Professional MBA
Entrepreneurship & Innovation

Making the transition to a subscription-based business model in the context of a B2B software company

A Master's Thesis submitted for the degree of
"Master of Business Administration"

supervised by
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Vienna, 30.06.2020

Affidavit

I, **ANGEL TCHOLTCHEV**, hereby declare

1. that I am the sole author of the present Master's Thesis, "MAKING THE TRANSITION TO A SUBSCRIPTION-BASED BUSINESS MODEL IN THE CONTEXT OF A B2B SOFTWARE COMPANY", 62 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted the topic of this Master's Thesis or parts of it in any form for assessment as an examination paper, either in Austria or abroad.

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Abstract

This master thesis aims to provide a guide for B2B oriented software companies on how to embark on the subscription journey. The subscription model itself brings a very different perspective on how to make business – it starts with different ways of engaging with the customer and a lot more customer care after the deal was made. To achieve this the business must readjust and align itself to the customers to be able to retain them. All this comes with the promise of increasing recurring revenue that should be more predictable and should outgrow the perpetual sales over time.

Drastically changing the business revenue model is not an easy thing, especially when the company doing it has a lot of existing customers that are used to the old model. Convincing the customers that this pricing model is meaningful and keeping them is a key challenge that must be overcome.

There is also the internal, or in some case the owners' resistance, especially when the company is public. It is expected that the company will have to coupe with revenue cuts, as even if the sales rate is increasing as the money will be claimed overtime. The salesforce might also be heavily reorganized, as their incentives are naturally related to the deal size.

The research of the topic will combine an analysis of documented case studies and internal views of B2B software vendors that are currently making the transitions to a subscription business model. This approach will help validate some of the theoretical hypotheses and reveal hidden risks in the transition. It will also focus in detail on how an R&D department in such a company will readjust itself to meet the new model's requirements.

The thesis provides a generic description of what it means for a b2b company to switch to a subscription-based revenue model along with many listed impediments and a set of examples of how to mitigate those. It may serve as a pragmatic yet systemic guide on how to trigger such a serious business model change.

TABLE OF CONTENTS

List of abbreviations

GAAP   Generally accepted accounting principles

CPM   Current profile maximizer

SaaS   Software as a service

XaaS   A combined term for everything that can be provided as a service, defined by Thomas Lah and J.B. Wood in their book "Technology-as-a-Service Playbook"

Shelfware   Purchased software that is never used.

CSM   Customer success manager

CSO   Customer success office

KPI   Key performance indicator

SLA   Service level agreement

MVP   Minimal viable product

LAER   Land Adopt Expand Renew

TSIA   Technology Services Industry Association

AARRR   Acquisition, Activation, Retention, Referral and Revenue

PM   Product management

R&D   Research and development

GDPR   General data protection regulation

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1 Introduction

1.1 Context of the thesis

For the past 120 or so years, we've been living in a product economy. Companies designed, built, sold, and shipped physical things under the asset transfer model. (Tzuo & Weisert, 2019). Nowadays, a new commercialization model is emerging – subscription-based. While it was around for a long time in different forms – like newspaper subscription and milk deliveries, the digitalization trend helped it flourish in the last two decades. Suddenly collecting regular payments customer usage data is no longer a challenge. The latter allows services to be tailored towards customers and keep them satisfied – this enables the subscription model in all sorts of industries. Perhaps the biggest shift is in the customers themselves. Owning is no longer the most important thing – everybody is chasing the value they will get, not the asset. (Tzuo & Weisert, 2019)

The software sector is changing particularly fast. With the cloud trend, software vendors started shifting their offerings from perpetual licensed products, that are acquired and owned by customers, to software as a service offering (SaaS). (Lah & Wood , 2016) In this model, the software remains in the ownership of the vendor and is just being used by the customers. While new customers land easily, because of the small upfront payment, selling companies now must build new capabilities to track them and to make sure their needs are matched. This requires setting up new structures and a new culture in multiple departments of software production companies. To remain competitive, a company will not only need new offers, but it will also need a new way to operate. Being connected to your customers is the catalyst. (Lah & Wood , 2016) It is not an easy shift, especially for the established big players. Especially on the fast-moving software market, the successful companies from yesterday will have to quickly adapt to continue their growth path. While they have resources and customer base, they are also notoriously inflexible, as they must fight internal inertia, opposition from shareholders and customers that are used to the way the business used to be conducted.

1.2 Aim of the thesis

The subscription economy is already here and the move to this model requires more than a different selling model and a price tag. The thesis aims to showcase how a product management and R&D departments of a software company should function in this new model. The research will analyze how the adjusted economical model will affect the organization structure, the culture, and will establish the new KPIs to track the business health. The thesis will particularly focus on the implications inside the Product management (PM) and research and development (R&D) organizations – how a product transitions to service and how decisions for new features should be made in the new situation. It will go in detail how on how the customer usage data is being analyzed and used as input of value engineering – e.g. how the classical product roadmap should embed the constant flowing feedback to retain existing customers and land new ones.

1.3 Course of investigation

The thesis will dive into literature sources and articles to answer the questions "Why?" and "What does it mean?" in the context of the subscription transition. Once the basics are explained two case studies that show theory in practice will be examined - Adobe that has already done the transition and SoftwareAG, a company currently going through it. In the following observation, It can be seen how the companies' product management and R&D departments readjusted their practices based on the new setup. The thesis will also go into the process of identifying and measuring customer value and how service vendors could quickly adjust their offerings to meet it. For this, we'll look at modern software production practices that can be closely aligned with the subscription model.

1.4 Structure of the thesis

The thesis will cover the theory around the subscription model and what does it mean for established enterprises. The overview will start from an overall perspective and will show a set of challenges that a software company faces in the transition. This will set the context for the case studies that will be presented – Adobe as a success that has already moved towards the subscription-based economy and SoftwareAG as a company that is currently moving towards this model and readjusting its structures to the new model's requirements. Finally, based on the presented theory and practice, the thesis will

propose further optimizations in the existing transition approaches for the R&D department within an established software vendor.

2 The subscription model

This chapter will give an overview of the subscription model as such and will put it into the context that will be later observed in the case studies – the world of the software B2B vendors. In addition, it will also provide more information on what theoretically needs to be changed in such a company to become successful. Finally, this thesis will point out the important technical challenges that a company needs to overcome while doing the transition.

2.1 What does the subscription economy mean?

As mentioned in the introduction, the subscription business model has been around forever. Subscription economy simply means that consumers buy services and not assets as they are more interested in getting value and not owning – a perfect example from our daily life is the car-sharing services in the big cities. The more and the longer customers buy the services, the better for the provider. However, the economy in the last 120 or so years has been tailored differently, namely as a product economy where companies produce items that are then pushed to the customers in transactions.

The subscription model is not just a different price and collecting model, but a different paradigm altogether. To be able to catch the attention of customers one should offer a service with a low entry bar. And for a customer to stay, a service provider needs to constantly know what they want. The subscription model, when correctly implemented through the organization, enables a constant connection between the service provider and service consumer. This helps the producers to regularly adjust their offerings to have a better product-market fit. This is where the digital revolution plays a vital role in the years as it allows product/service providers to take an inside look at how the services are being used – by collecting and analyzing huge amounts of user data. This data insight makes a big difference and is a disturbing factor in many established markets. One can look at how Netflix took over the market of Blockbuster and how Spotify, Pandora, and others completely turned around the music business.

2.2 The context of the B2B software company

B2B software business is historically a slow-moving train - the sales cycles are long, the system integration even longer. In addition, there is a maintenance contract that always rolls together with the license deal. At some point, the customer will have to swallow a huge upgrade bill, which will probably require an army of professional services. This is the typical B2B product lifecycle in the last three decades. Imagine an integration of an ERP system in a big production company and one would easily be able to identify several of the mentioned phases.

Customers needed product capabilities, but they were also used to buying software as an asset. Companies have preferred capital expenditures (CAPEX) for technology investment, as this provides them the ability to take advantage of amortization and depreciation. Now they prefer low upfront investment which gives them agility and leaves cash for growth. (Tzuo & Weisert, 2019) As growth has become a holy grail for all enterprises in the 21st century (Kutcher, Nottebohm, & Spargue, 2014), consumers are looking for software vendors that provide an agile business model – namely subscription.

From a customer perspective, there is another significant cost on top of software licensing. A huge pile of money flows into their IT departments that are running those big machines in the basement with the mentioned software – this is where all the mainframes, Oracle's and SAP's systems are hosted. A company with a huge deployment of the on-premise software needs to have a lot of allocated money for hardware and technical staff that will take care of the machines and the software running on it. However, in the last years, there is a huge trend in this sector – it is the cloud. This suddenly provides an opportunity for the software users to simplify their landscapes and to get only the value out of the software, without all the burden connected with the hardware, installation, patching, and upgrades. And while a company that uses software as a service SaaS will surely lose the total control over its applications(and data), they gain huge flexibility in terms of costs – they are not hosting the software itself, they are not maintaining it and they can use it on demand.

It is important to mention, that the cloud model does not have the goal to reduce the overall costs. The subscription costs for SaaS may exceed significantly the costs of purchasing and running an on-premise software solution. However, this approach gives a

company a lot of flexibility – better cashflow control, flexibility on what value they get for their money, scalability, outsourcing of IT staff. The cashflow control was already mentioned and is a big driver for the change. Flexibility on the value reduces a phenomenon called "shelfware" – this is bought software that was never or barely used. Scalability is not possible in the on-premise world, as it would require building hardware and software capabilities. This is not very easy if one is running its data center in the basement. And even if somebody goes through the hassle, this will not cover the use cases where there are only rare peaks of usage – e.g. like the load on webshop before Christmas day. Scalability comes as one of the big promises of SaaS and allows tailoring the payments to the needs. Table 1 provides a comparative overview between on-premise licensing software and SaaS

Table 1 Product/service comparison

	Pros	Cons
On-premise licensed software	It can be depreciated and amortized.	Big upfront investment. Big IT budget to support it – hardware and people. Expensive upgrade. No scalability – fixed capacity.
SaaS	Low upfront payments. Automatic patching and upgrade. Automatic scalability. Flexibility – don't pay for shelf-ware.	Higher average costs over multiple years. Giving application control and data to an external provider. Potential legal and security concerns.

2.2.1 The motivation for switching to the subscription model in the B2B software business

In modern times companies that don't grow die. This is especially true for the software B2B sector where if a company grows less than 20 percent annually it has a 92 percent chance of failure. The priority of growth over margins and cost optimization have been outlined by the McKinsey (Kutcher, Nottebohm, & Spargue, 2014). The importance of growth is also reflected in the market valuation of the company. Although many growth companies are not very successful by their GAAP results, the potential based on the bigger customer base is appreciated by the investors and leads to a higher market cap. The profitability horizon differs from company to company and will be discussed later in this chapter.

Product style companies can grow only by selling more products, increase the price of those units, or decrease the costs required to make those units. In the last 70 years, all industries moving in this model are trying to simply optimize those phases – with better enterprise resource planning, digitalization, and lean practices. But still, across the board, perpetual license and maintenance revenues are slowing or in decline. It seems like there's no growth left in on-premise software (Tzuo & Weisert, 2019). That is why lots of software vendors in search of growth are switching to new business model strategies aiming for more customer acquisition, increasing the value of those customers, and retaining the customer longer. This customer orientation is the core of the subscription economy and the major difference with the product-based economy.

