighted before introducing the authoritative definition of a MCS for this thesis.

The origins of the study of MCSs go back to the work of Robert N. Anthony in the year 1965.⁷⁸ Anthony defined MC as "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives."⁷⁹ In his conception, the MC acts as a connecting link between strategic

⁷²Cf. Kollmann (2019), p.642.

⁷³Merchant and Van der Stede (2017, p.3).

⁷⁴Cf. Davila, 2005, p.226; Davila et al., 2010, p.79.

⁷⁵Cf. Davila & Foster, 2007, p.907; Davila et al., 2015, p.207; Davila & Foster, 2005, p.1039; Davila, 2005, p.223; Davila et al., 2010, p.98.

⁷⁶The terms management accounting system (MAS) and MCS are often used synonymously in the literature. However, this usage can lead to misunderstandings, so a distinction between these two terms is necessary. Chenhall and Davila and Foster understand MASs as a subset of MCSs in which management accounting (MA) practices like cost accounting or budgeting are systematically applied to achieve the companies' goals. MCSs, while including MASs as previously discussed, also involve other controls like informal behavioral controls on employees. (Cf. Chenhall, 2003, p.129; Davila & Foster, 2005, p.1040.)

⁷⁷Cf. Malmi & Brown, 2008, pp.288f..

⁷⁸Cf. Ferreira & Otley, 2009, p.264; Langfield-Smith, 1997, p.208; Otley, 2016, p.46.

⁷⁹Anthony (1965, p.17).

⁶⁰Cf. Passaro et al., 2016, p. 10.

⁶¹Cf. Kollmann (2019), p.135.

⁶²Cf. Greiner, 1998, p.56.

⁶³Davila & Foster, 2007, p.909.

⁶⁴Cf. Kollmann et al., 2020, p.21; Kollmann (2019), p.137; Sammer, 2021.

⁶⁵Cf. Kollmann et al., 2020, p.21. In this context, the later and steady stages were combined as the later stage.

⁶⁶Cf. Kollmann (2019), p.137; Sammer, 2021.

⁶⁷Cf. Kollmann et al., 2020, p.21; Kollmann (2019), p.137.

⁶⁸Cf. DeTienne, 2010, p.204; Cumming & Johan, 2008, p.198.

⁶⁹Cf. DeTienne, 2010, p.211.

⁷⁰Cf. Cumming & MacIntosh, 2003, pp.195f..

⁷¹Cf. Isaksson, 2007, p.145.

planning and operational control and thus represents one of the three processes in the organization that are more separated from each other.⁸⁰ Therefore, the MCSs “should be integrated and coordinated systems”⁸¹ that ensure the long-term goals, plans and policies at the strategic level based on the operational control of the measurable processes.⁸² Despite his pioneering approach to research on MCSs, Anthony’s conception has been criticized in the literature because of two major issues. First, he was criticized for separating MC from strategic and operational control.⁸³ Langfield-Smith emphasizes in this context that employees from Anthony’s operational and MC level are commonly involved in the planning and implementation of strategic decisions, thus this approach should be considered inappropriate.⁸⁴ Secondly, he was criticized for his strong focus on using financial and accounting-based controls, which neglect the management of employee behavior by explicit control systems.⁸⁵

Correspondingly, many additional definitions of MCSs have been developed over the past decades. In his analysis of existing MCS definitions, Chenhall identified a broadening of the information content.⁸⁶ From definitions that include formal, financial, and accounting-based information for decision-making to definitions that additionally encompass “external information related to markets, customers, competitors, non-financial information related to production processes, predictive information and a broad array of decision support mechanisms, and informal personal and social controls.”⁸⁷

A frequently encountered definition in the literature is based on Merchant and Van der Stede, who separate strategic control from MC.⁸⁸ They define MC as influencing, directing, and aligning employees’ behavior to achieve the organization’s goals, consistent with its pursued strategy.⁸⁹ For this purpose, MCSs “are necessary to guard against the possibilities that people will do something the organization does not want them to do, or fail to do something they should do.”⁹⁰ Thus, according to Merchant and Van der Stede, the MCS addresses, monitors and prevents the following three employee issues: lack of direction, motivational problems, and personal limitations.⁹¹

A lack of direction signifies that employee do not act in line with the company’s goals because there is no clear communication of what the company requires of them. A further problem is the lack of motivation. In this case, although employees know what is required of them to achieve the

company’s goals, they do not operate as the company requires, due to conflicting personal and organizational goals. Finally, the MCS addresses personal limitations. Although the employees are motivated and understand the company’s requirements of them, they cannot perform their tasks well due to personal limitations such as a lack of experience, training, stamina, or knowledge. The MCS addresses and monitors these issues to enable the execution of the business objectives and strategy by the employees.⁹²

Many other scholars agree with Merchant and Van der Stede’s approach and define MCSs as the behavioral control of employees with regard to the corporate goals, mission and strategies.⁹³

Otley expanded Merchant and Van der Stede’s approach by understanding MCSs as an additional information base for decision-makers in the company. Accordingly, MCSs “provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behavior.”⁹⁴ Robert Simons’ definition, which has become firmly established in research of MCSs in startups⁹⁵, follows Otley’s approach. Simons defines MCSs as “formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities.”⁹⁶ His definition includes formal systems such as plans, budgets or market monitoring systems, as well as information-based procedures such as the search for new opportunities or the communication and monitoring of plans, goals, and developments across multiple hierarchical levels. These procedures should stimulate the managing of goal-oriented activities and the search for new opportunities and innovations, leading to new strategies.⁹⁷ Davila et al. interpret MCSs according to Simons’ definition “as recurring and formalized sets of institutionalized protocols and routines designed to motivate, monitor, and measure the behavior of managers and employees, as well as assist them in information-gathering and decision-making.”⁹⁸ In the context of this thesis, the definition and interpretation of an MCS by Simons and Davila et al. will be followed.

2.2.2. Davila and Foster’s categorization of management control systems

Several designs for MCSs have been established in the literature over time. The most famous is the levers of control framework by Robert Simons, who distinguished between the belief, boundary, diagnostic, and interactive systems.⁹⁹ Since this framework plays a subordinate role in this thesis,

⁸⁰Cf. Anthony, 1965, p.16.

⁸¹Strauß and Zecher (2013, p.237).

⁸²Cf. Anthony, 1965, pp.16ff.

⁸³Cf. Langfield-Smith, K. (1998), p.208; Otley, 1994, p.290.

⁸⁴Cf. Langfield-Smith, K. (1998), p.209.

⁸⁵Cf. *ibid.*, p.208; Merchant & Otley, 2006, p.788.

⁸⁶Cf. Chenhall, 2003, p.129.

⁸⁷*Ibid.*

⁸⁸Cf. Merchant & Van der Stede, 2017, p.11.

⁸⁹Cf. *ibid.*

⁹⁰*Ibid.*

⁹¹Cf. Merchant & Van der Stede, 2017, pp.12ff..

⁹²Cf. *ibid.*

⁹³Cf. Hartmann, Kraus, Nilsson, Anthony, & Govindarajan, 2021, p.15; Flamholtz, Das, & Tsui, 1985, p.36; Abernethy & Chua, 1996, p.573.

⁹⁴Otley (1999, p.364).

⁹⁵Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.908; Davila, Foster, & Li, 2009, p.323; Davila et al., 2015, p.207; Davila, 2005, p.226; Sandino, 2007, p.265; Schachel et al., 2021, p.661; Schachel, 2019, p.19.

⁹⁶Simons (1995, p.5).

⁹⁷Cf. *ibid.*

⁹⁸Davila et al., 2015, p.207.

⁹⁹Cf. Simons, 1995, p.7.

the significance of the individual levers of control will not be discussed further. Davila and Foster developed the authoritative design for exploring MCSs in startup companies. They subdivide the MCSs into eight categories: financial planning, financial evaluation, human resource planning, human resource evaluation, strategic planning, product development management, sales/marketing management, and partnership management. In addition, they assigned a total of 46 individual control systems to these eight categories. Table 1 presents the eight categories with a section of the individual control systems.¹⁰⁰ The presented systems demonstrate that MCSs are much more than just financial and accounting-based systems, but also systems that, for instance, want to communicate the company's culture and values to the employees.

Based on this categorization, Davila and Foster investigated which control systems startups adopt first. Using a sample of 78 startup companies, they found that the financial planning category has the earliest and most widely adopted systems involving the cash flow projection, operating budget, and sales projection. Moreover, the human resource planning systems, such as core values or organization charts, and strategic planning systems, including the definition of strategic milestones or the headcount development plan, are used early and frequently as control systems in startup companies. Evaluation systems such as financial and human resource evaluation systems are integrated into the company later.¹⁰¹

2.2.3. Management control systems in startups

The implementation of MCSs in startup companies represents a controversial issue in research. The traditional belief is that the rigid and bureaucratic character of MCSs negatively influences creativity¹⁰² and the entrepreneurial spirit of the startup and thus affects its future success.¹⁰³ Current studies have refuted this traditional view in numerous ways and have proven the importance of MCSs for the company's growth and value.¹⁰⁴ These studies further indicate that the growth creates new challenges that require transitioning from informal, personal management to a formal MCS.¹⁰⁵ Implementing these formal MCSs leads to various benefits that contribute to the startup's professionalization and development.¹⁰⁶ Against this background, Davila et al. identified four subsequent benefits of MCSs in startup companies as particularly important.¹⁰⁷ First, MCSs make the organization's objectives explicit and transparent, ensuring a

common understanding of the objectives across the organization and aligning employees' decisions to achieve them.¹⁰⁸ Second, MCSs facilitate the coordination of tasks as the number of employees increases, as well as the planning of next steps to achieve the organizational goals, through the introduction of coordination control systems and communication infrastructure.¹⁰⁹ Third, MCSs support managers in the fast and efficient acquisition of information for making the right decisions.¹¹⁰ Finally, MCSs relieve managers from routine tasks due to the integration of alert systems that monitor the achievement of process targets and provide managers more time for strategic activities.¹¹¹

Besides identifying the numerous advantages of MCSs, research has so far primarily focused on the identification of influencing variables for the introduction of MCSs and the impact of MCSs on business development, which will be presented in the following.

Influencing variables for the introduction of management control systems

Numerous studies have addressed the factors that motivate startup companies to adopt MCSs.¹¹² These studies have identified a variety of factors that positively influence the adoption of MCSs; for instance, the number of employees, international operations, time to revenue, presence of venture capital,¹¹³ Chief Executive Officer (CEO) characteristics,¹¹⁴ CEO turnover, or agency costs¹¹⁵. Particularly important and frequently identified factors are the company's growth, venture capital financing and CEO turnover, which will be presented in more detail in the following.

Company growth

Company growth constitutes one of the most important influencing variables for the introduction of an MCS and is measured by the number of employees.¹¹⁶

During the early stages, the communication, coordination, and control of tasks and goals typically occur frequently and through informal interactions.¹¹⁷ Due to the often small number of employees in the early stage, the informal organizational structure of the company does not pose significant challenges in terms of the MC. Davila et al. suggest that managers can handle between 50 and 80 employees with their personal management style, without the support of MCSs, depending on their abilities and time capacities as well as the complexity of the company.¹¹⁸ With increasing headcount,

¹⁰⁰Cf. Davila & Foster, 2007, p.908.

¹⁰¹Cf. *ibid.*, p.934.

¹⁰²Cf. Amabile, Conti, Coon, Lazenby, & Herron, 1996, pp.1774f..

¹⁰³Cf. Lukka & Granlund, 2003, p.13.

¹⁰⁴Cf. Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.930; Davila et al., 2015, p.207; Davila et al., 2010, p.87.

¹⁰⁵Cf. Davila & Foster, 2005, p.1044; Davila & Foster, 2007, p.907; Davila, 2005, p.226; Davila et al., 2010, p.86.

¹⁰⁶Cf. Davila et al., 2010, pp.97ff..

¹⁰⁷Cf. *ibid.*.

¹⁰⁸Cf. *ibid.*, p.97.

¹⁰⁹Cf. *ibid.*, p.98.

¹¹⁰Cf. *ibid.*.

¹¹¹Cf. *ibid.*, p.99.

¹¹²Cf. *ibid.*, pp.83ff.; Davila, 2005, p.223; Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.907; Davila et al., 2009, p.322; Cassar, 2009, p.27; Zor, Linder, & Enderich, 2019, p.658.

¹¹³Cf. Davila & Foster, 2007, p.907.

¹¹⁴Cf. Zor et al., 2019, p.658.

¹¹⁵Cf. Davila & Foster, 2005, p.1039.

¹¹⁶Cf. Davila, 2005, p.226.

¹¹⁷Cf. *ibid.*.

¹¹⁸Cf. Davila et al., 2010, p.86.

Table 1: Davila and Foster's MCS categorization*

MCS categories	Individual control systems
Financial planning	Operating budget Cash flow projections Sales projections
Financial evaluation	Capital investment approval procedures Product profitability analysis Customer profitability analysis
Human resource planning	Core values Mission statement Codes of conduct
Human resource evaluation	Written performance objectives for managers Individual incentive programs
Strategic planning	Definition of strategic (nonfinancial) milestones Investment budget
Product development management	Project milestones
Sales/ marketing management	Sales targets for salespeople Customer relationship management system
Partnership management	Policy for partnerships

*Based on Davila and Foster (2007, pp.914f.).

the interactions required to move information through the organization grow exponentially¹¹⁹, resulting in high coordination and control costs.¹²⁰ The high expenditure of time for the transfer of information leads to a decrease in the efficiency of informal management as the number of employees increases since there is less time for the more essential value-creating activities.¹²¹ In order to counter the growing costs and inefficiencies, the startup companies implement MCSs that formalize both communication, for example of company goals, and the motivation and monitoring of employees.¹²²

MCSs implemented to regulate company growth are typically human resource systems.¹²³ These systems usually include several functions to save management time and costs, such as the formal introduction of new employees to the company, or periodically informing existing employees about current or new organizational goals with which they should act in accordance.¹²⁴ Furthermore, business processes are often formalized through action controls as part of the growth by defining expectations for the individual process, outlining staff coordination, and defining controls through rules and employee roles.¹²⁵ Finally, formal result controls are commonly implemented to provide managers with information about the results and performance of employees, for instance, to motivate employees with incentives for reaching a certain

level of goal achievement.¹²⁶

Venture capital financing

A further significant influencing variable represents venture capital financing. Davila and Foster found an earlier and more intensive use of MCSs in venture capital-backed startups than in non-venture capital-backed startups. In this context, they identified the following three influencing factors for the earlier and more intensive use.¹²⁷

First, venture capital organizations invest in startup companies from which they expect high growth and will thus ultimately achieve a high return on their investment. Through their investment and supporting management expertise, they facilitate the startup's rapid growth and thus the implementation of MCSs, as outlined previously. Furthermore, startup companies that require venture capital funding are typically cash flow negative in their early stages of development. Therefore, they often implement more financial planning tools to monitor financial resources and calculate financial needs in their early stages. Finally, Davila and Foster identify the direct involvement of venture capitalists as an influencing variable on the adoption of MCSs. In order to evaluate the startup's development, venture capitalists expect regular and reliable financial reports.¹²⁸ To ensure transparent and reliable information for this purpose, venture capitalists often require the implementation of financial planning, financial evaluation, and strategic planning systems at the beginning of their investment.¹²⁹

¹¹⁹Cf. Davila & Foster, 2007, p.909.

¹²⁰Cf. Davila, 2005, p.226.

¹²¹Cf. *ibid.*

¹²²Cf. *ibid.*; Davila & Foster, 2005, p.1044; Davila & Foster, 2007, p.909.

¹²³Cf. Davila, 2005, p.227.

¹²⁴Cf. *ibid.*

¹²⁵Cf. *ibid.*

¹²⁶Cf. *ibid.*

¹²⁷Cf. Davila & Foster, 2007, pp.917-921.

¹²⁸Cf. Granlund & Taipaleenmäki, 2005, p.43.

¹²⁹Cf. Davila & Foster, 2007, pp.917-921.

In summary, venture capital-backed startup companies implement MCSs earlier and more frequently than startups that are not backed by venture capital. There is a particular focus on financial planning and evaluation systems due to the control of venture capitalists on results and developments, and the startup's negative cash flow.¹³⁰

CEO rotation

The last influencing variable presented in this chapter is CEO rotation. The CEO assumes a crucial position in building and professionalizing the startup company. In the early development stage, the founders take the lead.¹³¹ During this stage, the business processes are informally organized and "the founders [...] are usually technically or entrepreneurial oriented, and they generally disdain management activities."¹³² In order to ensure further growth as the business grows, the business structures need to be professionalized and formalized, requiring the founders to assume a manager's position.¹³³ Many founders are unable to make this transition: while they possess good qualities for managing the startup in its early development stage, these are not sufficient for managing a growing company that needs to be professionalized.¹³⁴ In this context, Hellmann and Puri have proven that venture capital organizations in particular frequently replace the founder(s) by an external CEO, in order to integrate formalized and professional organizational structures.¹³⁵ Davila and Foster also examined the relationship between founders' MCS intensity and CEO turnover. They found empirical evidence that founders with low MCS intensity are replaced faster and more often by an external CEO.¹³⁶ In spite of this, the founders often remain in a modified position with the company.¹³⁷

Thus, CEO turnover represents a combination of the two previously described influencing variables, namely company growth and venture capital financing. A new CEO is linked to the adoption of MCSs for the formalization and professionalization of business processes, such as monitoring and motivation of employees on the one hand, and the introduction of financial planning and evaluation systems for a transparent reporting of the business results and developments to the venture capitalists on the other hand.¹³⁸

Impact of management control systems on startup development

Apart from the numerous influencing variables, the impact of MCSs on the development of startup companies has also been widely investigated.¹³⁹ Empirical studies have

identified, for instance, associations between the adoption of MCSs and company growth¹⁴⁰, sales growth¹⁴¹, company value¹⁴², performance¹⁴³, and improved forecasting of startups¹⁴⁴. The following provides a more in-depth explanation of the impact of MCSs on the company's growth, its value, and the investment decision of external financiers.

Company Growth

Company growth not only represents a key influencing variable for the adoption of an MCS, but it can also be a consequence of the use of MCSs.¹⁴⁵

Davila and Foster examined the impact of MCS intensity on company growth. They found "that an increase in MCS intensity facilitates future company growth."¹⁴⁶ Thus, business growth and MCS intensity are interlinked and positively influence each other. Admittedly, this result represents merely an association and not causality.¹⁴⁷ Many other factors, such as the quality of the business model or the management quality of the CEO, also impact company growth.¹⁴⁸

Company Value

In addition to company growth, Davila et al. analyzed the impact of MCS intensity¹⁴⁹ on the company value. Based on an international sample of 66 startups, they examined the effect of MCS intensity on the startup valuation at external financiers' events. The statistical analysis of the data revealed both a statistically significant and economically positive correlation between the MCS intensity and the business valuation. The "results [...] suggest that a 10% increase in MCS adoption is associated with a 3.3% increase in firm value."¹⁵⁰ Beyond this general result, they identified further influencing factors that lead to a higher business valuation through the adoption of MCSs.¹⁵¹

On the one hand, the adoption of MCSs positively impacts the company value if the organization operates in a highly competitive environment and has high growth rates. "Intense competition forces companies [...] to adapt quickly to changing markets, customer preferences and technolo-

et al., 2010, p.87; Davila et al., 2015, p.207; Sandino, 2007, p.265; Schachel et al., 2021, p.660; Schachel, 2019, p.129; Wijewardena, De Zoysa, Fonseka, & Perera, 2004, p.216; Cassar & Gibson, 2008, p.732.

¹⁴⁰Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.930; Davila et al., 2010, p.87.

¹⁴¹Cf. Wijewardena et al., 2004, p.216; Davila & Foster, 2005, p.1040.

¹⁴²Cf. Davila et al., 2015, p.207.

¹⁴³Cf. Sandino, 2007, p.265.

¹⁴⁴Cf. Cassar & Gibson, 2008, p.732.

¹⁴⁵Cf. Davila & Foster, 2007, p.930; Davila & Foster, 2005, p.1040; Davila et al., 2010, p.87. Davila and Foster calculated the MCS intensity in a two-stage process. "First [they] compute the MCS category intensity as the percentage of individual systems adopted in each of the eight categories for each year. Then overall systems' intensity is calculated as the equal-weighted sum of the eight intensities." (Davila & Foster, 2007, pp.921f.).

¹⁴⁶Davila & Foster, 2007, p.930.

¹⁴⁷Cf. *ibid.*

¹⁴⁸Cf. Davila et al., 2010, p.86.

¹⁴⁹Davila et al. measure the MCS intensity "as the number of systems adopted at year-end immediately prior to the financing round." (Davila et al., 2015, p.207).

¹⁵⁰*Ibid.*, p.209.

¹⁵¹Cf. *ibid.*, pp.209-213.

¹³⁰Cf. Davila & Foster, 2007, pp.917-921.

¹³¹Cf. Hellmann & Puri, 2002, p.181.

¹³²Greiner (1998, p.60).

¹³³Cf. Greiner, 1998, p.60; Hellmann & Puri, 2002, p.181; Davila & Foster, 2007, p.930; Davila, 2005, p.228.

¹³⁴Cf. Davila, 2005, p.228.

¹³⁵Cf. Hellmann & Puri, 2002, p.181.

¹³⁶Cf. Davila & Foster, 2007, pp.931f.

¹³⁷Cf. Hellmann & Puri, 2002, p.181.

¹³⁸Cf. Davila, 2005, pp.228f.

