Applying Lean Analytics to Performance Metrics in M&A Earnouts

- A case study for SaaS-businesses

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Abstract

Ever since the dawn of internet, a new wave of fast-growing software companies has emerged. The M&A scholars have struggled to find appropriate valuation mechanisms for unprofitable companies with ultra-high revenue growth. To overcome the uncertain future, a contractual provision called earnout is often used. An earnout is a contractual provision in a M&A-deal that states the seller of the business is to obtain additional compensation in the future if the business achieves certain metrics.

The purpose of this study is to contribute to practice and nascent literature by exploring and evaluating metrics for SaaS-companies that can be used in earnouts. The study applies Lean Anaslytics to suggest a framework for choosing what metrics to use, and discusses how to avoid sub-optimisation and metric manipulation.

In order to answer the research questions, a qualitative, exploratory and abductive methodology was used. The study combines a literature and thought leader review and interviews to explore certain areas, with a case study that applies the findings.

The study suggests that the process for determining metrics should start with the buyer's acquisitions strategy. For acquisitions where the objective is to access talent, technology or accelerate product road-map, the study has shown that earnouts in most cases not be used at all. If the acquisition is made based on financial objectives, Lean Analytics can be used to determine what stage the seller's company is in. Understanding what stage the company is in is crucial as the type of metrics that matter differ depending on stage. The study suggests that the most suitable earnout metric for M&A based on financial objectives is monthly recurring revenue (MRR). The metric must be clearly defined so it cannot be manipulated. The reason why many other metrics from Lean Analytics cannot be used is that they are vulnerable to manipulation and can restrict the operating freedom for the entrepreneur.

Keywords: Lean Analytics, mergers and acquisitions, SaaS, earnouts, SaaS metrics, startups, technology, venture capital.

Sammanfattning

Sedan början av internet har en stor mängd snabbväxande mjukvarubolag vuxit upp. Forskare och utövare av företagsförvärv har brottats med att hitta ett lämpligt sätt att värdera olönsamma bolag med mycket hög omsättningstillväxt då normala finansiella modeller inte kan appliceras. För att brygga risken med den osäkra framtiden vid förvärv av denna typ av företag används en prismekanism som kallas för tilläggsköpeskilling. Tilläggsköpeskilling är en prismekanism som används för att säljaren av företaget ska få ytterligare kompensation om de når upp till vissa speciella prestationsmått, efter en viss tid.

Syftet med studien är att bidra till innovationslitteratur, och applikationen av den, genom att utforska och utvärdera prestationsmått som mjukvarubolag med prenumerationsmodeller kan använda vid transaktione r med tilläggsköpeskilling. Uppsatsen applicerar Lean Analytics för att föreslå ett ramverk som kan användas för att välja rätt prestationsmått, samt diskuterar hur man kan undvika suboptimering och manipulation av prestationsmåtten.

För att svara på frågeställningarna har författaren använt en kvalitativ, explorativ och abduktiv metod. Uppsatsen kombinerar en litteraturöversikt och intervjuer för att utforska vissa områden, med en fallstudie för att applicera upptäckterna.

Denna studie föreslår att processen av att bestämma prestationsmått i tilläggsköpeskilling börjar med köparens förvärvsstrategi. Om målet med förvärvet är att få tillgång till humankapital, teknologi eller att accelerera produktutvecklingen, så har studien visat att tilläggsköpeskilling inte bör användas alls. Om det är finansiella mål med förvärvet så kan Lean Analytics användas för att bestämma vilket skede säljarens bolag är i. Detta då relevanta nyckeltal varierar mellan olika skeden som mjukvarubolag går igenom. Studien visar att det bäst lämpade prestationsmåttet är månadsvis återkommande prenumerationsintäkter (MRR). Nyckeltalet bör tydligt definieras så att det inte kan manipuleras med bokföring. Anledningen till att andra nyckeltal från Lean Analytics inte bör användas är att de är sårbara för manipulation och kan begränsa den operativa friheten.

Nyckelord: Lean Analytics, förvärv och fusioner, mjukvarubolag, tilläggsköpeskilling, nyckeltal, SaaS, teknologi, riskkapital, .

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Vocabulary

SaaS
Software-as-a-Service is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. I

KPI
Key Performance Indicator. The metrics that are important when analysing how a company is doing.

GAAP
Generally Accepted Accounting Principles is the accounting standard adopted by the U.S. Securities and Exchange Commission (SEC). It is a standard framework of guidelines for financial accounting with metrics such as revenue, EBIT and profit.

CRM
Customer relationship management is an approach to manage a company's interaction with current and potential customers. Often referred to as the software solution where customer data is stored and accessed.

M&A Mergers and acquisitions is a general term that refers to the consolidation of companies or assets.

Corporate Development
Corporate development refers to the planning and execution of strategies to meet the company's objectives. For large technology companies, this is the division who handles mergers and acquisitions within the company.

Earnout An earnout is a contractual provision in M&A stating that the seller of a business is to obtain additional compensation in the future if the business achieves certain objectives.

The Lean Startup The Lean Startup is a methodology for developing businesses and products, which aims to shorten product development cycles and reduce waste. It attempts to accomplish this by adopting a combination of hypothesis-driven experimentation, iterative product releases, and validated learning.

Lean Analytics A develoipment of The Lean Staetup. The core idea behind Lean Analytics is that by knowing the kind of business you are, and the stage you're at, you can track and optimise the One Metric That Matters to your startup right now.

Chapter 1

Introduction

The introduction aims to give the reader a general understanding of the topic as proper background to the problems and research that the thesis explores. The purpose and research questions are presented as well as important background information

1.1 Backgroud

Since the late 1990s, a new type of company has emerged: the fast-growing technology startup. These fast-growing startups are usually highly unprofitable and often show close to no revenue. Yet, what originally looked like ludicrous pyramid schemes with no signs of profitability, has turned into the hegemonic incumbents of the 21st century. These new technology ventures require unconventional and sophisticated frameworks to manage and understand [16]. The classic management literature has been geared toward manufacturing companies and is insufficient to understand these nascent and disruptive organisations [37]. The emergence of technology startups has also brought a new form of financing with it: venture capital. The venture capital funds invest in promising startups with the aim of reaching liquidity through an IPO or M&A [19]. As the venture capital funds seek to return money to their investors, the M&A activity for small and fast-growing technology companies has skyrocketed[6]. Traditionally, the valuation of a company has often been tied it's financials such as revenue, profit or cash-flow . However, this is not an applicable model when a company may have very low revenue but extremely high growth [16]. A common way to overcome this problem in M&A is to use a mechanism called earnout [10]. An earnout is a contractual provision in a M&A-deal that states the seller of the business is to obtain additional compensation in the future if the business achieves certain objectives [25]. A very simplified example could be:

> A company gets sold at a valuation of £10M. The earnout provision then states that sellers will obtain an additional payment of £10M if they manage to grow revenue by 200% during the next twelve months. In this case annual revenue growth is the metric used in the earnout, 200% is the milestone and one year is the length of the earnout [40]

The core problem with earnouts is that they are designed for traditional profitable companies but applied for early stage technology businesses [40]. Since a significant share of earnouts lead to disagreement over outcome, many argue that earnouts simply converts today's disagreement over price into tomorrow's legal litigation over the outcome [25]. Clearly, the only parties benefiting from litigations are the lawyers who write the contracts and can earn additional fees. Not only is this bad for the company itself, it is also hindering innovation and job creation.

During the past 15 years, a new field of management literature has been written to help entrepreneurs manage the risk and high uncertainty that is in the nature of startups. This include books like The Lean Startup, Lean Analytics, The Innovator's Dilemma, Change by Design and The Innovator's Method [20]. The author's hypothesis is that an interdisciplinary understanding of corporate finance, innovation, financial controlling and venture capital is needed to suggest the perfect earnout. This study focuses on using nascent startup literature to create a better way of valuating, selling and acquiring early stage software-as-a-service (SaaS) companies. In particular, it will focus on using tailored software metrics in earnouts as opposed to traditional accounting metrics such as: revenue, EBIT, EBITDA and profit.

1.1.1 SaaS and the subscription economy

Software as a Service (SaaS) is a software delivery model that during the past ten years has become a leading model for B2B enterprise software. Examples of leading enterprise software companies with a SaaS model are: Salesforce, Adobe, Slack and Zendesk. As opposed to the perpetual license model that was used in the beginning of the 21st century, the SaaS model is built on subscription payments [34]. It is a great example of the development of the subscription economy, which makes revenues from subscriptions rather than sales. The time period varies between businesses and type of software, but traditionally monthly or annual subscriptions are used. This leads to a customer acquisition model where the company pays upfront for acquiring customers and get payed back in revenue over time [44]. This model affects both the company's cash flow as well as the metrics used in financial controlling. Cash-flow deficit during the growth is usually funded by venture capital [13]. The subscription model requires different metrics than a traditional company due to the recurring revenue model, scalability and different cost-structure [32]. Since the metrics for SaaS-companies differs from traditional manufacturing businesses, a new and way of setting metrics in earnouts that is adapted to subscription models is needed.

1.1.2 Why metrics matter

The importance of measuring metrics that matter was observed already in 1966 by Peter Drucker with his famous quote: "What gets measured gets improved". [1]. Obsessing over a few key metrics will give visibility on progress, create accountability among employees and provide a clear focus for the organisation [31]. Today, organisations have better capabilities than ever to develop sophisticated scorecards from data analysis. Organisations must develop capabilities to analyse data and turn it into actionable metrics that matter. Every business leader today should ask themselves: how do we know we are improving

things that matter for the overall success of the business [16]? Increased accuracy, accessibility, predictive capability, cost- and time effectiveness of analysis, and talent availability has made it possible for technically savvy companies today to be data-driven and make decisions based on information as opposed to not intuition[31]. As Alistair Croll and Benjamin Yoskovitz famously put it: "Instincts are experiments. Data is proof." [16].

1.1.3 Venture capital and its implications on exits

The clear majority of fast-growing and successful early stage SaaS-businesses are funded by venture capital [13]. The institutional venture capital fund raises capital from its limited partners, such as pension funds and university endowment funds, with the aim of liquidating the fund and returning capital to the limited partners after ten years. There are three ways a venture capital fund can get return on their investment: the startup starts paying dividends, the startup goes through a merger or acquisition, or the startup goes through an Initial Public Offering (IPO)[6]. Out of these three options, paying dividends is almost never a practically viable option due to the time it takes to get cash-flow positive and the small potential return for the venture capital fund. Hence, the only way for the venture capital fund to return cash to their investors is through a liquidation event, i.e. through an IPO or M&A [19]. This fundamentally change the planned trajectory of the startup, as it will need to plan for an exit within ten years after receiving its first venture capital investment. Since most of the M&A activity is private information, the real number is much higher. This data suggest that M&A is the primary exit option for startups and a crucial element for entrepreneurs, venture capitalists and employees (whom usually are rewarded through an option scheme).

1.1.4 The earnout provision in M&A

An earnout is a contractual provision in a M&A-deal that states the seller of the business is to obtain additional compensation in the future if the business achieves certain objectives. Typically, an earnout is used to bridge the valuation gap between the acquirer and the seller, particularly for companies with high but uncertain growth [41]. The metrics are usually expressed in terms of financial goals such as revenue, net income or EBIDTA, but sometimes non-financial metrics such as product milestones are used [23]. For financial metrics, Generally Accepted Accounting Principles (GAAP) is almost always used[25]. M&A earnouts are particularly well-used for small but fast-growing technology businesses with low real assets [23].

It is of interest for both the seller and the acquirer of the business to align the metrics used in an earnout with the future success of the company. The earnout should also be structured in a way that makes it hard to reach the metrics through sub-optimisation. A common problem related to sup-optimisation is that the sellers are vulnerable to the acquirer's action and decisions post-closing [25]. For instance, there has been examples of where the acquirer allocates inadequate resources to sell the product or simply stop selling the product at all [15]. This is commonly referred to as *"The issue of control"* and is one of the main reasons why many earnouts lead to legal litigation [25]. Usually, provisions regarding good faith and reasonable effort are used to restrict the acquirer's

ability to interfere with the seller reaching the milestones. However, as mentioned begore it has been argued that an earnout simply "converts today's disagreement in price to tomorrow's litigation over the outcome". In 2013, 40% of M&A deals in USA involved some type of earnout provisions [52]. 30% of earnouts use revenue as metric, 32% use EBIDTA. Non-financial metrics are primarily used for life-science and research-driven cases where product launch and FDA-approval are the most commonly used milestones. The length of an earnout varies between 1-4 years with 56% being shorter than two years [30].

1.1.5 The Lean Startup & Lean Analytics

Eric Ries published the book The Lean Startup in 2011, in which he argues that startups should work cross-functionally, iterative and hypothesis-driven to waste as little time and resources as possible. Ries argues that startups act under conditions of extreme uncertainty and should thus focus on going through has many iterations of the "build-measure-learn" feedback-loop as possible[20]. The Lean Startup methodology has gained international acceptance and has been implemented in countless organisations [33]. Lean analytics is an expansion of the lean startup methodology focusing on the "measure" stage in the build-measure-learn cycle. The methodology focuses on finding the right and actionable metrics that matter for start-ups and to provide a methodology for setting objectives: to "draw a line in the sand". It is using building blocks from customer development, lean startup and agile development with a focus on how to set and follow-up KPIs in accordance to these methodologies. Lean analytics use the fundamental insights of The Lean Startup to propose metrics and accounting principles that are designed for the iterative nature of a startup, as opposed to the GAAP that mostly apply to traditional businesses.[16]

1.2 Problem description

Traditional valuation models based on revenue and profit are less applicable to fast-growing technology startups with low revenue and no profit [43]. To overcome this, most acquisitions use an earnout provisions to bridge the valuation gap between the seller's and the buyer's expectations of future growth [25]. However, traditional GAAP metrics such as revenue and net income are used as milestones in the contract [10]. The metrics used in earnouts will impact the seller's focus after the acquisition. Thus the problem is prevalent post-transaction. Many of these rapidly growing software startups have subscription models with recurring revenue. SaaS-companies use different metrics than GAAP to measure unit economics [**SaaS2**]. Furthermore, pre-mature scaling of technology businesses is detrimental for the company [16]. In the early stages, revenues are not necessarily the best indicators of success. Therefore, there is a need to suggest more appropriate metrics in earnouts for SaaS-businesses.

There are many actors involved in an MA for a SaaS-business: entrepreneurs, venture capitalists, corporate development departments, acquiring management and lawyers [25]. Both sides of the table need a thorough understanding of innovation, the SaaS-model, data analytics, accounting, corporate finance and legal provisions, to successfully suggest an M&A earnout provision. We can also note that a significant amount of earouts lead to

legal litigation, which clearly shows that there is a fundamental flaw with how earnouts are designed today [10]. Hence, the conclusion can be drawn that there is a huge need for cross-functional expertise in the development of the earnout, particularly for SaaS.

1.3 Purpose

The purpose of this study is to contribute to practice and nascent literature by exploring and evaluating metrics for SaaS-companies that can be used in earnouts, and in particular those presented by Lean Analytics. The study aims to suggest a framework for using earnouts in SaaS M&A that is fit for purpose and constructed for innovation rather than built from the traditional principles of accounting and finance. By doing so the author hopes to give entrepreneurs, venture capitalists and corporate development teams a better way to use earnouts in the M&A process for SaaS-businesses. By doing so, the author hopes to decrease chances of litigation and align incentives between sellers and acquirers of the company. The framework suggested in this study can in the long run boost innovation through increasing the entrepreneurs' degrees of freedom post-acquisition. It should also facilitate M&A in early stages, allowing founders and investors to find earlier exit paths which would de-risk entrepreneurship and enhance innovation. The findings are aimed to be used by all parts involved in a SaaS M&A as an interdisciplinary study aligning all parties.

1.4 Research Questions

- **RQ(1)** What performance metrics would be most appropriate to use in an earnout for SaaS-businesses?
  - What characteristics of the business needs to considered?
  - How should metrics be set to avoid one part reaching them through suboptimisation?
- **RQ(2)** How can Lean Analytics be applied to the process of determining performance metrics

1.5 Delimitations

The companies for which the earnouts will be examined should have a Software as a Service (SaaS) model in place as their primarily business model. The thesis closely examines a tailored model for metrics in earnouts, which is why the target group must be specialised for the findings to be applicable across the larger sector. SaaS-businesses are also a suitable example since the model is highly data-driven and tracking metrics are at the core of the CEOs job. SaaS reach statistical significance on their metrics early on in their trajectory and which increase the ability to be data-driven in an accurate, specific and experimental

way. Furthermore, the SaaS-businesses should have more than $50k in monthly recurring revenue (MRR). Before this stage there is rarely enough data (depending on the annual contract value) to analyse with statistical significance and therefore metrics are not yet core to the business mode. Furthermore, the thesis will only examine SaaS statups that are funded by venture capital at seed-stage and onwards. Venture capital impact the planned growth trajectory and the need to seek acquisition.

There are many intricate aspects of designing an M&A earnout such as number of tiers, earnout length, caps and thresholds, litigation clauses and post-closing operations. However, this study will only focus on the metrics used in the earnout and exclude all other parts of the earnout. The author calls upon further research to be done to examine the legal implications of using non-GAAP metrics in earnouts, which is out of scope in this study.

1.6 Thesis outline

1.6.1 Introduction

The introduction aims to give the reader a general understanding of the topic as proper background to the problems and research that the thesis explores. The purpose and research questions are presented as well as important background information.

1.6.2 Methodology

The methodology chapter aims to present and justify the choice of research methodology that has been applied in this study. The research strategy, research methodology, research design are presented followed by a description of data collection and data analysis. The chapter ends with a discussion around the study's trustworthiness.

1.6.3 Theory

This chapter presents the theoretical framework on which the empirical data and analysis build upon. It aims to give the reader the necessary theoretical building blocks on which the argumentation and conclusions are based in the later chapters.

1.6.4 Empirics

In this chapter is divided into two parts. The first part presents the findings from the interviews and the second chapter presents the data for the case study company that has been analysed. The data and metrics that are presented in the latter part are from the theoretical framework in previous chapter.

1.6.5 Analysis

The analysis aims to analyse how earnouts are constructed through both the lens of the acquirer and the seller. In the second part of this chapter, the analysis is applied to the empirical data from the case study company.

1.6.6 Conclusion

The conclusion aims to answer the initial research questions. it also provides an example of how the findings can be applied by suggesting a fictional earnout on the case study company.

1.6.7 Discussion

In this chapter the author discusses the implications and limitations of the study. Furthermore, suggestions for future research are provided.

Chapter 2

Methodology

The methodology chapter aims to present and justify the choice of research methodology that has been applied in this study. The research strategy, research methodology, research design are presented followed by a description of data collection and data analysis. The chapter ends with a discussion around the study's trustworthiness.