Subscription business sales have grown substantially faster than two key public benchmarks – S&P 500 sales and US retails sales. They grew revenues about eight times faster than S&P 500 company revenues (17.6 percent versus 2.2 percent) and about five times faster than US retail sales(17.6 percent versus 3.6 percent) from January 1, 2012 to September 30, 2017 according to the Subscription Economy Index (SEI) index based on anonymized users of Zuora(https://www.zuora.com/) (Tzuo & Weisert, 2019)

SEI Growth vs. Growth in Sales for the S&P 500 and US Retail

Figure 1 Growth of SEI index companies vs S&P 500 (Tzuo & Weisert, 2019)

Apart from the growth, there is another big argument for the subscription – this business model is proving itself much more resilient in times of crisis (Tzuo & Weisert, 2019). As the operating expenditures for most client companies are already planned and those companies need the value of this software, subscription payments will likely be made, as long as the business is running. This is quite different from purchasing new software as assets. In a crisis, the capital expenditures are probably going to be blocked for most customer companies and revenues for software vendors will steeply decline.

2.2.2 What does switch to subscription mean?

SaaS is not just technology that is priced by month and hosted in the cloud. (Lah & Wood , 2016). As one can put it, the end goal of the subscription model is growing. In a subscription model, you need to acquire customers as in the product model, but more importantly, you need to keep those customers on the platform. And to expand, you need

to convince those customers to spend more money with you over time. (Lah & Wood , 2016) By achieving this, the company will have predictable annual recurring revenue (ARR).

The biggest paradigm change is that business starts revolving around the customer and his needs and not around the product and the market as in the product economy as shown in *Figure 2*. In the product economy the R&D produces the product, it hands it to the marketing, that markets it and pushes it through the sell channels. As the product is being shipped to the customer there is no direct feedback, rather a product vendor can just compare the financial results quarter by quarter (annually based – e.g. Q1 2019 with Q1 2018) and guess what is the reason for good or bad results – this can vary significantly from good/bad product/market fit, quality issues, enablement issues, poor salesforce performance, competitors performance, etc. In this setup, feedback is coming slowly, and the vendor reaction is even slower. This approach is full of inertia and is hard to adapt. Which such a distant relation to the market, the products may easily turn uncompetitive and the financial results are often very unpredictable.

The subscription economy on the other side revolves around the customer. The software provider must not only place the product by the customer but also make sure it delivers the promised value so that the subscription is prolonged. A service provider should always look for ways to increase customer value by upselling with additional services. By knowing how long a customer stays with service and how much he pays with for the service, a customer lifetime value can be calculated – a metric for measuring the subscription success.
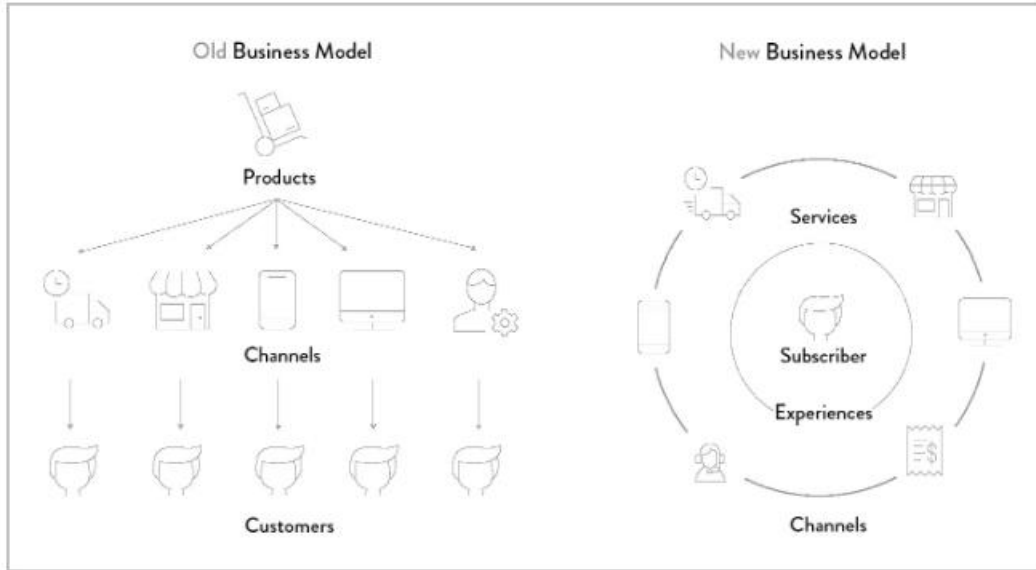
Figure 2 Changing the business model from push to a circular economy model *(Tzuo & Weisert, 2019)*

As mentioned above, the digitalization is a key factor in this subscription word. It is the revolutionary piece that enables the transition from a linear transactional channel to a circular, dynamic relationship with your subscriber. (Tzuo & Weisert, 2019) Here, the services, contrary to the products previously sold, need to collect as much usage data as possible. The data footprint that every customer generates, helps in understanding how the service is being used. This opens the door for a completely new, unseen in an age before digital, view of the customer. A company that has those insides has better chances to retain its customer and provide individual upsell service offerings for them. As Jeff Bezos (Amazon) says "Put the customer first. Invent. And be patient".

The customer value can only be maximized when an ongoing, lasting relationship between provider and consumer is established. (Lah & Wood , 2016) In sense, the subscription business is a race on the quality of the relation between the service provider its customer. The better it is, the lower the churn rate will be. The better the customer needs are understood, the more money he'll spend with the service. This relationship is a two-way street. Unlike the licensed product sales, where all the revenue is collected after the deal is sealed, in subscription, the customer may walk away from the service. It is a golden rule, that this option should be easily accessible. A provider should not hold a customer hostage of his service. (Kellman Baxter, The Membership Economy: Find Your Super Users, Master the Forever Transaction, and Build Recurring Revenue, 2015), but

9

rather, should always try to give them more value based on the data analysis that's being performed. Again, the mindset should be to get more profitability from a customer in the long run and not turn them off with short term sales tactics. It's all about building a relationship. As Tien Tzuo and Gabe Weisert state in their book "Subscribed" (Tzuo & Weisert, 2019):

"It's not about just slapping a monthly fee on a product and start shipping – a company must change its entire way of thinking. It needs a mindset that treats its customers like subscribers – partners in an ongoing, mutually beneficial relationship."

2.3 Transition challenges

2.3.1 Financial

There is a significant financial challenge when an established company switches to a subscription model. Those companies have been hugely successful over time, they are public with numerous shareholders and must publish financial results every quarter, yet if they want to switch to this model, they must reduce their income and increase their spending. This is extremely business counter-intuitive and for somebody out of the context, this would sound like madness. To counter this, a company on the transition needs to be very transparent towards all stakeholders and set correct expectations. This subchapter will introduce the fish model, which is referred to so often in the subscription literature and will explain the expected profit horizon for an established B2B software vendor.

2.3.1.1 The Fish Model

As a product vendor tries the switch to service subscription, the new service offerings will require significant investment in multiple areas such as:

- New technology platform

- New pricing and financial processes

- Revised sales and marketing

- New service offerings and capabilities

- Reengineered partner models (Lah & Wood , 2016)

During the subscription switch, the company structures and offerings must be quickly adjusted, which in short term shall increase significantly the investments in all areas stated above. On the other side, in a transition from perpetual licensing to service subscription, the booked revenue structure will change drastically – in a product deal, the whole deal revenue will be booked at once, while in subscription deal only a smaller time adjusted service fee can be booked and so for every period the customer renews. While this booking model will result in automatic revenue that gets accumulates and gets high over time, it also results in a significant drop in the GAAP results at the begging of the transition. This financial development that described both higher investment costs and lower-income bookings is what the analysts refer to as "the fish" of the transition and is shown in Figure 3. It must be swallowed by every company that embarks on the subscription journey. This process can be painful for B2B software businesses, as most of them are established, public companies that performed well in the last decade. There shall be lots of internal and external pressures related to this, as the official balance sheet will look bad in the first years of the transition. The company in transition must be very transparent and emphasize on the end goal is growth. If the transition is successfully executed and the fish gets swallowed within the set expectations, the companies are rewarded by record market cap valuation. The best examples in the B2B software segment are Adobe and PTC.

The Fish Model
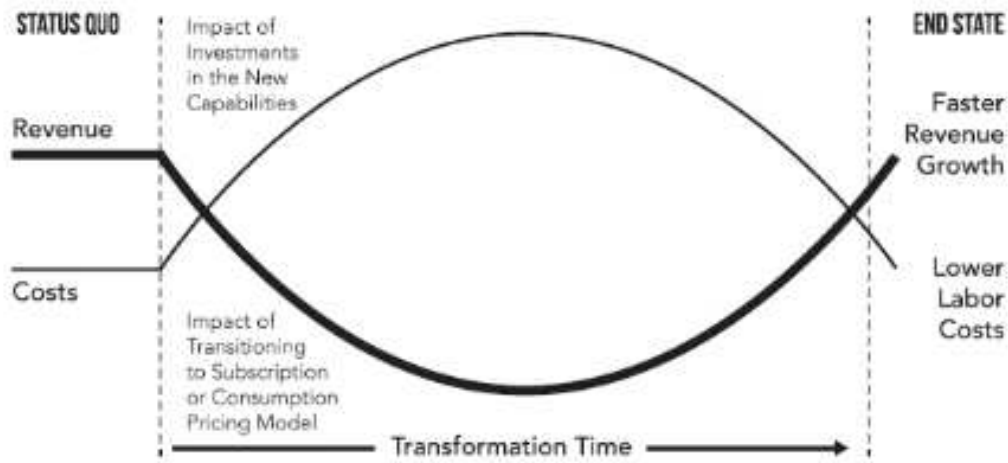
Figure 3 The fish model defined by Lah & Loods

2.3.1.2 Economic Moats

Another important notice we make here is the importance of revenue diversification. While this thesis will focus on how to change the R&D and Product Management departments to get profitable quickly, it is worth pointing out that all additional services and revenue streams will significantly help in the process of swallowing the fish. This diversification is mentioned as economic moats by Thomas Lah and J.B. Wood in their "Technology-as-a-Service Playbook". The more economic "moats" a transitioning company has created, the easier their transition towards the growth – all those additional revenue streams will reduce the revenue drop.

2.3.1.3 Profit horizon

The profitability horizon that is expected is important for the context of the software B2B vendors. In their book "Technology as a Service Playbook" Thomas Lah and J.B. Wood describe three types of subscription growth companies based on their profit horizon. Where the profit horizon is the time it takes to make the company successful in traditional GAAP.

12

- Future Value Aggregators – those are companies like Facebook and Uber. They are focused on growth without a clear perspective on how to monetize on the users, which is why their GAAP statement will look very unattractive. Still, those companies are measured by their growth rate which reflects their eventual potential.

- Mid Term Wedge (MTW) – those are still focused on the growth but are expected to start moving towards monetization in the short term.

- Current Profit Maximizer (CPM) – those are normally well-established companies with big market shares that switch to the new subscription business model. They aim after fast monetization from the new business model combined with additional growth.

Figure 4 displays an overview of the profit horizons and rough time estimates on how long it will take them to get profitable.