¹³⁹Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.930; Davila

gies¹⁵² to maintain their market position. Moreover, as described in chapter 2.2.3.1, high growth rates create an exponentially increasing demand for communication to transport information along the company, which formal control systems can handle.¹⁵³ Managers thus have more time for the essential, strategic decisions of the company. External financiers evaluate these systems as indispensable for companies, resulting in the higher valuation of companies with MCSs in place.¹⁵⁴

On the other hand, aligning MCSs with the business strategy also positively affects a company's valuation. The literature distinguishes between the cost leadership and the differentiation strategy.¹⁵⁵ In a cost leadership strategy, the company aims to be the cheapest provider on the market and therefore focuses on cost and quality controls. A differentiation strategy offers a unique product or service to the market, which is characterized, for example, by an improved design or extended distribution channels. This strategy focuses on revenue controls and thus on the marketing and sales productivity of the product or service.¹⁵⁶ Sandino proved in her study that a good alignment of the MCS and the business strategy is associated with improved performance.¹⁵⁷ In this context, Davila et al. have also verified that a good alignment is associated with a higher company valuation by the external financiers.¹⁵⁸

External financiers' investment decision

The impact of MCSs on external financiers has also been analyzed extensively in the past. Particular attention has been paid to the impact of MCSs on the investment decision of external financiers.¹⁵⁹

Access to equity providers, such as venture capitalists, or debt financiers, such as banks, represents an essential financial resource for startups to mature into growing, successful, and professional companies.¹⁶⁰ However, access to external funding relates to several criteria that must be evaluated by the financiers, such as the management team, profitability of the business model, market, competitors, or the prospects of success.¹⁶¹ The limited revenue and profit history of the startup companies, the negative cash flows¹⁶² and the information advantage of the founders about the performance, potential, risk and the true value of their startup, as well as about their own capabilities¹⁶³, lead to information asymmetries between the startup and the financiers, which significantly influence the investment decision of the latter. By introducing MCSs, startups can reduce information asymmetries and

simultaneously convey a positive signal about their growth and professionalization to the financiers.¹⁶⁴ The financiers of the startups "believe [that] formal MCSs lead to better decisions or that they signal firm quality and future growth potential."¹⁶⁵ Accordingly, Schachel provided evidence in the context of her dissertation that the adoption of MCSs has a significant, positive influence on the investment decision of financiers.¹⁶⁶ Schachel et al. also prove that already introduced MCSs are more important for the investment decision of debt financiers than that of equity financiers. Since debt financiers have fewer control rights and are less involved in the management process than equity financiers, they tend to prioritize MCSs in their investment decisions more. In this regard, debt financiers prioritize long-term financial planning systems for the startup's survival to ensure financial security and stability. In contrast, for equity investors, MCSs are less important for their investment decisions since they have more control rights and are involved in the management process, making the adoption of MCSs immediately after the funding more important for them. They also focus on the introduction of financial MCSs first.¹⁶⁷

2.2.4. Summary of the current state of research

Previous studies have revealed that MCSs are a suitable and necessary instrument for a startup's professionalization and expansion process. The focus of studies on MCSs in startups has so far been centered on different influencing variables and impacts of MCSs. Thus, the qualitative implementation of these systems in startups was not considered in greater detail. This thesis addresses this research gap and examines the implementation of financial planning and cost accounting instruments in startups, depending on their development stages. As described in chapter 2.2.2, financial planning is the MCS category, which is adopted earliest and most widely in startups,¹⁶⁸ and will be analyzed in greater detail with regard to its implementation. In contrast, Granlund and Taipaleenmäki showed that cost accounting, as a central MAS and thus a subset of MCSs, belongs to the less preferred tasks in new economy firms and receives less attention during the company's growth.¹⁶⁹ Thus, cost accounting differs from financial planning in terms of its attention in startup companies. However, the qualitative implementation of cost accounting across different startup development stages will be analyzed in greater depth in this thesis.

2.3. Fundamentals of financial planning

This thesis first focuses on the implementation of financial planning, as the central MCS, in startup companies. Financial planning is defined as "the process of goal-oriented,

¹⁵²Davila et al., 2015, p.212.

¹⁵³Cf. Davila & Foster, 2007, p.909.

¹⁵⁴Cf. Davila et al., 2015, pp.209-213.

¹⁵⁵Cf. Sandino, 2007, p.267.

¹⁵⁶Cf. *ibid.*, pp.267f..

¹⁵⁷Cf. *ibid.*, p.265.

¹⁵⁸Cf. Davila et al., 2015, pp.209-213.

¹⁵⁹Cf. *ibid.*, p.208; Schachel et al., 2021, p.661; Schachel, 2019, pp.100f..

¹⁶⁰Cf. Drover et al., 2017, p.1821.

¹⁶¹Cf. Kaplan & Strömberg, 2004, pp.2185-2189.

¹⁶²Cf. Davila et al., 2015, p.209.

¹⁶³Cf. Schachel et al., 2021, p.661.

¹⁶⁴Cf. Schachel et al., 2021, p.661; Schachel, 2019, p.114; Davila et al., 2015, p.209.

¹⁶⁵Davila et al., 2015, p.236.

¹⁶⁶Cf. Schachel, 2019, p.129.

¹⁶⁷Cf. Schachel et al., 2021, pp.676ff..

¹⁶⁸Cf. Davila & Foster, 2007, p.908.

¹⁶⁹Cf. Granlund & Taipaleenmäki, 2005, p.34.

i.e., aligned with defined liquidity, profitability and risk targets, shaping of future financial decisions.¹⁷⁰ In order to provide a fundamental understanding of the implementation of financial planning in companies, the essential tasks of financial planning are initially outlined before the long-term and short-term financial planning are presented.

2.3.1. Tasks of financial planning

The key objective of financial planning is to permanently secure the company's solvency.¹⁷¹ Achieving this goal requires a variety of tasks that financial planning must fulfill, of which the most important are outlined below:

- Planning of short and long-term capital requirements¹⁷²,
- Planning of short and long-term capital cover¹⁷³,
- Planning of cash inflows and outflows and securing liquidity¹⁷⁴,
- Early detection of capital deficits or surpluses¹⁷⁵,
- Planning and evaluation of appropriate countermeasures when identifying capital deficits or surpluses¹⁷⁶,
- Planning of the financial goals and the development of the company¹⁷⁷ and
- Creation of transparency regarding the company's planned development towards employees¹⁷⁸ and financiers¹⁷⁹.

In addition to the core tasks of financial planning listed above, there are many other essential tasks whose complete enumeration would go beyond the scope of this thesis. Nevertheless, the aforementioned tasks demonstrate the importance of financial planning in ensuring the company's survival and therefore provide a further reason why financial planning is introduced so frequently and early in startup companies.

2.3.2. Terms of financial planning

Financial planning distinguishes between long-term and short-term planning. These plans should not be considered as isolated but rather coordinated with each other.¹⁸⁰ Thus, long-term financial planning, for instance, forms the strategic framework on which detailed short-term planning is oriented

for financial decisions.¹⁸¹ In the following, long-term and short-term financial planning are presented in more detail.

Long-term financial planning

Long-term financial planning, often defined as strategic financial planning¹⁸², encompasses a planning horizon of three to five years.¹⁸³ It sets the company's main financial targets and provides the framework for short-term financial planning.¹⁸⁴ Long-term financial planning forecasts both the annual capital requirements and the capital coverage of the organization based on the company's strategic direction.¹⁸⁵

Several sub-plans are necessary to forecast these two plans as illustrated in Figure 1. A regularly chosen starting point for the preparation of the financial planning represents the revenue planning.¹⁸⁶ Various information can be considered to increase the revenue forecast accuracy, such as macroeconomic growth, industry growth, competitors, marketing efforts or customer behavior.¹⁸⁷ Based on this information, the revenue and thus also the sales volume can be forecast for the planning periods with the aid of assumptions. The sales volume allows a calculation of the costs of the products, on the one hand, consisting of labor, material, or overhead costs. On the other hand, the sales volume allows forecasting the investment requirements in non-current assets since an increased sales volume might require additional production facilities to fulfill the necessary capacity volume. On this basis, further costs for administration, distribution, research and development and other costs can be calculated. Additionally, depreciation can be planned and added to the production costs after completing the investment plan. The costs incurred are summarized under the capital requirement, which considers the requirements in non-current assets (machinery, etc.) and current assets (raw materials and supplies, etc.).¹⁸⁸

Revenues and expenses do not immediately lead to cash flows, as invoices are paid at a later stage. Therefore, the cash inflows and outflows must be forecast at the correct periods to plan the receivables and payables on this basis. Companies often have to pay their debts to suppliers sooner than they obtain the receivable from the customer. The capital cover planning ensures the financing of the capital requirements and thus the company's long-term survival. The planning involves evaluating various financing alternatives according to the cost of capital and the long-term supply security.¹⁸⁹ After completing the financing, the interest expense can be calcu-

¹⁷⁰Breuer (2021).

¹⁷¹Cf. Becker & Peppmeier, 2018, p.28.

¹⁷²Cf. *ibid.*, p.30; Perridon, Steiner, & Rathgeber, 2017, p.727.

¹⁷³Cf. *ibid.*.

¹⁷⁴Cf. Wöhe, Döring, & Gerrit, 2020, p.528; Becker & Peppmeier, 2018, p.29; Perridon et al., 2017, p.727.

¹⁷⁵Cf. *ibid.*.

¹⁷⁶Cf. Wöhe et al., 2020, p.522.

¹⁷⁷Cf. Mensch, 2008, p.30.

¹⁷⁸Cf. Merchant & Van der Stede, 2017, p.297.

¹⁷⁹Cf. Schachel et al., 2021, p.661.

¹⁸⁰Cf. Uskova & Schuster, 2020, p.11.

¹⁸¹Cf. Mensch, 2008, p.30.

¹⁸²Cf. Uskova & Schuster, 2020, p.11.

¹⁸³Cf. Merchant & Van der Stede, 2017, p.299; Wöhe et al., 2020, p.527; Mensch, 2008, p.31.

¹⁸⁴Cf. Mensch, 2008, p.30.

¹⁸⁵Cf. Becker & Peppmeier, 2018, p.30.

¹⁸⁶Cf. Perridon et al., 2017, p.748.

¹⁸⁷Cf. *ibid.*.

¹⁸⁸Cf. Gansel, 2005, p.3.

¹⁸⁹Cf. Wöhe et al., 2020, p.527.

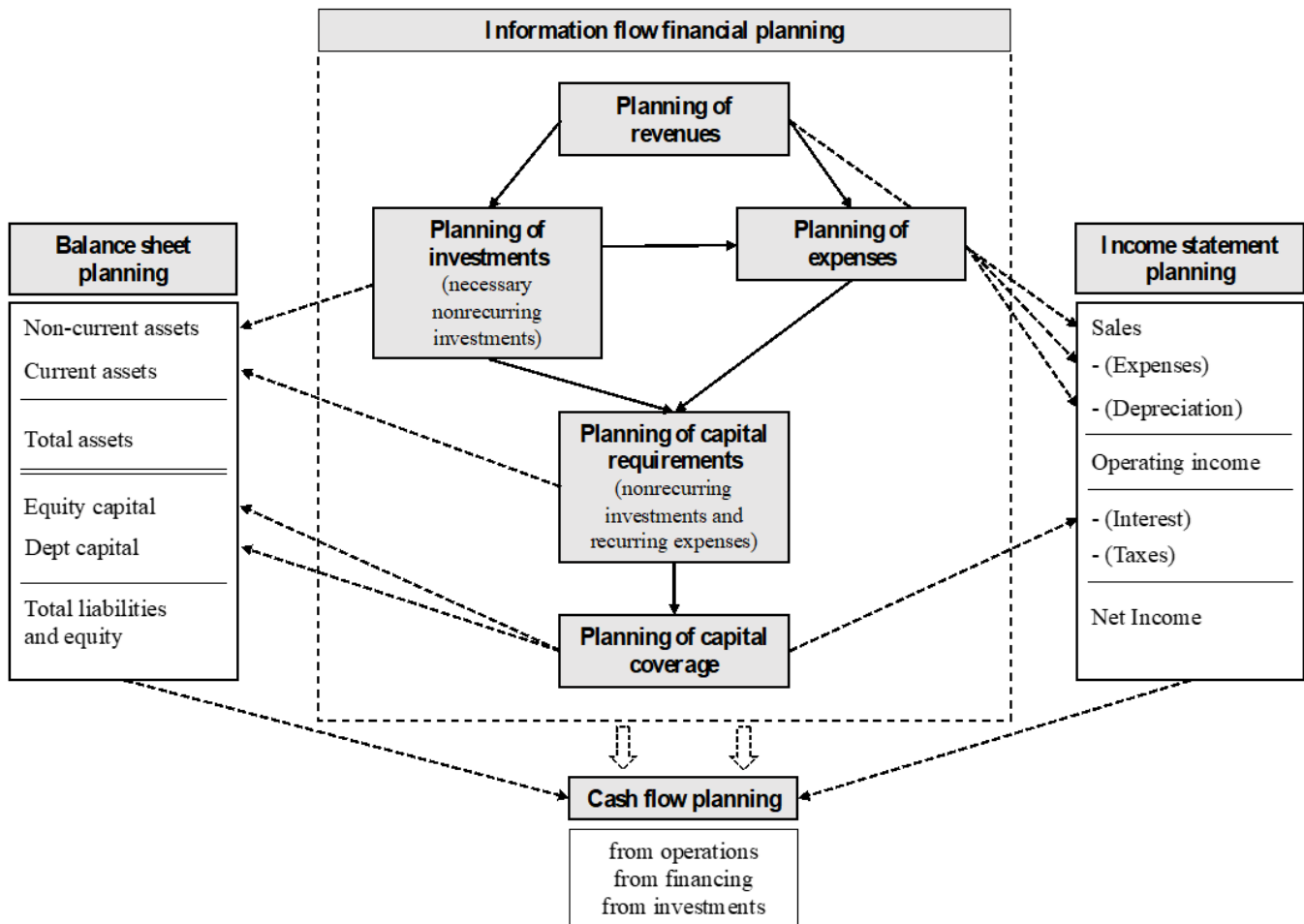


Figure 1: Information flow financial planning*

*Based on Gansel (2005), p.7.

lated for the subsequent income statement.¹⁹⁰

Therefore, long-term financial planning focuses on asset and capital planning and represents a balance sheet-based approach.¹⁹¹ The information gained from capital requirement and capital cover planning is thus presented in budgeted balance sheets and income statements.¹⁹² Figure 1 illustrates the previously described information flow. This figure also shows the cash flow planning, which is particularly important for short-term financial planning. Long-term financial planning hence provides indications about the structural and long-term equilibrium of the company with regard to its balance sheet.¹⁹³

The advantage of long-term financial planning lies in the early identification of problems and the company's broad scope to react to these.¹⁹⁴ Nevertheless, the forecasts for

long-term plans are subject to a higher degree of uncertainty.¹⁹⁵ According to Granlund and Taipaleenmäki, long-term financial planning is among the tools that receive little attention in new economy firms.¹⁹⁶

Short-term financial planning

Short-term financial planning, often defined as operational financial planning¹⁹⁷, comprises a planning horizon of a maximum of one year.¹⁹⁸ It represents an important instrument for startups, as many startups fail due to liquidity gaps, particularly in their early stage, and thus cannot fulfil their payment obligations.¹⁹⁹ Short-term financial planning counteracts this issue and serves to secure the liquidity of

¹⁹⁰Cf. Gansel, 2005, p.4.

¹⁹¹Cf. Becker & Peppmeier, 2018, p.31.

¹⁹²Cf. Gansel, 2005, p.4.

¹⁹³Cf. Uskova & Schuster, 2020, p.11.

¹⁹⁴Cf. ibid..

¹⁹⁵Cf. ibid..

¹⁹⁶Cf. Granlund & Taipaleenmäki, 2005, p.34.

¹⁹⁷Cf. Uskova & Schuster, 2020, p.13.

¹⁹⁸Cf. Merchant & Van der Stede, 2017, p.300; Becker & Peppmeier, 2018, p.29; Wöhe et al., 2020, p.528.

¹⁹⁹Cf. Schinnerl, 2018, p.153; Hahn, 2018, p.25.

companies.²⁰⁰ Thereby, all future cash inflows and outflows of the company are forecast on a daily, weekly, monthly or quarterly basis in a so-called cash flow forecast.²⁰¹ The necessary information for planning the cash inflows and outflows are obtained from the balance sheet and income statement on the one hand and from the capital requirement and capital cover planning on the other hand, as shown in Figure 1. Consequently, short-term financial planning follows the same scheme as long-term planning, but with a special focus on the planning of revenues and costs in line with the period to ensure the correct presentation of the cash flow.²⁰² These forecasts are very reliable as the plans can be adapted well to the current business situation due to their short-term nature.²⁰³ The comparison of cash inflows and outflows and the additional consideration of the cash opening balance enables liquidity surpluses and deficits to be identified.²⁰⁴

Table 2 illustrates the structure of a cash flow forecast, which comprises the cash flow from operations, financing, and investments. The addition of these three cash flows results in the total cash flow, which by adding the opening cash balance results in the ending cash balance. The ending cash balance provides information about the liquidity status of the company in the planning period. A negative ending cash balance indicates a liquidity deficit (as in time interval 2 in Table 2), which must be counteracted with appropriate measures, such as cancelling planned investments or capital contributions to ensure the company's survival.²⁰⁵ Even if a liquidity surplus is identified (as in time interval 1), countermeasures, such as capital repayments or additional financial investments, should be taken to use the surplus profitably.²⁰⁶ Therefore, short-term financial planning recognizes impending liquidity shortages and assumes an early warning function that provides the company with a time advantage to initiate countermeasures.²⁰⁷ However, the scope of action is limited due to the short-term nature of this financial planning.²⁰⁸

The principle of a rolling plan is commonly used for short-term financial planning, in which the planning over twelve months is divided into four decades, for example, with detailed planning for the first three months and rough planning for the remaining nine months. After the end of the first decade, a detailed three-month plan is prepared for the second decade while the remaining decades are roughly reviewed and adjusted if necessary. The planning horizon is extended by another decade, so that planning in this example would always run for one year.²⁰⁹

2.4. Fundamentals of cost accounting

Apart from financial planning, this thesis focuses on cost accounting as a central MAS and thus a subset of MCSs. Cost accounting is defined as a "central subarea of the internal accounting system in which costs are recorded [...], stored, allocated to the various reference variables (e.g., products) and evaluated [...] for special purposes."²¹⁰ This chapter initially presents the cost accounting tasks before introducing the full and partial cost accounting. This provides a fundamental basis for the later analysis of the implementation of cost accounting in startup companies.

2.4.1. Tasks of cost accounting

Cost accounting primarily comprises three major tasks: planning, control, and documentation.²¹¹ These three tasks are subject to numerous subtasks, of which some are outlined below.

Cost accounting provides a decisive support function with its information input in the planning of future-based and economic decisions of the company, especially in the areas of sales, procurement, and production.²¹² These include planning decisions such as:

- Determination of the optimal order quantity,
- Determination of the upper price limit in procurement,
- Determination of the optimal production program,
- Decision about make or buy,
- Determination of the lower price limit of the product.²¹³

Besides its planning function, cost accounting provides essential information about the current processes and conditions of the company and thus a reference point for controlling and steering the achievement of objectives. These include target-performance comparisons about predefined targets to monitor the efficiency of the performance process, and business unit comparisons with target values to analyze the results of the individual business units. If deviations between target and current values are identified, countermeasures can be initiated immediately. Simultaneously, the control information can act as the foundation for a result-based compensation system and thus align the employees' behavior with the company's goals.²¹⁴

The documentation tasks of cost accounting result from commercial and tax regulations. For this purpose, companies must document the determination of production costs for the activation of internal activities and inventory changes or the determination of group transfer prices. Furthermore, cost accounting possesses a documentation task in the determination of the cost of sales for public orders.²¹⁵

²⁰⁰Cf. Wöhe et al., 2020, p.528.

²⁰¹Cf. Becker & Peppmeier, 2018, p.29.

²⁰²Cf. Wöhe et al., 2020, p.525.

²⁰³Cf. Uskova & Schuster, 2020, p.13; Mensch, 2008, p.33.

²⁰⁴Cf. Becker & Peppmeier, 2018, p.30.

²⁰⁵Cf. Wöhe et al., 2020, p.524.

²⁰⁶Cf. *ibid.*.

²⁰⁷Cf. Uskova & Schuster, 2020, p.14.

²⁰⁸Cf. *ibid.*.

²⁰⁹Cf. Uskova & Schuster, 2020, p.15.

²¹⁰Weber (2021).

²¹¹Cf. Coenberg, Fischer, & Günther, 2016, pp.23f..

²¹²Cf. *ibid.*, p.23.

²¹³Cf. *ibid.*.

²¹⁴Cf. Coenberg et al., 2016, pp.23f..

²¹⁵Cf. *ibid.*, p.24.

Table 2: Example cash flow forecast*

	Time interval	1	2	3
	Cash flow from operations			
	Incoming payments from customers	600	450	750
–	Salaries and wages	200	200	200
–	Raw materials and supplies	200	300	200
–	Taxes	50	50	50
=	Total cash flow from operations	150	-100	300
	Cash flow from financing			
	New loans	1000	0	400
–	Repayment of loans	50	100	100
–	Payment of dividends	100	0	0
(+/-)	Interest	2	2	2
(+/-)	Other financing items	0	0	0
=	Total cash flow from financing	848	-102	298
	Cash flow from investments			
	Sales of tangible assets	0	0	100
+	Sales of intangible assets	0	0	0
–	Investments in tangible assets	350	600	0
+	Investments in intangible assets	100	150	0
=	Total cash flow from investment	-450	-750	100
=	Total cash flow	548	-952	698
+	Opening cash balance	100	648	-304
=	Ending cash balance	648	-304	394

*Based on Perridon et al. (2017, pp.756f.).

2.4.2. Cost accounting systems

Since the versatile tasks of cost accounting have distinct requirements, different cost accounting systems were developed, which refer on the one hand to the temporal reference and on the other hand to the extent of the allocated costs. Figure 2 presents the different cost accounting systems according to the previous distinction. In regard to the time reference, a distinction was made between actual cost accounting, normal cost accounting and standard cost accounting. Actual cost accounting allocates costs already incurred in the current accounting period and thus provides information about the current actual status of the costs. Normal cost accounting considers the average costs of several past accounting periods to normalize fluctuating variables and improve the comparability of cost information. Standard cost accounting plans future cost positions and thus establishes comparative figures for cost control. On the other hand, cost accounting is carried out according to the scope of the costs included. For this purpose, a distinction is made between full and partial cost accounting, which will be described below.²¹⁶

Full cost accounting

Full cost accounting considers all incurred costs and allocates them to so-called cost objects (such as products). The transfer of costs to cost objects is a phased process, consisting of cost element-, cost center- and cost object accounting. However, these three components of full cost accounting are presented below, without going into more detail on exact calculations.²¹⁷

In the first step, the so-called cost element accounting, the question of which costs in which amount are incurred is investigated. Companies usually obtain the necessary data regarding the accrued costs from their financial accounting. The identified costs are classified into cost elements, where the level of detail is associated with a high recording effort and therefore should be carried out according to the principle of economic efficiency. For instance, costs could be classified by production factors (personnel, material, or operating equipment costs) or function areas (procurement, production, or administrative costs).²¹⁸ At the end of cost element

²¹⁶Cf. Coenenberg et al., 2016, pp.72f..

²¹⁷Cf. *ibid.*, p.70. For deeper insights into full cost accounting, see Coenenberg et al. (2016).

²¹⁸Cf. *ibid.*, pp.74f..