2.1 Research strategy

Research can either take a qualitative approach, quantitative approach or a mix of both[8]. A quantitative research methodology attempts to quantify and measure results by applying statistical analysis. The quantitative approach needs a larger data set to draw conclusions about the broader population [17] A qualitative study is often appropriate when the research aims to fill an unexplored field of study regarding certain concepts, conditions and implications. Qualitative analysis is usually suitable when the state of prior theory and research on a certain topic is nascent The research methodology is thus particularly useful within relatively young or unexplored research fields [4].

The purpose of this study is to develop a new framework for setting metrics in an M&A earnout for SaaS-businesses. Since this is an area for which limited academic research has been conducted, a qualitative approach was deemed appropriate. However, since the metrics used in earnouts are of quantitative nature there will be quantitative elements to the study though the research method itself is qualitative.

The research approach is also defined by its purpose and characteristics. It can either be descriptive, problem-solving, explanatory or exploratory. A descriptive approach seeks to investigate and describe the field, a problem-solving approach seeks to find a solution to a proposed problem and a explanatory approach look for explanations and reasons on how something works. An exploratory approach is used to explore deeply how something works and is particularly used when there is little prior research in the area and the field of study is previously unexplored [11]. Since the purpose of this study is explore a better way to use Lean Analytics in constructing M&A earnouts for SaaS-businesses, this study will undertake an exploratory approach.

A reasoning approach can either be inductive, abductive or deductive. Deductive reasoning is most often used in quantitative studies as it implies a data collection measured against an initial hypothesis. An inductive reasoning approach applies that theory should be derived from data alone. An abductive approach implies that theory is built through the interaction between theory and empirics. It is about the interaction between ideas, observations and the nascent research field. [5]. When a qualitative research approach is chosen, an abductive reasoning is often used as a process of discovering and understanding an emergent field. Flexibility and an iterative process was deemed appropriate and therefore the abductive approach was chosen in this study.

2.2 Research methodology

There are four different types of research design methods: experiment, survey, action research and case study [11]. The choice of research design method depends on the objectives and characteristics of the study. In this dissertation, the used methodologies are a case study and a survey.

An experiment is not appropriate for this study as the purpose is not to explain causal relationships, nor is it possible to conduct an experiment with isolated variables. Action research was deemed to be an inappropriate method for this study due to the long feedback cycles in M&A earnouts and the difficulty to study the effects as it is private information covered by non-disclosure agreements. As this study aims to develop a new way of structuring M&A earnouts for SaaS-businesses, a survey will be used as a part of the methodology. In addition to the survey, a case study was deemed appropriate since M&A earnouts for SaaS-businesses is a multidimensional topic and the research is planned to be done in an iterative manner

2.3 Research design

The research design is the logical sequence of methods that connects the initial research question and ultimately answer its conclusions[22]. The purpose of research design is to tie the parts together and to make sure that the initial questions are answered. The methodology used in this study is a combination of interviews with a case study. The research process begins with a literature and review to synthesise the academic research that has previously been conducted around software metrics in general and Lean Analytics in particular. The thought leader review then then gathers additional information from industry experts to complement the knowledge from academia and gain best practices from practitioners. The thought leader review gathers interviews and essays written by people involved in the SaaS M%A process to find best-practices for both SaaS metrics and M&A earnouts. The theoretical framework is then synthesised, and interviews are conducted to gain more insights into important areas where the literature and though leader review are insufficient. The findings are then applied in a case study on a company where metrics for M&A earnouts are suggested in line with the best practices that are discovered in the literature and thought leader review. The case study acts as an example of how an earnout could be constructed with SaaS metrics. Since every case is different

and the metrics must be tailored to each company, the case study gives a specific example of how the framework and findings can be applied in practice.

The work is conducted in an iterative manner between literature review, data collection and analysis.

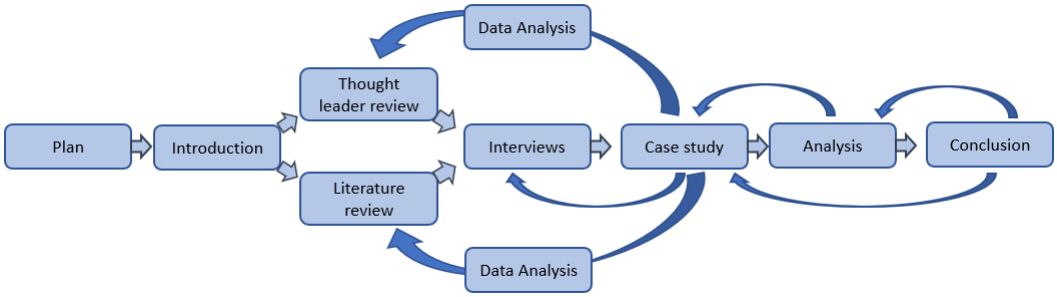

Figure 2.1: The work process

2.3.1 Literature and thought leader review

A literature review was conducted in an iterative manner to build the theoretical framework on which this thesis builds upon. It involved keyword searches in LUBsearch, Google Scholar and other academic databases. The aim was to gain fundamental insight into all areas around M&A earnouts to deepen the understanding of what aspects need to be considered in the process of determining performance metrics. A review of what thought leaders in the industry think is conducted to complement the existing theoretical framework from the literature review. Data for the theoretical framework is thus gathered both from a literature review and a though leader review, both presented under the theory chapter. The thought leader review gathers interviews and essays written by people involved in the SaaS M&A process to find best-practices for both SaaS metrics and M&A earnouts. The aim of the review is to get insights from all different fields that are involved in the M&A process. This was important as a inter-disciplinary design of the earnout provision is at its core in this study. The primary content that has been analysed is prerecorded interviews and essays written by people from corporate development, lawyers, venture capitalists, innovators and SaaS management teams. Interviews are a good way to make unexpected discoveries [26]. Content from at least three people from each discipline has been analysed in order to give a thorough and broad understanding of the issue. Each person has gone through a process of validation to make sure that the right person is being interviewed, that they are considered industry experts and that the people are who they say they are. A synopsis of topics and search queries for the literature and thought leader survey is presented in the table below:

The databases in which searches were conducted are: Google Scholar, LUB-Search and Medium.

Research topic	Search Queries & Keywords
Software metrics	SaaS metrics, Software KPI, SaaS accounting, Cohort Analysis,
Lean Analytics	Lean metrics, Lean Analytics critique, Lean Analytics SaaS
Earnouts	Earnout metric, Earnout problems, Earnout Litigation, Earnout Software, &A earnouts
Acquisition strategies	SaaS acquisitions, Technology acquisitions, Acquisition strategy, M&A strategy
Metrics and KPIs	KPI, Metricc acquisition, Balanced Scorecard

Table 2.1: Literature review topics, search queries and keywords.

2.3.2 Semi-structured interviews

After the initial literature and thought leader reviews were conducted, the semi-structured interviews took place. Six interviews with relevant people with insight into the M&A process of early stage technology companies was conducted. The interviews focused on complementing the literature and thought leader review with additional insights. The interviews were semi-structured and done by telephone or in person. . The topics of discussion were acquisition strategies, measuring success of acquisitions and the problems with earnouts. Corporate development departments are usually leding the M&A process when large technology companies are acquiring startups. Thus, three interviews were conducted with corporate development to gain insights into acquisition strategies. Interview guides can be found in Appendix 1.

Research topic	Name	Company	Role
Acquisition strategies	Matt Switzer	Hootsuite	SVP Corporare Development
Acquisition strategies	Bram Sugarman	Shopify	Corporare Development Lead
Acquisition strategies	James Loftus	Square	Corporare Development Lead
Earnouts	Eeswaran Navaratnam	01 Ventures	General Partner
Earnouts	Aleksis Tapper	Castrén & Snellman	M&A Lawyer
Case interview	Samir Smajic	GetAccept	CEO and Co-founder

Table 2.2: Literature review topics, search queries and keywords.

2.3.3 Case study design

A case study investigates a particular situation or phenomenon. It is a method that systematically analyse a particular situation. A qualitative case study should be descriptive,

heuristic, inductive and particularistic [2]. A case study can be a single or multiple case study and take on an embedded or holistic approach [22]. A study of multiple case units generally consumes more resources and time but is considered to be more robust than a single case unit study. The case study in this dissertation is a single case study since the objective is to apply the best practices observed in the theoretical framework and though leader review and demonstrate an example of how SaaS-metrics for earnouts can be decided in a real situation. Firstly, the quantitative data of the case company is analysed, and metrics are calculated. Through an iterative process with the case company, the data is "cleaned" and analysed to make sure that the metrics accurately reflect the reality. Thereafter, a group of KPIs are suggested to be used in a hypothetical earnouts. The best practices and findings from the literature review and the thought leader review will serve as a basis for how and why metrics are chosen.

2.3.4 Choice of case study company

When choosing a SaaS-business to use as a case unit, there are several things to consider. First, the company's main product must use a SaaS-model. Furthermore, the company must have sufficient number of customers to have enough data to develop accurate metrics. Here the annual contract value (ACV) is a key component since smaller ACV means higher volume given the same monthly recurring revenue. When the company has reached a significant volume of customers they can start becoming data-driven and work with metrics and dashboards. An example is appropriate here: Two companies both have monthly recurring revenues of $100k. Company A have 10000 customers with an average revenue per customer of $10, company B have 10 customers with an average revenue per customer of $10 000. If company A lose 1000 of their customers the first month, it is possible to draw the conclusion that around 10% of the customers leave the first month. If however one customer left for company B, one wouldn't draw the conclusion that 10% of the customers generally leave the first month since there is no statistical significance in the data. Company A can develop sophisticated models for retention rate prediction and try to find insights from segmenting users into cohort analysis to compare them. They need to track metrics such as numbers of users since it cannot possible keep track of it manually. Company B on the other hand can easily keep track of their customers and have a constant dialogue with them. Both companies ar of the same size but work fundamentally different with metrics.

The company chose for the case study is GetAccept AB, a sales engagement product with a SaaS-delivery model. The company went through the Y-combinator accelerator in 2016 and has since then had presence both in Sweden and in Silicon Valley. It is a fast-growing company backed by venture capital with more than 3000 users which makes it a suitable company for this case study. The data presented from GetAccept AB will be indexed and is not the actual data from the company itself since that is private and sensitive information.

2.4 Data collection

A qualitative approach is used for this study though quantitative data is used to calculate the metrics in the case study. The thought leader review gathers qualitative data through interviews, observations and documents. The author took notes during the interviews and structured the notes by topics and keywords. Thereafter, the case study gathers quantitative data to develop and calculate the appropriate metrics for the company from which an earnout can be constructed.

2.4.1 Semi-structured interviews

An in-depth interview is a data-collection method involving one person interviewing the participant and by this interaction letting the participant thoroughly discuss a certain matter [18]. Interviews can be either semi-structured or structured. A structured interview aims to script the eact formulation of the participant. A semi-structured interview is a less strict form with a less strict interview guide [4]. Semi-structured interviews were deemed appropriate due to the flexible nature and the ability for the participants to focus on the area he or she believe is important.

2.4.2 Case study data

The gathered data for the case study is of both qualitative and quantitative nature. The quantitative data is gathered to be able to calculate the appropriate metrics from which earnout metrics can be chosen. The primary sources of this data are the CRM-system (Hubspot), the invoicing system (ChargeBe) and the product GetAccept. The data from Hubspot and Chargebe is sliced in the tool and then downloaded as a CSV file so that it is possible to analyse it with Microsoft Excel. A "view" is created and saved in Hubspot so that the correct data can easily be exported from the system when necessary. Hubspot data concerns all data related do sales such as added MRR and users. ChargeBe data is used to track cancelled and non-renewed subscriptions. GetAccept product data is used to track engagement metrics and user behaviour within the product. The data from GetAccept was gathered through SQL-queries and then downloaded as a CSV-file. Furthermore, qualitative data is gathered through semi-structured interviews with GetAccept's CEO Samir Sjamic. The interviews are mostly used to understand the business model good enough to ensure that the right metrics are being tracked and that they are tracked the wrong way. Several interviews were conducted alongside the data analysis to better understand the data.

2.5 Data analysis

Data analysis is about processing data and transforming it into something insightful [12]. Data analyses has mostly been done in parallel with data gathering for the thought leader review to create structure.

2.5.1 Interviews

A literature review is conducted along with a thought leader review to build the theoretical framework on which the thesis builds upon. To complement it, six interviews were conducted. The analysis of qualitative data should be an evolving process in which the data collection and data analysis phases occur alongside each other [14]. Two techniques that were used are pattern matching and explanation building [22]. The pre-recorded interviews were transcribed in a semi-structured way to be able to categorise topics and tag questions. Transcribing interviews facilitate analysis and pattern recognition. After the interviews were conducted and the data gathered, the notes were analysed to find commonalities and insightful comments. All audio recordings were categorised into intervals where different topics and questions were discussed. Keywords were highlighted, and notes were taken when similar questions and insights were repeated by more than one person. The essays that were analysed were also categorised into different topics. The data was then compared to the existing theoretical framework to see how well it matched.

2.5.2 Case study data analysis

After data was gathered and exported to CSV-files, the data was analysed in Microsoft Excel to clean up the data and calculate the appropriate metrics. The first step in the data analysis was to create a key between Hubspot and ChargeBe to be able to connect the data between the two tables. This was done through several matching algorithms based on contact information, email address, name and postal code. A key called customer-ID was then created in the Hubspot table to be able to match CRM data with invoice data. After the key was created, significant time was spent cleaning the data through a series of tests. Significant time was spent "cleaning" the data to make sure that no errors occur and that the data accurately reflect the reality of the business. An example of a "data cleaning technique" is to check if the number of users for each account is the same in the CRM system as in the invoicing system. After the data cleaning process, the analyses and calculation of appropriate metrics was done.

2.6 Trustworthiness

Trustworthiness is the degree of trust in the collected data, its interpretation and the methods used ensure the quality of the study. The trustworthiness of this study is measured along four dimensions: Validity, transferability, objectivity and reliability [21]. The validity of a study refers to how well the gathered data can respond and answer the initial research question, i.e. how well the study analyses what it is supposed to analyse [7]. Transferability refers to the generalisation of the study, how well the conclusions are applicable in the general case [11]. The objectivity of the study means to what extent the authors own judgement, personal opinions and values have influenced the research results [**veatenteori**]. Reliability is how likely it is that the result will be repeated if the research is done a second time or by another researcher. These four dimensions are important aspects for the general trustworthiness and credibility of the study and will be analysed on their own below.

2.6.1 Validity

The study's validity refers to how well it answers the original research question. Generally, the validity in a case study is regarded to be high [21]. The author ensures high validity in the study by categorising data, creating interview guides and thoroughly iterating back to the original research questions. Proper data collection methods were used throughout the process to ensure high validity. An abductive research approach is used to make sure further increase the validity in the study. The validity of this can be considered high as the original research questions are answered properly.

2.6.2 Transferability

Transferability is about to what extent the results can be transferred to other context outside this case study. It is about the generalisation of the conclusions how it can be applied to other cases. When choosing a case study as a methodology there is generally a risk of low transferability [22]. This study has concrete delimitations within which earnouts and the metrics are somewhat similar. As previously discussed there are many aspects that decide what types of metrics are most applicable such as annual contract value (ACV). The type of milestones set in an earnout also depends on who the acquirer is and the specific acquisitions strategy, which limits the transferability. However, the general framework for deciding metrics in an earnout and the types of metrics that can be used in an earnout for a SaaS-business are applicable to many SaaS-businesses of the same size and ACV. The type of metrics is similar and the process for constructing the earnout is applicable to other SaaS-businesses within the stated delimitations. Hence, this study can be regarded as somewhat transferable to other SaaS-businesses post seed-funding, with MRR>\$50k and with more than 1000 customers.

2.6.3 Objectivity

Objectivity refers to the extent to which the authors own judgement and values have influenced the result of the study. For qualitative research methods, the researchers have an important role in interpretation, pattern recognition and synthesis of the collected research [4]. Hence, the researcher's own judgement has an important role to play in drawing conclusions about qualitative information. Therefore, the objectivity of the content review is relatively low. The objectivity of the quantitative part of the case study however can be considered to be high as the author's own judgement hasn't influenced the calculations of the metrics. Generally, the objectivity is in the study is fairly low due to the qualitative research method and the data collection methodology.

2.6.4 Reliability

The study's reliability refers to whether the same results would appear if the study was conducted again [11]. For quantitative data, it signifies how reliable the data gathering process is considering random variations. To ensure reliability in the content review and

literature review, interviews have been transcribed and categorised. Generally, however, the reliability is low if the primary data gathering method is interviews and observations. Since the thought leader review is largely based in pre-recorded interviews, the reliability can be considered low. The quantitative data used in the case study to develop the metrics have high reliability since the data was properly cleaned and black-box tested after analysis. The reliability on the calculated metrics is high, but the reliability on the framework for choosing metrics in an earnout is lower because it is built on more unreliable data such as observations and interviews.

Chapter 3

Theory

This chapter presents the theoretical framework on which the empirical data and analysis build upon. It aims to give the reader the necessary theoretical building blocks on which the argumentation and conclusions are based in the later chapters.

3.1 Traditional earnout metrics

The majority of earnouts use financial metrics as earnut metrics but some earnouts use non-financial metrics such as product launch or FDA-approval. [23]. Typically, the seller of the business wants to use revenue as metric while the buyers want to use net income [10]. To overcome this, many earnouts use some kind of metric in the middle such as EBIT or EBIDTA [23]. Other earnouts use metrics such as achievement on sales quota or gross margin. AA 2017 study conducted by SRS Acquiom shows that 64% of deals use revenue, 24% of deals use EBIDTA or earnings as earnout metric, and 36% oif deals use some other kind of earnout metric [55]. The most common financial metrics for earnouts are explained below:

- **Revenue** is the amount of money that a company actually receives during a specific period, including discounts and deductions for returned merchandise. Revenue is also known as sales or "top line"[51]
- **EBIT** (Earnings Before Interest and Taxes) is a financial metric calculated as revenue minus expenses, excluding interest payments and taxes. However, there are many different ways to calculate EBIT and it is not a GAAP-metric. EBIT is also referred to as Operating Earnings and Operating Profit. The metric measures the profit a company generates from its operations, ignoring variables such as capital structure and tax burden. The metric is useful when a firm is considering buying another firm out since the existing capital structure matters less than the company's earning potential.[47]
- **EBIDTA** (Earnings Before Interest, Taxes, Depreciation and Amortization) is a financial metric calculated as net profit + Interest +Taxes + Depreciation + Amortization. Though often shown on an income statement, it is not considered part of

the Generally Accepted Accounting Principles (GAAP) by the SEC. EBITDA is often used in valuation ratios and compared to enterprise value and revenue. EBITDA is now commonly quoted by many companies, especially in the tech sector. EBIDTA is an indicator of the company's financial performance without taking into account the capital structure as well as financing and accounting decisions. [48]

- **Gross margin** is a company's total revenue minus the cost of goods sold (COGS), divided by total sales revenue. It is a measure of profitability, expressed as a percentage and represents the portion of revenue that the company retains as gross profit. [49]
- **Net income** is a company's total earnings, also called profit. Net Income is calculated as revenue minus all costs of doing business such as operating expenses, taxes, depreciation and amortization. [50]

3.2 Lean Analytics

Lean Analytics looks at how startups should use data to build better and faster. It focuses around how to use analytics to measure success in experiments, power decision making and fundamentally understand the business and its customers. Instincts are experiments, data is proof. Much of lean analytics is about finding meaningful metrics, then running experiments to improve it until that metric is good enough for you to move on to the next problem or stage[16].