Figure 4 Different profit horizons for subscription economy companies. Source Lah & Wood, 2016

The software B2B companies, which are in focus this thesis, fit the profile of the CPM. Those companies are still profitable with the regular product business but struggle to
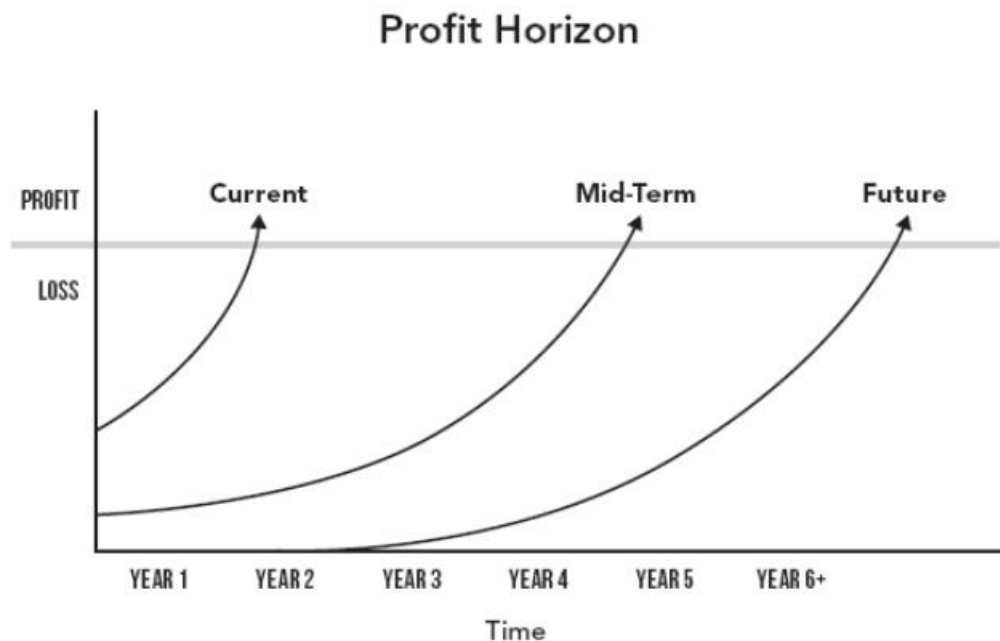
grow in recent years. They also have diverse revenue streams – most notably support revenue and services revenue, which will help them get GAAP profitable earlier. As a rule of thumb, companies with this profile are public. This puts them under immense pressure as they must reorganize quickly to turn profitable and get on the growth path. They must be very transparent in their communication with shareholder and their staff. The fish will have to be swallowed which and this expectation must be set for all stakeholders. The profile of CPM also hints that those companies have a pretty good idea of how to get profitable by leveraging their existing user base. Most of them will also have built various economic moats based on their service offerings around their software – professional services, maintenance contracts, different business lines that are not switching immediately to subscription, and others.

2.3.2 Organizational

As put in the context, the focus is on established B2B software companies, which are not growing and are looking for a transition into the subscription. Because of their profile and profit horizon, those are defined as current profit maximizers (CPM). As the move to subscription is a change in the pricing, but also tailoring the organization and around the new model, we'll examine what structural changes will have to be done to adjust to the new reality.

In the traditional business model shown in Figure 5 R&D is building a product, giving it to marketing, which fits it to a market and then hands it over to sales. The salesforce lands the product at the customer then leaves to the finance department to collect the payment and lets professional services integrate the product. Educational services will then train the customer on how to use the solution and the support organization will maintain the software. All those activities will lead to lots of handovers between the departments and each department will try to achieve optimal work on its own, as they'll also have a separate P&L statement. Eventually, sales will be declared as "owner" of the customer and will maintain a relationship with regular visits. Sales are the department that will renew and up-sale the customer. Typically, the sales are localized as the customer interaction differs significantly per region for further company fraction. To make it even more separated, each organization on the chain is controlled by a P&L to maximize its ROI.

Traditional Full-Service Business Model

1 Function = 1 Organizaton

Customer Handoffs

BUILD > MARKET > SELL > ORDER PROCESS > IMPLEMENT > TRAIN > OPERATE > SUPPORT > UPGRADE

R&D · MARKETING · SALES · FINANCE · PROFESSIONAL SERVICES · EDUCATION SERVICES · CUSTOMER · SUPPORT SERVICES · SALES

Central — Central & Field — Field — Central — Field — Central — Field
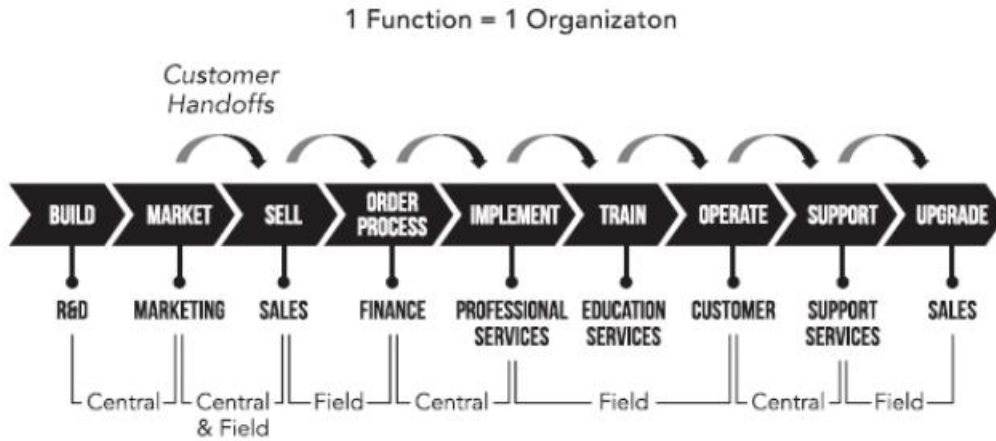
Figure 5 Traditional product economy engagement model. Source Lah & Wood, 2016

To scale-out operations and sales out, these departments were never oriented towards a single customer or even a single industry vertical, but rather tried to go as generic and as broad as it could to reach a maximum number of customers (Figure 6) by providing the most generic solution possible and then leave the customer often adjust it for their use cases. Without knowing the customers' usage there is hardly another way to scale. This model worked for a long time, as those customers often did not have a better choice.

Horizontal Go-to-Market

| MANUFACTURING INDUSTRY | FINANCIAL SERVICES INDUSTRY | HEALTH CARE INDUSTRY |

PRODUCT A →

Figure 6 Traditional Scaling Model – Horizontal Source Lah & Wood, 2016

This model is revolving around the product and not around the customer – selling, scaling and operational tactics are only tailored around the capabilities a company offers, and not the capabilities customers want. In the world of the subscription economy, this model is not applicable anymore. As the selling process is becoming continuous, a service provider needs to be constantly engaged with his customers. There is a need for

adjustment of the organization. The LAER model from TSIA and the AARRR give good ideas on how this set up could look like.

2.3.3 Technology challenges

The technology of a company and the way it is produced is a major cornerstone of the subscription journey. The technical challenges for a company with established products comprise revolve around a couple of key factors

- Deliver the product in a digitalized way and be able to track how it is used. (Kellman Baxter, The Forever Transaction: How to Build a Subscription Model So Compelling, Your Customers Will Never Want to Leave, 2020)

- Innovate the products faster based on the analyzed customer demands so that it constantly meets their needs.

We'll examine the Adobe case later and we'll notice that the company was selling a CD with their software. They also had a new version every 18 months. To get feedback on the products, Adobe needed to perform lots of interviews with different user groups, analyze them, and hopefully be able to include the feedback in the next version. Most customers that bought a CD for 1800$ would not directly go and buy the new version after 18 months, so the average time of new features arriving at a customer might become years. This non-digitalized productization and feedback gathering reveal several serious problems – interviews are hard and slow to conduct and their analysis is not entirely based on data, it's always possible that the problems of a loud minority will be preferred over the problems of the silent majority; because the process is slow even 18 months might not be enough to build the feedback into the product; even if the right feedback is built into the product, a few of the customers will benefit from it as they already own and use the previous version. While the subscription as pricing can resolve the issue of customers not moving to the new versions, new technology should enable the data gathering, analysis, and the leverage of the new software without huge costs.

Stepping on this technical problem statement, a new digital way of delivering a product can be defined. It needs to promote the constant relationship between vendor and consumer by ensuring constant interaction between them. By having this, the customer's

usage data can be constantly collected and analyzed. Data-driven analysis help to reduce the bias from the feedback process and will ensure what the product managers emphasize what's important. Technology should also ensure that any new value is delivered to the existing customers promptly and without additional costs – e.g. expensive installation and migration. If those premises are met, the relationship to the customer can become constant. Suddenly the process of creating and delivering a digital product has the properties of a service can be generally referenced as XaaS (Lah & Wood , 2016)

2.3.4 Using the right metrics

The metrics from the old product economy model do not apply to the new subscription times. Standardized KPIs like sales numbers per quarter and revenue per quarter simply cannot reveal the health status of the business and could be highly misleading. For example, the sales numbers might be very high, but customers may not prolong their subscriptions in the long term. In this case, the overall number of customers might be dropping. Similarly, the GAAP revenue can't be the north star metric anymore, as in the times of transition it will significantly drop - the booked value is only a fraction of what was booked before the switch to transition took place. In the old model, the engagement of the customer with a product is also measured indirectly – via the number of support incidents opened for it, but the product companies were generally ok with shelfware, as they already collected the money. The subscription reality puts a completely different perspective on this – a customer that gets no value has the freedom to discontinue his payments. This elevates the engagement metric to a pretty important one.

It becomes evident that there needs to be a set of KPIs that should show how the business is performing. Introducing those, analyzing, and understanding them is a major transition challenge. We shall dive deeply into the new metrics and their meanings in chapter 4 of the thesis.

3   Case studies

This chapter will investigate two companies that are moving to subscription and what steps they've along the way. Adobe is considered a trailblazer in this transition and has completed it, while SoftwareAG has recently embarked on a subscription journey. It will be observed how those companies, with roughly similar profiles, have tackled the subscription challenges.

3.1 Adobe

3.1.1 Company intro

Adobe is a world know software vendor originating from San Diego, California. The company revolutionized the publishing world with PostScript in the late 80s and then became a world leader in the creative industry with its numerous image-editing tools, Photoshop being the most famous from them. Adobe is as of 2020, a Fortune 500 company with a huge product/services portfolio, and the company valuation has been growing significantly in the last few years. This was, however, not always the case. (Saabey, 2015)

Adobe is a good case of a B2B and B2C software company. It sells a lot of software to creative individuals, but also SMEs and enterprises. Also, one of the companies leading products – Photoshop is so famous and widely recognized that the adjective "photoshopped" was created.

3.1.2 Adobe's switch to subscription

3.1.2.1   Financial aspects

Until the 2008 crisis, Adobe was doing quite well selling its software as a perpetual license, but in the first decade of the century, the company's revenue stopped growing.

The number of creatives was not growing as it used to and a good number of the existing users were happy with the product version they had. (Saabey, 2015) Then the 2008 global recession struck. Adobe observed, that companies that were using the subscription model took the economical hit much less painful than them. (Garrett & Cohen, 2015) The market trends were also in favor of changing the business model - in 2007, global revenue from SaaS enterprise apps was around $5.1 billion and was predicted to grow over 100% over the next few years. This was enough motivation for Adobe to make a historic change towards the subscription business model. They knew the transition will be painful as they had to face loss in revenue combined with higher investments in technology and their customer relationships. Adobe was also aware, that it will face resistance by investors, as they will be worried about the profitability of the company, and by customers who would have to adjust to the pricing model. Adobe began by being very honest with its investors about their transition plans. They transparently discussed what this transition would mean and how will it affect the revenue. They also put out some new metrics to shift the focus away from the GAAP results – number of subscriptions, annual recurring revenues, and average revenue per user. (Garrett & Cohen, 2015) The company projected ambitious targets along with concrete timelines to achieve them. All this resulted in a relatively small drop in Adobes's market cap even when the revenues depleted as expected during the first half of the transition. They were experiencing the classic fish model described in 2.3.1.1.