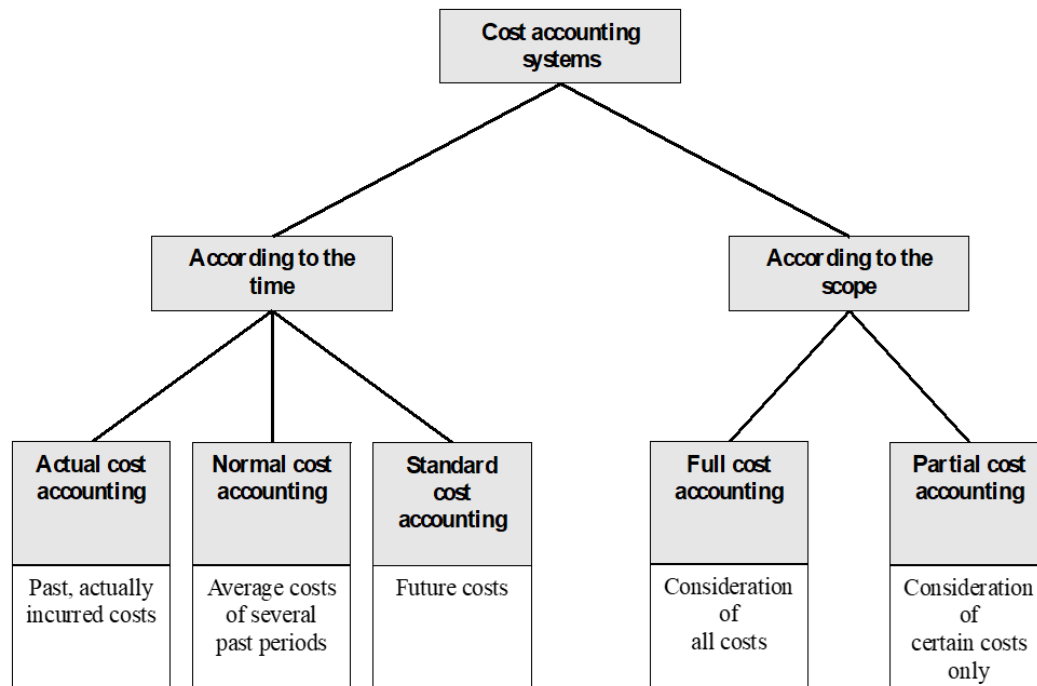


Figure 2: Cost accounting systems*

*Based on Coenenberg et al., 2016, p.73.

accounting, the classified costs are further differentiated into direct and overhead costs to identify those costs that can be assigned to a cost object directly and causation based.²¹⁹

In the next step, cost center accounting, the question of where the costs are incurred is investigated. In this process, the costs that cannot be directly allocated to a product (overhead costs) are assigned to the cost centers in which they are incurred. Such cost centers can be, for instance, company divisions such as production, administration, sales and warehousing, or individual company locations.²²⁰ Here, the overhead costs, such as total power consumption, are distributed to the individual cost centers according to their cause. This allocation of overhead costs is carried out within the framework of internal cost allocation with the help of an operational accounting sheet. Calculation rates are created at the end of cost center accounting, so that the overhead costs can be allocated to the cost objects in the next step.²²¹

In the last step, cost object accounting, the questions of which costs are incurred for and in what amount are investigated. For this purpose, the direct and the overhead cost, in terms of the overhead calculation rates, of the cost object are added using a calculation method such as surcharge or division calculation.²²² Thus, the manufacturing costs or costs of sales of the individual cost object are determined. By comparing the revenues and the costs of sales of the product,

the company's profitability can be checked. Furthermore, the incurred cost of the cost object can be calculated per period (week, month, quarter, or year) to obtain a short or long-term overview of costs and cost-saving potential of the object.²²³

Partial cost accounting

Partial cost accounting differs from full cost accounting in the scope of cost allocation since only a part of the costs incurred is allocated to the cost objects. The basic procedure of partial cost accounting is identical to full cost accounting, except that only variable costs are usually considered in the cost allocation. Variable costs depend on employment and only occur when something is produced (for example, raw material costs).²²⁴ In contrast, fixed costs are independent of the employment level and always occur at a constant level (e.g., rent).²²⁵ Thus, partial cost accounting can depict the short-term effects of changes in the employment level on the costs, due to the exclusive consideration of variable costs. It is therefore an essential source for short-term decisions, for example, about an additional order. The two main instruments of partial cost accounting are contribution margin accounting and break-even analysis, the basic concept of which is outlined in the following.²²⁶

²¹⁹Cf. Coenenberg et al., 2016, pp.69f..

²²⁰Cf. ibid., pp.120f..

²²¹Cf. Coenenberg et al., 2016, pp.70f..

²²²Cf. ibid., p.139.

²²³Cf. ibid., p.71.

²²⁴Cf. ibid., p.78.

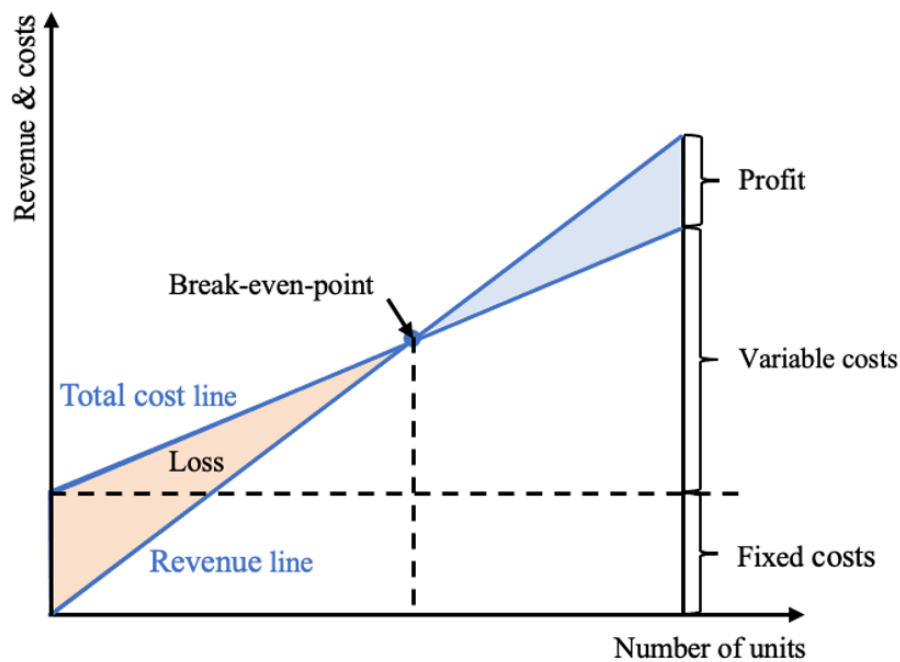
²²⁵Cf. ibid., p.77.

²²⁶Cf. ibid., pp.207f..

Table 3: Contribution margin accounting*

Contribution margin accounting	
	Revenues
–	Variable costs
=	Contribution margin
–	Fixed costs
=	Operational result

*Based on Coenenberg et al., 2016, p.217.

**Figure 3:** Break-even analysis*

*Based on Coenenberg et al., 2016, p.329.

Contribution margin accounting considers the exclusive decision relevance of variable costs assuming constant short-term capacities. Thereby, only the variable costs are initially deducted from the sales revenues, as illustrated in Table 3. This calculation results in the contribution margin, which can be interpreted as an intermediate variable with enormous importance for pricing policy decisions. The contribution margin indicates the proportion of sales revenue available for covering fixed costs that have not been considered yet. As shown in Table 3, the fixed costs are deducted in the next step to calculate the operational result.²²⁷

If the contribution margin is negative, the variable costs exceed the sales revenue, and thus the manufacturing of the product is not profitable since each unit produced incurs additional variable costs that are not covered. However, if the contribution margin is positive, the sales revenues exceed the

variable costs, and each additional unit produced finances a further part of the fixed costs. Thus, the acceptance of an additional order would be profitable. Therefore, contribution margin accounting can identify the advantageousness of manufacturing a product through the exclusive consideration of variable costs in contrast to full cost accounting.²²⁸

The break-even analysis represents a further important instrument of partial cost accounting. It provides an overview of revenues, costs, profits, and losses for alternative degrees of employment and thus represents an important basis for measures to increase the profitability of the company's products.²²⁹

The break-even analysis is usually illustrated with the revenue-total cost model (Figure 3). The break-even point is at the intersection of the revenue line and the total cost

²²⁷Cf. Coenenberg et al., 2016, p.208.

²²⁸Cf. *ibid.*, p.213.

²²⁹Cf. *ibid.*, pp.325f.

line (fixed cost + variable costs). It symbolizes the amount at which revenue covers total costs, resulting in neither profit nor loss. Once the revenue line exceeds the cost line (area to the right of the break-even point), the product generates a profit. The break-even analysis can be used, for instance, to illustrate the effects of price fluctuations, changes in variable costs or fixed costs on the break-even-point of the product, allowing the company to take measures to increase the profitability on this basis.²³⁰

2.5. Summary

As described in the previous chapters, MCSs represent suitable and necessary systems for the expansion and professionalization of startup companies.²³¹ Such systems not only contribute to the control of operational processes²³² but also to the planning of the business development²³³, the improvement of the internal communication²³⁴, the optimization of the task coordination²³⁵ and provide more transparency for stakeholders²³⁶. Previous studies have focused on various influencing factors for the application of MCSs and the impact of MCSs on the development of startups. The qualitative implementation of these systems in startups was not considered. This thesis addresses this research gap and investigates the question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages. Thus, the investigation of this research question tackles the scarcely explored link between the influencing factors and impact of MCSs in startups. At the same time, it deals with the implementation of MCSs, using the example of financial planning and cost accounting, across the different development stages. Finally, the examination of this research question also aims to identify different development steps and influencing factors in the implementation of financial planning and cost accounting between the development stages. This research question will be investigated in more detail in the following chapters.

3. Methodology

3.1. Research approach

In order to investigate the research question - namely how financial planning and cost accounting instruments are implemented in startups, depending on their development stages - a qualitative research approach was chosen in terms of a field study. A field study, i.e., an investigation where “the researcher spends considerable time in the field that is

studied and use[s] the knowledge gained as data”²³⁷, was used for three main reasons. First, the research question was designed for a qualitative field study. Field studies address questions about “how” or “why” and thus investigate, for example, how something was implemented in the investigated field and why it was implemented in that way.²³⁸ Accordingly, field studies aim to gain a deeper understanding of the research subject and investigate corresponding explanations and causalities.²³⁹ Considering the research question of how financial planning and cost accounting instruments are implemented in startup companies, the aims of a field study align with those of the research question. The second reason for adopting a field study approach is that through the qualitative data obtained from a field study, an initial understanding about a topic or problem that has been little or not explored before can be developed.²⁴⁰ Given the research focus on MCSs in startups on the influencing factors for the adoption and impact on the business development of these systems, the investigation of the implementation of MCSs, using the example of financial planning and cost accounting, in startups, represents a still under-researched area, where valuable information can be gained through a field study. Finally, data collection in a natural environment is a further reason for using a field study. Given the focus of this thesis on startups, data collection in an immediate startup environment provided an important basis for a deeper understanding and insight into the research question.²⁴¹

3.2. Data collection and sample

As part of the chosen qualitative research approach in terms of a field study, semi-structured interviews were conducted with finance/accounting executives from startups. Semi-structured interviews are particularly suitable for investigating still unexplored issues, as their open-ended questions allow the interviewees maximum leeway, while also enabling the interviewer to ask more in-depth questions about interesting or misunderstood aspects.²⁴² Semi-structured interviews are therefore an appropriate tool for developing deeper insights and a profound understanding of the startup-specific implementation of financial planning and cost accounting instruments. Furthermore, the finance/accounting executives in the startups had exclusive knowledge about the implementation of financial planning and cost accounting in their startups and were therefore appropriate interview partners for the investigation of the research question.

For conducting the interviews, a semi-structured guide was prepared. This guide was composed of four rubrics and included both open-ended and follow-up questions. The first rubric asked about the interviewees’ professional background and their experience in financial planning and cost

²³⁰Cf. Coenenberg et al., 2016, p.327.

²³¹Cf. Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.907; Davila et al., 2015, p.207; Davila, 2005, p.223; Davila et al., 2010, p.98.

²³²Cf. Davila et al., 2010, p.99.

²³³Cf. *ibid.*.

²³⁴Cf. *ibid.*, p.97.

²³⁵Cf. *ibid.*, p.98.

²³⁶Cf. Schachel et al., 2021, p.661; Schachel, 2019, p.114; Davila et al., 2015, p.209.

²³⁷Aspers and Corte (2019, p.148).

²³⁸Cf. Yin, 2009, p.9; Miles et al., 2014, p.11.

²³⁹Cf. *ibid.*.

²⁴⁰Cf. Miles et al., 2014, p.12; Aspers & Corte, 2019, p.151; Doz, 2011, p.584.

²⁴¹Cf. Miles et al., 2014, p.11; Aspers & Corte, 2019, p.152.

²⁴²Cf. Adams, 2015, pp.493f.

accounting. The subsequent category requested structural information regarding the number of employees, development stage and venture capital funding of the startup. The final two rubrics included questions regarding the implementation of financial planning and cost accounting in the respective startup. Among other things, questions were asked about the reasons for the implementation, the implementation itself, the development steps of the implementation, the influence of capital providers on the implementation, and the challenges of financial planning and cost accounting. The complete interview guide can be found in Appendix A. The interviews with the executives of the startups were conducted by video call and recorded via voice memo. Before starting the recording of the interviews, consent for the recording was requested, and the anonymization of the final transcript was agreed upon with the interview partners.

The selection of the interview partners was based on a total of five criteria, listed below:

- 1) The startup criteria according to the definition of a startup must be fulfilled:
 - a) The company had to be younger than ten years,
 - b) growth-oriented in terms of its employees/ sales,
 - c) (highly) innovative in terms of its products/ services, business models and/ or technologies,
 - d) and operated in the digital industry.²⁴³
- 2) The startup was based in Berlin.²⁴⁴
- 3) Each startup development stage (early, expansion and later stage) could be assigned to at least two startups.
- 4) The selected startups were from at least two different industries, and each industry examined must be associated with at least two startups.
- 5) The selected startups were of different sizes and ages.

These criteria were primarily applied to ensure the inclusion of startups from different development stages in the data collection. Furthermore, additional criteria on industry, size, and age of the startups were included to secure a heterogeneous selection of interview partners. These criteria were intended to provide further insights into industry, size or age-dependent differences in the implementation of financial planning and cost accounting instruments.

Based on the previously presented interview partner selection criteria, it was decided to conduct interviews with Berlin-based startups from the e-commerce and Platform as a Service (PaaS) or Software as a Service (SaaS) industries. According to the German Startup Monitor, the fields of e-commerce, PaaS and SaaS represent the digital business models of the majority of German startups, comprising 54.1%

of all 1,853 startups examined.²⁴⁵ The decision to focus on these industries was in line with the criteria of the digital industry (according to the definition of a startup) and the consideration of different industries. A total of 9.7% of the startups surveyed are located in the field of e-commerce, i.e., online trading of products, according to the German Startup Monitor.²⁴⁶ The PaaS and SaaS sectors are summarized in the context of this thesis as service models from the cloud computing area. Cloud computing is defined as “a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”²⁴⁷ The PaaS and SaaS sectors included respectively 17.7% and 26.7% of the startups surveyed in the German Startup Monitor and thus represent a total of 44.4%.²⁴⁸

For this thesis, a total of 52 startups and one external expert were contacted by phone and email to request an interview. Overall, ten of the contacted startups were gained as interview partners. Furthermore, the external expert agreed to an interview, resulting in a total of eleven interviews. According to Hennink et al., qualitative research reaches code saturation at nine interviews during data analysis.²⁴⁹ Based on this finding, the sample appeared to be adequate. Table 4 summarizes the interview partners with whom semi-structured interviews were conducted between June 2021 and August 2021.

As illustrated in Table 4, interviews were conducted with five startups from the e-commerce sector, five startups from the PaaS/SaaS sector, and one external expert. The interviews were conducted in the native language of the interviewees to enable an optimal output. A total of ten interviews were conducted in German and one in English (PaaS/SaaS-4). The average duration of the interviews was 43 minutes. The size of the startups interviewed ranged from two employees to more than 10,000 employees and thus fulfilled the criterion of considering different startup sizes. In both industries examined, interviews were conducted with startups from the early and expansion stages. Thereby, more interviews were conducted with startups from the expansion stage (five startups) than from the early stage (three startups). All early-stage startups were already founded and in the first stage. In contrast to the early stage, there were more significant differences between the startups in the expansion stage, especially regarding the number of employees. While some had just made the transition from the early stage to the expansion stage and were thus still at the beginning of the growth process, others were already in the middle of the expansion stage and could record rapid employee growth. From the later stage, two interviews were con-

²⁴³Cf. Kollmann et al., 2020, p.14; Skala, 2019, p.21.

²⁴⁴Berlin is considered to be the hotspot for startups in Germany (cf. Kollmann et al., 2020, p.22). Due to the good distribution between large and small respectively young and old startups, the location Berlin was chosen for the startup search. Naturally, the findings can be applied throughout Germany or Europe because of the heterogeneous selection of startups and the similar market conditions.

²⁴⁵Cf. Kollmann et al., 2020, p.24.

²⁴⁶Cf. *ibid.*

²⁴⁷Mell and Grance (2011, p.2).

²⁴⁸Cf. Kollmann et al., 2020, p.24.

²⁴⁹Cf. Hennink, Kaiser, & Marconi, 2017, p.591.

Table 4: Description of sample^a

Startup No.	Industry	Development stage	Founding	FTE ^b	Target group	VC ^c funding	Position of respondent	Duration of interview (min)
EComm-1	E-Commerce	Later stage	2008	>500	B2B2C ^d	Yes	Director Finance	61
EComm-2		Later stage	2012	>500	B2B2C	Yes	VP ^e Accounting	44
EComm-3		Expansion stage	2016	101-250	B2C ^f	Yes	CFO ^g	45
EComm-4		Expansion stage	2018	11-50	B2B ^h	No	Founder/CEO	37
EComm-5		Early stage	2013	11-50	B2C	No	Founder/CEO	34
PaaS/SaaS-1	PaaS/SaaS	Expansion stage	2016	101-250	B2B	Yes	Head of Finance	48
PaaS/SaaS-2		Expansion stage	2017	11-50	B2B	Yes	Co-founder/COO ⁱ	25
PaaS/SaaS-3		Expansion stage	2019	1-10	B2B	Yes	Co-founder/CFO	66
PaaS/SaaS-4		Early stage	2021	11-50	B2B	Yes	Controlling Lead	23
PaaS/SaaS-5		Early stage	2019	1-10	B2B	No	Co-founder/CEO	51
Exp	Expert	/	/	/	/	/	Director Transaction	34

^aOwn illustration.

^bFull Time Equivalent.

^cVenture Capital.

^dBusiness-to-Business-to-Consumer.

^eVice President.

^fBusiness-to-Consumer.

^gChief Financial Officer.

^hBusiness-to-Business.

ⁱChief Operating Officer.

ducted with startups from the e-commerce sector. However, these startups had already expanded their business model during growth, adding a PaaS/SaaS business model to the e-commerce business model and thus ultimately covering both industries examined. Furthermore, both startups from the later stage had already completed their IPO. It should be noted that EComm-1 fell outside the startup definition since it had already exceeded the age of ten years - but it had not long exceeded the age limit set out in the definition. Thus, EComm-1 was considered in the sample as a source of potentially valuable information about financial planning and cost accounting in the later stage and possibly even after this period. In order to avoid discrepancies, EComm-1 was nevertheless still classified as a later stage startup for the purposes of this thesis. In terms of the target group, it was notable that the interview partners from the PaaS/SaaS sector were all located in the B2B business, while the e-commerce sector

had a very mixed target group. Here, startups from the B2B, B2C but also B2B2C areas were interviewed. Moreover, in the area of venture capital financing, interviews were conducted with a total of seven venture capital-backed startups and three “bootstrapped”, i.e., self-financed, startups. The respondents were all in a leadership position with appropriate responsibility for financial planning and cost accounting in the startups and with relevant insight. The external expert was a startup expert who supports startups daily in terms of venture capital financing, the preparation of financial plans, and has supported many startups in their growth. Therefore, he was able to share profound insights into financial planning and cost accounting at different development stages.

As a result, all criteria for the interview partner selection were fulfilled, and similarly, a heterogeneous sample with startups of various sizes, ages, development stages and industries was generated. Additionally, the websites of the

interviewed startups were used as a secondary data source for data triangulation and to increase construct validity.²⁵⁰ Through this, missing structural information about the startups could be added after the initial reading of the transcripts, and ambiguities clarified.

3.3. Data analysis

For the analysis of the interviews and thus the investigation of the research question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages, a deductive-inductive approach, according to Kuckartz, was chosen.²⁵¹

This approach provides in the first step the formation of thematic main categories, which are derived from the research question (deductive category formation).²⁵² This is followed by the inductive coding²⁵³ of the transcripts, which implies a material-specific, open coding with subsequent grouping and categorization of the codes and thus the inductive expansion of the deductive main categories.²⁵⁴ Thus, this approach ensures a focus on the research question in the first step, and is suitable for the investigation of subjects where the existing theory or research literature is limited, as in the case of the present research subject, through the material-specific coding and generalization in the second step.²⁵⁵ Therefore, the deductive-inductive approach is appropriate for the investigation of the research question and will be described in greater depth in the following with regard to the specific context of this thesis. For this purpose, Figure 4 illustrates the general flowchart of the data analysis.

In the first step, the semi-structured interviews were transcribed in preparation for the data analysis. The transcription was carried out with the software *happyscribe* and was based on the simple transcription rules according to Dresing and Pehl, as follows:

- 1) Transcription was verbatim, i.e., not phonetic or summarized. Existing dialects were translated.
- 2) Language and punctuations were slightly smoothed. The sentence form was retained, even though it contained syntactical errors.
- 3) Breaks were indicated by three ellipsis points in parentheses (...).
- 4) Word breaks and stuttering were smoothed or omitted. Word doublings were only included if they were used as a stylistic device for emphasis. Sentence breaks were marked with the break symbol “-”.
- 5) Filler words such as “em” or “mhm” were not transcribed unless a response consisted only of this utterance.