3.2.1 Building Blocks

Lean startup is an extension of Lean Startup and heavily influenced by Customer Development[16].

Customer Development, developed by professor Steve Blank, is a framework for discovering and validating the right market for the right idea. The concept centres around building the right features that solve a customer's needs, testing the model and tactic for acquiring customers, and developing the right organisation to scale the business. The concept takes a direct aim at the outdated "build it and they will come" approach with linear waterfall development of products and companies. Customer Development focuses on an iterative process with continuous collecting of feedback that will impact the product's and business' direction.[9]

Lean startup was developed by Eric Ries, combining customer development, agile development methodologies and lean manufacturing. One of Lean Startup's core concepts is the *build-measure-learn* loop, where the ultimate goal is to maximise learning. Lean Startup tries to reduce waste and strongly advocate for test-driven development, identification of assumptions, cross-functional collaboration and an experimental approach. Lean Startup is also the origin of expressions such as MVP, pivot, validated learning and innovation accounting. [20]

Lean Analytics focus on the **measure** part of the *build-measure-learn* loop [24].

3.2.2 The Right Metric for the Right Stage

The stage of the business influences the type of core metrics that entrepreneurs and management teams should focus on. Croll and Yoskovitz (2011) suggest five stages: Empathy, stickiness, virality, revenue and scale [16].

In the **empathy stage** the entrepreneurs need to understand whether they are working on a problem worth solving, a real problem that the target market care about. This means getting out of the building and conducting interviews, observations and surveys[9]. The metrics for this stage are exploratory and usually qualitative[16].

In the **stickiness stage** entrepreneurs need to find out if they can build a solution to the discovered problem. Pre-mature scaling is detrimental to the business, so the focus on this stage should be to improve engagement and stickiness. The key metrics here are *user retention rate*, *weekly time spent by users*, *users' average time since last visit* and other engagement-metrics that are relevant to the specific business and product. The MVP is then iterated to understand how users are interacting with the product.[20]

In the **virality stage** the company should focus on experimenting with virality. A famous example of this is when Hotmail added a link for people who received e-mails from Hotmail to sign up for the service. The product was tweaked to increase the inherent virality in the product which became a huge force multiplier in their growth. The most important metrics in this stage are *the viral coefficient* and *the viral cycle time*. However, these metrics are mostly used for experiments and tests rather than reporting due to the practical difficulties calculating an exact number. In the virality stage the company should also start attacking the leading indicators of growth and experimenting with growth hacking [16].

In the **revenue stage** the company has moved beyond stickiness and virality, and start focusing on revenue. If the stickiness and virality stages are done right, they will compound and fuel the paid growth. The goal of the revenue stage is to prove that money can be made in a capital-efficient, scalable, sustainable and consistent way. The focus now shifts from building a product to building a business. Hence, the core metrics shift from measuring usage patterns to measuring business ratios. The paid engine of growth become the primary focus and thus the OMTM is shifted toward *CAC:LTV* and *magic number* which measure capital-efficiency and drive growth. [16]

In the **scale stage** revenues are coming in and focus shifts from growing the business to growing the market. More customers need to be acquired from new verticals and geographies. Investments are being made into channels, partners and distribution to grow the user base. Interaction with users is less important since they are now analysed quantitatively. Metrics such as *CAC payback time* are measured across channels, regions and marketing campaigns to find the most effective customer acquisition strategy. Costs become more important and as the organisation grow there will be many more functional departments who have their own metrics and reports. Metrics should also focus on the health of the entire ecosystem and the ability to enter new markets. The number of important metrics increase as the strategy and organisation become more complex. [16]

3.2.3 What makes a good metric?

Lean Analytics set out some general heuristics of what makes a good metric. In the age of information, data overflow is a big obstacle and knowing what to measure and how to interpret the results is critical to making metrics actionable and gaining the value from them.'

A metric should be **(1) comparative**, **(2) understandable**, **(3) behaviour changing** and **(4) a ratio or a rate** [16].

A metric should be comparative. In order to understand in which direction the trend is moving, it is important to be able to compare a metric to other time periods, types of users, competitor and cohorts. The key to making data actionable is by segmenting and comparing which is why a good metric always is comparable. [16]

A metric should be understandable.If people can't interpret or understand a metrics it is not actionable. It is very difficult to create a data-driven culture if people don't use metrics that are easy to understand. Using analytics to inform decisions will be hard if they are not easy to interpret.[16]

A metric should be behaviour changing. The metric should inform decisions and the way people in the organisation act. The most important question when deciding upon a metric is: What will you do differently based on changes in a metric? Metrics can be "accounting metrics" or "experimental metrics". Accounting metrics are typical metrics such as sales volume, whereas experimental metrics are how the results of tests are measured. Experimental metrics are by nature more likely to change behaviour.[16]

A metric should be a ratio or a rate. Ratios are generally easier to act on than metrics in absolute numbers. A ratio is inherently comparative and show the general trend. Furthermore, rations are good for comparing factors that are somehow opposed or for which there's an inherent tension, such as in cost-benefit analyses. [16]

3.2.4 Lagging and leading indicators

Metrics can be either leading or lagging indicators. A leading indicator tries to predict the future, whereas a lagging indicator is reporting on past performance. Another distinction is that leading indicators are generally input-oriented while lagging indicators are output-oriented. An example of leading and lagging indicators of weight-loss: A good lagging indicator would be "kg of weight lost this quarter" and a leading indicator could be "calorie deficit per day". In SaaS, a leading indicator is lead velocity rate (the rate at which the number of qualified leads are increasing) while a lagging indicator would be churn rate (number of customers who leave a given time period). For leading indicators to work as a prediction of lagging indicators, a startup need more data so they can conduct cohort-analysis in order to compare segments and groups of users. Therefore, startups in the earlier stages should focus on lagging indicators until they can thoroughly understand the causality between leading and lagging indicators. [16]

3.2.5 Vanity Metrics

Vanity metrics generally refer to metrics that strike your ego but cannot be acted upon [20]. If you are measuring a piece of data that doesn't help guiding actions or decisions, it's a vanity metric. Managers should always ask themselves: "What will I to differently based on the information i receive from the metric". A vanity metric typically goes "up to the right" in a graph and feels good to present. A good example is the "total number of signups" for a SaaS product or mobile application. The number will always increase but doesn't say anything valuable about whether the users are valuable or not. They may have signed up and then left forever. "Total active users" would be a better metric but is still a vanity metric as it will gradually increase over time. The actionable metric would be "percentage of users who are active", as it tells us something of the level of engagement between the users and the product [20].

3.2.6 Cohort Analysis

Cohort analysis is a type of analysis that compare segments of users over time [3]. It is used to understand and predict how users will act and can be used as both a leading and a lagging indicator depending on the type of metrics that are being tracked. As the product progresses and the company is formed, users will have a different experience with the product over time. Cohort analyses can analyse and measure the effect of new user on-boarding schemes, feature development and other product iterations [57]. For instance, it can be used as an exploratory metric of how users responded to 30 days trial period instead of 14. It can also be used to measure how retention and churn has improved over time. Cohort analysis is a multifaceted tool that is used to segment and compare groups of users for various reasons [45]. It can be done for revenue, engagement, churn, virality, costs or any other type of metric that matter [16].

The example below demonstrates an example of cohort-analysis is commonly done for subscription services. The users of the subscription service are divided into six different cohorts (groups or segments) depending on what month they signed up and became customers. The groups of users are here represented by the six different rows in the table. The columns are the number of months after sign-up date and the values are the gross retention rate. Gross retention rate is defined as the percentage of users in the cohort that are still customers. In this cohort analysis 400 users signed up in Jan-17 and five months later only 58% of those, a total of 232, users are still customers.

	Added users	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Jan-17	400	85%	83%	60%	59%	58%	58%
Feb-17	500	88%	86%	68%	67%	67%	
Mar-17	450	89%	89%	72%	70%		
Apr-17	475	91%	88%	72%			
May-17	515	92%	91%				
Jun-17	530	95%					

Figure 3.1: Cohort analysis example: Gross retention rate for fictive subscription service

The table is usually viewed both horizontally and vertically. Looking at each cohort's retention over time shows which months users tend to leave the product. Looking horizontally over one column will tell how the company has progressed its gross retention rate over time [57]. One can for example compare the "three-month retention rate" between cohorts to see if efforts to improve it has yielded results. A cohort analysis can also be plotted out as a graph:

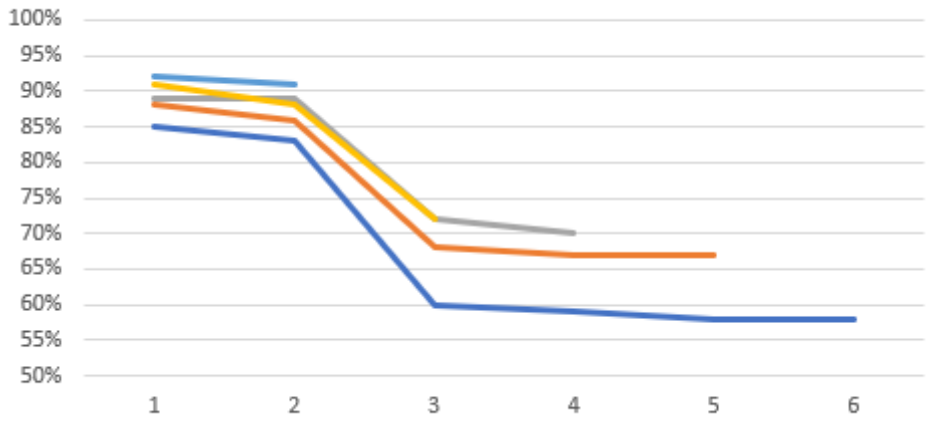

Figure 3.2: Plotted cohort analysis example: Gross retention rate for fictive subscription service

From this chart we can see that users tend to drop out the third month that they use the product. We can also see that the company has improved its user retention over time. Cohort analysis is a very insightful tool that can be used to compare segments of users with various metrics.

3.2.7 The three engines of growth

The three engines of growth is a concept originally developed in The Lean Startup by Eric Ries [20]. The three engines are **the sticky engine**, **the viral engine** and **the paid engine**. Each engine has their associated metrics. The concept should not be viewed as a choice between the three, but rather three different engines that together drive the companies to scale.

The sticky engine focus on retaining customers for the long run, and to make them keep using the product. If the product isn't sticky, many customers will stop using the product and the churn will be high. Many companies try to create "barriers to exit" for users so it is difficult for them to stop using the product or delete their account. Engagement is the best leading indicator of success with the sticky engine. The fundamental metrics for the sticky engine is customer retention and churn. Importantly though, stickiness isn't only about customer retention but also about the frequency of use [16].

The viral engine is about word of mouth or a product that advertise itself. Virality is very attractive as it compounds the user base and is a very cheap source of growth. There are three types of virality: Inherent virality, artificial virality and word-of-mouth

virality[20].

- *Inherent virality* is a natural form of virality build into the product and happens as a function of use. With inherent virality, the usage of the product itself is an advertisement. A good example of this are food delivery services: whenever they deliver food consumers may see the car with the name on and the use of the product itself is an advertisement. Another example could be TripIt where you share your travel plans with colleagues. [16]
- *Artificial virality* is virality that can be bought. The classic version of this is when users get are incentivised to invite their friends though some kind of offering such as Dropbox who give user more storage or AirBnB who give their users a promotion code.
- *Word-of-mouth virality* is the natural type of virality where people who use the service talk about it to their friends and colleagues. This type of virality is much harder to track and measure.[16]

The key metric for the viral engine is the *viral coefficient* - the number of new users that each user brings on. If the viral coefficient is greater than 1 the user base will grow exponentially. Due to the compound effect of a high virality coefficient, this engine can fuel exponential growth. Viral coefficient is a theoretical metric that is difficult to track, in particularly for the word-of-mouth engine. However, it is very suitable to use as an experimental metric for tests and experiments to improve artificial virality. Another important metric in the viral engine of growth is *the viral cycle time* which is the speed with which users invite each other[16].

The paid engine is where the company pay for its growth. The classic example is through paid advertising such as super bowl ads, Google AdWords or outdoor ads. It is usually premature to turn on this engine until the product is sticky enough and somewhat viral. The effect of paid engine can be compounded if the product is sticky and viral[20]. The most important metric for the paid engine is the ratio between *LTV:CAC* (Customer Life-time value and customer acquisition costs). This metric shows how much more the customers are worth over their lifetime compared to the cost of acquiring them upfront [57]. Revenue from the acquired customers can then be funnelled back into customer acquisition. LTV is generally a tricky metric to calculate since it is based on several assumptions such as future churn rate. Another important metric is *CAC payback time* which measure the time it takes to recover the initial customer acquisition costs[16].

3.2.8 The one metric that matters

One of the keys to startup success is to achieve real focus. Focus, however, doesn't mean myopia. Focus in metrics simply means that at any given time there's one metric to care about above all else. Eri Ries argues in The Lean Startup that successful companies focus on one of the three engines of growth at a time [20]. In analytics this means to focus on one metric that matter (OMTM). The OMTM heavily depend on what stage the business is in. At any given time, many metrics should be tracked and reported, but one should

be the core focus. Capture everything, focus on what's important and remember that the OMTM change over time [16].

3.3 SaaS Metrics

3.3.1 Financial metrics

3.3.1.1 Monthly Recurring Revenue (MRR)

Monthly recurring revenue (MRR) is the most commonly used financial metric for SaaS-businesses. The SaaS-model is based on recurring revenue: once you have acquired a customer you have recurring revenue from the subscription until the subscription is cancelled and churn occurs. MRR is simply the revenue that the company gets ever month from its subscriptions. If the subscription doesn't pay on a monthly basis, the revenue is normalised into a monthly amount [16]. Sometimes Annual Reccuring Revenue (ARR) is measured instead, which simply is the same as MRR but annualised.

3.3.1.2 Annual Contract Value (ACV)

Annual Contract Value is the annualised value (ARR) that each customer brings in. The ACV of a SaaS-business heavily influence the type of sales processes that should be used and the metrics that should be tracked. High ACV imply bigger contracts which typically requires more personal selling, help from sales engineers, customisation and more integrations. SaaS-businesses that sell subscriptions with small ACV tend to have a lot of customers. Higher volume of customers leads to more data which means that it is possible to develop sophisticated metrics at an earlier stage as significance is quickly reached [16]. When the ACV is high, the data collection tends to be more qualitative. Therefore, the target ACV of the subscriptions influence the types of metrics that matter.[46]

3.3.1.3 ARPU and ARPA

Average Revenue Per User (ARPU) and Average Revenue Per Account(ARPA) are defined as the average revenue that each user/account brings in a particular month. The simple way of calculating ARPU is:

$$\text{ARPU} = \frac{\text{Total MRR}}{\text{Number of users}} \tag{3.1}$$

$$\text{ARPA} = \frac{\text{Total MRR}}{\text{Number of accounts}} \tag{3.2}$$

3.3.2 Churn

For subscription models, churn means users that cancel or don't renew their subscriptions [60]. Churn also include downgrades, existing customers who are still paying but have churned some of their previous MRR. Simply put, customers that stop paying the recurring revenue they were previously paying. Churn can be measured in MRR, users or accounts where monthly MRR churn rate typically is the most commonly used metric. Churn is a key metric for SaaS-businesses as it is in direct opposition to growth. It has a direct impact on profitability, customer lifetime value and the company's valuation. If the churn is high it generally means that customers don't think the product is worth paying for. Churn is an essential part of the SaaS-model and managers spend an incredible amount of time watching the metric. [16]

3.3.2.1 Simple churn: monthly MRR churn rate

Simple churn is a metric that is often simply referred to as "churn rate". It is the amount of MRR, users or accounts that churn a specific month divided by the total number in the beginning of the month.

$$\text{MRR churn rate} = \frac{\text{Total MRR churned this month}}{\text{Total MRR in the beginning of this month}} \tag{3.3}$$

There are several problems with simple churn. For instance, it does not consider whether the user can churn or not and the metric get skewed in high growth[60]. The problem with the metric is that the numerator stems from users in the past and the denominator from current users. An example properly illustrates the problem with simple churn during high growth: A hypothetical SaaS-company has 100 users in January and grows to 10000 users the first of May. During May, all the 100 users from January churn. The simple churn rate here would be 1% which can be considered low. The churn rate is only at 1% but in fact all of the users from January have churned five months later which is a very short customer lifetime and a very high actual churn rate. This problem is best solved with cohort analyses[3].