It took Adobe two years to go financially through the transition and report positive GAAP results. After the initial resistance, customers began seeing the value of the lower entry price and the benefits of always getting the latest version. This resulted in more annual recurring revenue ARR, which eventually got reflected in the market cap of the company. (Garrett & Cohen, 2015)

3.1.2.2 Technological changes

As Adobe decided to switch to subscription, it realized it had to change a lot of things. As of 2008 the company was releasing its products every 18 months and was shipping them with CDs to its end customers. This "push" marketing mechanism also meant that Adobe had no chance to track customer usage and customer preferences. Customer feedback could only be gathered by engaging customer by customer, which is not a very scalable

process. This is, by all means, a pre-digital set-up that does not allow meaningful data gathering and data analysis over the customer base. Without data, the company is only basing its product's future feature set on the feedback of its loud customer (which is typically a minority) and the market trends. This has proven as not enough to grow the company's revenue, which along the financial crisis is the justification to switch to the new subscription business model.

Adobe had to change its portfolio to have

- a better, continuous relationship with the customers ranging from individuals to fortune 500 companies and government institutions.

- a way to be flexible with their product bundles and pricing, allow customers to maximize the value they get from the products.

- an infrastructure that will allow them to innovate faster based on the data insides they collect.

- a way to calculate ROI over the innovation as soon as possible and make product pivots faster

Following those requirements, Adobe made a big pivot in its product portfolio by releasing Creative Cloud (CC) and retiring its purely on-premise Creative Suite (CS). By this, the company discontinued its on-premise offering and allowed customers to purchase all the Creative Suite applications only via the Creative Cloud with a subscription. The service changed from a one-time transaction for the whole Suite for $1800 to $50 monthly for the same functionality or $19 for a single application. (prodducthabits.com, 2017)

In 2013 Adobe made a hard switch and stopped selling its Creative Suite completely – the only way to buy their software going forward was to pay monthly for the product. This change was not accepted well by all customer – major tech magazines posted articles with alternatives for Adobes products and a big group of users signed a petition, hoping to get Adobe to reconsider its marketing decision and sell the software both in both models – with perpetual licenses and subscription.

Adobe's investment in the cloud-based technology allowed users to download their products seamlessly, as customers still needed to run a lot of the applications on their computers (Photoshop and Illustrator are quite CPU intensive). Adobe needed to develop new capabilities for users to control the application lifecycle and understand what updates are coming to them, how to allow content authentication, and what right products were they eligible to. (Garrett & Cohen, 2015)

The shift to the cloud is not only to a new technology stack and a different price tag but more to a digital marketing platform. Every single user has a unique Adobe ID that is used to log in and download the software he's eligible for. The Adobe ID is a lifelong identifier and is also connected with different freemium services like cloud storage that can help keep users work in a safe place. The Adobe ID helps users quickly review, purchase, or renew different types of software provided via the Creative Cloud. By having all products at hand, either in bundles or as single units, customers can easily pick and choose exactly what they want for a particular task. As the acquisition cost is small, the barrier for purchasing will be relatively small (remember the $1800 customer had to pay before 2013). This allowed customers to get maximum value for their money and to reduce significantly their shelfware software.

And what did Adobe get out of the offering? They got to track both their user behavior and their business metrics better. The user behavior helps them in optimizing their products towards the real needs and just towards the market trends and product managers' assumptions, while the business metrics give them unseen before market inside and helps them track the metrics we shall mention in chapter 4.3.1. The customer lifetime value and the ARR per customer are key for the renew team in the organization. The usage of some tools and the customer profile might also give inside and what attention must be paid to a customer to maximize his value from the products, and retain him as a subscriber.

3.1.3 Outputs

Adobe's revenue development first followed the fish model described in 2.3.1.1 but then rose significantly in a linear manner over the next few years to its unseen levels today. (Garrett & Cohen, 2015)
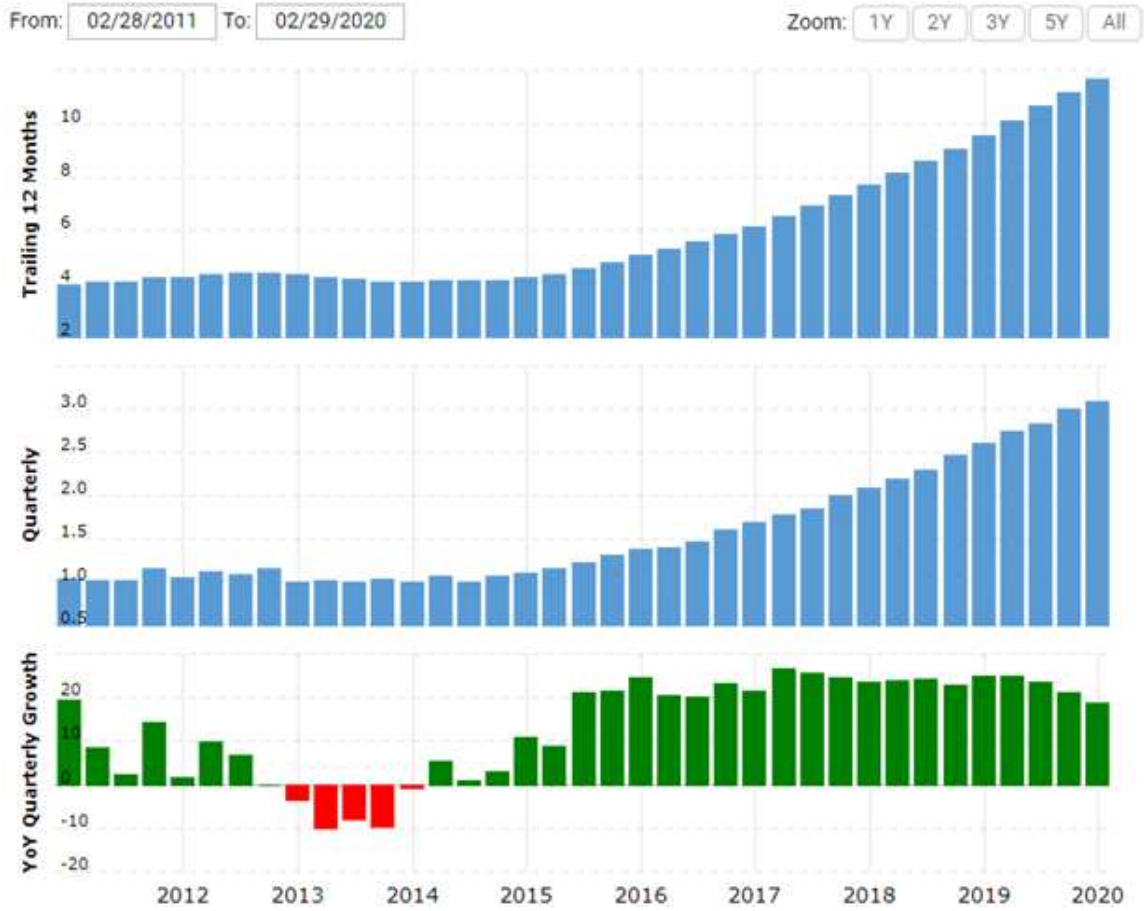
Figure 7 Revenue development of Adobe till today Source: macrotrends.net

Figure 8 Adobe's market cap. Source: markets.businessinsider.com

Even more importantly, switching to subscription was valuated very high by the market – at rates much higher than the revenue growth. We can explain this with the fact that investors give more value to loyal the size of the customer base, which gives easy upsell possibilities. Another aspect is the new recurring nature of the revenue - there are no spikes based on bigger deals (or their absences). This results in a predictable financial output that closely follows the market trends. As Adobe manages to obtain and retain customers for the long run it became more and more attractive on the stock market.

As the company managed to successfully "swallow the fish" for a relatively short period of one year (see the revenue development above). This established them as a trailblazer example CPM company, that managed to put itself on the growth path overcoming all internal (organization inertia) and external (investors) pressures.

3.2 SoftwareAG

3.2.1 Company intro

SoftwareAG is a German software company established in 1969 in Darmstadt, Hessen. It is an enterprise software vendor selling only B2B software. Their customer base in the last 51 years has reached 100000 customers is over 70 countries. SoftwareAG managed to achieve a 1 billion revenue mark in 2012, which ranked it as the second-biggest software vendor in Germany and one of the biggest in Europe. (sofwareag.com, 2020) The company is public and is traded on the Frankfurt Stock Exchange under the code "SOW".

After its revenue peaked in the early 2010s, the company's revenue slowly declined and then flattened. SoftwareaAG historically proved to be good at acquiring other companies, usually in new markets, then combine acquired capabilities with its own and reach its vast networks of clients for upsells. This turned out to be a very successful strategy on several occasions – most notably when they acquired the North American webMethods for $546 million (infoq.com, 2007). However, later acquisitions were either not that successful or the company just had to face the fact that the times have changed. The strategy of growth through acquisitions seemed to stumble, but the company still had enough arsenal to change its fortune – significant cash reserves due to the very strict

finance policies, a very diversified revenue from different product lines (some of which are completely independent) and around 20% income share from professional services. Moreover, the company is active in some growth markets

- Industrial IoT – projected growth of 7.4% to 2025 (MarketsAndMarkets, https://www.marketsandmarkets.com/, 2020)

- Enterprise Integration – actual growth of 11.2% to 2019 (MarketsAndMarkets, https://www.marketsandmarkets.com/Market-Reports, 2019)

3.2.2 Switch to subscription

3.2.2.1 Financial and organizational aspects

By 2018, SoftwareAG started to experience both internal and external pressures to switch to the subscription business model. Internally, the company revenue has stalled and was flat for about five years although the company was active in growing market. As quoted previously, companies that do not grow die, which is especially applicable for the software sector. (Kutcher, Nottebohm, & Spargue, 2014) The external pressure came from investors, clients, and competition. As a public company, SoftwareAG was needed to get back to the growth path and the strategies from the last four decades were not working. There was also market pressure from the customers and the competition. Consumers wanted to avoid making big up-front investments to have better liquidity and chase growth themselves. Nowadays they are more interested in getting value and not so much owning the software. The competitors in the IoT and Enterprise Integration field are also not lagging – MuleSoft, Dell and Tibco Software have all recently switched to a subscription model. Those facts put the conservative SoftwareAG on to a fast modernization track of that was kicked off in 2018, with the arrival of a new company's CEO – Sanjay Brahmawar.

The arrival of Sanjay marked the start of the transition towards the new model. This comprised of several vital steps:

- communicate openly with shareholder what the switch will mean for the company

- gearing the finance department towards the new financial metrics

- establish a new customer success management organization CSM

- setting up systems to track & measure KPIs for customers.

- extending the product portfolio with subscription first solutions as cloud offerings

Before the company started its move towards the subscription model, it needed to prepare its economic moats, as described in the Technology-as-a-Service Playbook by Lah & Wood (Lah & Wood , 2016). The company reinforced all revenue-generating departments that were not going to take part in the transitions. This move aimed to have a diversified income stream that will not be affected by the subscription and by this to have a smaller revenue drop when on moving on the fish curves.

The finance department also needed to start gearing up towards the subscription model – rethinking how the sales booking and the accounting should be adjusted in the new market reality and what GAAP and non-GAAP KPI can be used to measure the health of the company. SoftwareAG is fitting in the current profit maximizer (CPM) profile, so the CFO and his office needed to come with a plausible estimation of the profit horizons and the expected revenue and profitability drop – detailed estimates of how the fish model shape should look like. Those details needed to be communicated with the investors very openly, which happened on multiple media appearances, investors days, and shareholder gatherings during 2019. The culture of transparency was established with the hope of a minimum drop of the market cap during the transitions.