- 6) Nonverbal utterances were not transcribed.
- 7) Each speaker contribution received its own paragraph.
- 8) Paragraphs of the interviewer were indicated by an “I” and those of the interviewee by a unique abbreviation such as “EComm-1”.
- 9) Incomprehensible words or phrases were marked by (inaudible).
- 10) All information that allowed conclusions to the interviewed person and the startup were anonymized.²⁵⁶

The transcribed interviews can be found in Appendix B. After completing the transcription process, data analysis began with the support of MAXQDA 2020. This process started with the initiating text work, where the interview transcripts were read several times to gain a deeper insight into the data.²⁵⁷ During this process, interesting and particularly important text passages were marked, and notes or specifics were documented in the form of memos.²⁵⁸

Subsequently, the deductive main categories were developed based on the research question, and the transcript paragraphs were coded with the corresponding main categories.²⁵⁹ Based on the research question, the two main categories of financial planning and cost accounting were deduced and further segmented into the end of the early stage (which EComm-5, PaaS/SaaS-5, PaaS/SaaS-4 belong to), the start of the expansion stage (EComm-4, PaaS/SaaS-3, PaaS/SaaS-2), the expansion stage (EComm-3, PaaS/SaaS-1), and the later stage (EComm-2, EComm-1) to consider the development stages during the deductive coding of the transcripts. After forming the two main categories, the transcripts were coded according to these categories and divided based on the development stages.

With the following step, the inductive analysis of the transcripts began. This initially included the rereading of the transcripts and, at the same time, the generation of material-specific codes.²⁶⁰ These codes were generated directly from the material to reproduce its content as undistorted as possible.²⁶¹ For this purpose, it was decided to use descriptive coding to summarize the content of the interview passage to be coded as briefly as possible in one word or a short phrase.²⁶² The analysis was carried out from the end of the early stage to the later stage to obtain further input from the later stage startups regarding their early stage implementation of financial planning and cost accounting. Finally, the transcript of the external expert was evaluated inductively, to validate the previous results. Since there were no predetermined codes for this inductive approach, in contrast to the deductive coding, this process is termed as open coding.²⁶³

²⁵⁰Cf. Yin, 2009, pp.114-117.

²⁵¹Cf. Kuckartz, 2018, pp.97f..

²⁵²Cf. *ibid.*.

²⁵³In this thesis, the terms coding or code refer to the summary of an interview passage with a noun or a short phrase. This is also defined as descriptive coding. Cf. Miles et al., 2014, p.74.

²⁵⁴Cf. Kuckartz, 2018, pp.97f.; Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, p.71.

²⁵⁵Cf. Hsieh & Shannon, 2005, p.1279.

²⁵⁶Cf. Dresing & Pehl, 2012, pp.26ff..

²⁵⁷Cf. Kuckartz, 2018, p.101; Burnard, 1991, p.462.

²⁵⁸Cf. Kuckartz, 2018, p.101.

²⁵⁹Cf. *ibid.*, pp.101f..

²⁶⁰Cf. Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, pp.71f.; Mayring, 2015, pp.85f..

²⁶¹Cf. *ibid.*.

²⁶²Cf. Miles et al., 2014, p.74.

²⁶³Cf. Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Mayring, 2015, p.86.

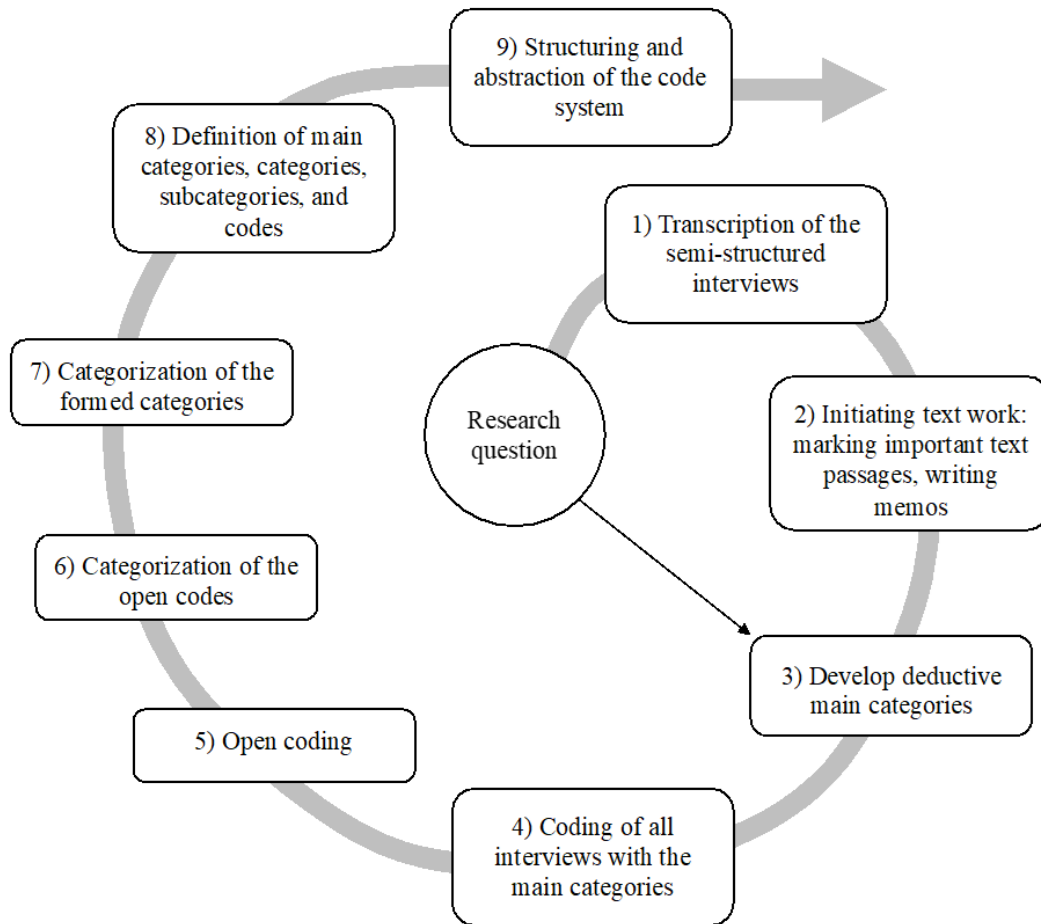


Figure 4: Flowchart data analysis*

*Based on Kuckartz, 2018, p.100; Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279.

The following two steps included the categorization of the previously developed codes.²⁶⁴ In the first step, related codes were grouped and combined into an inductively created category. In the next step, related categories were grouped into a top category. This data grouping created a hierarchical structure, which was essential for clarity. Thus, this inductive data structure extended the deductive main categories. Subsequently, definitions were developed for all categories and codes, which contributed to a better understanding of the code system.²⁶⁵ Based on the definitions, further related codes were identified and thus adjustments in the structure and abstraction of the code system were made. The resulting phase-specific financial planning and cost-accounting code systems can be found in Appendix C.

²⁶⁴Cf. Elo & Kyngäs, 2008, p.111; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, p.86; Mayring, 2015, pp.86f.

²⁶⁵Cf. Elo & Kyngäs, 2008, p.111; Hsieh & Shannon, 2005, p.1279.

4. Results

4.1. Implementation of financial planning

The first main subject of this thesis, as per the research question, is financial planning. In the following, the results regarding the implementation of financial planning according to the investigated development phases are presented. In a subsequent summary, the main results of the implementation of financial planning are summarized, and the key development steps of financial planning between the development phases are outlined.

4.1.1. End of early stage/ start of expansion stage

With regard to financial planning, the end of the early and the start of the expansion stage are considered collectively since the analysis revealed a similar implementation along these stages. The similar implementation corresponds to the identical objectives of these two phases, namely the achievement of initial revenues and the commencement of growth, but also results from the smooth transition between these two stages. Therefore, the answers of the interview partners to the question about stage classification were partially ambivalent. PaaS/SaaS-5, for instance, responded to

the development stage question with: “that means we are either very much at the end of your first stage, or just at the beginning of the second stage.”²⁶⁶ EComm-5 answered with: “I would say we are just at the end of the early stage and moving into the expansion stage.”²⁶⁷ Accordingly, due to the similar results and the overlap in stage assignment, the end of the early and the start of the expansion stage are considered collectively.

Among the group of the startups from the end of the early stage and the start of the expansion stage, there is a significant difference in the fundamental decision about the adoption of financial planning. While PaaS/SaaS-5, PaaS/SaaS-4, PaaS/SaaS-3, and PaaS/SaaS-2 have integrated financial planning in their startup, EComm-5 and EComm-4 have so far decided against the introduction. The decision against financial planning is based on several reasons, which are illustrated in Figure 5 and explained in more detail in the following.

The first essential aspect comprises the renunciation of external investors, i.e., bootstrapping. EComm-4 emphasizes in this context that the requirement for a financial plan at the outset is based on the needs of the external investors.²⁶⁸ For a bootstrapped startup, this obligation of preparing a financial plan for external investors does not apply, thus a financial plan serves the pure business purpose and not an investor process. EComm-5 and EComm-4 point out in this context that the focus in this stage, as a bootstrapped startup, lies on other aspects such as expense management, which can be realized without financial planning due to the still manageable financial structure.²⁶⁹ Therefore, EComm-5 emphasizes that the monthly “reporting from the tax advisor, the business evaluation, which shows the current status of the company [...] [and shows] what remains [in terms of cash]”²⁷⁰ is still sufficient in this development stage. EComm-5 highlights in this context that “you can also see here that the figures are still very manageable, they still have [...] a certain transparency.”²⁷¹ Besides the bootstrapping and manageable finances, the dispensability of financial planning is reflected in the already positive cash flow of these two startups. EComm-4 accentuates in this context that for a “small company with [11-30] employees, financial planning [...] doesn’t matter; the main point is that we are cashflow positive.”²⁷² EComm-5 concurs and adds that “the non-necessity [of financial planning] is due to the fact that [...] at the moment and so far there has always been enough liquidity available.”²⁷³ This was possible for EComm-5 through their methodology of prepayment and

their fast market acceptance.²⁷⁴ Specifically, the customer pays EComm-5 in advance after their individual configuration and order of the product; in turn, EComm-5 uses this capital to pay for the order of goods at the manufacturer as well as all other arising costs for the product and, furthermore, directly disposes of the resulting margin.²⁷⁵ By “fast acquiring of customers, [...] liquidity arrives quite fast [into the business in this manner]”²⁷⁶ and can be used for the expansion of the company. In this context, the presence of liquidity represents a crucial point for not implementing a financial plan. EComm-5 noted that the company “was provided with liquidity planners at the beginning of the Corona pandemic, since it came to a standstill and no sales were generated for two weeks to see how long the cash would hold out.”²⁷⁷ However, this planning was quickly ended due to the subsequent online boom.²⁷⁸ Two further identified aspects represent the effort/benefit dimension of the financial planning and the personal background of the executives. Regarding the effort/benefit dimension of financial planning, EComm-4 argues that the “necessary ongoing development of the financial planning [...] is a huge effort [...] which does not bring additional revenue.”²⁷⁹ Consequently, “it brings more to the company if the CEO makes more sales than keeping the financial planning up to date. Unless you want investors.”²⁸⁰ Finally, the personal background of the executive plays a crucial role in the question of whether to adopt financial planning. EComm-4 states in this context that financial planning “is always somewhere a look into the future, which is 99% [...] wrong. [...] That’s why I [EComm-4] have certain reservations about this form of fortune-telling.”²⁸¹

Consequently, the financing form, in addition to other aspects, has a decisive influence on the introduction decision. However, it must also be noted in this context that not all bootstrapped startups refrain from implementing financial planning. PaaS/SaaS-5, for instance, is also bootstrapped and has integrated financial planning. Moreover, EComm-5 strives for an introduction within the near future to address capital providers regarding the maintenance of growth and the expansion of the business in the future.²⁸²

However, as mentioned previously, startups from the end of the early and the start of the expansion stage which have already implemented financial planning were also interviewed. Based on these interviews, the question of how startups from the end of the early stage and the start of the expansion stage implement financial planning instruments will be answered. These two stages do not represent the starting point at which startups integrate financial planning. As PaaS/SaaS-3, PaaS/SaaS-2, PaaS/SaaS-1, and EComm-3

²⁶⁶PaaS/SaaS-5, para.6. The source reference is to the paragraph of PaaS/SaaS-5’s interview transcript in Appendix B, where the quotation can be found.

²⁶⁷EComm-5, para.6.

²⁶⁸Cf. EComm-4, para.16.

²⁶⁹Cf. *ibid.*; EComm-5, para.12.

²⁷⁰EComm-5, para.12.

²⁷¹*Ibid.*.

²⁷²EComm-4, para.20.

²⁷³EComm-5, para.14.

²⁷⁴Cf. *ibid.*, para.8.

²⁷⁵Cf. EComm-5, para.8.

²⁷⁶*Ibid.*.

²⁷⁷*Ibid.*, para.16.

²⁷⁸Cf. *ibid.*.

²⁷⁹EComm-4, para.28.

²⁸⁰*Ibid.*.

²⁸¹*Ibid.*, para.18.

²⁸²Cf. EComm-5, para.20.

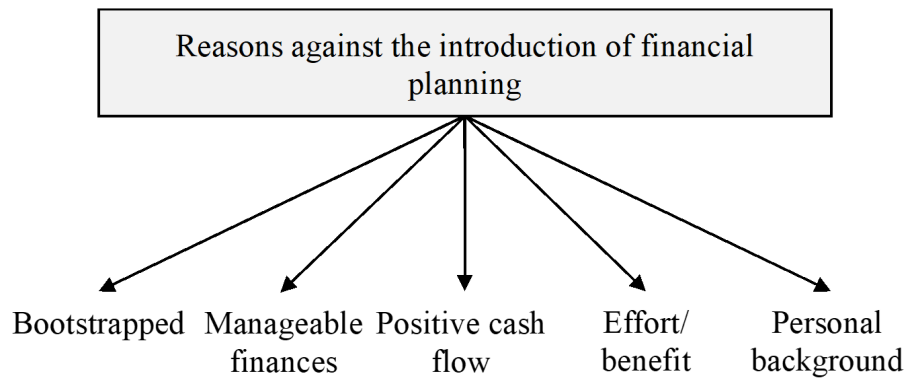


Figure 5: Reasons against the introduction of financial planning*

*Own illustration.

point out, the initial implementation already occurs prior to the startup's foundation, in the seed stage.²⁸³ This early adoption is motivated by numerous reasons, of which the most essential ones are illustrated in Figure 6 and will be described next.

Prior to the founding of the company, the evaluation of the business idea constitutes the most crucial aspect, since the financial planning included in the business planning evaluates for the last time before founding "whether [the startup] can be successful with [its business idea], and if so, under which conditions"²⁸⁴ or "whether a scalable product can be created or not."²⁸⁵ The other triggers mentioned also reflect essential aspects of financial planning after foundation, specifically the avoidance of illiquidity. Since only limited revenues are regularly generated at the end of the early and the start of the expansion stage, the cost management is even more important in these phases in order to avoid an illiquidity.²⁸⁶ Thus, the avoidance of illiquidity simultaneously reflects the creation of a cost overview to compare revenues and costs. Finally, financial planning is integrated to address the first investors. Therefore, the founders try to "symbolize [with financial planning] that [the startup] can be successful with what is planned to attract investors."²⁸⁷ Accordingly, even after the startup is founded, at the end of the early and the start of the expansion stage, "the most important concerns are liquidity management and investor processes"²⁸⁸ in implementing financial planning.

The starting point for the implementation of financial planning at the end of the early and the start of the expansion stage is, as in the other stages, the target and assumption planning, for instance, in terms of a roadmap. In this context, a distinction is made between detailed planning with a planning horizon of twelve months and rough planning with a

planning horizon of up to five years. The detailed planning includes short-term objectives, like "what [the management] want[s] to achieve in terms of product sales and market entry or funding"²⁸⁹, and focuses on the liquidity issue, namely "how long does [the] money have to suffice?"²⁹⁰ During the long-term rough planning, "the future is expanded based on various assumptions"²⁹¹, such as the inclusion of "sales increases [...], efficiency increases or even saturation effects depending on the market size."²⁹² Equally, strategic objectives such as a revenue growth rate by year five are defined and used to review "which milestones should be achieved by when and if they will be achieved."²⁹³ The determination of short and long-term objectives and assumptions is carried out by the management in a top-down approach at the end of the early and the start of the expansion stage.²⁹⁴ Furthermore, PaaS/SaaS-1 adds that the investors have a decisive impact by "specifying goals that have to be included in the planning"²⁹⁵ and against which the startup's performance is ultimately measured.

After completing the target and assumption planning, the startups from the end of the early and the start of the expansion stage continue with the revenue planning. Within this context, the startups examined exhibit PaaS/SaaS-specific approaches, which show slight divergences due to their underlying revenue model. For example, PaaS/SaaS-3 offers its users, commercial retailers, a digital bidding service for their products on a platform; thus, contractually regulated commission revenues provide the basis for revenue planning.²⁹⁶ The planning of these revenues was integrated by PaaS/SaaS-3 with the support of the investors based on marketing metrics "from classic e-commerce, where [...] revenues [can be] derived from users."²⁹⁷ Based on these marketing metrics,

²⁸³Cf. PaaS/SaaS-3, para.15; PaaS/SaaS-2, para.10; PaaS/SaaS-1, para.10; EComm-3, para.17.

²⁸⁴PaaS/SaaS-1, para.10.

²⁸⁵Ibid., para.12.

²⁸⁶Cf. Exp, para.20.

²⁸⁷PaaS/SaaS-1, para.10.

²⁸⁸Exp, para.2.

²⁸⁹PaaS/SaaS-5, para.20.

²⁹⁰Exp, para. 14.

²⁹¹PaaS/SaaS-5, para.14.

²⁹²Ibid..

²⁹³Exp, para.16.

²⁹⁴Cf. PaaS/SaaS-4, para.30.

²⁹⁵PaaS/SaaS-1, para.20.

²⁹⁶Cf. PaaS/SaaS-3, para.19.

²⁹⁷Ibid..

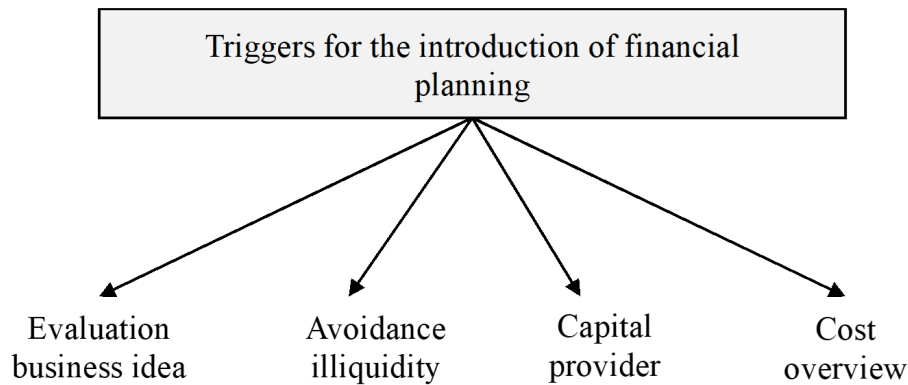


Figure 6: Triggers for the introduction of financial planning*

*Own illustration.

like “number of users [...], registrations per month, conversion rate, cost per click, advertising and so on”²⁹⁸ it can be determined “how many marketing costs are necessary for € 1 in revenue.”²⁹⁹ Building on this marketing cost to revenue ratio, historical values, and strategic objectives, PaaS/SaaS-3 projects the revenues on monthly and annual slices for the following five years. Exp points out in this context that the use of such online marketing metrics “is becoming increasingly important, especially in digital business models [...] to build up a better understanding of how individual marketing metrics work and what can then be changed in the planning.”³⁰⁰

PaaS/SaaS-5, PaaS/SaaS-4, and PaaS/SaaS-2 operate with a recurring revenue model for contracted terms. This revenue model was integrated into PaaS/SaaS-2 through the advice and support of their investors, resulting in a “shift from one-time revenues [...] to SaaS, [i.e.,] to small recurring revenues.”³⁰¹ The B2B business model of the startups examined represents a specific aspect at this point, which means that “significantly fewer customers [are acquired], but the customers are significantly more valuable”³⁰² than in the B2C area, i.e., their customer lifetime value is considerably higher. Accordingly, planning the revenues in the PaaS/SaaS specific B2B recurring revenue model starts with an examination of “who do we have as clients?”³⁰³ PaaS/SaaS-4 states in this step that the planning of the revenues of these clients can be accomplished through the manageable contracts and the “outgoing invoices that we are going to provide the service.”³⁰⁴ PaaS/SaaS-5 further outlines that this is followed by an intensive “look at which customers we think are coming in”³⁰⁵ for short-term revenue planning to augment planning with those revenues. Subsequently, this revenue model

also uses “marketing/sales cost budgets for planning [not yet contracted] sales”³⁰⁶ for long-term planning, via the use of marketing metrics such as “the conversion rate [and] customer acquisition costs.”³⁰⁷ PaaS/SaaS-4 concludes that the “projecting [of] sales [must] take into account [the] marketing streams.”³⁰⁸ As a result, the revenue planning of all startups from the end of the early and the start of the expansion stage follows the bottom-up approach. This implies that revenues are calculated starting from marketing metrics or customer consideration, rather than top-down from market size.³⁰⁹

The planning of the revenues represents the greatest challenge in financial planning for startups from the end of the early and the beginning of the expansion stage. Within this context, PaaS/SaaS-2 and PaaS/SaaS-5 stress that especially the dependency on business partners is a huge challenge in revenue planning:

“I think the biggest challenge is always revenue planning for small companies. So, are the things that you have planned so far ahead really going to happen? Because these are actually things that you can only influence indirectly, [...] because the cooperation of the customers is of course essential, or simply a prerequisite.”³¹⁰

“The greatest challenge [...] actually has to do with revenues, because in some cases you also have very large B2B customers who could theoretically redeem a large ticket in one fell swoop. And then of course it’s important to know whether the money will come in month X or only three months later.”³¹¹

²⁹⁸PaaS/SaaS-3, para.31.

²⁹⁹Ibid..

³⁰⁰Exp, para.8.

³⁰¹PaaS/SaaS-2, para.16.

³⁰²PaaS/SaaS-1, para.16.

³⁰³PaaS/SaaS-4, para.12.

³⁰⁴Ibid., para.14.

³⁰⁵PaaS/SaaS-5, para.20.

³⁰⁶Ibid., para.12.

³⁰⁷Ibid., para.22.

³⁰⁸PaaS/SaaS-4, para.10.

³⁰⁹Cf. Exp, para.12.

³¹⁰PaaS/SaaS-2, para.24.

³¹¹PaaS/SaaS-5, para.46.

Accordingly, Exp concludes that against this background, the challenge is the “*clean depiction of the operating business*”³¹², since the incorrect planning of revenues means that, in the worst case, the incurred expenses cannot be covered and could result in illiquidity.