3.3.2.2 Net MRR churn rate

Net MRR churn rate is the calculated as the net loss of MRR month over month after factoring in revenue increase from existing customers [57]. Most SaaS-businesses price their product along at least one variable pricing axis to facilitate up-sell. Examples of this are Dropbox who price on data storage and GetAccept who price on number of users within the company. Several SaaS-businesses use a pricing model with several tiers with different feature set. Net churn is calculated as the percentage of MRR that is churned subtracted by added MRR from up-sell and up-grades [44].

$$\text{Net churn} = \frac{(\text{Churned MRR} - \text{Increased MRR from existing customers})}{\text{Total MRR at the start of the month}} \tag{3.4}$$

Net MRR churn rate can be negative, which is known as Net Negative Churn [60]. This happens when up-sell on the existing customer base is larger than the churn. Net Negative Churn is by entrepreneurs and venture capitalists known as "the holy grail" and most management teams strive to reach it. Net negative churn is like high yield saving accounts: every month more money comes in without much effort from the company [53]. The effect is very positive and can fuel a SaaS-business growth to huge success. To illustrate the power of net negative churn, we can compare two hypothetical SaaS-companies. Both companies acquire 100 users per month over a period of 12 months, each paying $1 per month. Company A have a churn rate of 5% per month and company B have a net negative churn of -5%. Company A will have 919 users with an MRR of $919 in the end of the year, while company B will have 1592 users and an MRR of $1592 by the end of the year. Below are the plots of the user growth for both companies.[16]

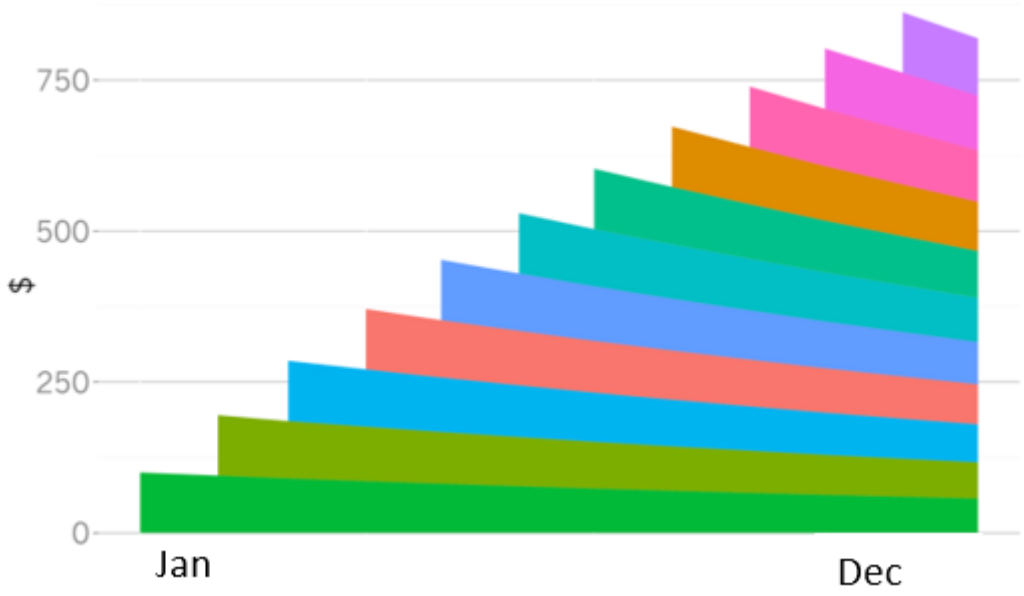

Figure 3.3: SaaS-company A: Annual user growth with 5% monthly churn rate

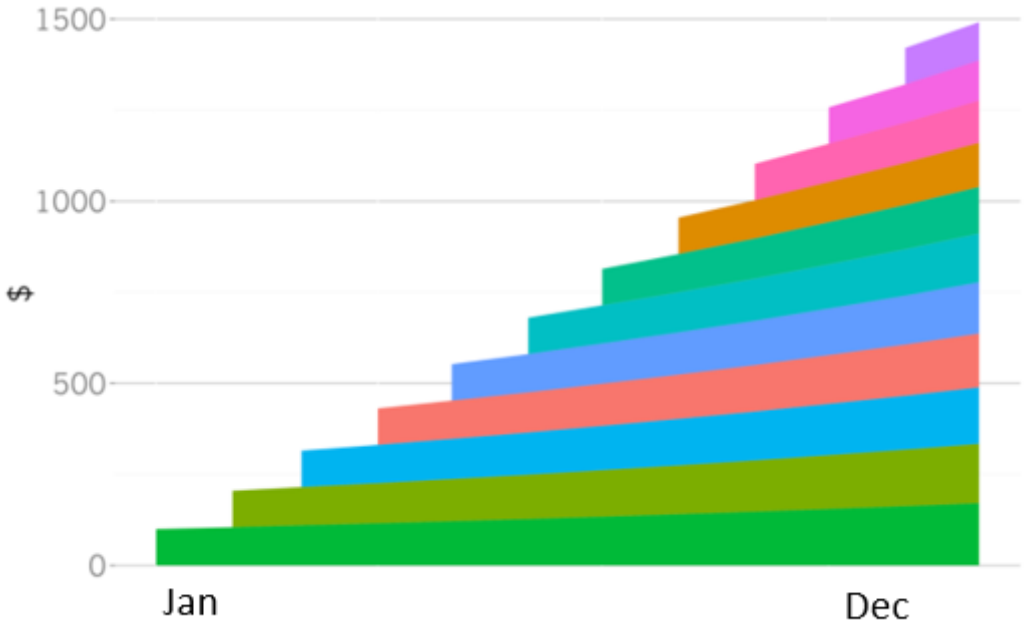

Figure 3.4: SaaS-company B: Annual user growth with -5% Net Negative Churn rate

In both cases the two companies acquire the same amount of users month over month but the difference in growth rate is staggering. This example clearly demonstrates the power of net negative and how it fuels growth over time [57]. Another benefit of net negative churn is that up-sell generally is less expensive than customer acquisition.

3.3.2.3 Available churn

In many cases subscriptions can be purchased on different time periods such as monthly, quarterly and annual. This means that not all customers can churn every month which makes the simple churn rate inaccurate [60]. Consider an example where 90% of a hypothetical SaaS-business' customers are on annual contract and 10% are on monthly contracts. The company have a churn rate of 5%. Let's say that the company was started 11 months ago so that no customers on annual contracts can churn yet. This means that 50% of the customers that can churn do so every month and it is likely that the customers who are on annual contracts will churn as soon as their contract period is over. Available churn takes into account the number of customers that can churn every specific month, i.e. the customers that are not tied up in longer subscriptions.[59]

$$\text{Available churn} = \frac{\text{Churned MRR}}{\text{Total MRR from customers who can churn this month}} \tag{3.5}$$

3.3.2.4 Retention cohort

Retention cohort is a good way of measuring and analysing the user churn rate of a SaaS-product. Cohort analysis is used to be able to compare segments of users as well as trends

in the churn rate plotted over time [3]. The retention cohort shows when users tend to churn and also how the churn rate has changed over time. A retention cohort can be calculated either as net or gross retention and on MRR, account or user basis. [57]

$$\text{Net MRR Retention}_{xy} = \frac{\text{TI} - \text{C}}{\text{T}} \tag{3.6}$$

T = Total initial MRR from customers in cohort x

I = Increased MRR in month y from customers in cohort x

C= Churned MRR in month y from customers in cohort x

3.3.3 Engagement metrics

Measuring engagement in the product is key to understand how sticky the product is and whether or not it is ready to scale [16]. The ultimate metric for engagement is daily use, the percentage of customers that use the product on a daily basis. Some products, such as a tax preparation site or a reservation tool for dentists, simply are not meant to be used on a daily basis. For most SaaS-products engagement is a very strong leading indicator of churn [3]. If the engagement early on in the customer journey is low, it will be hard to demonstrate enough value to avoid churn. Engagement is the key metric for stickiness which fuel the sticky engine of growth. It is an indicator that the company is building a product that the users want. Engagement metrics are also very suitable for experiments through looking at usage patterns [56]. Various engagement metrics can also be calculated on a cohort basis and compared to a retention cohort to see how engagement compares and correlate with churn. From this data the company can then draw conclusions on when to take actions to try to re-engage their users to avoid churn. If, for example, the cohort analysis shows that users engagement drops in month three and the churn in month four and five is high, the conclusion can be drawn that more resources should be put on activating users in month three [**engagementscore**]. The company can then act on this insight with their customer success team and trying different on-boarding schemes. Another effective way of using engagement metrics is to identify users in trials who are ready to purchase. It can also be used to identify prospects for upsell [56].

3.3.3.1 DAU, WAU and MAU

The most commonly used metric for measuring engagement are numbers of daily, weekly and monthly active users [16]. To fulfil the criteria that a good metric should be a ratio, this is usually compared to the total number of users of the product [3]. Some products are supposed to only be used every month while some products should ultimately track daily usage. Therefore, the products use case and value add need to be considered before choosing between DAU, WAU and MAU. The company also need to define what they consider to be an active user. For some products this is simply logging in while for others it is taking a specific action such as writing, sharing, uploading or sending [16]. If the

company is only using logins as the measure of activeness they might miss out on useful insights into what types of features the users are using [56].

3.3.3.2 Engagement scores

The customer engagement score is a single metric that measure how engaged the customers are [56]. The higher the number the more engaged they are. A customer engagement metric set a weight to the different actions a user can do within the product based on how important they are for the company. The formula then calculates a metric based on both user frequency and engagement weight of the features used and actions taken to a single metric showing the overall engagement of the user. Customer engagement score can help finding customers in trial who are ready to purchase, identify customers who are about to churn or need help, and identify customers who are appropriate for up-sell or cross-sell [16]. Customer engagement score is an excellent experimental metric to understand how to make the product stickier and the user more engaged. It is a metric that should be closely watched at the stickiness stage. [**engagementscore**]

3.3.4 Customer Acquisition and Sales Efficiency Metrics

Customer acquisition and sales efficiency metrics measure the unit economics of a subscription-based business model [16]. As previously discussed, the SaaS-model is based on acquiring customers upfront and then getting payed back over time [57]. This delay cash-flow and means that traditional way of viewing revenue, costs and margins must be changed to accurately reflect the unit economics of the business. Sales efficiency metrics provides a good way of understanding how effective the company's customer acquisition is and whether it is ready to scale and invest in growth [58]. Venture capitalists tend to view sales efficiency metrics as crucial as it is a measure of how capital efficient startups will be with their investments [53].

3.3.4.1 LTV:CAC

Customer acquisition costs (CAC) are the total combined costs associated with acquiring a customer [16]. The customer Lifetime Value (LTV) is the total value of a customer over its lifetime. The ration between customer lifetime value and customer acquisition costs (LTV:CAC) is the metrics that is most often cited by venture capitalists as the most important metric they look at when investing in SaaS [57]. Simply put, it measures how much money is spend acquiring customers compared to their worth from cradle to grave. The problem with this metrics is that the LTV calculation is based on assumptions on future churn. If the product has net negative churn the theoretical LTV would be infinite which of course is incorrect [3]. In practice, a maximum lifespan of 1-4 years is often used to cap the lifetime value customer if the churn is low or negative. A general rule of thumb is that LTV should be three times higher than CAC for it to be capital efficient enough to start investing in the paid engine of growth [3]. If the metric is below three the company need to focus on stickiness and virality to boost sales efficiency before trying the paid engine again [16]. The LTV:LTV also is difficult to get correct in practice as it is

unclear how to divide salaries in the CAC if for instance some people are doing both sales and product work [60]. It is also a metric that vary a lot month-to-month. LTV:CAC is theoretically one of the most important metrics as it shows whether or not the business model is viable. In practice, however, it is a difficult metric to use as it builds on several assumption. Customer Lifetime Value (LTV) is calculated from the churn rate:

$$\text{LTV} = \frac{\text{ARPU}}{\text{Churn rate}} \tag{3.7}$$

3.3.4.2 Magic number

The magic number is an easy metric that measure the output of a year's worth of MRR growth compared for every dollar spent on sales and marketing [58]. The magic number is calculated from the increase in annualised MRR between two quarters, compared to the customer acquisition costs spend in previous quarter [16]. It is a simpler metric than LTV:CAC that is easier to measure as it doesn't build on several assumptions inherent to the LTV.

$$\text{Magic Number } \text{Q}_x = \frac{(\text{MRR } (\text{Q}_x) - \text{MRR } (\text{Q}_{x-1})) * 12}{\text{CAC}_{x-1}} \tag{3.8}$$

If the metric is below 0.75 the company is not ready to scale as it first must improve its capital efficiency. A good benchmark for a SaaS-business is to be above 1 when it starts scaling and investing in the paid engine of growth.

3.3.4.3 CAC payback period

CAC payback period measures the time it takes to recover the customer acquisition costs from subscriptions [16]. Even if the unit economics looks viable and the LTV:CAC ratio is above 1/3, there might be issues with cashflow for the company [58]. This is particularly common when the company has long customer lifetime as it might take a long time to recover the cash spend upfront for acquire customers. CAC payback period is important as it determines how much cash the company will need to grow [53].

$$\text{CAC payback period} = \frac{\text{CAC}}{\text{MRR - (Average cost of service)}} \tag{3.9}$$

3.4 Earnouts

The earnout provision is often used in private M&A and particularly in the technology and the life science industries. The reason for using earnouts is usually because the seller and the buyer have very different views on value and financial projections [42]. The purpose is to share and balance risk and return between the acquirer and the acquiree of a business

venture. Studies have shown that earnout financing contributes to the achievement of many objectives and benefit both parties in the acquisition [29]. Barbopoulos and Adra (2016) argue that the sellers are compensated for sharing the post-acquisition integration risk by being offered a relatively higher risk-premia[29]. .

An earnout will never be constructed in a perfect way, but it can be fair and balanced for both parties. It is a complex provision that need careful consideration to ensure that both parties benefit from it. A poorly structured deal can lead to opportunistic behaviour from the acquirer where they can impact the possibility for the seller to reach the objectives and get the additional payment from the earnout[25].

Danielle Myles (2005) argue that there are four main stages that define the earnout deal: Partner selection, value determination, structure identification and pay-out schedule[10]. Partner selection is about the identification of the right transaction partner, committing on the ultimate success of the merger, aligning on acquisition strategy, conduct proper due diligence and examination of prior transactions. If the acquirer previously has done deals with earnout provisions, the acquirer should diligently investigate whether the projected earnout target milestones were met or not. Value determination is simply the negotiation of the value that is attributed to the transaction. The structure identification goes through the details of the payments such as whether they are to be paid in cash or equity. In the pay-out schedule, the milestones and earn-out length are decided [10].

The earnout clause has five key components: the metric by which performance is measured, the amount, the calculation mechanism, accounting measures and seller protections post-closing[28][25].

3.4.1 The earnout metric

There are many ways to structure the metric by which performance is measured in an earnout [23]. The buyer usually wants to base the earn-out on the seller's standalone profitability. The seller, however, usually want the earnout to be based on revenue. Using revenue as the metric creates a problem in that the seller can spend an enormous amount of money on achieving the revenue milestone and neglect the profitability. Using profit, however, also creates a problem as it is possible to move costs within the company via "creative accounting" [42]. Many deals use EBIDTA or EBIT as a middle ground to satisfy both seller and buyer. Some deals have used non-financial metrics such as product launch or obtaining FDA drug approval for a drug or medical device. An earnout milestone can also be track performance on the entire entity, a business-unit, or a particular product or set of products [25].A recent survey of life science deals showed successful achievement of milestones in more than 50% of cases [25]

3.4.2 The amount

Deciding upon how much of the value should be tied to earnout payments vs upfront payment is a critical part of the earnout structure. The more money that is payed upfront, the more the risk shifts to the acquirer. It is also an indication of how much the acquirer value the seller's technology. Upfront payments account for more than half of the total

value in more than two-thirds of transactions [23]. In life science deals, earnout payments are typically a larger proportion of the total value compared to other industries [41]. Venture capitalists usually don't prefer a large part of the total transaction value in earnouts as it increases the time to liquidity. In most transactions the up-front payment is about 30-70% of the total transaction value. Typically, more proven technologies tend to have a larger part of the transaction in up-front payments [10].

3.4.3 The calculation mechanism

The calculation mechanism defines under what conditions earnout payments should be payed such as thresholds, caps and tiers. A threshold is the minimum performance that needs to be achieved to receive earnout payments. If an earnout is capped, there is a maximum amount that can be received if all milestones are reached. A multiple tier structure typically includes multiple performance targets with different earnout payment rates tied to each level of performance. An earnout calculation mechanism can be based on a percentage of performance or as a fixed amount if a certain milestone is achieved [41]. Sellers will typically seek pro-rated payments for performance below target rather than a binary outcome. About 73% of earnouts use a cap on the earnout payment, 70% use a minimum threshold, and 30& use a multiple tier structure [25].

All parties in the M&A process must also consider an appropriate length of the earnout. A long earnout period increases the risk for the seller due to the chances of unforeseen events happening that could hinder or prevent achievement of the milestones [25]. The American Bar Association found that 38% of deals had an earnout period of one year or less, 18% had a period between one and two years, 12% had a period between two and three years, and 12% had period between three and four years[25]. High-tech industries tend to have shorter earnout periods while life science tends to have longer[41].

The capitalisation structure of the seller should be considered when designing an earnout structure. If the company is funded by a venture capital fund at the end of the fund's life cycle, it will impact the decision about earnout length as the fund need to return capital to their limited partners [25].

3.4.4 Post-closing control and seller protection

One of the key problems that cause tension between buyers and sellers relying on earnout provisions, relates back to the role of the acquirer once the deal is completed and their responsibility regarding the performance of the assets after closing. The seller is vulnerable to the buyer's actions and decisions, which may impact the likelihood of reaching milestones and receiving earnout payments. If the milestones aren't met, and sellers are deprived on expected pay-outs, the sellers can argue that the buyer didn't do enough to ensure the earnout was met [15]. Furthermore, it is also possible that the acquirer allocates inadequate resources to sell the product and thus making it difficult for the seller to reach the agreed milestones for additional payment. The earnout provision usually include good faith and reasonable effort provisions to protect against opportunistic behaviour. Several court cases have set precedent for what is perceived to be good faith and reasonable effort and even when a good faith clause is not used the courts have ruled that such an obligation

is implied. Generally, earnouts are easier to execute when buyers are dealing with a set of assets that will remain independent post-closing [15]. A recent survey showed that more than 60% of earnout deals used some kind of provision to restrict the buyer's discretion to operate the business [25].

3.4.5 Accounting measures

The precision in how metrics are calculated is important so that both sides are on the same side when it comes to the definition. Accounting metrics should be specified, formulas should be constructed, and examples provided to clarify and eliminate confusion over the math [15]. Depending on the duration of the earnout, the buyer may be incentivised to manipulate the recognition of sales from one time-period to the other to avoid reaching the milestones and having to pay additional the earnout value to the seller. Both parties must agree upon accounting measures in the deal to avoid confusion, sub-optimisation and litigation. The seller must also pay close attention to the definition of what is being measured such as product, entity or business-unit. If the milestone is set for the performance of a specific product the definition of what constitute that product must be clearly defined and understood [25].

3.4.6 Dispute resolution and litigation

In theory, the earnout solves the initial disagreement over price and future projections by requiring the buyer to pay more only if the business proves that it is worth more [25]. However, since the value is frequently debatable and the causes of underperformance equally so, an earnout often converts today's disagreement over price into tomorrow's legal litigation over the outcome. Often, dispute resolution and litigation stems from lack of clarity relating performance metrics or post-closing allocation of resources from the buyer. Shell's UK Head of Legal expressed his view of earnouts in Myles (2015): "I can absolutely see the value in an earnout, and I can absolutely see the theoretical attractiveness of an earnout as a way of bridging parties' legal and commercial differences about the potential valuations, but I am personally quite sceptical about using them as they are very tricky to draft, and unless the seller and buyer are very clear and aligned on its purpose, it can be an invitation to litigation" [28].

3.5 Synopsis

Traditionally, the metrics used in earnouts are financially metrics such as revenue, EBIT, EBITDA or net income. This chapter goes through the definitions of those metrics, Lean Analytics' metrics and key concepts, as well as theory around the earnout provision.

Lean Analytics classify startups into five different stages: the empathy stage, the stickiness stage, the virality stage, the revenue stage and the scale stage. The type of metric that matters differs depending on what stage the company is in. Furthermore, it emphasises the importance of reaching certain milestone before attempting to move on to the next

stage.

There are four key categories of metrics that SaaS-businesses should track: financial metrics, churn, engagement metrics and sales efficiency metrics.