With the switch to subscription, there is a new capability that the company needed to develop – tracking customer success to ensure a low churn rate. SoftwareAG started building the customer success management (CSM) team in 2019 and by the time the subscription was made officially switched it was ramped up with around 50 people worldwide. The team required systems in place to track customer health and detailed KPIs and act on them. In early 2020 such a system was introduced was combined information from the CRM with extended R&D health information about product usage and customer product satisfaction. With the help of this system, the CSM can easily identify and act on unhappy customers and to retain. In this sense, the CSM became the

"owner" of the existing customers, in contrast to the perpetual's model, where sales were taking care of customers through their whole lifecycle.

3.2.2.2 Technological changes

Move to the cloud started in 2011, way before a complete switch to a subscription model was even considered. The cloud-first offerings were around the core business of the company – Enterprise Integration. This made the solutions attractive for SMEs as it reduced their upfront investment and related IT staff costs. To this day this remains the major cloud promise.

After 2016 it was clear that the subscription switch had to happen. SoftwareAG has done further strategic steps towards ways of delivering and billing for its solutions - by acquiring some subscription cloud offerings. Those acquisitions brought much-needed capabilities and subscription culture to the company. The most important of them were:

- 2017 – Cummulocity IoT – Subscription Industrial IoT first business based in the cloud and paid by the number of connected devices (tech.eu, 2017)

- 2018 – Build.io – cloud fist subscription-based integration solution acquired by SofwareaAG. (www.businesswire.com, 2018)

With those important acquisitions in place the company managed to reach the following important milestones in its portfolio:

- 2018 – SoftwareAG cloud was announced – a single stop-shop for available SoftwareAG cloud solutions. Those are seven different cloud offerings with very diverse value propositions. The new cloud portal allowed seamless onboarding experience, freemium plans, and easier usage of different products from the SoftwareAG suite. Along with the functional features, this offering allowed the vendor to track the product usage in:

  o Conversion rate from freemium to paid service

  o Customer engagement – how often a product is being used

o What other products than the original purchases are customers interested in.

- 2019 – Build.io, that got acquired the previous year, got enhanced with the existing in-house capabilities and rebranded as webMethods.io. As a cloud-first, subscription first software it is not only designed better to run in the cloud but also brought a lot of meaningful metrics and insights on customer usage. The new webmethods.io offering was directly introduced into the SoftwareAG cloud.

The cloud infrastructure allows quick innovation and SoftwareAG started pushing out a new cloud solution version every 3 months. While this is still away from the extremely innovative companies like Netflix and Uber that release new features almost daily, this is a leap for the company that used to have only a single release per year. It also reduced the average delivery time for features from over a year to 4,5 months. This, along with other mentioned benefits, make the cloud offering more appealing to customers.

While the cloud is the native environment for subscription, most of the products will still be installed on-premise, which is similar to Adobe and their Photoshop. This is especially valid for the webMethods enterprise integration stack that is used for the modernization of legacy mainframe systems. To help customers get the most value out of their solutions, SoftwareAG switched not only to subscription for all on-premise products, but it also made the pricing dependable on their usage. All locally installed software is constantly reporting its metrics to the vendor's servers. The customer receives an invoice at the end of the month, based on the usage. On one side, the offering is fairer for them, as they can maximize their investment, on the other side – SoftwareAG can still collect usage data like the one coming from the cloud infrastructure.

3.2.3 Future product development

The product management of SoftwareAG is still building its roadmap based on the collected usage data. The mode in which the products are being developed is still more tailored towards the push market model and not ready for the circular economy.

While the innovation is accelerated to three-month cycles in the cloud, the on-premise installation still moves in yearly product iterations. Currently, it is believed that the complexity and the duration of the adoption projects will function as customer locks and will thereby prevent churn rate.

3.2.4 Preliminary results

SoftwareAG switched fully to the subscription model as of the 1st of January 2020. It is to be seen what this will bring them and if they can live up to the expectations to follow the current profile maximizer model and become a growth company by 2022.

Based on the SoftwareAG's annual report for 2020, the first signs of the transitions can be seen from the GAAP finance report. The company started swallowing the fish by significantly increasing its investment costs. The lower revenue bookings will be seen in the 2021 financial results for the first time.

The product innovation should prove itself as a backbone of this growth strategy. Product management and R&D should accelerate the innovation speed and work closely with customer success managers to allow existing customers to extract more value for their investments. They should enable data collection and data analysis and convert the standard product roadmap to a product value map.

3.3 Summary of the case studies

We've looked at the case studies to see what are the common patterns among transitioning companies of a similar profile. Both companies have planned in detail their transition and started executing it consciously, realizing that there will be resistance from all stakeholders. This required them to be very transparent and to set timelines and goals.

On the technology side, we see a major trend towards moving to the cloud as a mean rapid software delivery and usage metrics collection. Those capabilities are vital, as it allows the software vendor to align with the user, thus providing him greater constant value and retaining him.

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4 Overcoming subscription challenges

This chapter, as the core of the master thesis, will focus on transitions challenges an established software vendor is going to face when switching to subscription. Those will be observed in the order presented in 2.3 The technical challenges will be investigated in greater depth as they would guarantee the long-term success of the subscription model. The focus will fell on changes in product management – that defines the future directions of the services, and the R&D department is responsible for the deliveries.

4.1 Dealing with the financial aspects

Dealing with financial aspects during the subscription change is always tricky, as those companies will face a short term drop in the profitability – as described in 2.3.1.1. Yet it is even more challenging for public companies where everything is transparent and where investors, analyzers, and media are going to raise eyebrows as the transition begins. This could build immense external pressures on the company and even push customers away from it.

The way to coup with this is transparency. Both companies we've discussed were very open to the public about their transitions, their revenue expectations, and their profit horizons. This should come hand in hand with educational materials on why such a transition is done in firsts place and what the promises of it are. Shareholders need to know how the fish model looks like and have a rough expectation when it is going to be swallowed. Shareholders should be pointed to new financial indicators - mostly the annual recurring revenue ARR, as the GAAP instruments will not give a good picture of the real financial status.

Transitions lead to turbulent times especially when the company knows that it is going to take financial hits. While doing the transitions without a loss is an illusion, as described in the fish model in 2.3.1.1, companies can try to minimize the revenue drop by performing flawlessly on other income streams like services and by this minimize the struggle of the transition. (Lah & Wood , 2016) The plan here is to intensify the internal communication within the company to emphasize to every non-core revenue-generating organization how important their performance right now is. While in normal times additional services (e.g. professional services, support, system integration, specific business consulting)

complement the main offerings, at times of transition where the product/service revenue is temporary on a steep decline, their results could reduce the overall impact.

4.2 Adjusting the organization

The organization must be adjusted during the subscription transition – especially the front-line departments that deal with the customer. The old product model's way of engagement with the customer is no longer viable, as described in 2.3.2. Luckily, there are enough references that could be implemented for a successful engagement model. AARRR framework (Acquisition, Activation, Retention, Referral, Revenue) and the LAER model developed by TSIA can be mentioned as good examples here. Let's take a closer look at the latter as a viable option for goal segment – B2B software vendors.

LAER

The LAER model (pronounced layer) is an organizational model that is adjusted to the circular economy around the customer. It defines different stages of the customer interaction with a vendor company and assigns roles aiming to follow the customer through the usage, unsure that he gets value, expand the offerings, and renew him. This

new role division is quite applicable for the XaaS (X stands for all sorts of services) journey depicted in Figure 9.

The XaaS Journey

Figure 9 XaaS Engagement Journey. X stands for different types of offerings. Source Lah & Wood, 2016

LAER stands for

- **Land.** All the sales and the marketing activities required to land the first sale of a solution to a new customer, and the initial implementation of that solution.

- **Adopt.** All the activities involved in making sure the customer I successfully adopting and expanding their use of the solution.

- **Expand.** All the activities required to cost-effectively help current customer expand their spending as usage increases, including both cross-selling and upselling.

- **Renew.** All activities required to ensure the customer renews their contract(s). (Lah & Wood , 2016)

If we map the traditional technology companies to the LAER model, we'll see their existing capabilities in landing new customers and renewing maintenance contracts as shown in Figure 10. While the adoption is historically taken care of from the professional services, there is often a detachment with the rest of the phases because of the mentioned handovers. Expand and renew are historically again taken care of from the sales, that owns the customer account. This ownership can sometimes be very contra-productive for all other departments of the company, as the owner, having a separate P&L and incentives, is optimizing the department and not the end to end customer journey.

XaaS Customer Engagement Model

LAND ADOPT EXPAND RENEW

TRADITIONAL STRENGTHS OF
TECHNOLOGY PROVIDERS

Figure 10 Map of product company capabilities to LAER. Source Lah & Wood, 2016

So, what are the capabilities, that need to be added? The goal is to have successful customers that stay and develop with the company. This requires more of a partnership with them, then just pushing the products. Because of this, sales are no longer a great candidate for owning the customer, as they see them mostly as a cash cow that can be milked on certain occasions – either landing a sale or renewing. There is a need for a new customer-owner, that will ensure that success of the whole program – he can help customers adopt a solution by engaging correct partners or professional services, can easily identify new upsell opportunities and that makes sure that customer is staying with the company. This gap can be filled by a new department lead by a Customer Success Office CSO (or customer revenue owner CRO) and assigned customer success managers. Salesforce was, which their subscription first business, were pioneers in this manner.

As the organization is tailoring around its customers, its structures must be reorganized in verticals – more around the industries where the services are going to be used and not generically around the capabilities. On first glimpse this strategy does not seem very scalable, it might be the best way to understand the customers in dept and partner with them. The scalability of the customer success department could then be reached in the verticals – e.g. in chemicals, logistics, retails, banking, and others. By this, the CSM team will know best how to deliver value for those industries.

As discussed previously, a key factor for the subscription move is collecting data around the service usages. No matter what structures are built around the customers, if there is no usage data collected, the analysis will be very shallow. The usage of data collection is a technical capability that we'll discuss later in this chapter. Having a usage data lake is not enough to produce actionable items for CSM and product management – therefore a new data analysis team should be installed. This team can map raw data to business objectives and guide both current supporting activities by the CSM team and on future value propositions that will be developed by PM and R&D.

4.3 What to measure and how to use it

This subchapter will cover the challenge of readjusting the company apparatus towards the subscription metrics. As pointed in 2.3.4, the old way to measure business in no longer applicable. Along with the introduction of the new metrics, it will be explained how to map the most important ones to common business terms and how those metrics can be used by internal departments to carefully navigate the offerings in the future.

4.3.1 Subscription metrics

Adjusting the business around the customer might mean that we need to change the way we track our success. In perpetual based pricing, the north star KPI is the revenue. When a deal is being done, the product vendor books a huge GAAP revenue and could forget about the customer for a couple of years. The sales department continues to chase customers and is measured by its ability to land new deals. This organization is measured by its P&L for the costs of sales. If the revenue is still not where it is supposed to be, the company starts looking at different possible problems – sales performance

issues, not enough marketing, bad product-market fit. While this is an oversimplified view of the perpetual license analysis, it does show a major flow – measuring the results is slow, and the reaction time is even slower (e.g. change product-market-fit might take years).

If a company is already on the subscription lane and wants to align with its customers, what metrics does it need to measure to be successful in its business? In her recent book "The Forever Transaction" Robbie Kellman Baxter defines the major metrics that need to be tracked by a subscription-based company. Those are commonly found in all readings on how to run and maintain a subscription business and will be mentioned as reference here:

- **Customer acquisition costs (CAC)** – how much does it costs to land a new customer on the service.

- **Customer lifetime value (CLTV)** – the total amount of revenue the customer generates by using the service.

- **CLTV/CAS Ration** – the relation between the first two can clearly show if the service/market fit is correct.