Subsequently³¹³ or frequently in parallel³¹⁴ to the revenue planning, the investment and cost planning occur. The distinction between investment and cost planning is still nebulous in this context, since investments mean “*no large of-fice investments or cars*”³¹⁵ in this stage. PaaS/SaaS-3 clarifies that investments refer, for instance, to external service providers “*who are commissioned to build the platform [...] and [can be easily planned] by obtaining offers with payment steps.*”³¹⁶ PaaS/SaaS-5, on the other hand, adds freelancer costs to the cost planning;³¹⁷ thus, the distinction between cost and investment planning varies between startups in this stage. However, the planning of necessary investments is fundamentally derived from the assumption and target planning. The planning of costs generally involves fixed costs, “*such as office, tax advisor, accounting, hosting, telecommunications, insurance, lawyer*”³¹⁸ or personnel costs, and variable costs, such as “*marketing/sales cost budgets*”³¹⁹, which “*are very manageable in digital business models.*”³²⁰ Therefore, cost planning does not pose a challenge for the startups, “*because [they] can cover the running costs quite well*”³²¹ and can plan the total incurred costs accurately due to the few variable costs.

This investment and cost planning is followed by financing planning. Venture capital-backed startups plan to raise funding on a “*usual cycle [...] between 12 and 18 months.*”³²² The planned timing of funding is highly dependent on the cash flow planning, which shows how long the available capital will be sufficient and when a funding round must be closed at the latest.

Based on these previous plans, the balance sheet and income statement items are planned. PaaS/SaaS-3, for instance, has established a (SKR) 04 Datev standard cost framework in the Excel calculation for this allocation of the previously planned revenues, individual costs, investments, and financings.³²³ This involves assigning the planned items to the corresponding Datev accounts, which subsequently enables a straightforward assignment to the balance sheet and income statement items and thus their planning. Based on this balance sheet and income statement allocation, the cash flow is planned on a cash-effective, accrual basis.³²⁴ The cash

flow represents the essential instrument of the startups from the end of the early and the start of the expansion stage, as it provides information on “*how long the cash will still last*”³²⁵ and thus provides the basis for planning a follow-up funding round.³²⁶ Hence, PaaS/SaaS-5 declares that cash flow planning contributes to check, especially in the short term, “*when do amounts probably arrive in our account, when do they go out, do we have [a] liquidity problem? How long does the cash last, what is the cash burn rate and run rate?*”³²⁷ Furthermore, Exp emphasizes that cash flow planning supports the startup in “*managing costs, [because] in the early stages there are still not so many revenues. That means [the startups] have to think carefully about what [they] spend the limited capital [...] on and how long it will last. What is the impact?*”³²⁸ Consequently, the focus of planning at the end of the early stage and at the beginning of the expansion stage is on short-term detailed planning, intending to be able to allocate the cash flows as closely as possible and on an accrual basis to avoid the illiquidity of the company.

The control of this established plan is carried out monthly with the help of actual values in the examined phase.³²⁹ This control is crucial for the short-term detailed planning, as a substantial deviation in revenues or costs can lead to significant consequences for the cash flow, resulting, for instance, in liquidity shortages when continuing the existing plan. Therefore, the short-term detailed plan is adjusted quarterly in the case of PaaS/SaaS-2³³⁰ or even continuously in the case of PaaS/SaaS-5 when innovations or new findings occur³³¹.

In implementing financial planning, the startups from the end of the early and the start of the expansion stage pay particular attention to a dynamic configuration. Therefore, the model should already be designed in this stage in a way that allows a quick reaction to “*various influences [...], [such as] what does it mean if my revenue increases by 20%, what happens to my result*”³³², or “*I do more marketing, then a formula is used in my financial planning to calculate what the sales are likely to be.*”³³³ Consequently, the financial planning is already designed coherently and dynamically in the early stages to convince investors in financing rounds of the financial model through the already existing scenery capability³³⁴, but also to be able to depict the effects of individual measures quickly and transparently to make decisions on this basis.³³⁵ A further focus in the design of the planning is, as already indicated above, “*the clean mapping of the operating business to accurately represent the short-term sales based on appropriate Key Performance Indicators (KPIs)*”³³⁶ and thus to reduce the

³¹²Exp, para.20.

³¹³Cf. PaaS/SaaS-3, para.19.

³¹⁴Cf. PaaS/SaaS-5, para.12; PaaS/SaaS-2, para.10.

³¹⁵PaaS/SaaS-3, para.19.

³¹⁶Ibid..

³¹⁷Cf. PaaS/SaaS-5, para.32.

³¹⁸Ibid..

³¹⁹Ibid., para.12.

³²⁰PaaS/SaaS-3, para.39.

³²¹PaaS/SaaS-2, para.24.

³²²Exp, para.14.

³²³Cf. PaaS/SaaS-3, para.25.

³²⁴Cf. ibid..

³²⁵Ibid., para.27.

³²⁶Cf. ibid..

³²⁷PaaS/SaaS-5, para.20.

³²⁸Exp, para.20.

³²⁹Cf. PaaS/SaaS-2, para.20; PaaS/SaaS-4, para.12.

³³⁰Cf. PaaS/SaaS-2, para.20.

³³¹Cf. PaaS/SaaS-5, para.16.

³³²PaaS/SaaS-3, para.11.

³³³PaaS/SaaS-5, para.12.

³³⁴Cf. PaaS/SaaS-3, para.11.

³³⁵Cf. Exp, para.8.

³³⁶Ibid., para.20.

risk of illiquidity.

The startups examined from the end of the early stage and start of the expansion stage mostly use a standard Excel calculation to implement the financial planning. PaaS/SaaS-3 emphasizes that Excel offers the advantage that *“it is rather free”*³³⁷ and consequently, based on the necessary know-how, it allows an easy implementation of a dynamic financial planning model. PaaS/SaaS-3 further underlines in this respect that the use of an Enterprise-Resource-Planning (ERP) system, such as SAP, is unsuitable for these early startup stages due to the cost factor, the ease of use, and the inflexibility of these systems.³³⁸ PaaS/SaaS-3 also highlights that *“the introduction of a financial planning system [like SAP] in [...] this phase would not make sense [...], since you would overtake yourself in the question, what does this financial planning system actually bring me and how flexible is it?”*³³⁹ PaaS/SaaS-5 concludes with regard to the implementation *“that you should not write a dissertation with your financial planning in the early stage, but it must be sufficient so that you can make good decisions and get a good picture of what the cash looks like. [...] Otherwise it would be a waste of time and inefficient.”*³⁴⁰ As a result, finding the right and necessary balance in the implementation of financial planning is a decisive factor in this stage. An exception to the system used is presented by PaaS/SaaS-5, which offers a financial planning software on the market and consequently also uses it for its own planning, in order to equally recognize and eliminate error susceptibilities in the system.³⁴¹

Compared to the initial implementation of the financial planning in the seed stage, several development steps towards the end of the early and the start of the expansion stage could be identified. Although the dynamic structure of the financial planning was already considered in the seed stage implementation, it was further expanded due to the more detailed financial planning. Furthermore, financial planning was refined by investor-related development steps, especially in the area of revenue planning as described above. Accordingly, the inclusion of marketing KPIs and the shift to industry-specific revenue models, in order to improve the operational planning, represent further development steps from the seed stage to the end of the early and the start of the expansion stage. PaaS/SaaS-3 emphasizes that the next development step will be the start of automating the financial planning process: *“since we still work very much manually, I would like to have [...] a stronger automation.”*³⁴²

4.1.2. Expansion stage

In the subsequent expansion stage, the basic implementation of the financial planning follows the same scheme from the end of the early and the beginning of the expansion stage.

Again, the first step involves the planning of the strategic objectives and assumptions, such as internationalization or new product launches³⁴³, for the short-term detailed planning (12 to 18 months) and the long-term rough planning (five years) in the top line of the startup. Due to the more differentiated corporate structure of the two startups examined from this stage (EComm-3, PaaS/SaaS-1) compared to the ones from the end of the early and the start of the expansion stage, these objectives are communicated between the individual departments and thus *“each department derives targets [...] that are aimed at these strategic objectives.”*³⁴⁴ Therefore, the planning of the strategic goals and assumptions also occurs in a top-down manner in the expansion stage.

The subsequent revenue planning reveals the development step in the financial planning compared to the previous stage, but also highlights the differences in the implementation of the financial planning between the two industries examined. EComm-3 operates in this context in e-commerce with a B2C target group. Here, the starting point for revenue planning represents a top-down sales planning in which *“the volume to be achieved [...] is derived from the market size.”*³⁴⁵ Such a top-down approach for revenue planning is justified by *“the rapid growth of the market in which [...] [EComm-3] operates.”*³⁴⁶ and by *“the scale on which [EComm-3] now operates, with an average of [one to two] million Euro in revenue per month, where [...] calculations can already be made very statically.”*³⁴⁷ After defining the revenue to be achieved, an analysis of the key sales figures of the offered products is carried out, i.e. the consideration of the so-called unit economics. In this process, the necessary sales to achieve this revenue target are calculated based on the average order volume.³⁴⁸ EComm-3 represents at this point a one-product company that offers its customers an online configurator to enable them to set up the product according to their wishes before it is installed on the customer's site by the company's installers. Therefore, the calculation of the average order volume can easily be done using historical values. The next step involves the determination of the required marketing expenses for achieving these sales. For this purpose, the sales department uses a sales driver that automatically calculates the required resources for the necessary marketing efforts based on key figures from *“performance marketing [...] such as the number of necessary leads”*³⁴⁹, the costs per click or the costs per lead. A further driver, called the *“put-through rate”*,³⁵⁰ was integrated into the revenue planning process of EComm-3, which automatically integrates the *“offset between the sale and installation of the product and thus also the invoicing.”*³⁵¹ This put-through rate is also based on his-

³⁴³Cf. EComm-3, para.31.

³⁴⁴PaaS/SaaS-1, para.28.

³⁴⁵EComm-3, para.19.

³⁴⁶EComm-3, para.19.

³⁴⁷Ibid., para.33.

³⁴⁸Cf. ibid., para.39.

³⁴⁹Ibid., para.19.

³⁵⁰Ibid..

³⁵¹Ibid..

³³⁷PaaS/SaaS-3, para.13.

³³⁸Cf. ibid., para.11.

³³⁹Ibid., para.13.

³⁴⁰PaaS/SaaS-5, para.30.

³⁴¹Cf. ibid., para.10.

³⁴²PaaS/SaaS-3, para.37.

torical values and has a range of “90 to 110 days.”³⁵² Using the time offset of the put-through-rate, a further driver from the operations department determines the “installation activities.”³⁵³ This driver includes the “number of units to be installed per month and plans the personal expenses [of the operations department] [...], the material expenses, installation costs, etc.”³⁵⁴ Thus, EComm-3 started to automate the process of revenue planning as well as cost or budget planning on the basis of drivers. Currently, many departments “such as finance, tech, [...] or brand and communication marketing”³⁵⁵ still operate independently of drivers; therefore, “in the future [automation] will be significantly expanded and dedicated drivers will be developed for most departments [...] to be able to determine at least 80% of the resource requirements based on drivers.”³⁵⁶ This driver-based planning was implemented primarily due to the increasingly complex corporate structure resulting from the rapid growth of the company, so that the departments “had previously planned [the necessary budget] relatively independently of each other.”³⁵⁷ With the implementation of the drivers, EComm-3 pursues the objective of “better displaying the interrelationships, automating [the planning process] and developing it in a better interlocking manner.”³⁵⁸

The top-down approach is also used for long-term revenue planning at PaaS/SaaS-1 in the B2B specific area. In this regard, PaaS/SaaS-1 plans “the development of the revenue based on the targeted market share.”³⁵⁹ EComm-3 highlights that such an approach proves useful when “the market is already relatively crowded”³⁶⁰, as in the case of PaaS/SaaS-1. In the short-term detailed planning, as in the case of the previously presented PaaS/SaaS startups from the end of the early stage and the beginning of the expansion stage, bottom-up revenue planning is carried out. This is again caused by the B2B business model, since “you have significantly fewer customers [than in the B2C area], [...] allowing you to deal with each one in great detail”³⁶¹, as PaaS/SaaS-1 accentuates. The necessary figures for the planning of already acquired customers are provided by multi-year contracts, which enable the planning of recurring revenues.³⁶² For the planning of customers to be acquired, detailed “individual business cases”³⁶³ are calculated, since PaaS/SaaS-1 acquires “only two close full customers [...] per year.”³⁶⁴ PaaS/SaaS-1 has raised the detail level of short-term revenue planning to a daily basis for this purpose.³⁶⁵

Regarding the industry, a significant difference can be in-

ferred from the two considered revenue plans. This lies in the underlying revenue model, which is highly dependent on the industry. While in e-commerce, non-recurring revenues are regularly generated by the sale of a product to the customer, in the PaaS/SaaS area, a recurring revenue model is often used. Therefore, revenue planning in e-commerce is usually based on unit economics such as the average order volume or average number of sales per month, whereas in the PaaS/SaaS-specific B2B area, the planning is often driven by customer economics such as the average customer lifetime value and contractual agreements.

In terms of cost planning, PaaS/SaaS-1 places a particular focus on planning personnel costs “because [the PaaS/SaaS business model] is very personnel-intensive.”³⁶⁶ Here, the planning of personnel requirements is performed on a departmental level in a bottom-up approach, allowing the allocation of the necessary resources to the individual departments to fulfill the strategic objectives. The planning of the remaining costs takes place in PaaS/SaaS-1 through budget specifications for the individual departments by management in a top-down approach. In EComm-3, cost planning is partially automated via drivers such as sales or installation activities, as outlined previously. Cost planning for the driver-independent departments is carried out in a top-down manner, whereby the individual departments act according to the budget specifications of the top line.³⁶⁷ In the future, this resource planning will be driver-based across all departments of EComm-3.³⁶⁸

Building on this revenue and cost planning and the strategically defined investments and financings, the planning of the balance sheet, income statement and cash flow is also carried out in the expansion stage through the dynamic planning design. Again, the focus in this phase is on cash flow planning and thus on short-term financial planning, with regard to “how long [the] cash run rate will last [and] when the next financing round should be initiated.”³⁶⁹ PaaS/SaaS-1 stresses in this context that although a five-year plan is created, “planning more than two years ahead does not make sense [...] [as] the world, markets, and business are now moving so fast.”³⁷⁰

As in the previous stage, these plans are monitored monthly using target-actual comparisons. PaaS/SaaS-1 emphasizes that this comparison is also necessary since in this interval the startup must report to the investors “how it stands to its planned developments.”³⁷¹ Furthermore, PaaS/SaaS-1 accentuates “that a new adjustment of the existing plan [...] should be completed at least every six months”³⁷², to consider deviations and new developments, such as failed product launches.

The realization of financial planning in the expansion stage thus focuses on the implementation of integral (cross-

³⁵²EComm-3, para.19.

³⁵³Ibid..

³⁵⁴Ibid..

³⁵⁵Ibid..

³⁵⁶Ibid., para.21.

³⁵⁷EComm-3, para.21.

³⁵⁸Ibid..

³⁵⁹PaaS/SaaS-1, para.12.

³⁶⁰EComm-3, para.19.

³⁶¹PaaS/SaaS-1, para.16.

³⁶²Cf. ibid..

³⁶³Ibid..

³⁶⁴Ibid., para.26.

³⁶⁵Cf. ibid., para.16.

³⁶⁶PaaS/SaaS-1, para.26.

³⁶⁷Cf. EComm-3, para.21.

³⁶⁸Cf. ibid..

³⁶⁹Ibid., para.27.

³⁷⁰PaaS/SaaS-1, para.18.

³⁷¹Ibid., para.20.

³⁷²Ibid., para.18.

company) and coherent planning, in addition to the already established dynamic implementation from the previous stage. This focus is related to the company's growth and the emergence of new departments and responsibilities, which must find appropriate consideration in financial planning, as PaaS/SaaS-1 explains:

*“Planning is much easier to implement in the early stages with just a few people [than in the expansion phase] because as the company grows, more and more responsibilities arise, and thus more decision makers also have an impact on the financial figures.”*³⁷³

PaaS/SaaS-1 further emphasizes the necessity of human resource MCSs to integrate and follow this plan, ensuring that *“in top-down planning [...] the defined objectives and released resources are also communicated down to the level of a tech division manager or the head of a logistics subdivision.”*³⁷⁴ Otherwise, there is a risk that due to unknown budget restrictions, investments or expenditures are made that have not received consideration in the planning. Consequently, PaaS/SaaS-1 concludes *“that finance must repeatedly create a [cross-company] framework, [...] which also must be known and lived [by all departments].”*³⁷⁵ EComm-3 outlines that the focus of planning is *“to present correlations, to automate and to develop better interdependencies.”*³⁷⁶ For this purpose, dedicated drivers for the individual departments were developed in single cases and will be further developed. These drivers represent the interrelationships of the departments and can determine the resource restrictions automatically on this basis. Thus, the *“previous independent planning [of the departments]”*³⁷⁷ was broken up with the introduction of drivers.

For the implementation of the financial planning in the expansion stage, an Excel calculation is still used. EComm-3 justifies the choice of Excel *“with the advantage of flexibility”*³⁷⁸, so that the interfaces of the driver-based planning can be represented in the best way with it.

The next development steps involve, first of all, letting *“the planning grow further”*³⁷⁹, and second, as EComm-3 emphasizes, developing *“drivers across the entire value chain of the startup, which then allow optimization [...] as well, [i.e.,] to integrate an efficiency process.”*³⁸⁰

4.1.3. Later stage

The final stage to be considered, known as the later stage, encompasses startups with already successfully completed IPOs (EComm-1 and EComm-2). Both companies integrated an ERP system as part of the IPO, but also due to their strong

growth and the resulting complex corporate structure.³⁸¹ Besides creating an integrated and coherent view of the company, this system also enables automated data collection and planning.³⁸²

Even in the later stage, the planning of the strategic objectives for the five-year plan and the one-year plan represents the starting point for financial planning. Thereby, the company management plans and communicates the objectives in a top-down manner within the framework of the corporate strategy for the next five years, such as *“a growth of 20% to 25% [...], a profitability of 2 to 3.5% in the following years”*³⁸³ or even the *“establishment of a new warehouse in France in two years [...] [and] the expansion into Eastern Europe.”*³⁸⁴ Regarding the planning of short-term objectives, EComm-1 accentuates that in addition to management's strategic objectives, *“operational [...] initiatives [are] planned on top, which ultimately should lead to this revenue growth.”*³⁸⁵ Accordingly, EComm-1 combines the top-down approach with the bottom-up approach for planning and checking the feasibility of the short-term objectives. The basis for defining these objectives includes historical values and current market developments,³⁸⁶ as well as real-time data generated by queries from the ERP system, *“like which [products] have higher margins and which have lower margins.”*³⁸⁷

Based on the planning of the objectives and the assumptions, the planning of revenues is also carried out first in the later stage. EComm-1 and EComm-2 initially base their revenue planning on a top-down approach whereby the revenue objective is derived from the top line on the targeted market share.³⁸⁸ EComm-1 states in its last annual report that *“the goal continues to be growing faster than the market and further increasing [the] market share as a result.”*³⁸⁹ Since EComm-1 and EComm-2 operate in an international environment with multiple revenue streams, this top line revenue target represents the result of a consolidated revenue plan. In their planning approach, both EComm-1 and EComm-2 subdivide by country and revenue stream³⁹⁰ to *“project first at the country level what [...] is achievable in terms of revenue.”*³⁹¹ In dividing this revenue, EComm-1 again differentiates between revenue from traditional e-commerce and the PaaS-specific revenue share, where merchants *“offer their goods on [EComm-1's] website and pay a commission upon a successful sale.”*³⁹² In contrast, EComm-2 differentiates between target group

³⁷³PaaS/SaaS-1, para.22.

³⁷⁴Ibid., para.24.

³⁷⁵Ibid..

³⁷⁶EComm-3, para.21.

³⁷⁷Ibid..

³⁷⁸Ibid., para.23.

³⁷⁹Exp., para.18.

³⁸⁰EComm-3, para.35.

³⁸¹Cf. EComm-2, para.2.

³⁸²Cf. *ibid.*, para.20.

³⁸³EComm-1, para.5.

³⁸⁴*Ibid.*, para.11.

³⁸⁵*Ibid.*, para.9.

³⁸⁶Cf. EComm-1, annual report 2020; EComm-2, annual report 2020. To preserve the anonymity of EComm-1 and EComm-2, the sources of the annual reports are not added to the reference list.

³⁸⁷EComm-2, para.22.

³⁸⁸Cf. EComm-1, annual report 2020; EComm-2, annual report 2020.

³⁸⁹EComm-1, annual report 2020.

³⁹⁰Cf. EComm-1, para.13; EComm-2, para.18.

³⁹¹EComm-1, para.13.

³⁹²EComm-1, para.13.

specific revenue categories in its planning.³⁹³ EComm-2 accentuates that the planning of the country-specific revenue categories is automated by means of queries from the ERP system³⁹⁴, which are “*coordinated with the managing directors of the [individual] countries, so that they [...] can also adjust the growth targets of the respectively country again.*”³⁹⁵ The country-specific view is finally summarized in a consolidation, which again should be in line with the strategic objective of the top line.