- **Financial metrics** include metrics such as Monthly Recurring Revenue (MRR), Average Revenue per User or Account (ARPU and ARPA) and Annual Contract Value (ACV). The key financial metric is monthly recurring revenue (MRR) which is the revenue that the company gets every month from its subscriptions (one-time fees are excluded).
- **Churn metrics** measure the rate at which customers stop subscribing to the product. An appropriate analogy is that MRR can be seen as a bucket of subscriptions and churn is the rate at which the bucket is leaking. Important metrics are the Simple Churn Rate, the Available Churn Rate, Net MRR Churn Rate and Cohort Analysis of Net MRR Retention Rate.
- **Engagement metrics** measure how much and how often the users are using the product. It is a leading indicator of churn. The type of metric differs from company to company, but some commonly used metrics are: Daily/Weekly/Monthly Active Users (DAU, WAU and MAU), Engagement Scores and Engagement Cohort Analysis.
- **Sales efficiency metrics** measure the return on investment on sales and marketing and give insights into how scalable the customer acquisition strategy is. Key metrics is Customer Lifetime Value to Customer Acquisition Costs (LTV:CAC), The Magic Number and CAC Payback Period.

These metrics can be used to understand what stage the company is in. If the engagement metrics are low, the company is still in the stickiness stage. If there is yet no inherent virality in the product, the company is in the virality stage. If the churn and the engagement is high, the company is in the revenue stage. If the engagement is high, virality is implemented, churn is low, and sales efficiency is favourable, then the company is ready to scale.

Important aspects to consider when constructing an earnout are the earnout metric, the amount, the calculation mechanism, post-closing control, accounting measures, and dispute resolution and litigation. It is important that the earnout metric is aligned with the acquisition strategy of the buyer so that the seller is trying to reach goals that matter for the acquirer. The metric should be chosen so that it is difficult to manipulate through "creative accounting" and cost allocation within the company. Many earnout lead to legal litigation over the outcome which is why the calculation mechanism and accounting measure should be clearly defined and understood by all parties involved. After the acquisition, the seller is vulnerable to the buyer's actions and decisions. The buyer can in theory try to avoid having to pay additional earnout payments by stop selling the product or allocating inadequate resources to it. Therefore, the earnout provision include good faith provisions for reasonable effort from the seller.

Chapter 4

Empircs

In this chapter is divided into two parts. The first part presents the findings from the interviews and the second chapter presents the data for the case study company that has been analysed. The data and metrics that are presented in the latter part are from the theoretical framework in previous chapter.

4.1 Interviews

The findings from interviews consist of both pre-recorded interviews as well as semi-structured interviews with people with insights into the M&A for fast-growing technology businesses in general and SaaS-companies in particular. The purpose is to complement existing theory with insights into acquisitions strategies and the earnout provision. The findings are divided into the sections "acquisition strategies" and "the earnout provision".

Deloitte's Gerbert Hubert argue:

> *"Larger companies are looking at M&A as a tool to jump into a new market or ramp up a new technology quickly. M&A can solve time-to-market issues and talent issues far quicker than internal activities can."[54]*

4.1.1 Acquisition strategies

Acquisitions in the software industry happens for many different reasons. The acquisition strategy depends on the acquirer, where private equity firms will have radically different strategies from larger technology incumbents. Though PE deals in early stage tech, M&A from the large technology incumbents are still more common which is why the interviews focus on them. The acquisition strategies are usually based on talent, technology, product, market entry or financial interest.

Matt Switzer, SVP of Corporate Development at HootSuite, explains:

> *"The way we look at and evaluate potential M&A, is that there are three main sources of value in a deal: Talent, Technology or Traction.* ***Technology*** *refers to acquisitions where the product, data, technology or IP is core in the acquisition.* ***Traction*** *include revenue growth, access to certain users, a beachhead in a new market or geography, reference cases and customers, and more.* ***Talent*** *is a brilliant founding team or specialised knowledge of some kind. The company does not need to have all three pillars, but usually we look for two of them.[39]*

4.1.1.1 Talent in focus

Focusing on talent in acquisitions of tech-companies is a common denominator throughout all the interviews. Acquisitions targeting talent is commonly referred to as "acquihires". In an acquihire, the buyer is primarily motivated by the talent of the seller's employees rather than its operating business or the technology. The buyer is looking for a cohesive group that has proven its ability to work together, combined with technical prowess and a good culture fit. In a pure acquihire, the business success of the target is secondary at best [27]. A good example of this is Google who primarily have acquired based on talent and access to specific domain expertise [54].

Matt Switzer, SVP of Corporate Development at HoouSuite, said:

> *"Talent is involved in every transaction. It is very rare that we pursue a deal without that particular T of our framework" (Technology, Talent, Traction). [39]*

The importance of talent in acquisitions is also confirmed by Bram Sugarman, Director of Corporate Development Lead at Shopify, who said:

> *"Acquihires are incredibly attractive and the type of acquisition that we have done the most of. We look for great product teams and incredibly strong leaders.[38]"*

4.1.1.2 Product and Technology

In addition to talent, the most commonly quoted reason for acquisition is due to product and technology.

Bram Sugarman at Shopify said:

> *"We use Corporate Development (M&A) as a platform to accelerate our product roadmap. Our M&A strategy always start with discussions with the product teams to understand the road-map and see in which areas M&A can be used."[38]*

James Loftus, Corporate Development Lead at Square said: "Corporate Development doesn't do deals, product does"[35]

4.1.1.3 Traction and Revenue

For early stage technology companies, acquiring based on revenue growth is unusual. Facebook CEO Mark Zuckerberg, in an often-repeated quote, told a 2010 audience that

> *"Facebook has not once bought a company for the company itself" [27].*

Bram Sugarmann, at Shopify, said:

> *We don't necessarily at all acquired based on revenue [38]*

4.1.1.4 Success of acquisitions

Measuring success of the acquisition is key in determining the right earnout metric. Bran Sugarman, argued that the biggest risk in M& is the integration risk [38]. James Loftus, Corporate Development Lead at Square, said on the question how they evaluate the post-acquisition success:

> *In most acquisitions technology and talent are the main drivers so you can't really build a model directly related to the company's existing revenues and profit. We measure success of an acquisition by talent, traction and product. For talent, we ask ourselves the question: are they still here, are they contributing and are they an important part of our organisation? For Technology/product: Are we using the technology and functionality the way we expected to and did the acquisition accelerate our product road-map like we wanted? For traction we measure KPIs against the model that we developed at the time of the acquisition and ask ourselves if the results are what we expected them to be.[35]*

4.1.2 Valuation and the earnout provision

Pricing early stage technology companies is not a straightforward exercise as the acquisitions rarely are based on revenues and profit. James Loftus at Square said:

> "Pricing technology companies is incredibly difficult. The acquisitions are usually driven by technology or talent so you can't really build a model directly related to the existing revenue or profit.[35]"

Eeswaran Navaratnam explained that earnouts are used to avoid companies to falling into traps where companies "fatten the pig before butchering it". Similarly, to before an IPO,

when a company is being sold the seller make sure to spend time on the "cosmetics" of the business. Costs are moved around and short-term improvement are made to make the numbers look really good in the short run. This is very difficult to sustain for a longer time which is why acquirers use earnout periods, to see whether the seller can sustain on the growth trajectory as promised.[36]

4.2 Case study

4.2.1 Introduction to GetAccept

GetAccept is a Swedish software company that was founded in 2015 by a team of four entrepreneurs. The company was a part of the Y-Combinator's accelerator in the start of 2016. Y-combinator is arguably the most prestigious startup accelerator in the world with an acceptance rate of below 1% and it has fostered companies such as Airbnb, Drop-Box, Reddit and Stripe. The company released their product in December 2015 and the founders then moved to Silicon Valley to take part in the accelerator in Mountain View, CA. The company has two different offices, in Malmö and in San Francisco. GetAccept has grown rapidly since the start and today they employ more than 30 people. Three out of the four founders have moved back to Malmö, which now is their headquarter, but they still have six employee's left in San Francisco. GetAccept have funded their growth by raising venture capital from both institutional funds and angel investors from Europe and America. They have raised capital up to the seed-round and have more than 4000 users.

GetAccept's product is a sales enablement and e-signing tool that helps salespeople engage their buyers and track their behaviour. Key product features include legally binding electronic signatures, document analytics, video introductions, live chat with prospects, reports, integrations and work-flow management for salespeople. The product's users are salespeople who send documents to their potential buyers. GetAccept is also being used by HR and other functions to sign documents digitally. Most of the customers are based in the Nordic countries but there are plenty of American customers as well. Customers tend to be salespeople who struggle to differentiate themselves from other vendors and those who send large volumes of documents. GetAccept work with many industry verticals including hotels and hospitality, enterprise software and professional services. The product is delivered through a SaaS-model where users pay on either a monthly or an annual basis. The pricing model is based on the number of users within the customer's company i.e. the customer pays for each person using the product. This is an example of a variable pricing axis and gives GetAccept the ability to do up-sell on existing customers. There are three pricing tiers of the product with different feature sets. When the customer is new to the product, he or she will get a 14 days trial with full functionality. After 14 days the customer then has the option to start paying for the product or to continue using the product on a "solo" plan with very limited offering of features. If the customers start paying for the product they can either choose the "Pro-plan" or the "enterprise-plan". The enterprise plan is more expensive than the Pro-plan but include more features such as API integrations. Customers can choose to start either a monthly or an annual subscription. Many customers start with a monthly subscription to avoid lock-in, and GetAccept then try to convert these customers into paying on an annual basis. The price point for an annual contract is about 25% lower than for the monthly contract. This is

constructed to incentivise customers to bill annually, which has a positive effect on the customer life-time value. GetAccept also charge a one-time fee in several deals, for API integrations, implementation, and user on-boarding and training.

GetAccept's vision is "to be the trend-setter, market leader, and the most wanted partner for innovative SaaS solutions for Sales Automation and electronic signatures in particular, and sales in general".[37]

4.2.2 SaaS-metrics

The following metrics has been calculated with data from the CRM and the invoicing system. The data has then been changed to not reveal any confidential information. However, the data and metrics that are presented should be seen as a representative example of what a SaaS-company of the same size as GetAccept could have.

4.2.2.1 MRR

The MRR is calculated as the added MRR (data from the CRM system) including the MRR churn (data from the invoicing system). In addition to the recurring revenue (MRR), GetAccept also sell one-time fees for implementation, on-boarding and API-integrations. The one-time items are excluded in the MRR calculation as it is not a recurring revenue. The MRR graph shows the total MRR from all countries and includes both annual and monthly users. The MRR has increased from 45 529 to 133 355 USD from January 2017 to April 2018.

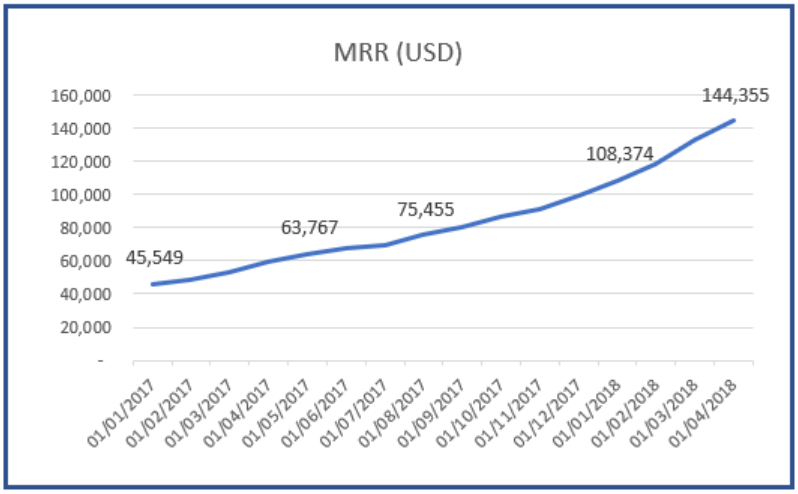

Figure 4.1: MRR Growth: January 2017 - April 2018

The compounded monthly growth rate from January 2017 to April 2018 is 8%. The monthly growth rate is presented in the chart below. Notably, the monthly growth rate has high variance and month-on-month growth varies between 5 and 13%. The variation can be explained by the volatility of sales peoples' performance.

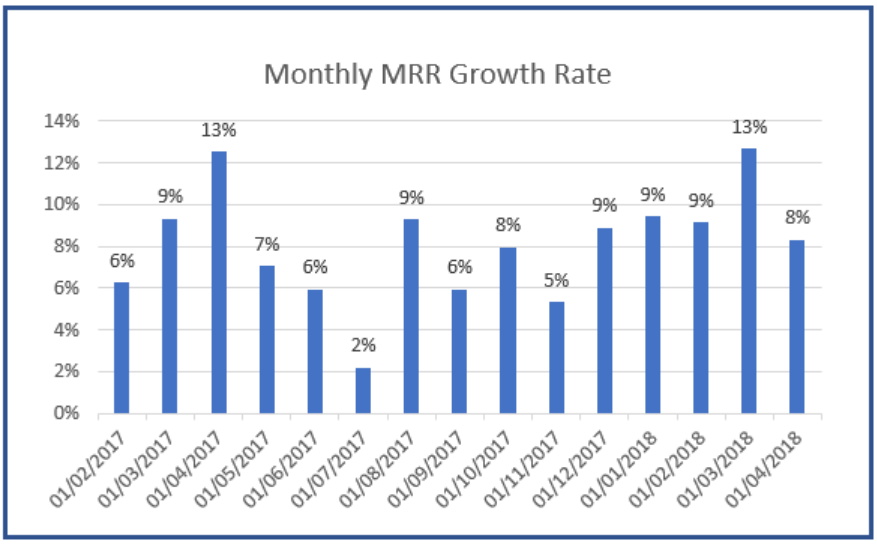

Figure 4.2: Monthly MRR Growth Rate: January 2017 - April 2018

The total amount of users is correlating with the MRR as subscriptions are sold on a per user basis. The correlation between MRR and user growth is not perfect, however, as the average revenue per user (ARPU) is changing over time.

4.2.2.2 User growth

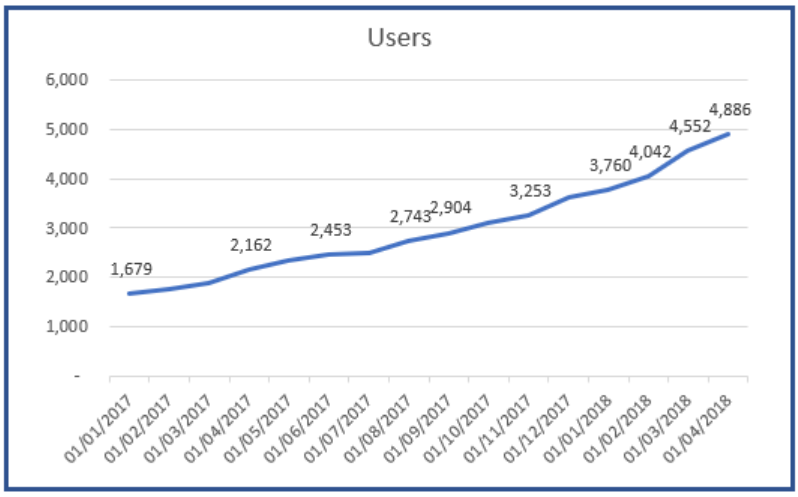

Figure 4.3: User Growth: January 2017 - April 2018

4.2.2.3 ARPU and ARPA

The average revenue per user (ARPU) has varied between 30 and 41 USD. The change in ARPU is due to price difference between monthly and annual users and the ratio of annual to monthly users vary over time. Differences in ARPU can also be explained by the discount that some customers get if they purchase subscriptions for larger quantities of users. The ARPU has not increased significantly over time.

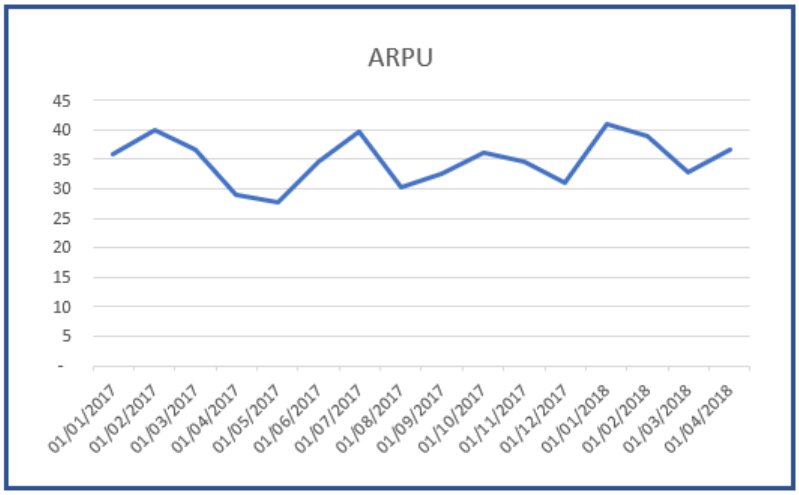

Figure 4.4: Average revenue per user: January 2017 - April 2018

The average revenue per account (ARPA) has improved over the last 16 months. This is due to a shift in focus to targeting larger customers with more users to increase the annual contract value (ACV) of every deal. The ARPA for April 2018 is 226 USD and has increased from 120 in January 2017.

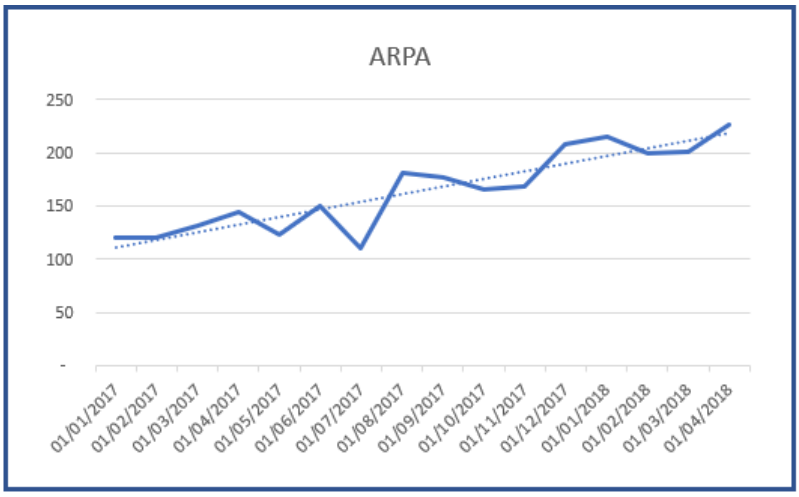

Figure 4.5: Average revenue per account: January 2017 - April 2018

4.2.2.4 Churn

Churn occurs when customers stop paying for their subscriptions. As discussed in section 3.2.2, the monthly simple churn rate does not perfectly reflect reality for a SaaS-business with high MRR growth. This is because churn rate is calculated based on the incoming MRR for a particular month, while churn is a lagging indicator from users in the past. The simple churn rate for GetAccept varies between 0,5 and 2,5 % over time with no significant improvement.