- **Net Promoter Score (NPS)** – a good indicator of quality and usability. Shows if the customer is getting the expected value and if the service would be further recommended. This is a key indicator to be followed by R&D as its value is correlated to its direct output.

- **Churn rate** – the percentage of customers leaving. If above 20% the service business is considered a failure and the offering must be deeply analyzed

- **Annual Recurring Revenue (ARR) –** as the GAAP P&L won't be a good indicator for the business, as even CPM will require 3-5 years to turn profitable, the ARR is needed to reveal if the subscription business is starting to get momentum.

- **Customer Engagement** – services that are not used are likely to be canceled. This metric is important for the revenue team and can give them a good inside if a

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customer is about to discontinue the subscription. Here, the customer relationship can be proactively driven by the service provider with better offerings, discounts, or different products that fit the needs better.

While none of those metrics are new for a service organization, a typical product company is not used to them. If the company in transition had overcome the technological challenge, it must be able to see these metrics almost in real-time. The consumer of those will be the Product Management organization and the CSM department.

4.3.2 Mapping to business terms

Let's assume the company in transition already figured out the data usage collection and can come up with the important metrics numbers on daily basis. Still, how do we know that the company is doing ok? Most of the old metrics may be very misleading – e.g. if sales number doubles, but the churn rate is high, the revenue might be dropping.

What is needed is a mapping of the new metrics to the business 101 basics. They must be observed from a different angle because the aim of the subscription transition is an endless transaction with the customer and not just landing deals.

Product Market Fit

If the number of sales is no longer relevant for our product-market fit, how do we find out if the product is what the customers desire? We must look at the retention or the churn (1- retention rate). This is the key metric that shows if customers like the service and want to stay with it. Even if your sales quadruple, the high churn points that the offering fails to deliver the promised value, which can directly be related to a wrong product-market fit. If the churn rate for an enterprise is above 20%, there is a serious problem that must be addressed. (Lah & Wood , 2016)

Pricing

You can monitor pricing by the churn again, or if a freemium plan is used – by the conversion rate. If the customers are engaged with the products, yet stop their

subscription, maybe the price is inadequate for this segment. When using the freemium we might observe many engaged customers that never convert to a paid model. This might hint, to a couple of things:

- They are perfectly comfortable with the value they get for free

- The value they will get for their money is not enough to justify the bill

Quality and usability

Customers might be engaged with the service because they get value out of it, yet if there they switch to a competitor with a similar offer, you might have quality or usability issues. The best indicator of those is the net promoter score or NPS, which can be formed by formally asking the customers regularly if they would recommend the service. If the NPS is low, the service vendor needs to engage with its customers to figure out the exact reason for this and fix it.

Profitability

The north start of the subscription profitability is the customer lifetime value or CLTV. It is calculated by multiplying two factors – the prices and the lifespan of the customer. The more attached a customer is to the service, the greater the profitability will be.

Customer acquisition cost CAC is another important profitability metric. If it is too high, even a smaller churn will hit the profitability greatly. That is why the relation between CLTV/CAS is also measured. The aim of the subscription business should be to boost the CLTV while reducing CAC as the sales get more used to the service offering.

4.3.3 Data aided decision

The main consumer of analyzes metrics in a subscription company will be two departments - the customer success managers (CSM) and product management (PM). CSM will have to ensure the customers get enough value from the service to renew their subscription. They will need those metrics in almost real-time to engage and proactively prevent churn – customers not using the services might need smaller tweaks like

additional training, special attention for new features or they might have security and quality complaints. In any of those cases, CSM should be the point of contact that deals with customers in the LAER model (presented in 4.2). CSM should take of the customer's health at any time during their journey with the company, therefore they need the subscription metrics regularly updated.

Product management is the other team that can get actionable items based on the subscription metrics. By focusing on the right metrics at the right time, the service could have optimal product-market fit at all times or even make pivots to new segments if they look more promising. Innovations can be verified by real customers much faster than before, by releasing smaller portions and a solution and showing how it affects the metrics. Over time the whole service development model, especially when it comes to an established product, will look like a gauge similar to the ones in place in submarines or big engine rooms (depicted in Figure 11). Whenever some valve is turned with a new feature, product modification, or a policy (like availability, disaster recovery, or pricing for the package), the usage metrics will move on the gauges. While tracking metrics and adjusting the business to meet the goals is not a new thing, the speed of these adjustments under the subscription model is a tremendous differentiator.
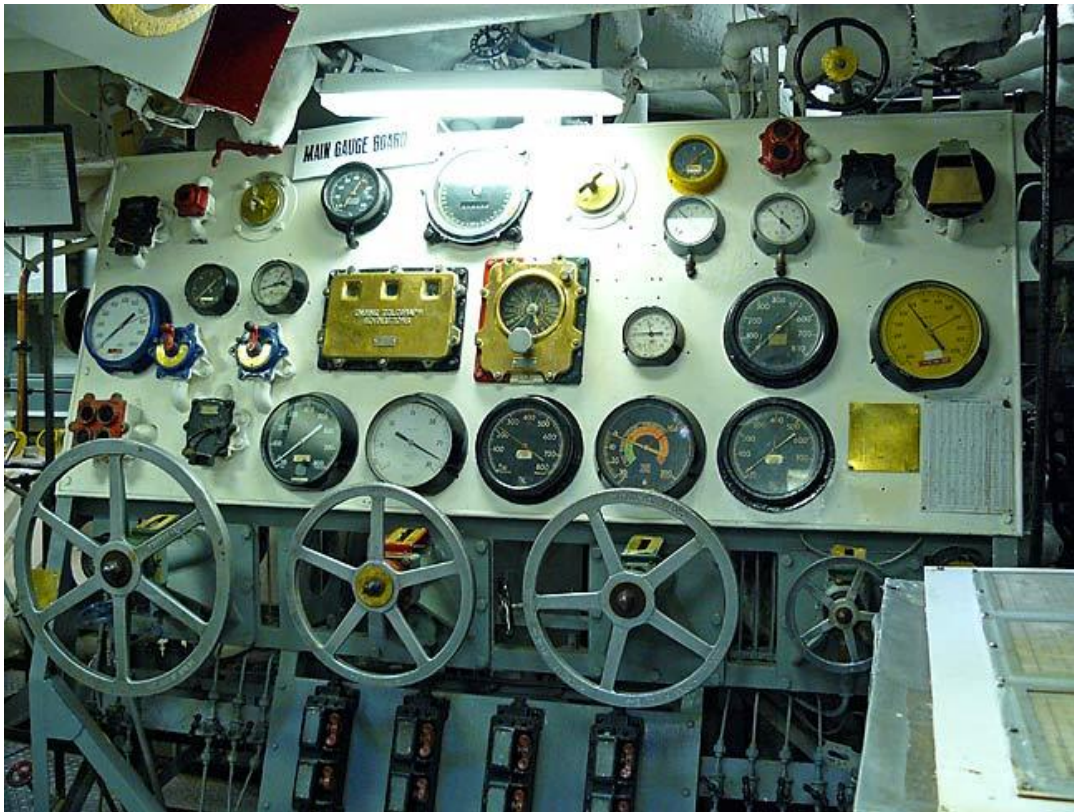
Figure 11 USS The Sullivan DD-537 - Engine Room / 24 Main Gauge Board Bill Maloney 12/29/2009

What should not be forgotten, is that any business solutions should be data aided and not purely data-driven. Data does not replace the meetings with your customers, nor the relationship your company has established with them, but this data can significantly optimize and streamline your organization towards the real customer needs.

4.4 Technological transition to subscription service for an established software vendor

Technology is a key cornerstone of the subscription story. As mentioned in chapter one, it is the digitalization era allowed all those transitions to happen in the first place. The new paradigm is revolving around the customer and aims to provide him the maximum value, as only this can keep him subscribed.

This chapter will discuss what technology pieces and processes need to be put together to have a successful subscription story. In particular, the focus will be on the following questions:

- How to obtain usage data?

- What technical capabilities are needed to quickly adjust the service offerings for the customer?

- How should the analytical and technical capabilities be used from product managers to deliver better offerings?

4.4.1 Collecting usage data

Yesterday a company was selling products and now the same functionality is sold as services. Surely, nobody expects to retain and expand the customer base just by different pricing and installing a customer success management team. So, what needs to be changed in the offering to support the switch from a push-based product economy to a circular client base economy? How can a service vendor ensure, that customers get enough value to renew their subscriptions and refer the solution to others? The answer is rather easy to figure out, but very difficult to implement – the software vendor needs to know how their service is being used. This usage data will bring the following benefits:

- It will help figure out how and where customers get value out of your product to constantly reevaluate the product-market fit and to make it better.

- It will help your customer success management (CSM) team understand when to pay more attention to a customer. If the software is a shelfware, the subscription surely won't be prolonged. Maybe they find the software difficult to use and just need training or maybe there is this one little feature that prevents them from using it. The automated data would not give a huge amount of information on what's wrong but will help the right people engage with the customer at the right time and by this increase the chance of retaining the customer.

- It could predict if a customer can get more value – either via new service capabilities or by upselling with complementary services. If the profile of the customer and his current needs are known, maybe an easy upsell is possible.

- If can help build better services based on automatic feedback.

Collecting usage data may be easier or quite challenging depending on the way the service is being delivered. We'll discuss the major variations and they differ by two criteria – is the given software hosted by the vendor or by the customer, and does the software have an uninterrupted connection with the internet.

SaaS Data Collection

When the product is web-based (cloud-based) the data collection is relatively straight forward. People visiting a web resource can be identified even without an authorization system. With the technology state of 2020, numerous technical hooks can be easily plugged into a web application to collect data in different formats. SaaS solutions are again exposed as web resources to the customers but with a very complex back-end logic. Here the software vendor is in full control of as the complex computation logic is hosted on his infrastructure, thus usage can be measured in detail.

Mobile data collection

Like the web, any software installed on mobile devices is considered constantly connected to the internet, this data can be obtained flawlessly if required. This segment will mostly be used for thin clients of SaaS products. However, usage data collected here could help improve the UX significantly and help customers get better value.

On-premise data collection

While usage data collection seems a natural fit for SaaS and mobile solutions, many of the established software vendors will continue to deliver their software as on-premise installations – Adobe is a good example of this. Their product is called Creative Cloud but is a combination of software in the cloud and software that must be installed on the user's machines – e.g. Photoshop. As image processing software requires the local processing power of the machine to perform the heavy lifting computation, this model will not change to pure SaaS in the foreseeable future. A deeper observation of the B2B segment reveals that the purchased software is often mission-critical – ERP, CRM, integration, and messaging solutions. These solutions will probably remain in control of the clients for many more years. An on-prem piece of software, especially mission-critical

one will also rarely be connected to the internet, so all strategies applicable to the SaaS and mobile are not applicable. This leaves the data collection with limited options:

- Collect data on software licensing, like in the Adobe case, where customers can get their licenses only after logging with their Adobe Id. This allows track if a software is used, as the licenses in a subscription model need to be frequently upgraded.

- Collect usage as part of bug reports. If the customer is engaged with the software, there surely will be a "trace" of this within the support organization of the software vendor. While this is an interaction between the customers and the support is irregular, the exchange often contains details about the chosen architecture, exact software version, log files, and additional information needed to reproduce the problem. Usage data can be added to this information as it will have a dual purpose – fist to aim for the quick resolution of support case and then to help the software vendor build up knowledge on how the software is used. This tactic is used by many on-premise software solutions – a good example is the Windows operating system.

- Automatic surveys could be sent during an interaction between the service provider and the consumer. Those are mostly used to collect information about the net promoter score (NPS).