The subsequent cost planning is done by drivers at EComm-1. For this purpose, a translation from revenue to the required number of goods sold is carried out. To calculate the required number of goods sold, the planned revenue in the e-commerce segment is divided by the average purchase price per good.³⁹⁶ With the aid of this translation, the necessary drivers for all business units are defined and distributed, enabling the units to plan their necessary budgets automatically using these predefined drivers and their own budget assumptions, such as cost rates.³⁹⁷ For example, the necessary number of goods sold is transmitted to the purchasing department, allowing it to carry out appropriate planning with an average purchase price per good.³⁹⁸ The logistics department receives drivers such as “*how many parts go into the warehouse [...], how many parts must be handled [...], how many parts are in a package on average [...], [or] how many packages must be shipped*”³⁹⁹ from the market department, allowing them to calculate the corresponding costs and the necessary budget from existing cost rates like shipping costs.⁴⁰⁰ Ultimately, the individual budget plans of the respective units are consolidated, resulting in a total necessary budget.⁴⁰¹ In contrast, EComm-2 works with queries from the ERP system for cost planning, “*from which [among other things] the material costs can be drawn very well and detailed from the platform [...] and can be evaluated very good via the business analytics. For this purpose, there is also a large business analytics department, which then evaluates this from scratch as well.*”⁴⁰²

Building on this revenue and cost planning and the strategically defined investments and financings, the balance sheet, income statement and cash flow are also planned in the later stage. Regarding the control of the short-term plan, different levels of granularity can be observed between EComm-1 and EComm-2. While EComm-1 controls the short-term plan weekly,⁴⁰³ EComm-2 controls it daily “*by means of two to three reports from the business analytics [department].*”⁴⁰⁴ The actual results are presented to the management in a monthly

report; based on this, EComm-2 decides monthly whether to adjust the plan.⁴⁰⁵ By contrast, EComm-1 decides on a quarterly basis whether an adjustment of the plan is necessary and does so if required.⁴⁰⁶ In this respect, EComm-1 criticizes excessive adjustment of the financial plan, since “*it represents a very high effort [...] and then also leads to a pseudo accuracy at a certain point.*”⁴⁰⁷

In the implementation of financial planning, both EComm-1 and EComm-2 have placed particular attention on a high level of detail. EComm-1 justifies this with the increasingly complex and growing company structure, which makes “*the revenue composition more complicated, since several business models exist internally from which several revenue streams come [...] or the logistics network becomes more complicated, since you have several locations with different cost structures. A warehouse in Sweden is more expensive than in Poland.*”⁴⁰⁸ EComm-2 adds that the level of detail was positively influenced by “*the consolidated aggregation of planning in the individual countries.*”⁴⁰⁹ A further focus is placed on automation in the implementation of financial planning. EComm-1 states in this context that planning in the later stage is “*quite complex and can only be handled again through automation.*”⁴¹⁰ Moreover, EComm-2 explains that, with the help of automation, “*data are drawn from [the operational ERP system] via queries and the financial planning is built upon this data*”⁴¹¹, meaning that the database for planning is located in a single source and not, as was previously the case, “*drawn together from many sources.*”⁴¹² A third point that is focused on in the implementation of financial planning in the later stage is the consistency of the planning. EComm-2 underlines in this context that when approaching the IPO, “*everything [became] much more structured, so that you don't have a system that is constantly modified again, but rather you also have consistency in it [...], so that you can compare the planning from the previous year with the planning from this year and other parameters are not suddenly included.*”⁴¹³ However, EComm-2 and EComm-1 clearly differ in their approach on this point. EComm-1 expresses that the “*process of annual planning is very different every year, since there is still a lot of learning about how to think about certain things and especially how the interactions are.*”⁴¹⁴ EComm-1 cites communication as an essential point for achieving a consistent planning process. Thereby, a lack of communication poses the main problem for the inconsistent planning process at EComm-1 since “*there are so many teams involved now, so it's just difficult to keep everybody on the same information level*

³⁹³Cf. EComm-2, para.4.

³⁹⁴Cf. *ibid.*, para.22.

³⁹⁵*Ibid.*.

³⁹⁶Cf. EComm-1, para.23.

³⁹⁷Cf. *ibid.*.

³⁹⁸Cf. *ibid.*, para.13.

³⁹⁹*Ibid.*.

⁴⁰⁰Cf. *ibid.*, para.17.

⁴⁰¹Cf. *ibid.*, para.13.

⁴⁰²EComm-2, para.24.

⁴⁰³Cf. EComm-1, para.7.

⁴⁰⁴EComm-2, para.46.

⁴⁰⁵Cf. *ibid.*.

⁴⁰⁶Cf. EComm-1, para.9.

⁴⁰⁷*Ibid.*.

⁴⁰⁸*Ibid.*, para.15.

⁴⁰⁹EComm-2, para.16.

⁴¹⁰EComm-1, para.17.

⁴¹¹EComm-2, para.20.

⁴¹²*Ibid.*.

⁴¹³EComm-2, para.20.

⁴¹⁴EComm-1, para.15.

all the time.”⁴¹⁵ Due to this lack of information in some parts of the company, inconsistencies arise in the planning process, so that things can “quickly go in the wrong direction”⁴¹⁶, such as using the wrong drivers for budget planning.⁴¹⁷

EComm-2 uses Google Sheets as the financial planning system, where the automatically generated data from the ERP system serve as the basis.⁴¹⁸

As the next development step, EComm-1 sees the emergence of a more consistent planning process, whereby planning “is not constantly revised and touched on anew.”⁴¹⁹ However, overall, both later-stage startups examined regard their financial planning as very mature, since, on the one hand, “an extremely large financial organization has been established [in both startups], but on the other hand [both startups] also try to underpin everything with figures and correspondingly important planning processes are also assessed for [both] companies.”⁴²⁰

4.1.4. Summary

In summary, the results show a distinct contrast in the first step with regard to the fundamental decision to introduce financial planning in the early startup stages. In this context, EComm-5 and EComm-4 justify their decision not to introduce financial planning with the bootstrapping and still manageable finances. Accordingly, for both startups, the monthly business evaluation by the tax advisor is still sufficient.⁴²¹ In contrast, the remaining eight startups examined have integrated financial planning. This was already established in the seed stage of the startups for the validation of the business idea. The underlying financial planning process follows the same scheme along all development stages, as illustrated in the first part of Figure 7.

The planning basis represents a top-down assumption planning for the detailed one-year plan and the rough five-year plan for all startups. Here, the top line of the company and the investors plan the strategic objectives of the company. These objectives from the assumption planning represent milestones for all startups, against which their performance is measured. In its one-year planning, EComm-1, as a later stage startup, also considers operational initiatives, thus linking a top-down and bottom-up approach.⁴²²

Building on this assumption planning, all startups investigated first carry out the revenue planning. The PaaS/SaaS startups from the end of the early stage and the start of the expansion stage examined pursue an often investor-driven bottom-up approach for revenue planning, whereby revenues are planned on the basis of marketing metrics, as well as existing and planned customer contracts. In contrast, the startups from the expansion and later stages follow a top-down

approach for the planning of revenues based on the planned market shares or the planned revenue volume. EComm-3 argues that this approach is useful for startups that already generate “an average of [one to two] million Euro in revenue per month, [so that] calculations can already be made very statically.”⁴²³ Based on the planned revenue, the startups from e-commerce calculate the necessary sales using the average order volume, while the startups from the PaaS/SaaS-specific area calculate the number of necessary customers using the average customer lifetime value. However, despite this top-down approach, PaaS/SaaS-1 plans the individual revenues of existing contract customers and planned customers on a daily granular level in the short-term revenue planning and thus in a bottom-up manner, due to the small but very valuable number of customers.⁴²⁴ The industry-specific differences in the planning of the startups are particularly evident in the revenue planning. While PaaS/SaaS startups with few customers from the B2B sector operate with customer economics, such as the average customer lifetime value or contractual agreements, in their planning, e-commerce startups operate with unit economics, such as the average order volume or the average order value per good.

The simultaneous or subsequent cost planning proves to be simple for the startups from the end of the early stage and the start of the expansion stage, as there are few variables and many fixed costs in digital business models, so that the still few individual cost elements incurred in this stage can usually be easily planned independently of the departments. The costs are planned in line with the revenue, so that a higher marketing expense must result in revenue growth. In the expansion stage, a department-specific cost planning occurs, in which the first automation approaches are established, for example, by using drivers for automated planning of single costs based on the sales. At the later stage, cost planning is fully automated on a department-specific basis using drivers in EComm-1 or queries from the ERP system in EComm-2.

The planning of investments also follows from the assumption planning, thus the planned investments, such as a new warehouse, are considered numerically in the investment planning. While the investments are clearly arranged at the beginning and mainly include the development, investments in the later stage are made in new warehouses or in the establishment of new international locations.

The financing plan as the last basic plan in the upper left area of Figure 7 considers all previously planned aspects to determine when the next financing round must be initiated. For this purpose, the cash flow planning is also particularly suitable since it indicates when the available liquid resources will be used up.

Based on this planning foundation, the balance sheet, income statement and cash flow are planned in all startups examined. Here, the focus is on short-term cash flow planning, especially at the end of the early stage and the beginning of

⁴¹⁵EComm-1, para.19.

⁴¹⁶Ibid..

⁴¹⁷Cf. *ibid.*

⁴¹⁸Cf. EComm-2, para.18.

⁴¹⁹EComm-1, para.27.

⁴²⁰Ibid..

⁴²¹Cf. EComm-4, para.16; EComm-5, para.12.

⁴²²Cf. EComm-1, para.9.

⁴²³EComm-3, para.38.

⁴²⁴Cf. PaaS/SaaS-1, para.16.

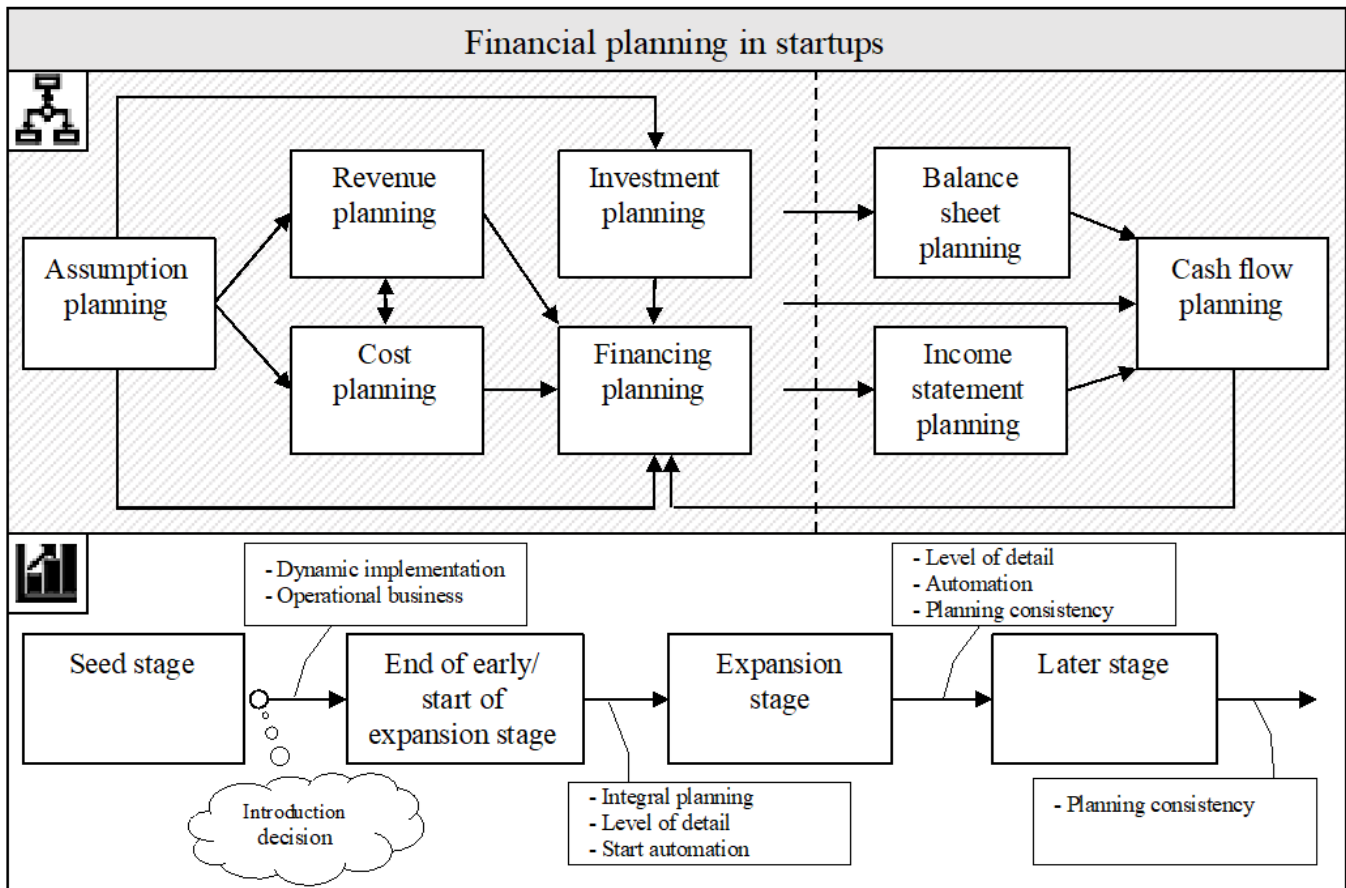


Figure 7: Financial planning in startups*

*Own illustration.

the expansion stage. PaaS/SaaS-5 emphasizes in this context that financial planning at the beginning “*must be sufficient [...] so that you can make good decisions and get a good picture of how things look in terms of cash.*”⁴²⁵ Thus, the cash flow planning represents the essential instrument of the startups, especially at the beginning, to avoid illiquidity and secure the continuity of the company. PaaS/SaaS-1, as a startup from the expansion stage, further criticizes long-term planning because “*the world, markets, and business are now moving so fast [...] that planning more than 24 months into the future makes no sense.*”⁴²⁶ EComm-1, as a later stage startup, agrees and adds that “*a five-year plan [...] is necessary for the long-term focus, but as you look further ahead, the results become more volatile.*”⁴²⁷ Accordingly, the focus in the expansion and later stage is also on detailed short-term planning.

In the lower section of Figure 7, the planning-specific development steps between the stages are illustrated. The planning at the end of the early stage and at the beginning of the expansion stage is implemented more dynamically than

in the seed stage to enable the quick mapping of the consequences of individual measures and to make decisions based on this. Furthermore, a stronger focus is placed on the correct planning of the operative business, so that accruing revenues and costs can be planned as accurately as possible in view of the cash flow. Towards the expansion stage, increased attention is paid to more integral planning which takes the increasingly complex corporate structure into account, in order to carry out cross-company planning. Furthermore, planning becomes much more detailed in view of the higher sales and expanded corporate structure, thus the automation of planning is initiated to also ensure its later manageability. From the expansion stage to the later stage, the level of detail in the planning is further increased significantly in view of a possible IPO. Due to consolidation issues, the automation of planning is further advanced, thus drivers or queries from the ERP system are used to automate the planning. Moreover, greater emphasis is placed on consistent planning with uniform annual parameters to ensure comparability. The development of planning consistency is afforded particular focus even beyond the later stage.

⁴²⁵PaaS/SaaS-5, para.30.

⁴²⁶PaaS/SaaS-1, para.18.

⁴²⁷EComm-1, para.9.

4.2. Implementation of cost accounting

The second main subject of investigation in this thesis, according to the research question, is cost accounting. In the following, the results on the implementation of cost accounting in the development phases examined are presented. In a subsequent summary, the main findings on the implementation of cost accounting are described and the main development steps along the phases are outlined.

4.2.1. End of early stage/ start of expansion stage

Similarly to financial planning, the results of the implementation of cost accounting in the startups from the end of the early stage and the start of the expansion stage are presented collectively. The reasons for this are the same as those in the financial planning section, namely the similar implementation and the overlapping phase classifications from the startups examined from these two phases.

In terms of the basic decision to introduce cost accounting, it is notable that all startups have established fundamental cost accounting in their company. The initial implementation should already occur in the seed stage according to EComm-3 and PaaS/SaaS-2.⁴²⁸ This timing is motivated by two main triggers, which are illustrated in Figure 8.

The first trigger for the introduction of cost accounting is financial planning. As previously outlined, the planning of costs constitutes an essential aspect of financial planning, for which an overview of the incurred costs is indispensable. Accordingly, PaaS/SaaS-5 justifies the introduction of cost accounting with the knowledge *“that [cost accounting] is part of financial planning and brings important insights later. Above all, however, also to be able to calculate target ratios such as customer acquisition costs [...] or cash flow.”*⁴²⁹ PaaS/SaaS-1 further stresses *“that [financial] planning is ultimately only as good as the execution, and this is automatically accompanied by cost accounting.”*⁴³⁰ A second trigger for the implementation of cost accounting involves the improvement of transparency. EComm-5 accentuates in this context that cost accounting provides information on *“whether the product you are selling is profitable and how profitable it is.”*⁴³¹ EComm-1 concurs with EComm-5's statement and justifies the integration of cost accounting as a *“means to an end, [...] [to] make costs transparency.”*⁴³²

The implementation of cost accounting by the startups from the end of the early stage and the beginning of the expansion stage occurs in a very rudimentary manner. Five of the six startups examined from these stages have merely implemented cost element accounting, which is intended to provide a sound overview of the incurred costs. PaaS/SaaS-5, for instance, distinguishes between *“telecommunication costs, hosting, tax advice, legal expenses [...], personnel costs*

*[etc.]”*⁴³³ and lists these monthly. Therefore, the necessary data basis is provided by the actual costs from the respective financial accounting systems.⁴³⁴ The startups justify the lack of need for distinctive cost accounting with the manageable costs and their company size:

*“So, we don't have a cost center or anything like that now, but it's just the rudimentary costs that are incurred. Later, in another stage of expansion of the company, this [...] must take on other professionalism.”*⁴³⁵

*“For the moment, it is not necessary to be more detailed, since it would not provide any new insights, except that it would cost time.”*⁴³⁶

*“What we do in the field of cost accounting? We are still too small right now, I can still calculate everything in my head, I don't need explicit cost accounting.”*⁴³⁷

*“It's very simple, as I just said. So, you can do cost accounting in a complex way, but it depends on the size of the company and what you're doing.”*⁴³⁸

*“If the number of products increases, I think we will have to implement a proper cost accounting. Right now, that is not necessary.”*⁴³⁹

As the only startup from the end of the early and the start of the expansion stage, PaaS/SaaS-4 has already integrated cost center accounting into the company, consisting of four cost centers (operational-, product-, financial service-, and human resource service cost center). Here, the operational cost center contains the costs of the current business activity such as *“office expenses [...], personnel [costs], [...] notary costs or legal costs.”*⁴⁴⁰ The financial service and human resource service cost centers capture the costs incurred for the two offered services, and each deals with *“what it costs [PaaS/SaaS-4] to deliver this [service].”*⁴⁴¹ Finally, the product cost center includes the costs incurred for product development, which *“mainly [comprises] personnel and freelancer costs.”*⁴⁴² PaaS/SaaS-4 justifies this early further subdivision by means of the very experienced team and the financial service offered.⁴⁴³

In the area of partial cost accounting, PaaS/SaaS-5, PaaS/SaaS-3, and EComm-4 have implemented a break-even analysis as a further cost accounting instrument. PaaS/SaaS-5 and PaaS/SaaS-3 justify the choice of a break-even analysis

⁴²⁸Cf. EComm-3, para.37; PaaS/SaaS-2, para.38.

⁴²⁹PaaS/SaaS-5, para.42.

⁴³⁰PaaS/SaaS-1, para.40.

⁴³¹EComm-5, para.26.

⁴³²EComm-1, para.37.

⁴³³PaaS/SaaS-5, para.32.

⁴³⁴Cf. *ibid.*, paras.37f.; EComm-5, para.28; EComm-4, para.4; PaaS/SaaS-2, para.48.

⁴³⁵PaaS/SaaS-5, para.34.

⁴³⁶*Ibid.*, para.50.

⁴³⁷PaaS/SaaS-3, para.39.

⁴³⁸PaaS/SaaS-2, para.42.

⁴³⁹EComm-5, para.26.

⁴⁴⁰PaaS/SaaS-4, para.36.

⁴⁴¹*Ibid.*

⁴⁴²*Ibid.*

⁴⁴³Cf. *ibid.*, para.38.

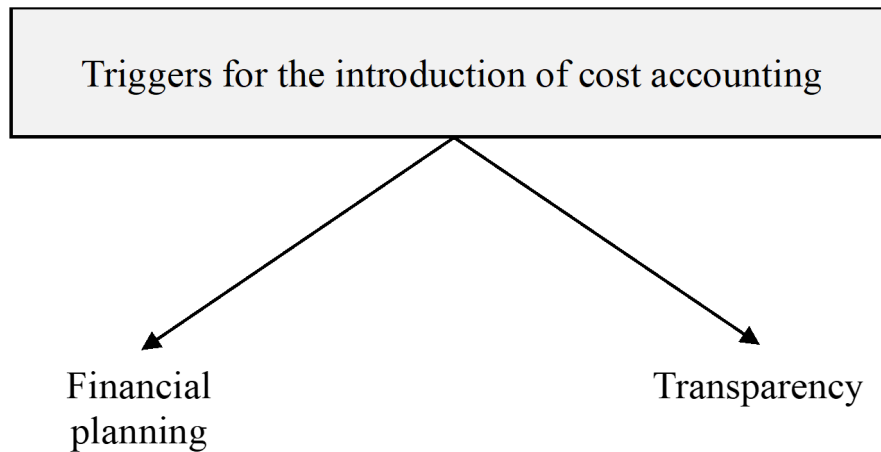


Figure 8: Triggers for the introduction of cost accounting*

*Own illustration.

with the corporate goal of profitability, to determine the point at which the revenues are equal to costs. For this purpose, PaaS/SaaS-3 has not set up an explicit tool for break-even analysis but derives the break-even point “from the timeline in income statement [...] at which point the result switches into the positive.”⁴⁴⁴ With regard to contribution margin accounting, PaaS/SaaS-5 emphasizes that in a SaaS business model, no products exist where variable costs are deducted to find out if a product is even profitable to produce.⁴⁴⁵ The service provided is developed and further maintained or improved, but cannot be compared with a manufacturing company, since “a digital company usually has very few variable costs.”⁴⁴⁶ Therefore, only PaaS/SaaS-5 considers the contribution margin, without explicitly focusing on it.

For the next development step, EComm-5 and PaaS/SaaS-3 have already started to build up cost centers, which will be used to implement a cost center accounting in the subsequent expansion stage of the company.⁴⁴⁷ Moreover, PaaS/SaaS-2 is striving to integrate a project-related cost post-calculation “to see whether the [planned] costs have actually occurred in this way.”⁴⁴⁸

4.2.2. Expansion stage

In the expansion stage, the growth of the startup and the resulting more extensive and complex corporate structure lead to a broader cost accounting system. Since costs in this development stage can no longer be monitored and made transparent by using a single cost element approach, EComm-3 and PaaS/SaaS-1 have also implemented distinctive cost center accounting. PaaS/SaaS-1 states at this point that “growing along [with cost accounting] is a great challenge,

since going ahead [...] with too many steps [...] overloads the employees with administrative work.”⁴⁴⁹ The cost center structure of the two startups is subdivided in accordance with a functional company view by operational departments.⁴⁵⁰ This functional splitting of the cost centers offers the advantage of reviewing the planned cost framework of the respective departments in financial planning. EComm-3 differentiated this cost structure hierarchically. Therefore, the main cost center operation is divided into the cost centers logistics and installation, for instance, or another main cost center growth is assigned to the cost centers sales and marketing.⁴⁵¹ This cost center structure is documented in a cost center plan, ensuring that the vouchers from the financial accounting system are booked as accurately as possible to the appropriate cost center with the incurred cost elements.⁴⁵² The usual distinction between direct and overhead costs, so that the latter can be allocated to the respective cost centers, is not applied in this context; thus, all incurred costs are allocated to the corresponding cost centers and the subsequent cost object accounting is not carried out.