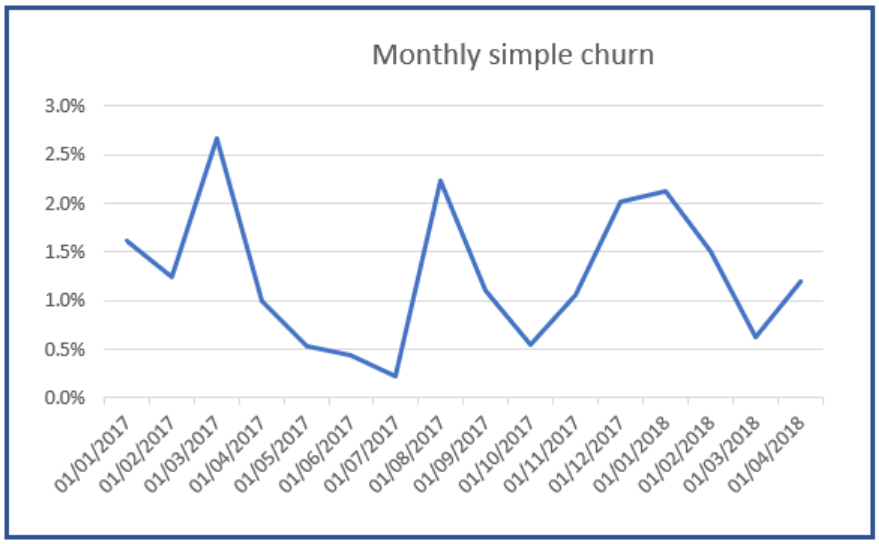

Figure 4.6: Monthly Simple MRR churn rate: January 2017 - April 2018

As GetAccept have users on both annual and monthly contracts, not all users can churn each month since they are tied up on annual subscriptions. Therefore, the available churn ratio depends on the ratio of annual to monthly users.

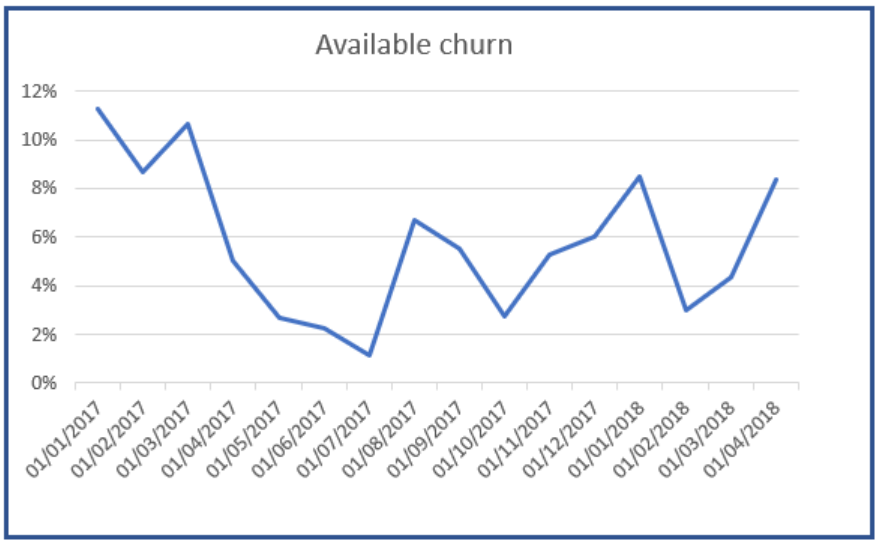

Figure 4.7: Monthly Available MRR churn rate: January 2017 - April 2018

Churn Cohort Analysis As discussed in section 3.3.2, cohort analysis is a great way of understanding the real churn in the business. It compare segments of users to each other in order to find patterns in user retention. Since GetAccept have users on either monthly or annual subscriptions, the two types of subscriptions are separated into one cohort analysis for monthly and one for annual users.

The cohort analysis of monthly users shows that the churn is relatively high. The net MRR retention rate for most cohorts is below 100% which means that churn is larger than up-sell for those customers. There is a large difference between different cohorts of users. The six-month net MRR retention rate varies between 60 and 109% with an average of

86%. The retention rate has improved somewhat over time. However, it is not a linear improvement and it is unclear if the improvement is statistical significant.

Cohort Analysis: Net MRR Retention Rate for Monthly Users

	Added us	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Jan-17	41	100%	124%	122%	114%	99%	109%	96%	96%	96%	96%	96%	96%	95%	82%	82%
Feb-17	28	106%	77%	58%	65%	50%	60%	57%	59%	59%	59%	53%	53%	34%	53%	
Mar-17	38	100%	87%	85%	92%	73%	83%	54%	62%	58%	58%	58%	58%	39%		
Apr-17	23	100%	95%	62%	69%	66%	85%	87%	102%	102%	99%	105%	95%			
May-17	39	94%	77%	69%	71%	56%	66%	63%	71%	82%	82%	82%				
Jun-17	34	100%	95%	101%	101%	97%	93%	89%	89%	89%	89%					
Jul-17	43	100%	95%	83%	90%	65%	75%	72%	80%	70%						
Aug-17	27	104%	107%	120%	115%	108%	101%	105%	105%							
Sep-17	43	93%	88%	72%	79%	81%	93%	101%								
Oct-17	31	100%	91%	89%	92%	77%	91%									
Nov-17	43	100%	95%	99%	106%	120%										
Dec-17	34	100%	95%	62%	69%											
Jan-18	30	100%	90%	95%												
Feb-18	61	96%	91%													
Mar-18	44	100%														

Figure 4.8: Net MRR Retention Rate (Monthly Users): January 2016 - April 2018

The cohort analysis for annual users shows that the net MRR retention rate for annual users is significantly higher than for monthly users. When users are on annual subscriptions, they can't churn until month 13. In month 13, however, the net MRR retention rate doesn't drop below 100% in any of the cohorts. This means that annual users have net negative churn. Net negative churn's exponential impact on growth is discussed in section 3.2.2.2. However, it is worth noting that only three cohorts have yet come to month 13 which is when its users can start churning. After nine months, the average cohort retention rate is 121%. The strong 9 months retention rate indicates that the 13-month retention rate will be above 100% thus reaching net negative churn for rest of the cohorts as well.

Cohort Analysis: Net MRR Retention Rate for Annual Users

	Added users	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Jan-17	299	100%	100%	100%	100%	100%	100%	100%	114%	114%	114%	114%	114%	107%	109%	112%
Feb-17	45	100%	100%	100%	102%	107%	107%	107%	117%	107%	107%	107%	111%	102%	101%	
Mar-17	89	100%	101%	117%	117%	127%	127%	127%	128%	128%	129%	129%	129%	119%		
Apr-17	116	99%	101%	107%	107%	109%	111%	114%	115%	115%	117%	118%	120%			
May-17	66	100%	111%	111%	111%	114%	114%	138%	151%	152%	154%	154%				
Jun-17	50	100%	100%	104%	104%	116%	116%	116%	126%	116%	116%					
Jul-17	27	100%	100%	107%	111%	111%	111%	121%	121%	115%						
Aug-17	133	100%	100%	100%	103%	107%	107%	107%	107%							
Sep-17	95	100%	101%	102%	104%	105%	106%	106%								
Oct-17	97	100%	100%	100%	101%	102%	102%									
Nov-17	96	100%	100%	100%	100%	101%										
Dec-17	296	100%	100%	100%	100%											
Jan-18	104	100%	100%	100%												
Feb-18	173	100%	100%													
Mar-18	167	100%														

Figure 4.9: Net MRR Retention Rate (Annual Users): January 2016 - April 2018

Averages in cohort analyses can be misleading since the number of users in each cohort varies greatly. Thus, it can be beneficial to look at the weighted average net MRR retention rate (WAR-rate). The WAR-rate combines the cohorts and weigh them on number of users in the cohort. The graph shown can be seen as a representation of how an average user (or one dollar in MRR) grow over time.

The WAR-rate of annual users show net negative churn as the graph never go below 100%.

In month 13 there is churn, but the accumulated up-sell during twelve months is larger.

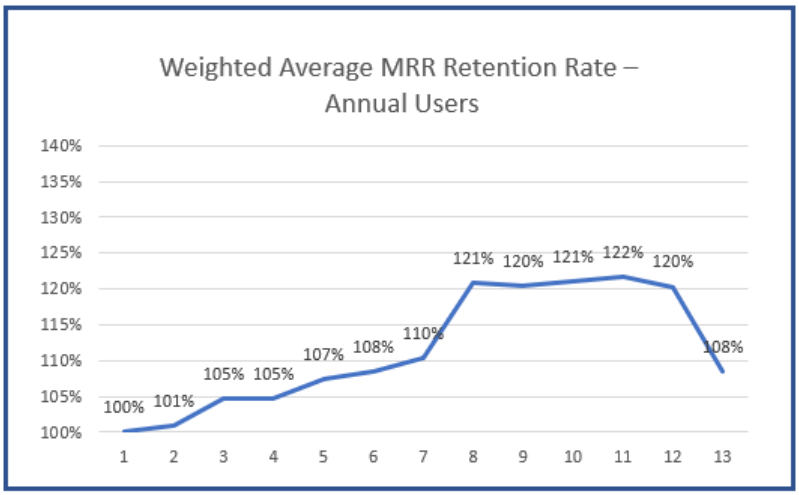

Figure 4.10: Weighted Average Net MRR Retention Rate (Annual Users): January 2016 - April 2018

The WAR-rate of monthly users is significantly lower than that for annual users. The net positive churn is linear which indicates that there is not one particular month in the customer journey where users stop subscribing to the product.

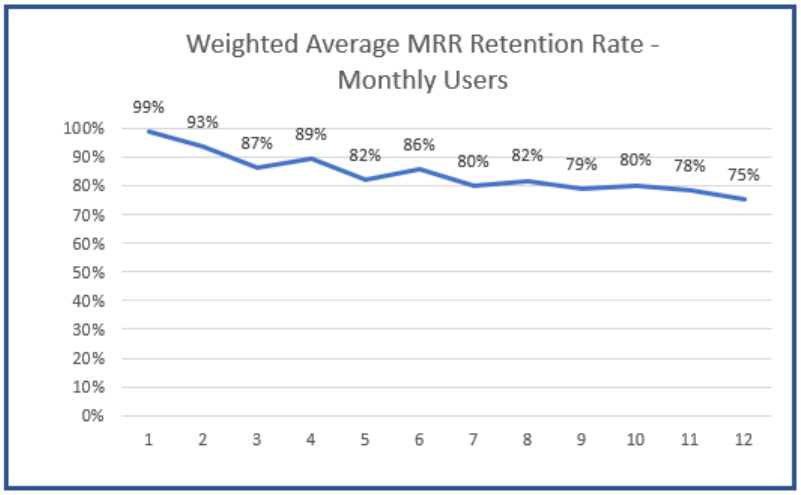

Figure 4.11: Weighted Average Net MRR Retention Rate (Monthly Users): January 2016 - April 2018

4.2.2.5 Engagement metrics

For GetAccept, a monthly active user (MAU) us defined as a user who has logged in or used the product's API at least three times in a particular month. The engagement ratio is defined as the percentage of total paying users that are active. Below is a graph of the engagement ratio plotted over time. As shown in the graph, the engagement ratio has improved significantly during the fall of 2017 until the start of 2018 and has since then

been flat. Naturally, the engagement in the product is lower during the summer since less people work then.

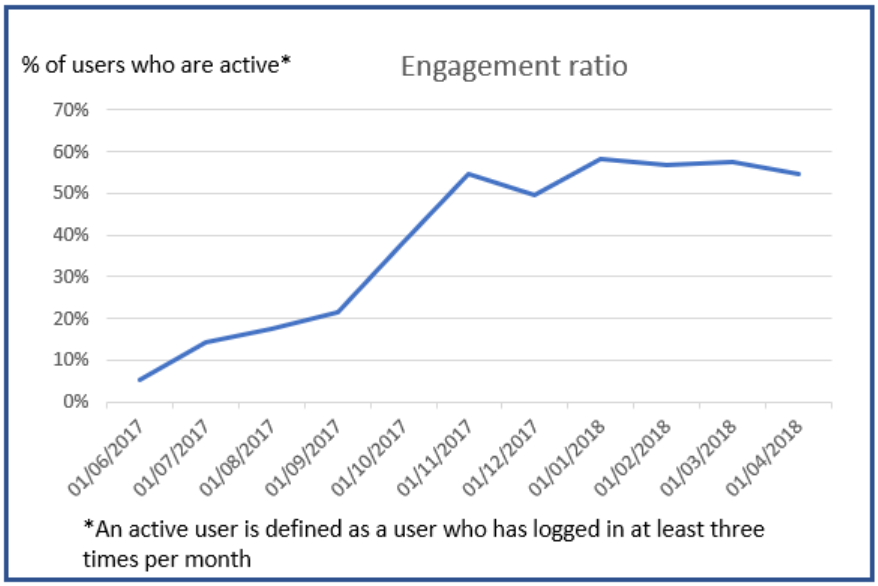

Figure 4.12: Engagement Ratio: June 2017 - April 2018

From the cohort analysis of the engagement ratio, it is clear that users' engagement their first month of subscribing has been a key driver in the overall increased engagement ratio. The six-month engagement rate has not been improved however. Users have become more active the first three month of subscribing. The user engagement ratio three months and more into the users' subscription has not been improved.

Cohort Analysis: Engagement Ratio

	Added users	1	2	3	4	5	6	7	8	9	10	11
Jun-17	132	17%	33%	39%	43%	66%	78%	74%	70%	68%	69%	68%
Jul-17	31	33%	48%	47%	71%	72%	69%	62%	66%	53%	62%	
Aug-17	133	37%	38%	67%	65%	77%	63%	72%	72%	70%		
Sep-17	166	39%	53%	80%	72%	75%	68%	66%	67%			
Oct-17	183	54%	74%	72%	71%	67%	63%	57%				
Nov-17	165	76%	59%	67%	63%	74%	55%					
Dec-17	111	83%	81%	73%	72%	72%						
Jan-18	379	76%	68%	71%	67%							
Feb-18	217	79%	65%	53%								
Mar-18	321	85%	66%									
Apr-18	263											

Figure 4.13: Engagement Ratio Cohort: June 2017 - April 2018

4.2.2.6 Sales Efficiency

As discussed in section 3.2.4.1, the LTV:CAC ratio builds on several assumptions. There are also several different ways of calculating the customer acquisition costs and what to

include in it. The GetAccept CAC include salaries, marketing spend, software tools and a proportionate part of the fixed costs. Calculating customer life-time value (LTV) is a theoretical exercise that is practically difficult with net negative churn. To simplify, the assumption is made that an average user stays for three years. The LTV:CAC calculation is made on a quarterly basis to average out the monthly variance.

The LTV:CAC ratio is calculated on a quarterly basis and varies between 2.5 and 4.5. The ratio doesn't take into account that salespeople generally take between 2-4 months from start to close their first deal. There is a delay between spent CAC and closed MRR. Therefore, the LTV:CAC ratio is lower after recruitment since costs occur before the sales people are closing new deals.

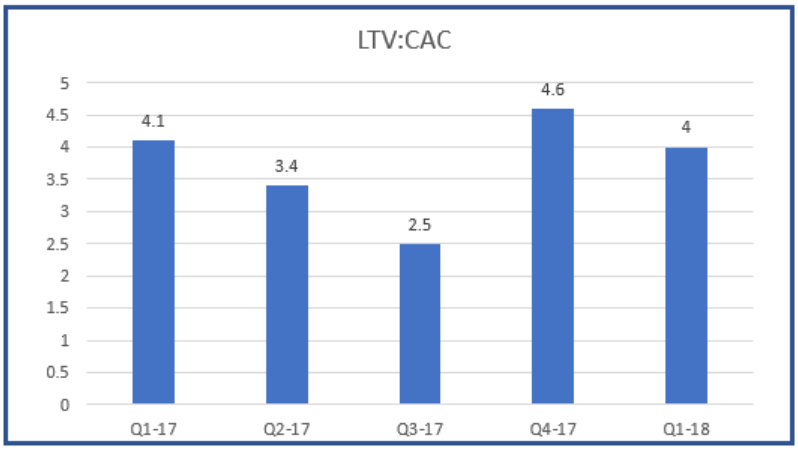

Figure 4.14: LTV:CAC Q1-2017 - Q1-2018

The magic number takes into account the delay between CAC and increase in MRR. The ratio varies between 1.2 and 1.8 over time which can be considered very favourable.

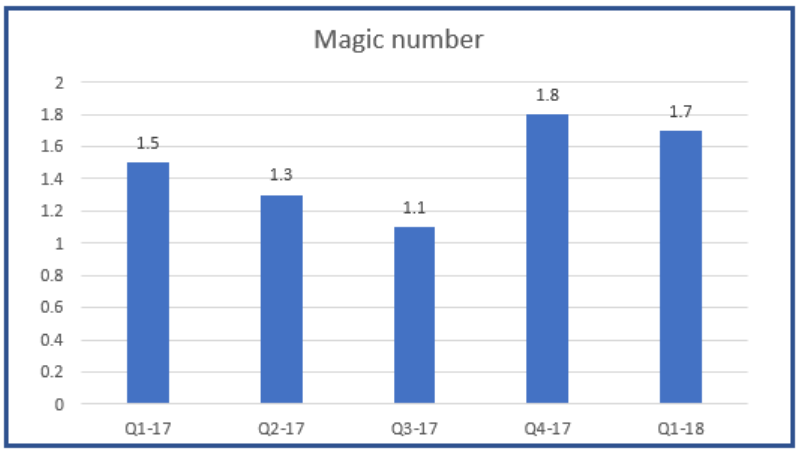

Figure 4.15: Magic Number: Q1-2017 - Q1-2018

As discussed in section 3.2.4.3, The CAC payback period is inversely correlated to the magic number. The CAC payback period varies between 7 and 11 months. The relatively short payback period has a positive effect on cash-flow.

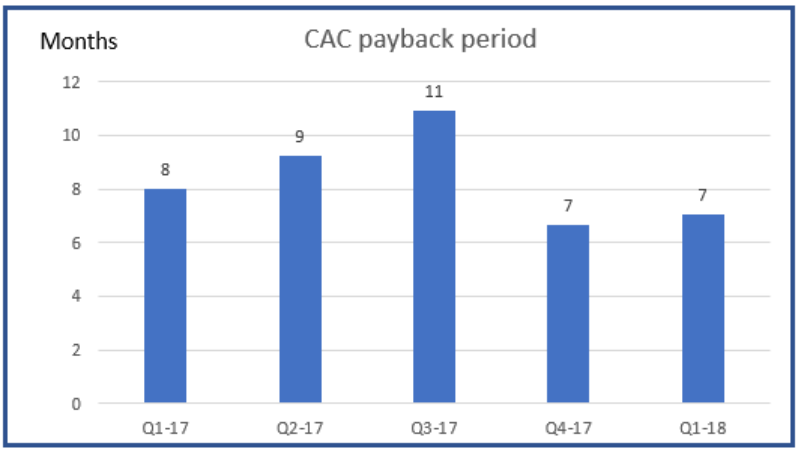

Figure 4.16: CAC Payback Period: Q1-2017 - Q1-2018

Chapter 5

Analysis

The analysis aims to analyse how earnouts are constructed through both the lens of the acquirer and the seller. In the second part of this chapter, the analysis is applied to the empirical data from the case study company.