Legal notice on Data Collection

Collecting usage data to maximize the customer value sounds like a win-win situation, however, there is a very natural concern against "usage tracking". A subscription-based company needs to work carefully with its legal department to figure out which metrics can be tracked. This may also heavily differ based on the location – e.g. Europe introduced the GDPR in 2018, different data protection laws are valid in other locations. Customer specifics like hostnames and security information must never be collected as a general rule of thumb. As every business is sensitive to its data, the service vendor needs to be very open to what is collected. This information should be put in the legal notice that is accepted by customers as they log-in the products, or as they install them on-premise.

4.4.2 Product management - building service roadmap for subscription

Product management uses a roadmap to navigate through the priorities and meet the market requirement. This roadmap is a direction and not a promise and is aiming to give an internal and external orientation of where the product/service is going to go. As discussed, the subscription economy requires product management and R&D to adjust their decision and release processes around the customer. The usage data collection, usage analysis, and DevOps give high levels of agility. This allows the direction of the roadmap to change frequently to give customers maximum value, thus making the offering sticky for them – in subscription everything should be done to increase the CLTV. This metric is the north start when it comes to building a subscription roadmap and it should be in the center of all brainstorming sessions and should always have the biggest weight when deciding features priority.

When building roadmaps, we can distinguish between how we define them for mature products/services and brand-new offerings. Let's check those in detail in the next two subchapters.

Roadmap for mature products/services

When dealing with the products that already have an established product-market fit, a product-manager can mostly do evolutionary changes. This service offering will already have a baseline of the important metrics, which would easily allow an evaluation of smaller experiments and their effect on the KPIs. A major technique used to do this in the subscription reality is the A/B testing.

A/B testing offers an easy way to test new service features by releasing them only for a certain cohort of users. Like clinical testing, the metrics between the test group and the group without the features are compared and if the results are favorable, the new functionality gets released for everybody. This is a great way to conduct experiments with customers and test hypothesis directly in the real world, thus you can eliminate biases and guesses on what works.

A/B testing can be conducted on all types of systems where user data can be collected and where the DevOps practices are established. Its main usage began with web site

experience as shown in Figure 12, where different test groups are redirected to a different version of the site with the same functionality allowing them to track their behavior in both cases and test the new functionality based on the data. The size of the features that can be tested may vary from color and button changes to adjustments of the business model. As of 2020 similar tests can be easily developed for mobile apps, marketing campaigns, e-mails, and all sorts of digital content that could be tracked.
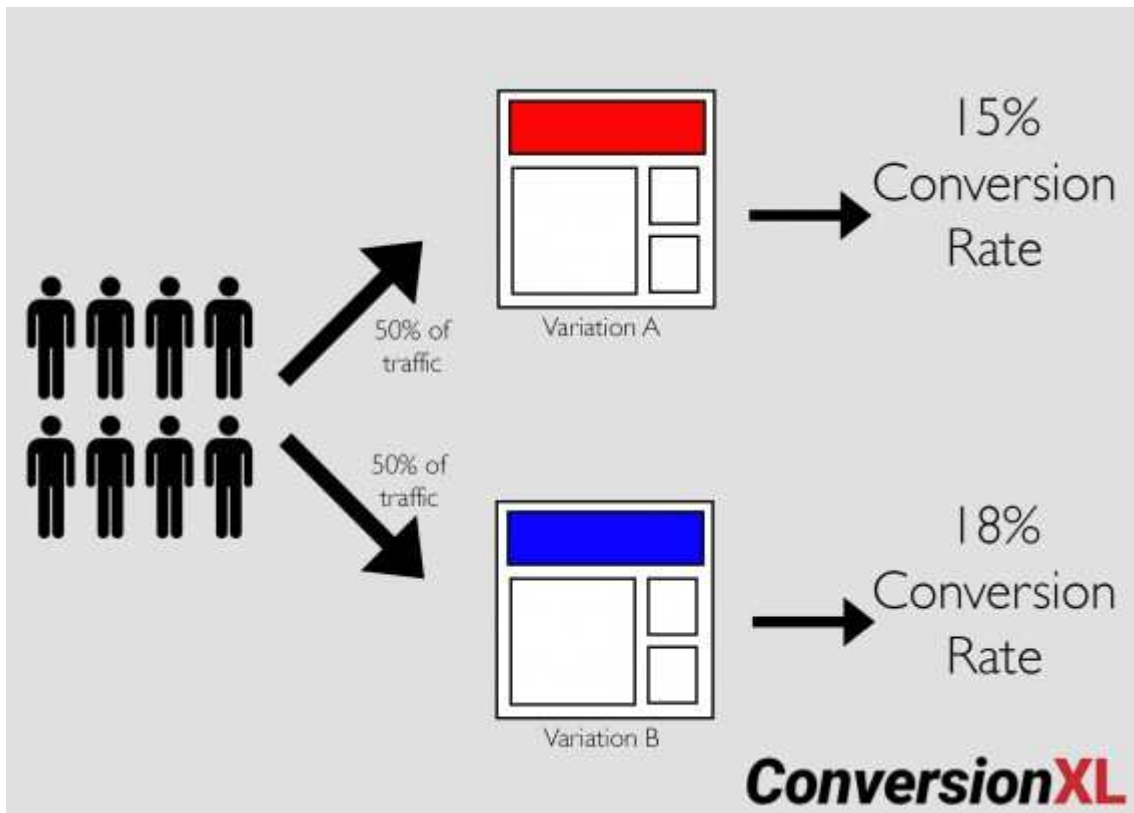

Figure 12 A/B testing splits traffic 50/50 between a control and a variation. Source https://cxl.com/blog/ab-testing-guide

For new service offering

Similar techniques can be used when creating a brand-new service offering for a subscription. Unless a marketing genius is working on the tasks or the company has spent a good amount of time and money on research, the offered service will probably be a best guess of what customers. To optimize this process one can use the Lean Startup approach in which the hypothesis is created as a minimal viable product MVP, released as soon as possible out to real users and tested via the feedback loop (Figure 13) described by Eric Ries (Ries, 2011)
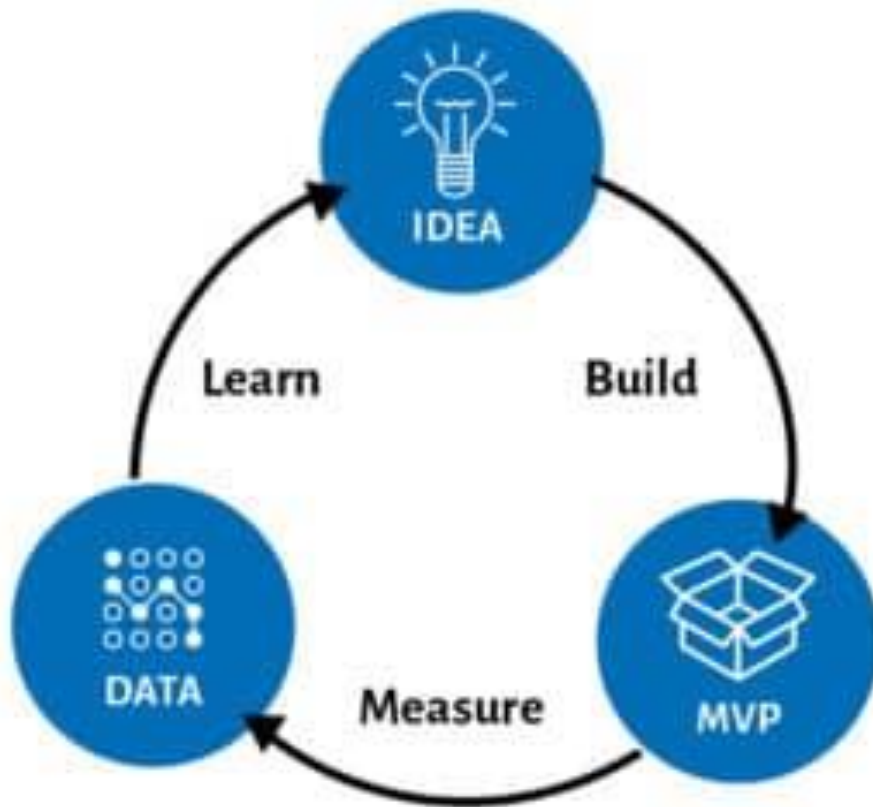
Die approbierte gedruckte Originalversion dieser Masterarbeit ist an der TU Wien Bibliothek verfügbar.
The approved original version of this thesis is available in print at TU Wien Bibliothek.

Figure 13 The Lean Startup Feedback Loop Source https://www.caroli.org/en/the-build-measure-learn-cycle-for-exploration-and-exploitation/

With the quick launch and multiple interactions over the feedback loop, one can get a feeling of what customers want. This might lead to all sorts of pivots in with quick turn-around time – it might lead to changing the target segment to changing the whole business model. Major benefits are the speed and reduced costs of the innovations, as the feedback flows early in the MVP phase.

The major difference between the established product and the new offering is the degree of possible changes. When working on a new service, we could verify its general viability with minimal functionality. This can lead to drastic changes like shutting down the

44

offering, or 180% turn of the business model – the work is more exploratory than evolutionary. It is an interesting question if an established company can allow itself such a degree of experimentations as it might lose credibility. Sometimes, brave experiments will have to be taken out of the company – here an ecosystem of startups might help that eventually could get acquired by the established company.

4.4.3 Delivering updates in smaller iterations

The collected and analyzed data must serve product management to produce better services, but this requires several important changes in the way the products are being produced. The new culture of DevOps and its effects on the product lifecycle will be discussed in detail with an emphasis on their role in the subscription story.

The Adobe cast study showed how a company significantly reduced its release cycle from 18 months to much smaller product iterations. But why is this so important? When companies start incorporating data analysis in their feature decisions, they need a way to figure out if those were right. Without any change in the delivery speed, Adobe would have waited years to understand if a feature makes the impact they were hoping for. Such a speed of innovation makes the data collection and analysis marginal – imagine that you turn a valve on the gauge board showed in Figure 11 and have to wait a couple of months to see a single gauge moving in some direction. The more often a company innovates, the more often its results can be measured, the more often it can adjust its decisions to achieve its goals. SaaS companies like Uber and Airbnb already managed to deploy to their production systems multiple times a day. (https://dzone.com, 2018) To achieve this a company needs to implement a change that is not only technical but also cultural. Both aspects of this change are combined in a modern term called DevOps. An extremely simplistic description of the it would be – be able to automate everything in the development organization from testing to the actual deployment on production systems. It is a cultural change in the R&D organization that promotes breaking the borders between teams and roles to achieve a greater speed of innovation while also keeping quality at a high level by full software test automation. Figure 14 gives a quick overview of the set of activities hidden behind the DevOps term.
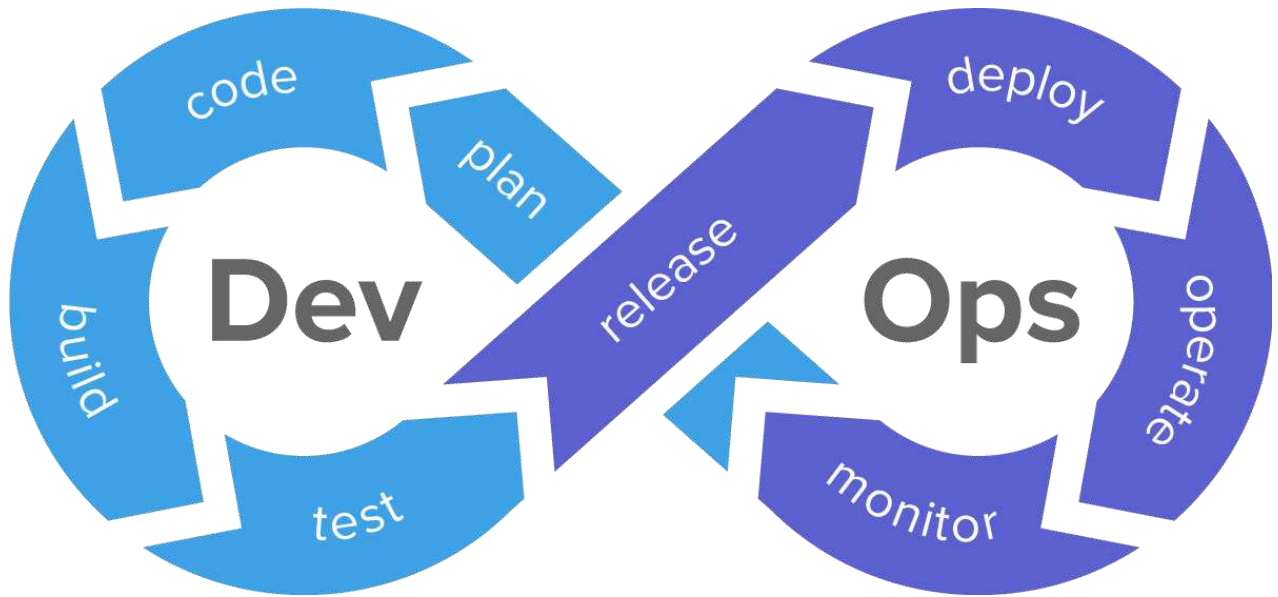
Figure 14 Summary of the DevOps activities. Source: https://nub8.net/