With project cost accounting, EComm-3 has integrated a second cost dimension besides the functional view.⁴⁵³ Project cost accounting involves a post-calculation “to see which projects bring how much margin with them”⁴⁵⁴ and was initiated on instruction of the capital providers.⁴⁵⁵ The investors criticized here that the functional dimension frequently does not consider the booked project-specific “material orders, [...] revenues [...] or partner installation [costs]”⁴⁵⁶ in the same period, since “the material order [...] must occur sooner

⁴⁴⁴PaaS/SaaS-3, para.45.

⁴⁴⁵Cf. PaaS/SaaS-5, para.36.

⁴⁴⁶PaaS/SaaS-3, para.39.

⁴⁴⁷Cf. *ibid.*; EComm-5, para.28.

⁴⁴⁸PaaS/SaaS-2, para.48.

⁴⁴⁹PaaS/SaaS-1, para.40.

⁴⁵⁰Cf. *ibid.*, para.32; EComm-3, para.41.

⁴⁵¹Cf. EComm-3, para.41.

⁴⁵²Cf. *ibid.*.

⁴⁵³Cf. *ibid.*, para.39.

⁴⁵⁴*Ibid.*.

⁴⁵⁵Cf. *ibid.*, para.51.

⁴⁵⁶*Ibid.*.

[...] *than the partner installers issue their invoice*⁴⁵⁷, and thus does not provide the necessary transparency. Consequently, the voucher for a material order is not only booked to the purchasing cost center, but also to the specific project for which the order was executed.⁴⁵⁸ The employees book their project-specific time expenditure via time recording to the project, thus enabling a corresponding post-calculation with all revenues and costs after completion of the project.⁴⁵⁹ Accordingly, EComm-3 uses this project cost accounting to implement cost object accounting on a project basis.⁴⁶⁰

Based on the project cost accounting, EComm-3 has implemented a multi-level contribution margin accounting. Here, the project cost data recorded in Datev are evaluated in Excel and calculated down to the contribution margin III as shown in Table 5. For this purpose, the material costs are first subtracted from the project revenue to calculate contribution margin I, before the partner installation costs and finally the sales and marketing costs are deducted to obtain contribution margin III.⁴⁶¹ For the sales and marketing costs, a lump sum is applied.⁴⁶² By means of this contribution margin accounting, EComm-3 examines and analyzes the individually listed positions regarding deviations from the average as part of the post-calculation.⁴⁶³

PaaS/SaaS-1 has so far not implemented any partial cost accounting instruments but emphasizes that instead, much is calculated with cost metrics, such as *“acquisition costs in relation to sales or in relation to the amortization.”*⁴⁶⁴ These metrics provide an understanding of the company’s *“risk ranges, [...] so that, for example, a customer that amortizes its [acquisition costs] only after 24 months carries a very high company risk.”*⁴⁶⁵

The next development step, according to EComm-3 and PaaS/SaaS-1, involves a further adjusted growth of cost accounting to the enterprise.⁴⁶⁶ Here, EComm-3 aims to achieve a *“more performant database [for cost accounting] that is easier to share within the company”*⁴⁶⁷ as the next step.

4.2.3. Later stage

Even in the later stage, the fundamental process of full cost accounting follows that of the expansion stage. However, the startups in the later stage make a further distinction in cost accounting according to their respective established business models.⁴⁶⁸ Specifically, EComm-1 differentiates between the basic e-commerce business and the recently integrated PaaS-specific business model.⁴⁶⁹ In contrast,

EComm-2 distinguishes between the B2B and B2C-specific e-commerce business models.⁴⁷⁰ EComm-2 furthermore makes a country-specific differentiation in addition to the business models as part of its international operations and locations.⁴⁷¹ After the previous business model and country-specific distinction, the later stage startups also carry out a cost element and cost center accounting. The cost centers represent the respective company departments to *“monitor which costs are incurred in which departments”*⁴⁷² and, based on this, to conduct *“a comparison of planned and actual costs.”*⁴⁷³ Therefore, the allocation of the incurred cost elements from the financial accounting system to the functional cost centers, occurs on a country and business model-specific basis through an ERP system. EComm-1 emphasizes in this context that potentially *“two business models can converge in one cost center [...] which however can be separated by means of the data flow.”*⁴⁷⁴ Therefore, even the startups examined in the later stage allocate the costs completely to the corresponding cost centers without performing subsequent cost object accounting. Both EComm-1 and EComm-2 evaluate this cost accounting method as sufficient.⁴⁷⁵ EComm-2 further emphasizes that *“we are not a production company, we are a pure retailer and in essence the cost accounting system is to look at where the gross profit comes out in the corresponding business case.”*⁴⁷⁶ The cost center accounting thus provides a good overview of the cost distribution in the individual departments, but the *“cost and performance control comes rather via daily business analytic reports [in which] it is checked how much revenue we have made that day, what is the gross profit margin [...], how is the business situation.”*⁴⁷⁷ Building on these business analytics reports with included real-time data, EComm-2 initiates measures in case of deviations from the plan, without deeper consideration of cost element and cost center accounting.⁴⁷⁸ EComm-1 also underlines that the focus is rather on the creation of future automated management reporting which serves as a basis for planning measures and making decisions, to which cost accounting is fundamental.⁴⁷⁹ Cost accounting therefore represents a *“means to an end”*⁴⁸⁰ for EComm-1.

In the area of partial cost accounting, no results were found. However, in view of the profitability objectives of the later stage startups, it can be assumed that both startups have at least implemented a break-even analysis.

As a further development step in the field of cost accounting, EComm-1 envisions the integration of additional cost centers as the company continues to grow.⁴⁸¹ However, the

⁴⁵⁷EComm-3, para.51.

⁴⁵⁸Cf. *ibid.*, para.39.

⁴⁵⁹Cf. *ibid.*.

⁴⁶⁰Cf. EComm-3, para.43.

⁴⁶¹Cf. *ibid.*, para.39.

⁴⁶²Cf. *ibid.*, para.43.

⁴⁶³Cf. *ibid.*, para.39.

⁴⁶⁴PaaS/SaaS-1, para.34.

⁴⁶⁵*Ibid.*.

⁴⁶⁶Cf. *ibid.*, para.40; EComm-3, para.55.

⁴⁶⁷EComm-3, para.55.

⁴⁶⁸Cf. EComm-1, para.31; EComm-2, para.38.

⁴⁶⁹Cf. EComm-1, para.13; EComm-1, annual report 2020.

⁴⁷⁰Cf. EComm-2, para.4; EComm-2, annual report 2020.

⁴⁷¹Cf. EComm-2, para.38.

⁴⁷²*Ibid.*.

⁴⁷³*Ibid.*, para.42.

⁴⁷⁴EComm-1, para.37.

⁴⁷⁵Cf. *ibid.*; EComm-2, para.38.

⁴⁷⁶EComm-2, para.38.

⁴⁷⁷EComm-2, para.38.

⁴⁷⁸Cf. *ibid.*, para.40.

⁴⁷⁹Cf. EComm-1, para.39.

⁴⁸⁰*Ibid.*, para.37.

⁴⁸¹Cf. *ibid.*.

Table 5: Contribution margin accounting of EComm-3*

Contribution margin accounting of EComm-3	
	Project revenue
–	Material costs
=	Contribution margin I
–	Partner installation costs
=	Contribution margin II
–	Sales and marketing costs
=	Contribution margin III

*Own illustration.

focus is basically more on reporting, so that both startups in the later stage are focused on the further expansion and automation of reporting to enable faster and better analyses and decision making.⁴⁸²

4.2.4. Summary

In summary, the results show that all startups have implemented cost accounting, even if only in a very rudimentary manner. The introduction point of cost accounting in startups is the seed stage, so that the startups can verify the set-up costs in the financial planning and adjust them if necessary. However, in contrast to financial planning, no uniform implementation process could be identified for cost accounting by the startups examined. Nevertheless, phase-specific development steps could be identified, which are illustrated in Figure 9.

Cost accounting is still conducted in a very rudimentary way towards the end of the early and the beginning of the expansion stage. Here, the startups merely list the incurred cost elements without making any further allocations. PaaS/SaaS-5 emphasizes that this overview of the cost elements is sufficient *“and more detail is not necessary [in these early stages], since it would not provide any great new insights, except that it costs time.”*⁴⁸³ Considering the still manageable number of employees and departments, this cost overview provides the necessary transparency without a further subdivision. As the only startup from the end of the early and the beginning of the expansion stage, PaaS/SaaS-4 has already established four cost centers for further cost allocation. PaaS/SaaS-4 justifies this early subdivision with the very experienced team and the financial service it offers.⁴⁸⁴

Towards the expansion stage, cost centers are established due to the growth of the company and its increasingly complex corporate structure. The cost centers are subdivided according to the functional corporate structure, thus the vouchers with the cost elements from the financial accounting system are booked to the corresponding department. The subdivision according to the functional company view offers the

advantage that the planned, department-specific costs from the financial planning can be matched with the actual costs incurred per department. A further distinction by cost object is not applied because of the digital business model, so that all occurring costs are booked to the respective cost centers. EComm-3 has also established a further, investor-driven cost accounting dimension in which all project-specific incurred expenses are booked to the specific project in addition to the functional booking.⁴⁸⁵ This project cost accounting corresponds to a cost object accounting and is used for the post-calculation of the planned project budget.

Towards the later stage, further cost centers are integrated according to the functional view of the company and the level of detail is increased, so that a further differentiation according to the business models and countries occurs. Even in the later stage, cost object accounting is not applied. EComm-1 and EComm-2 justify the complete cost allocation to the corresponding cost centers by means of an ERP system as sufficient due to the digital business model.⁴⁸⁶ EComm-2 further states in this context that *“essentially it is looked at [...] where the gross profit comes out in the corresponding business model”*⁴⁸⁷ and daily automated business analytic reports are applied for this purpose. Therefore, besides the introduction of further cost centers in the case of continued growth, the advancement of automated reporting as a basis for decision-making will be pursued even after the later stage.

In the area of partial cost accounting, strong differences among the startups can be observed. Only PaaS/SaaS-5, PaaS/SaaS-3 and EComm-4 stated that they have integrated a break-even analysis as a partial cost accounting tool into their company. However, it should also be mentioned at this point that EComm-1, EComm-2 and PaaS/SaaS-4 could not be interviewed about partial cost accounting due to time constraints. In view of the reason given by PaaS/SaaS-5 and PaaS/SaaS-3 for the introduction of a break-even analysis, namely to check the company's profitability target, it can be assumed that EComm-1 and EComm-2, as later-stage startups with profitability targets, have also implemented a

⁴⁸²Cf. EComm-1, para.39; EComm-2, para.52.

⁴⁸³PaaS/SaaS-5, para.50.

⁴⁸⁴Cf. PaaS/SaaS-4, para.38.

⁴⁸⁵Cf. EComm-3, para.39.

⁴⁸⁶Cf. EComm-1, para.37; EComm-2, para.38.

⁴⁸⁷EComm-2, para.38.

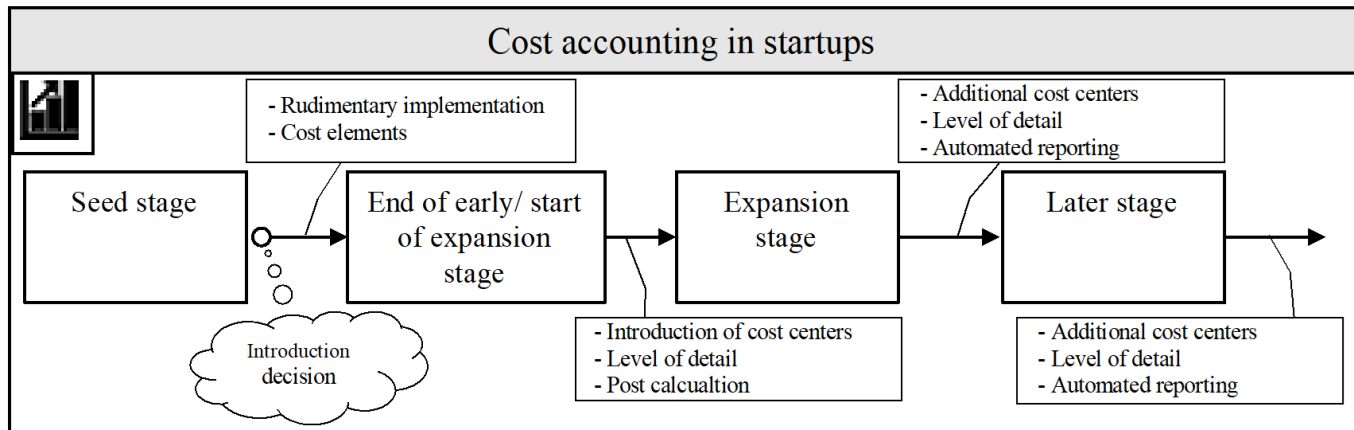


Figure 9: Cost accounting in startups*

*Own illustration.

break-even analysis. The only startup examined that consciously uses contribution margin accounting is EComm-3. The instrument of contribution margin accounting was broken up by EComm-3 and modified for the company-specific purpose. PaaS/SaaS-1 supports this approach and emphasizes that "you have to break up the theoretical constructs to make them usable for the corresponding case."⁴⁸⁸

5. Discussion

This study was conducted to investigate the implementation of financial planning and cost accounting instruments in startups, depending on their development stages. For this purpose, semi-structured interviews with executives from startups of different development stages, industries, and sizes as well as an external expert were conducted to ensure a heterogeneous database.

In the first part of this thesis, the implementation of financial planning along the development phases was analyzed. The results indicate a strong contrast between the startups examined from the end of the early and the start of the expansion stage regarding the fundamental decision to introduce financial planning. The findings suggest that the underlying form of financing influences the decision to adopt financial planning: bootstrapped startups introduce financial planning at the outset less frequently than venture capital-backed startups. This result is consistent with Davila and Foster's finding that bootstrapped startups often introduce MCSs, such as financial planning, later in their development.⁴⁸⁹ Davila and Foster explain the earlier adoption point of venture capital-backed startups with their often negative cash flow and thus the necessity to evaluate the impact of expenditures as part of the financial planning and to determine the cash runway

in order to prevent illiquidity.⁴⁹⁰ In line with Davila and Foster's explanations, the results of this thesis indicate that bootstrapped startups tend to focus their attention on the operational expansion of the company. In the earlier stages of development, therefore, the business evaluation of the tax advisor and the certainty of a positive cash flow prove to be sufficient in the area of financial management.

Second, the results reveal a consistent approach among the startups to the fundamental implementation of financial planning irrespective of their development stage or associated industry. Here, the startups initially carry out assumptions and objectives planning, upon which the revenues, costs, investments, and the necessary financing to achieve these objectives are planned. Using this as a planning basis, the three main planning components, consisting of the balance sheet, income statement and cash flow, are planned by all startups, as illustrated in Figure 7 in section 4.1.4. This uniform approach to financial planning along the development stages, without considering the level of detail and implementation of the individual planning instruments, is in line with expectations and is also consistent with Gansel's information flow model of financial planning for newly founded companies from section 2.3.2.1.⁴⁹¹ An explanation for this result lies in the creation of the necessary planning transparency for internal and external stakeholders. With the aid of this planning scheme, the startups can disclose the figures and composition of the individual items of the balance sheet, income statement, and cash flow in detail and thus make them more comprehensible and justifiable for the stakeholders. Furthermore, this approach offers the basis for a dynamic financial planning perspective, as already carried out by the startups during their initial planning implementation. Consequently, the effects of changes in the basic planning, such as in costs, on the other basic planning elements as well as on the balance sheet, income statement

⁴⁸⁸EComm-3, para.34.

⁴⁸⁹Cf. Davila & Foster, 2007, pp.918ff.

⁴⁹⁰Cf. *ibid.*, p.921.

⁴⁹¹Cf. Gansel, 2005, p.7.

and cash flow can be identified on a formula basis. A dynamic design according to this approach thus serves on the one hand as an instrument for evaluating potential decisions with regard to effects on the company's financial structure, and on the other hand as an instrument for performing various scenario analyses.

Regarding the timeliness of planning, the results similarly show that startups conduct both short-term and long-term financial planning regardless of their development stage. Long-term planning serves the company's strategic orientation and is particularly interesting for the investors to assess the value increase of the startup in view of a future exit. Due to the high degree of uncertainty in long-term planning, resulting from the continuously changing market and competitive conditions, and the high growth rates, the focus of the startups lies on short-term planning along all development stages. This result is consistent with the findings of Granlund and Taipaleenmäki, namely that "especially due to high environmental uncertainty, the time scope of planning in [new economy firms] is typically so short that long-term strategic financial planning deserves limited attention."⁴⁹²

Besides the fundamentally uniform financial planning approach, the results show development stage and industry-related commonalities and differences in implementing the individual planning instruments in the third step.

In the assumptions and objectives planning, which form the basis of planning, the results indicate an initially uniform approach of the startups. This planning step occurs in all startups with a top-down approach by the management and the investors. Operative initiatives are only included in the planning of short-term objectives in the later stage. An explanation for the linkage of the top-down and bottom-up approach in the later stage lies in the very large and complex corporate structure of the startups from this development stage with several business models and international locations. Consequently, the planning top line usually has detailed information about the market and competitive developments, but also information deficits about operational potentials and restrictions. Therefore, this information enters the planning process in a bottom-up approach alongside the market and competition analysis, to increase planning accuracy and thus achieve a more realistic future picture of the company. This dual approach is not yet necessary for the interviewed startups from the early and expansion stage, since the management can still oversee the operational business despite the growing corporate structure. Nevertheless, this dual perspective is also relevant for startups, especially from the expansion stage, with an already very large corporate structure and several business models or international locations, to consider the operational potentials and restrictions still adequately in the planning. In this respect, the need for MCSs to ensure an adequate information flow along the company hierarchies becomes apparent once again.

As regards revenue planning, the results reveal differences in implementation according to different development

phases, revenue volume and industry. The startups from the end of the early and the start of the expansion stage frequently plan their revenues based on an investor-driven bottom-up approach. Here, the startups project their revenues based on marketing indicators such as the conversion rate or the customer lifetime value, ratios such as the marketing effort to revenue ratio, or the existing and planned contracts with customers for business models with very few customers. This procedure is in line with the expectations, as there are few historical values at the end of the early and the start of the expansion stage which can be used to derive revenues from existing and planned market shares in a top-down approach. In the expansion and later stage, the results indicate a top-down revenue planning, where the revenues are planned from the targeted market share or determined by a fixed revenue volume. The startups examined justified this approach with their high revenue volume and existing historical values. Accordingly, it can be concluded that startups in the expansion stage with low revenue volumes and few historical values also regularly use a bottom-up approach for revenue planning. Based on this top-down revenue planning, the necessary number of orders or customers is determined by key figures such as the average order volume in e-commerce or the average customer lifetime value in the PaaS/SaaS-specific area. The results from the expansion stage also show that startups with a business model with few customers (as is often the case in the PaaS/SaaS-specific B2B area) also use a bottom-up approach in addition to the top-down approach for short-term revenue planning. This enables detailed planning of the revenues from existing customers through contracts and the execution of business cases for the revenues of planned customers. This procedure is also in line with expectations since the few but more valuable customers allow more accurate revenue forecasts in a bottom-up than in a top-down approach, and therefore the short-term future can be better depicted in this way.

Furthermore, the findings from the revenue planning indicate industry-specific differences in planning. Here, PaaS/SaaS startups from the B2B area mainly operate with recurring revenues and use customer-based figures for planning, such as the average customer lifetime value or existing and planned contracts with customers. Conversely, e-commerce startups mainly operate with non-recurring revenue models and use order-based figures such as the average order volume or the average order value per good to plan the necessary sales.

In terms of cost planning, the results show that the startups from the end of the early and the start of the expansion stage plan their costs independently of departments in terms of a manageable cost block. This manageable planning is attributable on the one hand to the cost structure in digital business models with many fixed and few variable costs and on the other hand to the still small size of the company in this stage. A further reason is the fact that company departments, which are closely linked to the company size, are not yet explicitly integrated and defined, thus not requiring detailed planning of departmental budgets. In the expansion stage,

⁴⁹²Granlund & Taipaleenmäki, 2005, p.35.

the cost planning is much more detailed and department-dependent because of the further increase in the company size and the more complex company structure. Here, the first planning automation is partially integrated based on the sales planning, for example through cost drivers, which allow the planning of department-specific costs. This planning automation is justified by the rapid growth and the associated higher planning effort, ensuring that planning remains manageable even in the subsequent expansion of the company. Accordingly, the results reveal that cost planning in the later stage is fully automated via, for instance, the further expansion of department-specific cost drivers or via queries from the ERP system.

In the final two components of basic planning, investment and financing planning, the planning is primarily based on the assumptions and objectives planning of the management and investors in all startups. Differences between the development stages result from the type and the volume of investments and financings.

The results suggest that the investment volume increases along the development stages due to the large and sustained growth of the startups, resulting in necessary investments in larger office space or new locations. At the end of the early and the start of the expansion stage, this investment volume is still limited due to the quantitatively smaller financing rounds, thus investments are primarily made in the further development of the offered product or service. In the expansion stage, investments are made in the scaling of the business model, thus higher investment volumes are already made in the development of new product variants, new office space, and, if possible, entry into new markets. In the later stage, the investment volume is significantly higher again, so that the management plans investments in new, possibly international, locations, warehouses, or the development and establishment of new business models.

The financing plan depends on all previously considered plans, thus the necessary resources for executing these plans are projected here. The results show, in accordance with the theoretical foundations, that financing planning in the early and expansion stage occurs through bootstrapping or venture capital with a typical cycle of 12 to 18 months. In the later stage after the IPO, the financing planning is carried out via the issuance of shares to investors or often also via the company's positive cash flow.

Building on the instruments of the basic planning, the results reveal that all startups use the dynamic design of the planning to formally project the balance sheet, income statement, and cash flow. The focus of the startups lies, in accordance with Davila and Foster, in particular on the cash flow planning to determine the cash runway and thus the latest point in time for a follow-up financing round to avoid illiquidity.⁴⁹³

Finally, the results indicate phase-specific development steps in the implementation of financial planning. Towards

the end of the early and the start of the expansion stage, particular attention is paid to dynamic implementation with an accurate depiction of the operating business. As part of the dynamic design, the interdependencies and interrelationships of the individual planning instruments are presented in a formula-based manner to enable the rapid mapping of the consequences of individual measures and decision-making. Ensuring a realistic presentation of the operating business primarily relates to short-term financial planning, whereby the accruing revenues and costs for the upcoming months are projected as closely as possible to the period to enable the correct presentation of the cash flow. Towards the expansion stage, planning becomes much more detailed and comprehensive. Here, the findings show that planning is carried out across the company on a departmental basis. In order to manage this planning effort and ensure future manageability, the first planning automation is included. Towards the later stage, the level of detail is again significantly increased due to multiple business models and international locations, so that planning can only be managed through further automation. Another focus is on planning consistency, to make the planning more comparable and transparent for stakeholders. The results suggest that the expansion of planning consistency continues even after the later stage. The identified development steps between the development stages correspond to the expectations. Given the increasing planning complexity, as the company grows, there is still a need to automate planning in order to maintain the planning's accuracy and transparency, so that the identified development steps correspond to this expectation.