5.1 Suggesting performance metrics in earnouts for SaaS-businesses

Earnouts today use traditional financial metrics such as revenue, EBIT, EBIDTA or net income. Some earnouts, particularly in life-science and medical technology, use non-financial metrics such as product launch or FDA-approval. This study is looking at suggesting more appropriate metrics for SaaS-businesses, with the basis in Lean Analytics.

A milestone in an M&A earnout is a metric that if achieved would give the seller additional payments from the buyer. Thus, it is important that the milestone is aligned with value creation for the acquirer. Measuring value creation is not straightforward since talent and technology often is involved in the acquisition strategy which can't be compared to a financial model. When setting the metric, the author suggests looking at both the seller's as well as the buyer's perspective. Hence, the analysis will start with looking at buyer's perspective and different types of acquisition strategies. The author will then look at the issue from the seller's perspective by using Lean Analytics to propose a framework for understanding what stage the company is in, and then suggesting appropriate metrics for each stage. The analysis is then applied to the case company for which earnout metrics are suggested as if the company was sold today. The section ends with an analysis of how to avoid metric manipulation and sub-optimisation.

5.1.1 Types of acquisitions: The buyer's perspective

As shown in section 4.1, different acquirers will have fundamentally different reasons for acquiring a company. If a company gets acquired by one of the technology incumbents, talent and product is often the main driver. If the buyer is an Asian conglomerate, the

strategy is more likely to be based on market access. If the acquirer is a private equity firm, the acquisitions are usually based on financial metrics.

As shown in section 4.1, codifying the acquisition strategy before constructing earnout provisions is important because it defines how success should be measured. The earnout literature shows that the earnout milestone should be aligned with the buyer's strategy and its view on value creation. If the milestone on which the earnout payment is based is fundamentally different from what the buyer's want from the acquisition, there will be misalignment between the entities and an increased post-acquisition integration risk. Hence, the process for determining milestones in an earnout should start with the acquisition strategy. As discussed in section 4.1.1, the most common acquisition strategies for early stage technology businesses is **acquihires**, **product or technology acquisitions** and **traction acquisitions**. Technology refers to acquisitions where the product, data, technology or IP is core in the acquisition. Traction include revenue growth, access to certain users, a beachhead in a new market or geography, reference cases and customers, and more. Acquihires are acquisitions where talent or access to specialised knowledge are the key drivers. These acquisition strategies are not mutually exclusive, and acquisitions usually encompass at least two of these dimensions.

5.1.1.1 Acquihires

In an acquihire, the buyer is primarily motivated by the talent of the seller's employees rather than its operating business or technology. Many acquisitions have the objective to access talent in combination with other areas such as product or revenue. These types of acquisitions are thus not pure acquihires. If talent is the main driver and key value creator in an acquisition, disagreement around the future growth trajectory of the business should not impact the valuation. Using financial metrics to determine earnout payments in a transaction that only focuses on talent would create unnecessary misalignment and increase integration risk. As shown in section 4.1.1.3, the success of acquihires is generally measured by how well the acquired team contributes after some time period. This is a qualitative metric that can't be decoded into an accounting principle on which an earnout should be based. It is not feasible to use qualitative metrics such as those around talent contribution in earnouts due to their subjective nature, as it most certainly would create disagreement around fulfilment and accounting. Using financial metrics would therefore create misalignment between the parties and using qualitative metrics around team contribution is not feasible. For these reasons, the author argues that earnut metrics based on financial metrics or Lean Analytics are inappropriate in acquihires. However, a provision that makes sure that the sellers get fully paid only if they stay in the company for some time-period after the acquisition would be appropriate to protect the buyer.

5.1.1.2 Product and technology acquisitions

As shown in section 4.1.1.2, many acquisitions in the early stage technology industry, and in particular in SaaS, are driven by an urge to accelerate product road-map and to get access to functionality or technology. Most product acquisitions are not solely based on the product, but rather a combination of product, technology, talent and traction. There are several reasons for acquiring a company based on their product such as integrating

their functionality into an existing platform, augmenting the offering with new features or use the acquired technology for internal operational excellence. As argued in section 5.1.1, the objectives of the acquisition need to be in focus when determining the metric by which the success of the seller's company is measured after acquisition. If the technology access is the reason for acquisition, it is difficult to use a quantitative metric of success that is not subjective or easily manipulated by the acquirer. The same logic applies to acquisitions that are based on functionality, feature or product integration into the acquirer's existing offering. It becomes even more difficult to use metrics for earnouts when the objective of an acquisition is mixed between talent and product. When milestones are set in such a way that they are subjective and easily manipulated by the acquiring party, misalignment between the two companies can be created and the integration risk increased. As argued in section 4.1, the buyer usually acquires a company due to perceived synergies between both parties. It is highly subjective and difficult to measure how much value that has been created from these synergies and thus the risk for disagreement and litigation over the outcome is high. As we have seen from previous research around earnouts, the amount of earnout deals that lead to litigation and dispute resolution is very high due to disagreements on accounting issues and definitions of metrics. Hence, the author argues that using financial metrics or metrics related to synergies between the two parties is most likely not a good idea at all. However, as argued in section 5.1.1.1, there should be some kind of provision that makes sure that sellers can't quit the company after acquisition and walk away with the all of the money.

5.1.1.3 Traction acquisitions

As argued in section 4.1, it is very unusual for an early stage technology company to be acquired by larger technology incumbents (Google, SalesForce, Oracle, SAP, Adobe etc.) based on their revenue. However, traction can be a part of the overall acquisition strategy. Acquisitions based on traction are also more common when foreign companies acquire for market access. Private equity firms have traditionally not been active in the early stage technology ecosystem, but recently the M& activity from PE-firms has increased. Depending on the original objective of the merger, an earnout based on financial metrics from Lean Analytics such as MRR, MRR growth or User growth may be appropriate. If the acquirer has a strong balance sheet with liquid assets and aim to scale the seller's business post-acquisition, sales efficiency metrics such as magic number can be used in earnouts if the seller's current business model is not capital efficient enough. Some acquisitions are made on the premise that they are believed to add to the financial metrics of the acquirer. In those situations, earnouts are appropriate to use as it bridges the gap between the seller's and the buyer's valuation expectations. When the acquisitions strategy is a mix of product and traction, MRR can be used as one of the earnout metrics. An example can be when the strategy is to keep the companies independent until a critical mass of users is reached, and then the seller's product is integrated into the acquirer's existing software product. In those cases, it can be very relevant to have metrics in the earnout such as user growth or MRR.

5.1.2 The seller's perspective: Characteristics to consider when suggesting earnout metrics

As shown in section 3.2.2, the important metrics depends on what stage the startup is in. Therefore, in addition to the buyer's perspective and the acquisition strategy, the seller's product and the nature of the company need to be carefully considered when choosing an appropriate metric in an M&A earnout.

5.1.2.1 Lean Analytics' stages and earnout metrics

As discussed in section 3.1.2, the stage of the seller's business is critical to determining what metrics to focus on. This is because the metric that are important (the OMTM) change over the lifetime of a company. In an earnout, it is of great importance that the chosen milestones correlate with success of the seller's company and the buyer's objectives. As such, the stage of the company is crucial to consider when determining the earnout metric.

If the company is still in the empathy or stickiness stage and get acquired, it will by definition not be a "traction acquisition" but rather an acquihire or a technology access acquisition. If the company is in the stickiness stage with low engagement and high churn, the focus needs to be on improving the product's stickiness before trying scale. As previously discussed, a provision that makes sure that the sellers get fully paid only if they stay in the company for some time-period after the acquisition should be used to protect the buyer. Earnout milestones based on financial metrics or Lean Analytics should not be used in acquisitions of companies in these stages. However, the metrics from Lean Analytics can be used to determine whether or not the company has moved beyond the stickiness stage. The metrics that should be analysed are the **engagement metrics**. Because different products have inherently different usage patterns, it is impossible to give a general benchmark of engagement and retention that a company should have to have moved beyond the stickiness stage. A good starting point is the **engagement ratio** should be somewhat continuously high and that the engagement WAR-rate doesn't show steep drops after a couple of months. **Cohort analysis** is the best way of understanding the real engagement patterns and should be used to decide if the company has moved beyond the stickiness stage or not.

The virality stage is passed when the product has found some kind of virality, whether inherent, artificial or word of mouth. This is very difficult to track quantitatively due to the complex nature of the metric.

As shown in section 3.3.3, engagement is a good stickiness metrics as it is a leading indicator of churn and it should be used in the early stages of a company when there is not enough data to see what the real churn is. When the company has acquired a significant amount of customers, the **simple churn rate** and **Net MRR Retention Rate** should be analysed. The monthly **simple churn rate** should be below 3-4% for the company to move beyond the early revenue stage. As argued before in this study, the simple churn rate is flawed at high MRR growth which is why it is essential to look at the **cohort analysis of Net MRR Retention Rate**, as well as the **WAR-rate**. If the 12 months WAR-rate is above 85%, the company has low enough churn to start

looking into sales efficiency. Naturally, these general recommendations do not apply to every SaaS-product. The nature of the product and the customers must be considered when deciding upon what a good churn rate looks like. If the churn is too high but the product has high **MRR** or **number of users**, churn metrics could theoretically be used in certain cases as a metric in earnouts. However, there are complexities in the metric that makes it difficult to track objectively, which makes it practically difficult to use the metric.

As shown in section 3.2.3, companies in the early revenue stage, with low churn but low sales efficiency, should not attempt to scale. Sales efficiency metrics could then be appropriate metrics if the acquirer wants to scale the seller's business after acquisition, but the current sales model is too capital inefficient. If the seller believes that they through synergies with the acquirer can increase the sales efficiency and make the model scalable, sales efficiency metrics in earnouts can arguably lead to alignment between both parties and focus the efforts on what matters for the acquirer. The most commonly used sales efficiency metrics are the **LTV:CAC ratio**, the **Magic Number** and the **CAC Payback Period**. As argued in section 3.3.4.1, the LTV:CAC metric builds on several assumptions and can easily be subject to manipulation. This makes it an inappropriate choice for metric in an earnout. The Magic Number is a better metric to use in an earnout if the company has poor sales efficiency and need to improve it before attempting to scale. Magic number is a much simpler metric than the LTV:CAC ratio, however the cost allocation component is slightly problematic and needs to be clearly defined. The **CAC payback ratio** has the same problem with cost allocation as the **Magic Number**. **The CAC Payback Period** is very similar to the Magic Number but the Magic Number is somewhat more simplistic and easy to define. Thus, in the previously hypothetical case, the Magic Number would be more appropriate as a metric in an earnout. If the **Magic Number** can be used as a metric in an earnout it must be clearly defined as the cost allocation part of it can lead to suboptimisation, which will be discussed in the upcoming sections.

As argued in section 3.2.3, if the company has favourable sales efficiency metrics it is ready to go on to the early parts of the scale stage and is ready to scale up the customer acquisition model. It has proven that the sales model is capital efficient enough to invest in growth. This is generally the case when the LTC:CAC ratio is higher than 3, the Magic Number higher than 1 and the CAC Payback Period lower than twelve months. If that is the case, the primary objective is MRR growth which also should be the earnout metric.

The suggested framework for applying Lean Analytics to earnout metrics is synthesised below:

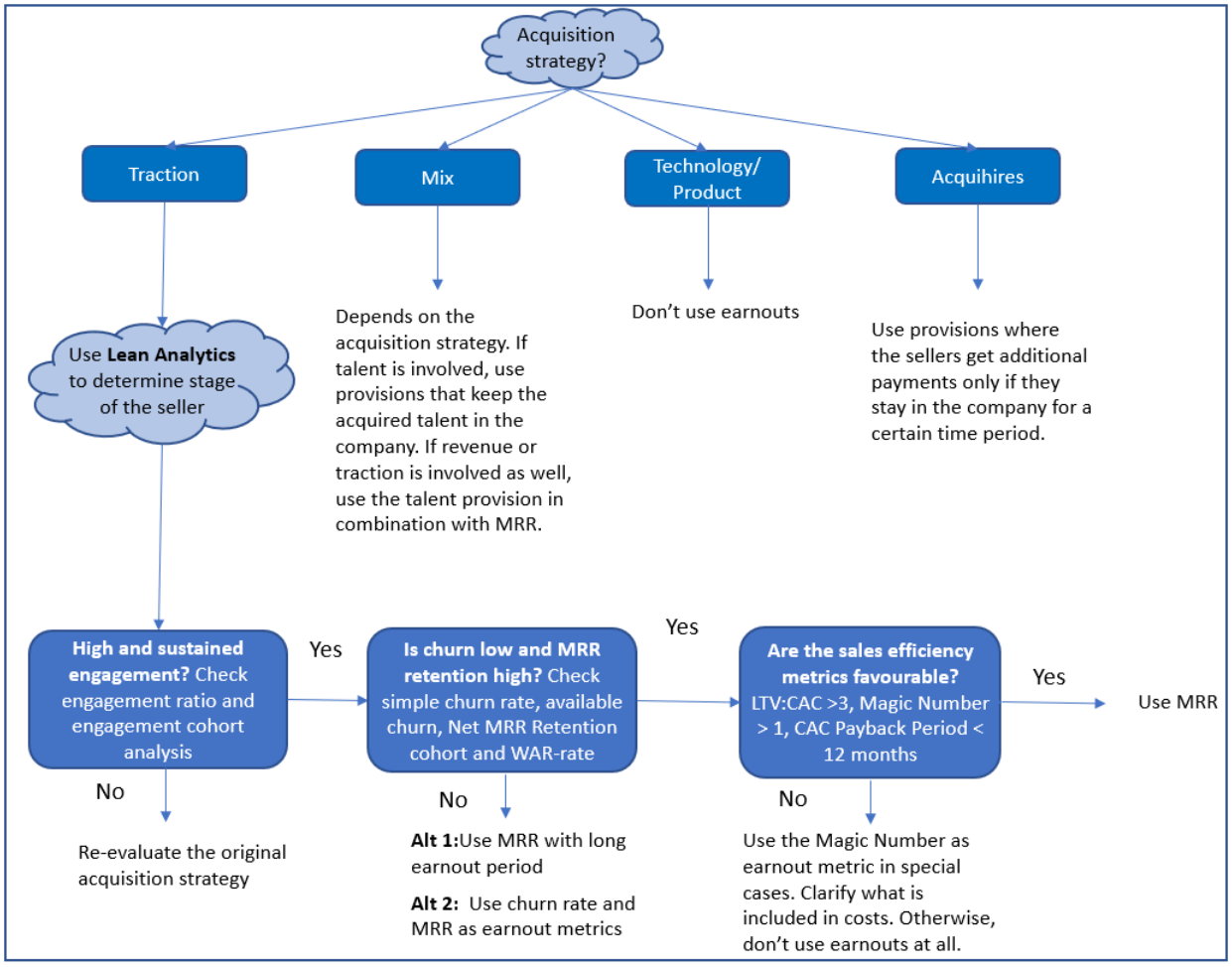

Figure 5.1: Process for determining earnouts in SaaS

5.1.3 How to avoid reaching milestones through sub-optimisation

As we have discussed previously, one of the biggest problems with how earnouts are designed today is that a significant amount of them lead to disagreement over outcome, dispute resolution and litigation. This is usually due to: **lack of clarity** around how earnout metrics are defined, as well as the **post-acquisition control** issues.

5.1.3.1 Post-acquisition control

As shown in section 3.4.4, the seller is vulnerable to the buyer's actions and decisions post-closing, which may impact the likelihood of reaching milestones and receiving earnout payments. If the milestones aren't met, and sellers are deprived on expected pay-outs, the sellers can argue that the buyer didn't do enough to ensure the earnout was met. The best way to work around this issue is for the two companies to remain independent entities after the acquisition. However, the aim of the acquisition is usually to integrate the company into the acquirer's organisation and use their product functionality, technology, team and capabilities. Therefore, this is not always a viable option. The earnout provision

usually include good faith and reasonable effort provisions to protect against opportunistic behaviour.

5.1.3.2 Clarity around the metric definition

As shown in section 3.4.3, a metric need to be clearly defined and understood by both parties. There must be complete transparency around how the metric is calculated and around how the accounting is done to calculate it. When the earnout provision is written, examples of outcomes should be provided to both parties to exemplify metric calculation. A third party can be used for potential dispute resolution. It is difficult to user qualitative metrics as they are subjective, hard to define and are likely to lead to disagreements on whether or not the milestones have been achieved. Simplicity is very important as complicated metrics lead to a lack of clarity and understanding, which in its turn lead to a higher probability of disagreement and litigation over outcome. Therefore, metrics that build on assumptions such as the LTV:CAC ratio should not be used as milestones in earnouts. The metrics that are being used should also preferably be lagging indicators since they track performance over the earnout period. If metrics that involve cost allocation is used (such as the Magic Number or net profit), there must be clear definitions from the start on what costs are to be included. Generally, the more complex the cost allocation becomes the more likely it is to lead to opportunistic behaviour and sub-optimisation.

5.1.3.3 Inversely correlating metrics

A combination of metrics can also be used to avoid reaching the metrics through sub-optimisation or "creative accounting". If the product is in the stickiness stage, the metrics used could be a combination of **engagement ratio** and **simple churn**. If the company tries to lower churn in the short run by adding a lot of users who will churn after the earnout period is over, the engagement ratio will go down. If the company tries to improve the engagement ratio by dropping users who are not engaged from the product, the simple churn ratio will go up. Combining these two metrics makes it difficult for the seller to reach milestones by opportunistic behaviour and sub-optimising.

5.2 Applying Lean Analytics to an earnout for GetAccept

GetAccept, as discussed in section 4, is a SaaS-business that is funded by venture capital. Because they are funded by venture capital, they will need to seek liquidity at some point to be able to return the money to its shareholders. They have more than 3000 users and around 150 000 USD in monthly recurring revenue. They are a perfect candidate for an early stage M&A which makes the attempt to set metrics in a fictional earnout a highly relevant exercise.

As discussed before, both the acquisition strategy of the acquirer and the seller's perspective needs to be considered when determining the earnout metric:

5.2.1 The seller's perspective

In section 5.1.2, the importance of understanding what stage the seller is in when determining earnout metrics was discussed. The theoretical framework from Lean Analytics five stage's (section 3.1) is appropriate for this exercise. Since GetAccept have more than 4000 paying users, they clearly have moved beyond the *empathy stage*.From the empirical data in section 4.3.5, we see that the engagement ratio is around 70& which can be considered high. The engagement cohort analysis further confirm our view that GetAccept's product is sticky enough, and that they thus have moved beyond the second stage in Lean Analytics: *the stickiness stage*. One of GetAccept's key product features is electronic signatures. This creates inherent virality (section 3.1.7) in the product as every product usage creates a marketing opportunity. The more their product is being used, the more exposure their brand gets. Therefore, GetAccept have arguably crossed the *virality stage*. From the cohort analysis of the Net MRR Retention Rate, it is observed that GetAccept have net negative churn and an annual WAR-rate of 108% for annual users, but an annual WAR-rate of 75% for monthly users. Overall, this is indicative of a very low churn and GetAccept have arguably moved beyond the early revenue stage. The empirical data presented in section 4.3.6, show that GetAccept's LTV:CAC ratio, the magic number and the CAC payback time are favourable. It indicates that the sales model is working and that the company is ready to scale. The LTV:CAC ratio is around 3, which can be considered good enough. The magic number is above 1 and the CAC payback time is is below 12 months. This is generally a sign that the company has found an effective paid engine of growth and that they are ready to attempt to scale. GetAccept has arguably moved on to the early stages of **scale**.