DevOps, when implemented correctly, provides a streamlined process of developing, testing, and promoting code up to a production environment. A subscription-based company should be able to deploy changes to production at least once a week to meet the business agility requirements. The CSM team would often require quality fixes or small tweaks that prevent customers from getting value delivered urgently while product management will use the deployment frequency to validate their business hypothesis.

DevOps is considered a revolutionary technological capability and usually requires years of internal process modifications and staff training. It is not an easy goal and expectations about is adoption should be set accordingly. As it is tightly related to the culture of the developers it is also not a capability that can be acquired.

DevOps for SaaS

If the software vendor offers a SaaS solution, then DevOps can be flawlessly executed without any customer interaction. Because the software lifecycle is completely controlled by the software vendor, the process of change is completely invisible to the client. Often you might have discovered a new Uber functionality or a new Facebook UX just by logging into the service. With good software production processes, minor changes and bugfixes will never be noticed by the customers and the application satisfaction level can be constantly high.

DevOps for on-premise products

The on-premise software will always require customer interaction to deploy product modification. In this set-up, frequent changes will not be appreciated as they will raise the cost of ownership for the products – e.g. a dedicated staff has got a fix/new product version an applies it. However, DevOps can be applied in a bit different manner here:

- Increase the speed of a fix delivery. If a customer encounters a problem, make sure they get the fix on the next day. This will leave the feeling of an excellent organization that cares for its customers.

- Make sure the fix installation process is always easy and flawless, so that customer can apply the DevOps practices themselves and feel comfortable with your software.

- Make any upgrade steps flawless and easy. Decouple complex dependencies and aim for fully automated, zero downtime, flowless upgrade. This will encourage customers to always be on the latest software version and leverage the latest features. The more frequent they get new value from the products, the more likely they will renew the subscription.

4.5 How to obtain subscription capabilities?

When embarking on a subscription journey the company needs to make a good assessment where is it technologically. The most important questions for this assessment are:

1. Can we collect usage data and understand what customers are doing with your products?

2. Based on the collected data, are we able to analyze and follow the metrics introduced in 4.3.1?

3. Can you innovate fast? Uber and Airbnb tweaks in their product multiples times a
    day. Are we anywhere near this with at least one offering?

4. Do we possess technology and processes to prototype and validate ideas fast?

As discussed in this chapter, these capabilities reside mostly in the Product Management
and R&D departments. When the company is established and successful, those
departments will be full of organizational and knowledge inertia – refusing the learn and
change. Yet exactly those departments in a transition company need to move quickly
and establish the technical foundations for the subscription model.

A SWOT analysis of the new capabilities is a good start for any technology organization.
Based on the results and engineering culture two main actions can be extrapolated from
the SWOT – either to build the new capabilities or to acquire a company. Both are
possible but have their pros and cons.

4.5.1 Acquisition of capabilities

There are numerous books on this topic and how to choose and execute an acquisition
correctly. In this subchapter, it will briefly touch upon major points of what an acquisition
might bring for an established vendor on their SaaS journey.

Product Management and R&D in an established software company are often mainly
tasked with optimization and maximizing the output of the existing product portfolio.
While they get very good at it and streamline the whole production line for the best
results possible, they often lose capabilities to innovate in completely new areas as it
was never their task. In such situations, buying a solution and team that complements
both portfolio capabilities and culture is often a good idea. It brings fresh technology to
look at the problems and a new culture of solving the problems.

One can distinguish between the acquisition of a startup and the acquisition of an
established company that has already achieved some results. Startup technology might
be superior and innovative, but it is mostly a proof of concept as it has not been deployed
on a large scale enterprise level. This often marks such innovation as unusable or

"needing too much investment to be profitable". The culture of a startup is also a very hard fit for an established company and will be quickly overwhelmed.

The acquisition of a more established company might prove itself more successful but it is also a very costly venture. It is a better fit when one looks for the acquisition of development culture, as a proven organization will not just blend into the bigger structure but will continue to carry its values and may very well spread them.

4.5.2 Building capabilities

Building new capabilities in an established company may be quite a challenging task because all the internal inertia the organization will have. Honestly said– talented employees that are tasked with optimizing their current processes and products for years and years and were very successful at it, but now they will have to do something completely different.

What needs to be made clear, is that the subscription transition, especially on a technical level, needs more attention. It can't be taken for granted, that the old product management and R&D structures will just switch to the new model. They will need special guiding, probably in the form of external consulting and a good amount of time to perform a successful transition.

5   Discussion and conclusion

The final chapter of the thesis will do a summary of the presented content and will list recommendations for the subscription transition performed by the software B2B vendor.

5.1 Summary

The switch to subscription economy is something that can be seen more often in recent years. Accelerated through the digital revolution and by the strive towards greater growth, both provider and consumer companies of all sectors anticipate this change.

49

Digitalization allows easier constant transactions and enables lots of new B2C business models like Uber, Airbnb to flourish, showing end customers that they can get value without ownership. It took some time for this phenomenon to get to the B2B software segment, but it is already there, and numerous companies are performing the transition from selling perpetual licenses to a subscription model.

A commercialization model becomes viable when enough customers start believing they need it, and enterprise customers are looking for a subscription today. They look for a smaller upfront investment and constant innovation from the service vendors. Here, the change of the payment model is leaving customers with more liquidity to invest in their operations, so they could chance growth in their own business faster. Constant innovation is another key factor. In the Adobe use case, customers pay thousands of dollars to get a fixed version of the software. They need to wait 18 months for a new version, and they need to buy it again. In the new subscription, reality customers may pay as little as 19$ a month for an Adobe product and directly leverage all new features the moment they get released. To make customer sticky Adobe started releasing software much often than before.

The software vendors are moving into this not only because of the market pressure. Predictability of revenue is one of the biggest motivators. Most of them will experience a significant short term drop in the revenue, which is explained with the fish model, but from then on, the annual recurring revenue (ARR) would gradually follow the market share percentage of the offering. As the dependencies on individual deals will be greatly reduced there will also be no spikes in the revenue. If the company is in a growing market and can retain its customers, which is transparently indicated by the ARR, it becomes more valued by its investors. Uber is a good example of this – their GAAP results are still negative, but their ARR constantly grows reflecting their expanding share in the transportation market, which skyrocketed the valuation of the company.

This thesis provides an overview of a segment in the software industry – software B2B vendors. The companies that have been analyzed are all placed in growing markets and have a good product-market fit, yet their revenues had flattened for several years before the transitions happened. They are also successful public companies that are pressed by the investors to do a fast transition and become profitable within a short timeframe. This short horizon of the expected profitability puts those companies into the current profit

maximizer (CPM) profile. This means the transition along with its numerous org-changes and acquisition of technical capabilities should happen rapidly.

5.2 Recommendations on a subscription transition

To successfully transition to subscription, a software B2B vendor perform the following actions:

- **Be transparent about the change with all stakeholders**

Be open to your investors, your customers, and your employees about the change that is going to happen. Communicate the expected revenue drop and set a time horizon for when you're going to be profitable again.

- **Build your economic moats**

To keep the revenue, drop in the fish model to a more acceptable level, try to accelerate any of the company's complementary offerings like professional services. Communicate this urgency with the respective departments and make sure they stay motivated.

- **Reorganize your customer engagement structure**

The customer engagement model from the product economy will not work in the subscription economy. One needs to research and pick a new model and install new departments like customer success management on the way. In this thesis, attention has been given to the LAER engagement mode, but there are also other alternatives like the AARRR framework.

- **Know what your customers are doing**

Conducting interviews with existing customers has been the only way of understanding your customers' needs in the past. It is important to understand how products are used based on the usage date. User engagement, the conversion rate from freemium, and others are hardly obtained in other ways. Make sure data

collecting points are built into your software platform and that this information is evaluated often. Collecting usage data from the SaaS cloud solution is easier than collecting the on-prem usage data, but there are creative ways to work around the limitations. However, it is important to note that collected information should not be violating any legal causes. The fact that user data is being collected should never be hidden from the customer and should always be present in the legal notice.

- **Understand the new key metrics**

What if sales are booming but the churn rate is also high? What does this say for your revenue and product-market fit? What to do when you realize that the engagement with the service is low – should you just wait and see if customer prolong their subscription? The conversion rate from freemium is quite low? Where might the problem with this be? What might be the reason for a low NPS?

The main consumers of those metrics should be customer success managers CSM and the product managers. While the first make sure that customers get the maximum current value from purchased services, the latter should make sure that the customers remain with the vendor in the long run. The metrics should be constantly evaluated and act upon – a short term with attention and long term with more fitting functionality. The horizon of the long term should also be redefined for a service offering, as most customers today don't have the patience to wait years for something they badly need.

- **Be able to innovate faster**

Slow-release cycles are a thing of the past – requirements are changing faster and so should the products. If a customer needs a new feature but the company releases its software once a year, the feature could be adopted after 1-2 years in the best case – it needs to be produced, put in the correct release, and then adopted by the customers. The transition to a service is the perfect time to accelerate innovation speed. This means delivering smaller features more often and automating all steps around the release – quality assurance, deployment procedures, and manual processes between departments. Those activities are summarized under the modern term DevOps. It has both cultural and technical aspects and takes time to implement across the organization. Start early and aim for a high goal, such as weekly release to

production. Adopting DevOps to transition from a big product release to gradual functionality increments is probably the biggest technological challenge in the subscription era, so have correct expectations about possible release timelines.

5.3 Conclusion

The shift from owning to only getting the needed values is becoming a major economical trend. The purpose of this thesis is to highlight the dynamics in the software B2B sector backed with some examples from the real world. Those companies are suffering from stalled growth, while they still reside in growth markets and have good offerings. They need the switch to subscription to answer the new market needs. In the process of doing this, they need to adjust their organizations and their technical capabilities. The latter should allow selling and digitally tracking their services. Stepping on this technology milestone, the companies in transition need to rewire the way their product management PM and R&D departments work – PM needs to make more conscious decisions aided by the analyzed data, while R&D should be able to deliver often and in smaller iterations. The purpose of the above-mentioned changes is to create an opportunity that positions customers in the center and therefore, keeps them longer with a company.

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