In the second part of this thesis, the implementation of cost accounting along the development stages was analyzed. The first finding here is that all startups have integrated cost accounting, but the implementation remains rudimentary in the earlier development stages. In this regard, the startups pursue the objective of enhancing the transparency of the costs to enable, for instance, target-actual comparisons with the planned costs without delving into the details. This implementation is consistent with the finding of Granlund and Taipaleenmäki that cost accounting generally receives less attention in new economy firms than financial planning.⁴⁹⁴ This is primarily caused by the digital business model of the startups: especially in the PaaS/SaaS segment, the incurred costs, consisting primarily of personnel, are difficult to allocate to a single service for a customer. Conversely, the required time for such cost accounting makes the effort-benefit ratio disproportionate, and the startups therefore refrain from implementing cost accounting down to a single cost object. In the e-commerce segment, the startups generally act as retailers, thus the goods sold are not manufactured in-house but rather purchased ready-made and subsequently resold with a margin adjusted to the respective market. Consequently, the model of classic cost accounting as used in medium-sized production companies does not apply either in this case.

⁴⁹³Cf. Davila & Foster, 2007, p.919.

⁴⁹⁴Cf. Granlund & Taipaleenmäki, 2005, p.34.

Second, in contrast to financial planning, the startups do not pursue a uniform approach to cost accounting along the development stages, but rather different procedures depending on the company size. Here, the startups from the end of the early and start of the expansion stage summarize the incurred cost elements without splitting them further. This rudimentary cost accounting procedure can be explained by the cost planning approach at the end of the early and the start of the expansion stage, where only the individual cost elements are planned independently of the departments. Thus, this cost overview supplies the necessary transparency to carry out target-actual comparisons with the planned costs. Towards the expansion stage, the level of detail of cost accounting increases significantly, resulting in the establishment of cost centers in line with the functional company view, where the incurred cost elements are fully booked according to their origin. This procedure can be explained by the company's size: a simple overview of cost elements becomes insufficient for transparent cost accounting as the volume of costs increases with the size of the company and the complexity of its structure. Consequently, as in cost planning, the costs incurred are booked to the corresponding departments to enable target-actual comparisons with the planned costs and, if necessary, to adjust the plan. In the same way, cost accounting is also carried out in the later stage, with a further increase in the level of detail, by differentiating between business models and the country-specific perspective. However, the results show that the cost and performance control of the startups from the later stage is more frequently carried out via automated business analytic reports, where cost accounting forms the basis, but is seen by the startups themselves as a means to an end. The level of detail of cost accounting and the automated reporting for cost and performance control continues to be driven forward even after the later stage.

Furthermore, the results show that cost object accounting is occasionally established in startups in the context of post-calculations of project budgets. Here, project-specific expenses are booked to the project in addition to the cost center. Moreover, the employees working on a specific project book their time to the project to ultimately check compliance with the budget after certain milestones or completion of the project. Consequently, cost object accounting is not entirely unimportant for startups, but generally plays a rather subordinate role.

Finally, the results in partial cost accounting suggest that especially startups with the objective of profitability integrate a break-even analysis. This result is in line with the expectation, as the break-even analysis serves to investigate profitability and therefore represents a suitable instrument for these startups. Regarding contribution margin accounting, the results indicate that startups tend to integrate this partial cost accounting instrument less frequently. Here, the contribution margin accounting is split according to the company-specific purpose for appropriate comparisons of specific product or project costs from the average costs. Due to time restrictions during the interviews, less attention was paid to the

partial cost accounting, thus the completeness of the findings cannot be guaranteed.

Overall, it can be concluded regarding a comparison of the implementation of financial planning and cost accounting that the implementation of financial planning in startups along all development stages is significantly more mature and detailed than cost accounting and generally perceived as a more important instrument by startups. This finding is consistent with Davila and Foster's quantitative result that financial planning is the earliest and most frequently adopted MCS category by startups and thus holds the greatest importance for startups.⁴⁹⁵

Finally, the results suggest that the necessity of human resource MCSs for establishing formal communication along the company hierarchies arises in the expansion stage when exceeding a certain company size. These MCSs are especially important for financial planning, ensuring that all employees are informed about objectives and budget restrictions and operate accordingly. This result is consistent with Davila's findings that human resource MCSs are crucial for regulating the growth of startups.⁴⁹⁶

When interpreting the results of this thesis, further limitations should be kept in mind besides the previously described restrictions of partial cost accounting. During the data analysis, the reliability of the data was not tested, meaning that the data were not coded again by an independent second party and checked for agreement. Thus, the reliability of the data can only be assumed. Since only one interview was conducted with each startup, only a few factors influencing the implementation of financial planning and cost accounting instruments could be examined. When interpreting the results, it should be noted that, besides the structural organizational factors examined, there are additional influences from the organizational environment, such as market and competitive considerations, which were not in the focus of this thesis. Furthermore, it is important to note that a limited number of interviews were conducted. Especially within the expansion and later stages, only two startups were interviewed in each case, and therefore the results should not be generalized in a statistical sense. Instead, the results of this study should be understood as the first of their kind with regard to the qualitative analysis of the implementation of MCSs, using the example of financial planning and cost accounting, depending on the development stages of the startups.

6. Conclusion

The aim of this master's thesis was to answer the research question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages. For the investigation of this question, eleven semi-structured interviews were conducted with executives from startups in different development stages and industries, as well as with an external expert.

⁴⁹⁵Cf. Davila & Foster, 2007, p.934.

⁴⁹⁶Cf. Davila, 2005, p.227.

The analysis of the interviews revealed that startups follow a uniform approach when implementing financial planning along the development stages. This planning process involves, in the first step, the planning of short and long-term assumptions and objectives of the management and the investors. Subsequently, the revenues, costs, investments, and necessary financings are planned based on these assumptions and objectives. Building on this planning basis, a dynamic planning process across all development stages is used to set up the three main planning components, consisting of balance sheet, income statement and cash flow, in a formula-based manner. Apart from this uniform approach, the results show that these individual financial planning instruments differ in their implementation and level of detail between the development phases. Here, the identified differences in the implementation are associated with the company size, the business model expansion, and the respective industry of the startups. Finally, fundamental priorities and development steps in the implementation of financial planning between the development stages could be identified. The findings demonstrate that towards the end of the early and the beginning of the expansion stage, the startups examined paid particular attention to a dynamic design of the planning and the appropriate representation of the operating business, without making the planning too detailed. In the expansion stage, planning becomes much more integrated and automated as the company's size increases sharply and the company structure becomes more complex. Finally, in the later stage, as the startups continue to grow and integrate new business models, the findings indicate that the level of detail and automation of planning further increases. Moreover, the results suggest that the later stage startups examined prioritize increasing planning consistency to make plans more comparable.

As regards the implementation of cost accounting, the results show that the startups examined from the end of the early and the start of the expansion stage only differentiate between the incurred cost elements at the beginning due to the still low cost volume. This pure cost element calculation proves to be sufficient initially, as it provides the necessary cost transparency. With growing company size and cost volumes, the level of detail increases in order to ensure cost transparency. Accordingly, the findings show that the incurred cost elements in the expansion and later stage are fully allocated to functional cost centers without further dividing the costs into individual cost objects. The findings further indicate that later-stage startups increasingly use automated business analysis reports for cost and performance control, besides cost element and cost center accounting.

Overall, the results of this thesis contribute to the expansion of the existing literature on MCSs in startups. According to the author's knowledge, this study represents the first investigation of the cross-development-stage implementation of an MCS and a subset of an MCS in startups. Accordingly, this study makes an important contribution to the study of MCSs in startups by examining, for the first time, the link between the already studied influence variables on the adoption and impact of MCSs in startups with the implementation

of MCSs.

However, when interpreting these results, the limited number of startups interviewed must be considered; therefore, the results cannot be generalized in a statistical sense. Nevertheless, this limitation also offers potential for future research.

This study offers a first overview of the implementation of financial planning and cost accounting instruments along the startup development stages. It was demonstrated that startups focus their attention on financial planning and consider cost accounting mainly as a support instrument for controlling costs in financial planning. Considering the limited number of interviews, especially in the expansion and later stage, future qualitative studies should further examine the implementation of financial planning with respect to the specific development stages. Moreover, this study has highlighted the need for human resource control systems for formal communication across multiple hierarchical levels. Especially when the company exceeds a certain size, it was found, in line with previous research, that employees in operational hierarchy levels often do not receive information about financial planning. This can result in actions being taken that lead to planning deviations, which could be avoided by improved corporate communication. Future research could investigate the qualitative implementation of human resource control systems along the development stages and elaborate a cross-phase overview of the implementation and necessary development steps. Such an overview would provide a guide for startups in the further development of human resource control systems, and also the opportunity to compare the qualitative implementation of different MCSs between the development stages. Finally, this study offers the link between the previously studied influence variables for integration and the impact of MCSs in startups. Considering the identified phase-specific qualitative differences in the implementation of MCSs, future research could investigate the impact of differences in the implementation of MCSs on the development of startups, for example, in terms of their growth or value

References

- Abernethy, M. A., & Chua, W. F. (1996). A field study of control system "redesign": the impact of institutional processes on strategic choice. *Contemporary Accounting Research*, 13(2), 569–606.
- Adams, W. C. (2015). Conducting semi-structured interviews. In K. E. Newcomer, H. P. Hatry, & S. Wholey Joseph (Eds.), *Handbook of practical program evaluation* (4th ed., pp. 492–505). San Francisco: Wiley.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154–1184.
- Amornsiripantich, N., Gompers, P. A., & Xuan, Y. (2019). More than money: venture capitalists on boards. *The Journal of Law, Economics, and Organization*, 35(3), 513–543.
- Anthony, R. N. (1965). Planning and control systems: A framework for analysis. In *Harvard business school press*. Boston.
- Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, 42(2), 139–160.
- Becker, H. P., & Peppmeier, A. (2018). *Investition und Finanzierung: Grundlagen der betriebswirtschaftlichen Finanzwirtschaft* (8th ed.). Wiesbaden.
- Blank, S. (2013). Why the lean start-up changes everything. *Harvard Business Review*, 91(5), 63–72.
- Bourne, M. (2014). Managing through uncertainty. In D. Otley & K. Soin (Eds.), *Management control and uncertainty* (pp. 97–111). Palgrave Macmillan, London.
- Breuer, C. (2021). *Finanzplanung*. <https://wirtschaftslexikon.gabler.de/definition/finanzplanung-32228>.
- Burnard, P. (1991). A method of analysing interview transcripts in qualitative research. *Nurse Education Today*, 11(6), 461–466.
- Cassar, G. (2009). Financial statement and projection preparation in start-up ventures. *The Accounting Review*, 84(1), 27–51.
- Cassar, G., & Gibson, B. (2008). Budgets, internal reports, and manager forecast accuracy. *Contemporary Accounting Research*, 25(3), 707–738.
- Chenhall, 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*, 28(2-3), 127–168.
- Coenenberg, A. G., Fischer, T. M., & Günther, T. (2016). *Kostenrechnung und Kostenanalyse* (9th ed.). Stuttgart.
- Cohen, S. (2013). What do accelerators do? Insights from incubators and angels. *Innovations: Technology, Governance, Globalization*, 8(3-4), 19–25.
- Csaszar, F., Nussbaum, M., & Sepulveda, M. (2006). Strategic and cognitive criteria for the selection of startups. *Technovation*, 26(2), 151–161.
- Cumming, D. J., & Johan, S. (2008). Information asymmetries, agency costs and venture capital exit outcomes. *Venture capital*, 10(3), 197–231.
- Cumming, D. J., & MacIntosh, J. G. (2003). Venture-capital exits in Canada and the United States. *The University of Toronto Law Journal*, 53(2), 101–199.
- Davila, A., & Foster, G. (2005). Management accounting systems adoption decisions: evidence and performance implications from early-stage/startup companies. *The Accounting Review*, 80(4), 1039–1068.
- Davila, A., & Foster, G. (2007). Management control systems in early-stage startup companies. *The Accounting Review*, 82(4), 907–937.
- Davila, A., Foster, G., & Gupta, M. (2003). Venture capital financing and the growth of startup firms. *Journal of Business Venturing*, 18(6), 689–708.
- Davila, A., Foster, G., & Jia, N. (2010). Building sustainable high-growth startup companies: management systems as an accelerator. *California Management Review*, 52(3), 79–105.
- Davila, A., Foster, G., & Jia, N. (2015). The valuation of management control systems in start-up companies: international field-based evidence. *European Accounting Review*, 24(2), 207–239.
- Davila, A., Foster, G., & Li, M. (2009). Reasons for management control systems adoption: insights from product development systems choice by early-stage entrepreneurial companies. *Accounting, Organization and Society*, 24(3-4), 322–347.
- 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(3), 223–248.
- DeTienne, D. R. (2010). Entrepreneurial exit as a critical component of the entrepreneurial process: Theoretical development. *Journal of Business Venturing*, 25(2), 203–215.
- Doz, Y. (2011). Qualitative research for international business. *Journal of International Business Studies*, 42(5), 582–590.
- Dresing, T., & Pehl, T. (2012). *Praxisbuch Interview & Transkription: Regelsysteme und Anleitungen für qualitative ForscherInnen* (4th ed.). Marburg.
- Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A., & Dushnitsky, G. (2017). A review and road map of entrepreneurial equity financing research: venture capital, corporate venture capital, angel investment, crowdfunding, and accelerators. *Journal of Management*, 46(6), 1820–1853.
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115.
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research*, 20(4), 263–282.
- Flamholtz, E. G., Das, T. K., & Tsui, A. S. (1985). Toward an integrative framework of organizational control. *Accounting, Organizations and Society*, 10(1), 35–50.
- Gansel, B. B. (2005). *Toward a framework of financial planning in the new venture creation*. Magdeburg.
- Giardino, C., Bajwa, S. S., Wang, X., & Abrahamsson, P. (2015). Key challenges in early-stage software startups. In C. Lassenius, T. Dingsøyr, & M. Paasivaara (Eds.), *Agile processes in software engineering and extreme programming* (pp. 52–63). Springer, Cham.
- Granlund, M., & Taipaleenmäki, J. (2005). Management control and controllership in new economy firms – a life cycle perspective. *Management Accounting Research*, 16(1), 21–57.
- Greiner, L. E. (1998). Evolution and revolution as organizations grow. *Harvard Business Review*, 76(3), 55–64.
- Hahn, C. (2018). *Finanzierung von Start-up-Unternehmen: Praxisbuch für erfolgreiche Gründer: Finanzierung, Besteuerung, Investor Relations* (2nd ed.). Wiesbaden.
- Hartmann, F., Kraus, K., Nilsson, G., Anthony, R., & Govindarajan, V. (2021). *Management control systems* (2nd ed ed.). London.
- Hellmann, T., & Puri, M. (2002). Venture capital and the professionalization of start-up firms: empirical evidence. *The Journal of Finance*, 57(1), 169–197.
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2017). Code saturation versus meaning saturation: how many interviews are enough? *Qualitative Health Research*, 27(4), 591–608.
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288.
- Isaksson, A. (2007). Exit strategy and the intensity of exit-directed activities among venture capital-backed entrepreneurs in Sweden. In G. N. Gregoriou, M. Kooli, & R. Kraeußl (Eds.), *Venture capital in europe* (pp. 143–156). Butterworth-Heinemann, Oxford.
- Kaplan, S. N., & Strömberg, P. (2001). Venture capital as principals: contracting, screening, and monitoring. *The American Economic Review*, 91(2), 426–430.
- Kaplan, S. N., & Strömberg, P. (2004). Characteristics, contracts, and actions: evidence from venture capitalist analyses. *The Journal of Finance*, 59(5), 2177–2210.
- Kollmann, T. (2019). *E-Entrepreneurship: Grundlagen der Unternehmensgründung in der Digitalen Wirtschaft* (7th ed.). Wiesbaden.
- Kollmann, T., Jung, P. B., Kleine-Stegemann, L., Ataee, J., & de Cruppe, K. (2020). Deutscher Startup Monitor 2020: Innovation statt Krise. In *Bundesverband Deutsche Startups e.V.*
- Kollmann, T., Stöckmann, C., Hensellek, S., & Kensbock, J. (2016). Deutscher Startup Monitor 2016: Der perfekte Start. In *Bundesverband Deutscher Startups e.V.*
- Kuckartz, U. (2018). *Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung* (4th ed.). Weinheim.
- Lange, G. S., & Johnston, W. J. (2020). The value of business accelerators and incubators – an entrepreneur's perspective. *Journal of Business & Industrial Marketing*, 35(10), 1563–1572.
- Langfield-Smith, K. (1997). Management control systems and strategy: A critical review. *Accounting, Organizations and Society*, 22(2), 207–

- 232.
- Luger, M. I., & Koo, J. (2005). Defining and tracking business start-ups. *Small Business Economics*, 24(1), 17–28.
- Lukka, K., & Granlund, M. (2003). Paradoxes of management and control in a new economy firm. In A. Bhimani (Ed.), *Management accounting in the digital economy* (pp. 1–16). Oxford University Press.
- Malmi, T., & Brown, D. A. (2008). Management control systems as a package – Opportunities, challenges and research directions. *Management Accounting Research*, 19(4), 287–300.
- Mayring, P. (2015). *Qualitative Inhaltsanalyse: Grundlagen und Techniken* (12th ed.). Weinheim.
- Mell, P., & Grance, T. (2011). *The NIST definition of cloud computing*. National Institute of Standards and Technology, Gaithersburg.
- Mensch, G. (2008). *Finanz-Controlling- Finanzplanung und -kontrolle: Controlling zur finanziellen Unternehmensführung* (2nd ed.). München.
- Merchant, K. A., & Otley, D. (2006). A review of the literature on control and accountability. *Handbooks of management accounting research*, 2, 785–802.
- Merchant, K. A., & Van der Stede, W. A. (2017). *Management control systems: performance measurement, evaluation and incentives* (4th ed.). Harlow.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: a methods sourcebook* (3rd ed.). Thousand Oaks.
- Morrisette, S. G. (2007). A profile of angel investors. *The Journal of Private Equity*, 10(3), 52–66.
- Otley, D. (1994). Management control in contemporary organizations: towards a wider framework. *Management Accounting Research*, 5(3), 289–299.
- Otley, D. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, 10(4), 363–382.
- Otley, D. (2016). The contingency theory of management accounting and control: 1980-2014. *Management Accounting Research*, 31, 45–62.
- Passaro, R., Rippa, P., & Quinto, I. (2016). The start-up lifecycle: an interpretative framework proposal. *RSA AilG, Bergamo*, 1–25.
- Perridon, L., Steiner, M., & Rathgeber, A. W. (2017). *Finanzwirtschaft der Unternehmung* (17th ed.). München.
- Salamzadeh, A., & Kesim, H. K. (2015). Startup companies: life cycle and challenges. In *Proceedings of the 4th international conference on employment* (pp. 1–11). Belgrade.
- Sammer, W. (2021). *Startup Life is a Rollercoaster: Der Startup-Lebenszyklus*. <https://ut11.net/de/blog/startup-phasen/>.
- Sandino, T. (2007). Introducing the first management control systems: evidence from the retail sector. *The Accounting Review*, 82(1), 265–293.
- Schachel, H. (2019). *Management control systems in uncertain environments: three essays on innovation and entrepreneurship control*. Berlin.
- Schachel, H., Lachmann, M., Endenich, C., & Breucker, O. (2021). The importance of management control systems for startup funding – empirical evidence from external financiers. *Journal of Accounting & Organizational Change*, 17(5), 660–685.
- Schinnerl, R. (2018). *Erfolgreich in die Selbstständigkeit: Von der Geschäftsidee über den Businessplan zur nachhaltigen Unternehmensgründung*. Wiesbaden.
- Simons, R. (1995). Levers of control: how managers use innovative control systems to drive strategic renewal. In *Harvard business school press*. Boston.
- Skala, A. (2019). *Digital startups in transition economies: challenges for management, entrepreneurship and education*. Warsaw.
- Spender, J.-C., Corvello, V., Grimaldi, M., & Rippa, P. (2017). Startups and open innovation: a review of the literature. *European Journal of Innovation Management*, 20(1), 4–30.
- Strauß, E., & Zecher, C. (2013). Management control systems: a review. *Journal of Management Control*, 23(4), 233–268.
- Tech, R. P. G. (2014). Crowdfunding hardware startups in Germany. In *Proceedings of the european conference on information systems 2014* (pp. 1–9). Tel Aviv.
- Uskova, M., & Schuster, T. (2020). *Finanzplanung, Investitionscontrolling und Finanzcontrolling*. Wiesbaden.
- Wang, X., Edison, H., Bajwa, S. S., Giardino, C., & Abrahamsson, P. (2016). Key challenges in software startups across life cycle stages. In H. Sharp & T. Hall (Eds.), *Agile processes in software engineering and extreme programming* (pp. 169–182). Springer, Cham.
- Weber, J. (2021). *Kostenrechnung*. <https://wirtschaftslexi-kon.gabler.de/definition/kostenrechnung-39-542>. (Accessed: 25.08.2021)
- Weber, M. (2016). *Zur Wirkung der Geschäftsmodellgestaltung auf den Unternehmenserfolg von internetbasierten, nicht börsennotierten Startups in Deutschland – eine empirische Studie*. Passau.
- Wijewardena, H., De Zoysa, A., Fonseka, T., & Perera, B. (2004). The impact of planning and control sophistication on performance of small and medium-sized enterprises: evidence from Sri Lanka. *Journal of Small Business Management*, 42(2), 209–217.
- Wöhe, G., Döring, U., & Gerrit, B. (2020). *Einführung in die allgemeine Betriebswirtschaftslehre* (27th ed.). München.
- Yin, R. K. (2009). *Case study research: design and methods* (4th ed.). Thousand Oaks.
- Zaech, S., & Baldegger, U. (2017). Leadership in start-ups. *International Small Business Journal*, 35(2), 157–177.
- Zinke, G., Ferdinand, J. P., Groß, W., Möring, J. L., Nögel, L., Petzolt, S., ... Wessels, J. (2018). *Trends in der Unterstützungslandschaft von Start-ups – Inkubatoren, Akzeleratoren und andere*. Berlin.
- Zor, U., Linder, S., & Endenich, C. (2019). CEO characteristics and budgeting practices in emerging market SMEs. *Journal of Small Business Management*, 57(2), 658–678.