At the *revenue stage*, the most important metrics are sales efficiency and MRR/user growth. The most appropriate metric for GetAccept, as they are in the early scale stage, would be MRR or MRR growth. Number of users and user growth wouldn't be as appropriate since that could lead to a price decrease in order to attract more users, which could hurt revenues and long-term profitability.

5.2.2 The buyer's perspective

Naturally, the acquisitions strategy must be considered when choosing an appropriate earnout metric. As discussed before, earnouts for acquihires should not use Lean Analytics' metrics as earnout metrics. Product acquisitions where the seller's product is meant to be integrated as a feature into the buyer's existing products, usually are not well-suited for these types of metrics in earnouts either. For traction acquisitions however, where the acquisitions strategy is market access or revenue based, Lean Analytics' metrics are very appropriate for earnouts. Target MRR or MRR growth is probably the best metric to use in this case.

5.3 Comparison to traditional earnout provisions

Traditional earnouts use GAAP-metrics such as revenue, EBITDA or net income. The benefit of using Lean Analytics' metrics compared to the traditional GAAP, is that they better reflect the reality of the recurring revenue model and align incentives after the acquisition.

5.3.1 Traditional GAAP financial metrics are not appropriate for SaaS

Due to the delayed cash-flow in subscription-based models, traditional accounting principles are not adequate to examine the health of a growing SaaS-business. The Generally Accepted Accounting Principle (GAAP) metrics simply does not tell whether the business model is viable. By using the GAAP, a SaaS business may look like it is performing very poorly as measured by revenue and margins, where in fact the business model is profitable and viable. For a traditional business using GAAP, the revenues are calculated based on sales that is already invoiced. In SaaS, however, customers often pay on a monthly or annual basis. Therefore, closed sales for a subscription-based model might only be the contract value of the first monthly payment whereas the customer lifetime value may be significantly higher if the customer stays over a long period of time. Repeat purchases are fundamental to the business model and GAAP does not correctly take that into account. Thus, several new ways of looking at SaaS unit economics have been developed by venture capitalists and startup CEOs. The MRR metric is also a better indicator of how much revenue the company will have in the future. If, for example, the company doesn't sell anything from January to November and then in December they sell for an MRR of 100 000 USD, the total revenue for that year would be 100 000. If revenue was used as a metric, and 200% growth as a milestone, the earnout milestone would be a revenue of 300 000 USD for the upcoming year. Next year, however, the company will earn 100 000 USD every month from the existing recurring revenue, which is an annual recurring revenue of 1 200 000 USD. Thus, revenue is not an appropriate metric for projecting what the future revenue of a SaaS-company should be and should therefore not be used as a metric in an earnout.

The revenue metric is a lagging indicator of income while MRR is an indicator of how much recurring revenue the company at one given point have. In the case of GetAccept, they have both recurring revenue and one-time fees, with the majority coming from recurring revenue. If the earnout metric would be revenue, they could reach the goal by focusing on adding high implementation costs which would add to the revenue metric this year. However, that would be sub-optimisation as it is bad for the business in the long run. For SaaS-businesses, it is clear that revenue is an inferior metric compared to MRR.

5.3.2 Aligning incentives

In order to align the post-acquisition financial incentives of the seller with the value created for the acquirer, the metrics used in an earnout must be the metrics that should they improved would significantly increase the value of the company for the acquirer. The success of the acquired company within the earnout length time-frame should be defined

by the metrics used in the earnout. Thus, the acquisition strategy should be tied to the metrics in the earnouts. The milestones will create a financial incentive for the seller to improve on those very metrics, and as previously argued: What gets measured gets improved". It is important for the post-acquisition success that the financial incentives of the seller are aligned with the success of the business so that they try to improve the metrics that matter for the acquirer. Since traditional GAAP metrics such as revenue and net income does not reflect the health of the SaaS-business, they should not be used in earnouts. Having revenue or profit as an earnout metric without considering the stage of the company would in many cases lead to pre-mature and capital inefficient scaling that can be detrimental to the business.

Chapter 6

Conclusions

The conclusion aims to answer the initial research questions. It also provides an example of how the findings can be applied by constructing a fictional earnout for the case study company.

6.1 Suggesting appropriate performance metrics in earnouts for SaaS-businesses

The process of determining the earnout metric should to start with the acquisition strategy. The acquirer should codify its objectives and decide what success looks like. For pure "acquihires", earnouts are not appropriate though a mechanism for keeping the people in the acquiring company should be used. For acquisitions based on the product, earnouts should be avoided if possible as the metrics for success is of qualitative nature. If the acquisitions strategy is to add to financial metrics of the acquirer, earnouts are a good way of bridging the valuation expectation gap. The stage of the seller's company must be considered since the metrics that matter differ between stages in the company. To understand what stage the company is in, Lean Analytics' metrics can be used. Financial metrics, churn, engagement metrics and sales efficiency metrics should be analysed to understand where the company is at. The key to setting the right earnout metric is thus to understand the acquisition strategy and the metrics that are important for the seller. The process of selecting earnout metrics is summarised in the framework below.

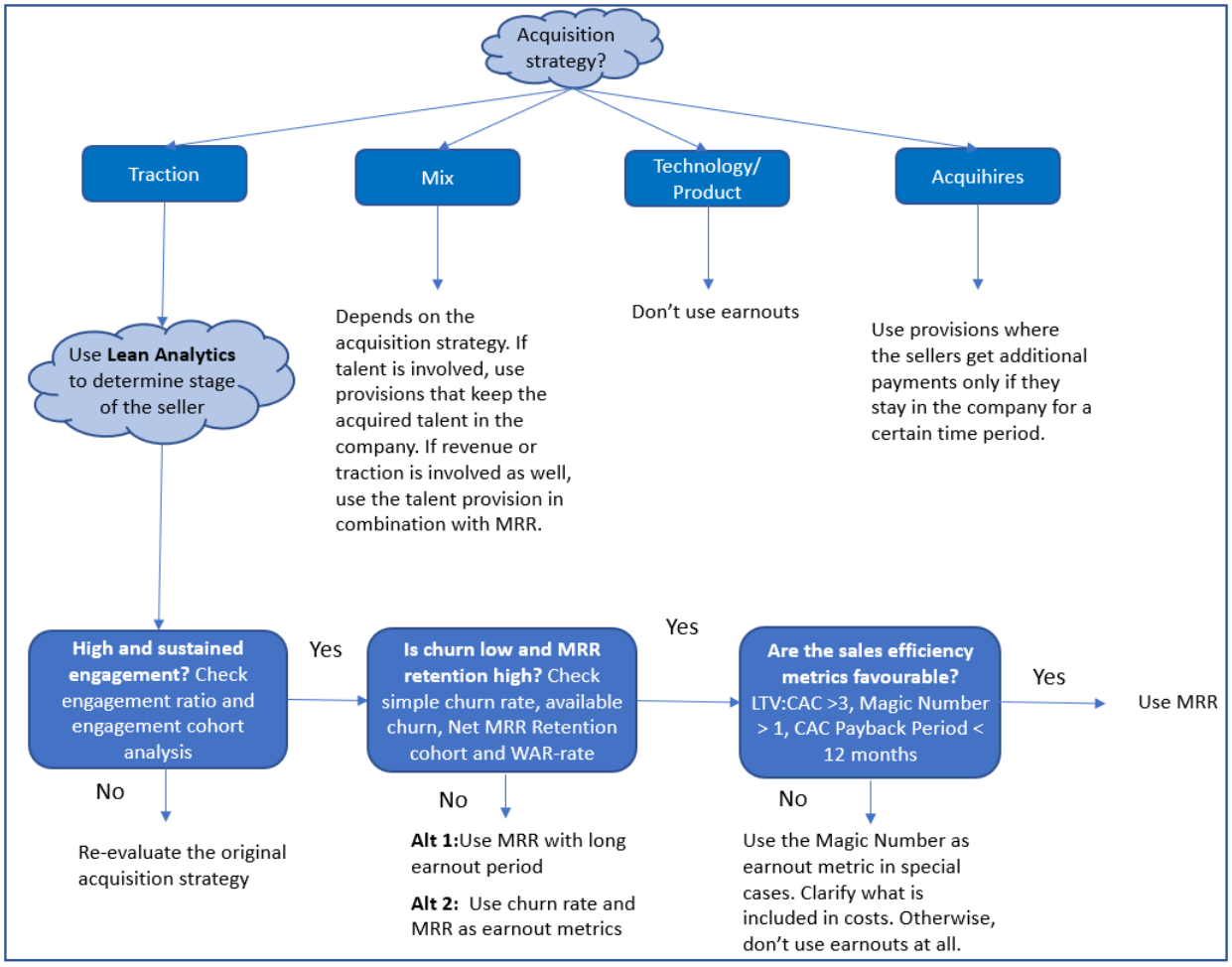

Figure 6.1: Process for determining earnouts in SaaS

After the earnout metrics is decided, all parties involved in the M&A process must pay attention to metric definitions and avoid post-closing control issues. Metrics that involve cost allocation, such as bottom line growth or sales efficiency metrics, should generally be avoided. If they are used, the definition must be clear and both parties aware of how costs are to be allocated during the earnout period. The metrics should not be qualitative or subjective, and both parties must agree upon clear definitions and accounting principles. Furthermore, metrics that build on assumptions should not be used. Both parties must make sure that the metrics in the earnout is aligned with the acquisition strategy and the success of both companies. The earnout provision should also include good faith and reasonable effort provisions to protect against opportunistic behaviour.

6.2 Applying Lean Analytics to the process of determining earnout metrics

Some metrics from Lean Analytics can be used as metrics in earnouts. However, most of them are easily manipulated and too complicated which can lead to an increased risk of disagreement over outcome and legal litigation. The MRR metric, Simple Churn Rate and

the Magic Number can be used in earnouts depending on what stage the company is in. Simple Churn and the Magic Number are only suggestions, however, for metrics that can be used in very special occasions situations. MRR would in most cases be an appropriate metric to replace the traditional revenue, EBIT or profit metric. Even if Lean Analytics' metrics are not used as earnout metrics, they should be used to determine what stage the seller's company is in, which in turn is an important part in determining the right metric.

6.3 The earnout metric for GetAccept - with Lean Analytics

In a hypothetical acquisition of GetAccept, Lean Analytics can be used to determine the earnout metric. As discussed in section 5.3, GetAccept have strong engagement metrics, net negative churn and favourable sales efficiency. Hence they are currently in the *scale stage* and MRR is an appropriate metric to use if they were to be acquired in a "traction acquisition". The metric should be set so that the seller would receive additional payments if they continue or accelerate the growth pace of the previous year. The compounded annual growth rate since January 2017 has been 8%. Assuming an earnout length of 2 years, the MRR milestone would be 915 000 USD in MRR.

Chapter 7

Implications of study and future research

In this chapter the author discusses the implications and limitations of the study. Furthermore, suggestions for future research are provided.

7.1 Implications of the findings

By choosing more appropriate metrics for SaaS-companies in M&A earnouts, the author has argued that there will be increased alignments between both parties which increases the likelihood of success.

The academic contribution of this study is to combine several academic disciplines such as innovation engineering, financial accounting, corporate finance, data science and law, to better understand all stakeholders involved in an M&A transaction of software companies. The traditional management research has been geared towards the manufacturing companies of the 20th century. During the last 15 years there has been an increase in literature trying to understand and manage new technology ventures. However, the corporate finance theory has been lagging behind and has not been adapted to unconventional technology ventures where financial models cannot be applied as usual. This study also aimed to make early stage transactions easier which would de-risk entrepreneurship. The author hopes to bridge the gap between traditional corporate finance and management scholars, and the practitioners that have learned by experience.

The practical contribution of this study is to provide an alternative way of constructing earnouts for SaaS-businesses, that better reflect the reality of the business. Force-fitting metrics or frameworks onto businesses is rarely a good idea, yet this is exactly what happens when traditional GAAP-metrics are used for subscription businesses. Setting milestones in transactions must start with understanding the acquisition strategy and the seller's company, and then determine the milestones and metrics - rather than the other way around. The study has also examined and discussed the possibility of reaching metric through sup-optimisation and opportunistic behaviour. By doing so, the author

hopes to shed light on the absurdity that earnouts in many cases simply converts today's disagreement over price into tomorrow's legal litigation over the outcome. Technology ventures should focus on innovation and growth, not spending time and money on legal litigation. The propensity for earnouts leading to litigation is a sign that the current way they are structured is broken, and entrepreneurs must be aware of the limitations of earnouts.

7.2 Limitations of the findings

It is hard to discuss the validity and reliability of a qualitative study as the results do not consist of measurable and statistically significant data. The conclusion builds on very broad simplifications of what acquisition strategies in M&A look like. The reality is much more nuanced and complex than three types of acquisition strategies. The objective of the acquisition is usually a mix of different aspects which makes it difficult to categorise them into one field. Most acquisitions are based on perceived synergies between the entities and have specific integration goals in mind. The acquisitions strategy also depends on who the acquirer is. Another limitation in this study is that M&A is very rare in the early stages. Most acquisitions happen at the scale stage of Lean Analytics, unless they are pure acquihires or technology access acquisitions. Thus, in practice it is very rare that acquisitions would happen at the stage where churn or the magic number would be appropriate earnout metrics.

The more complex metrics become, the easier they are to manipulate. One of the key problems with earnouts is how frequent they lead to legal litigation and disagreements over the outcome. As discussed, this is often due to a lack of clarity around metric definition and calculation. Many metrics from Lean Analytics are conceptual. They ought to be used as a mental model to understand the fundamentals of the business model. Those metrics are not suitable to be used in earnouts. The Magic Number takes both customer acquisition costs and increase MRR into account. This metric can easily be manipulated by lowering customer acquisition costs during the last phase of the earnout period. Drastically lowering the CAC at the end of the earnout period would most likely not yield in lower MRR growth during the earnout length since there is a delay between money spent on customer acquisition and increased MRR. This clearly shows that the magic number can be subject to manipulation and opportunistic behaviour, which creates misalignment, hinder integration and can lead to litigation. Thus, the magic number is a metric that would be good to use in theory, but in practice it can actually worsen the problem with litigation. The churn rate can also be subject to metric manipulation by increasing the total MRR by lowering the price. However, since adding MRR decreases the simple churn rate at a given absolute number of churn, the seller will also have an incentive to increase MRR in order to decrease the simple churn rate. This is why MRR churn should be used and not account or user churn rate. If the metrics are not clearly defined and there are limitations on what can be done with regards to manipulation and cost allocation, using these metrics can be counter-productive to its purpose. Using MRR is probably the most viable and appropriate earnout metrics. The MRR metric is much more difficult to manipulate than the magic number and the simple churn rate. It is also better representing the reality of the business than GAAP-metric such as revenue, EBIT or profit.

Using complex and very specific metrics with a long earnout period might restrict the entrepreneurs' degrees of operating freedom. It is important that the entrepreneurs have the freedom to iterate, pivot and refine their hypothesis before reaching product market fit. If the entrepreneurs have a financial incentive to reach a certain metric, they will most likely optimise over that specific metric with less regards to other important aspects of the business. Optimising over one or a few metrics with disregard to other areas is rarely a good idea since reality is much more nuanced than just improving upon a couple of KPIs. By putting constraints on the entrepreneurs' freedom to develop the business, earnouts can actually hinder innovation. Using specific product or sales efficiency metrics, such as churn and the magic number, can be counter-productive as it restricts the entrepreneurs' ability to act on new information and opportunities that come up. It can also hinder successful integration with the acquirer..

7.3 Suggestions for future research

This study has been focused on understanding the fundamentals of SaaS-businesses through Lean Analytics. It has put the seller's company in centre of the analysis and disregarded a lot of the legal aspects that are involved in the earnout provision. The thesis would be well-complemented by additional research from the legal perspective to understand the practical implications of Lean Analytics in earnouts. The validity and applicability of the thesis would increase if future research would analyse the practical feasibility of implementing these metrics into earnout provisions and transaction agreements. There are other aspects of the earnout that need to be considered such as the earnout length, tiers, caps, and thresholds. The implications of using Lean Analytics' metrics in earnouts on post-closing control issues need to be analysed further to make the conclusions applicable. Furthermore, future research should be made into understanding the accounting issues that using Lean Analytics' metrics in earnouts could create. In theory, Lean Analytics' metrics in earnouts can be used, but the practical implications of the transaction must be studied to understand the full picture of how transactions can be constructed to align incentives and avoid legal litigation.

7.4 Concluding reflection

The purpose of this study was to provide a framework for using earnouts in SaaS M&A that is fit for purpose and constructed for innovation rather than built from the traditional principles of accounting and finance. The thesis has focused on understanding the fundamentals of the SaaS-business by using Lean Analytics and then together with empirical data from acquisition strategies create a inter-disciplinary and synthesised picture of how to better create earnouts designed for innovation. However, as argued before, optimising over a few metrics with financial incentives can lead to a disregard of other important aspect within the company. Using sophisticated metrics from Lean Analytics can restrict the degrees of freedom for the entrepreneur and increase the chances of disagreement over outcome. Over-complicating the metrics could backfire and create more misalignment with higher risk of legal litigation, which would harm innovation. The case study has shown that it is possible to use metrics from Lean Analytics in earnouts. In pratice, it is

very likely that MRR is the best metric to use. Using other metrics would likely lead to worse outcomes than using traditional GAAP-metrics due to sub-optimisation and metric manipulation.

This study has shown that there is not one perfect way of bridging risk between sellers and buyers in earnouts. What works perfect in theory, often become problematic and unfeasible in practice. It is clear, however, that an interdisciplinary approach to solving the problem can be beneficial as there are many stakeholders from different functional departments involved in the process.

The author believes that metrics for subscription businesses should be different from the traditional metrics used in management theory and manufacturing companies. Understanding the fundamentals of a subscription models has become more important for venture capitalists, investment bankers, lawyers and entrepreneurs in general. In addition to providing a framework for constructing earnouts, the author hopes that this thesis has given the reader an insight into the world of SaaS and subscription models. These companies will form the giants of tomorrow, and traditional management disciplines are insufficient to understanding technology ventures.

Chapter 8

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Chapter 9

Appendix

In this chapter the appendices are presented

9.1 Interview guides

The following questions were used as an interview guide for the conducted interviews.

- What are the main acquisition strategies for technology incumbents acquiring startups?
- What objectives have been most common in acquisitions, in your experience?
- For what strategic purpose do you use M&A?
- How would you measure success of an acquisition?
- In your experience - what are the biggest problems with the way earnouts are used today?
- In what types of acquisitions would you say earnouts are inappropriate to use?
- Is revenue a common componend in acquisitions?