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CONDUCTING B2B SAAS BUSINESS WITH A FREEMIUM MODEL: A CASE STUDY



TIIVISTELMÄ

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Tämä pro gradu -tutkielman tarkoituksena oli tutkia mitkä ovat onnistumisen avaintekijät B2B SaaS freemium -liiketoiminnassa. Lisäksi tämä tutkielma tutki mitkä ovat B2B SaaS freemium -yrityksen tunnusomaiset piirteet. Freemiumliiketoiminta on B2B-puolella vähän tutkittu aihe, joten liiketoiminnan ymmärryksen karttamiseksi aluksi teoria haettiin B2C SaaS freemium -puolta tutkimalla, sillä kyseistä ilmiötä oli laajasti tutkittu. Pilvipohjainen liiketoiminta, erityisesti freemium-liiketoimintamuoto, on valtavirtaistunut ja kasvattanut valtavasti suosiotaan viime vuosina. Kuluttajapuolella freemium on isossa roolissa oleva liiketoimintamuoto, joka on alkanut valumaan myös yritysten väliseen kaupankäyntiin. Jotkut tavanomaista myyntivetoista B2B SaaS-liiketoimintaa tekevät toimijat ovat alkaneet kääntyä freemiumin puoleen, jolloin on tärkeää ymmärtää mikä saa yritykset aloittamaan freemium-liiketoiminnan ja miten ne sitä toteuttavat. Tämä tutkimus toteutettiin case study -tyyppisesti ja tutkimusaineisto kerättiin haastattelemalla eurooppalaisia B2B SaaS freemium liiketoimintaa harjoittavia yrityksiä. Tutkimusaineiston analysointiin käytettiin temaattista analyysimenetelmää. Niin kuluttaja- kuin myös ja yritysten välisessä liiketoiminnassa tutkimusaineistosta esille nousivat kolme pääteemaa, joiden alle menivät tunnistetut menestymisen avaintekijät ja toimintatavat: asiakkaiden menestyminen, sisäiset mahdollistajat ja ulkoiset mahdollistajat. Yhtäläisyyksiä löytyi kaikkien teemojen alta, mutta suurimmat erot kuluttajille suunfreemium-palveluiden vrityksille suunnattujen nattujen ja freemiumpalveluiden menestyksen avaintekijöiden välillä löytyivät sisäisistä ja ulkoisista mahdollistajista.

Asiasanat: SaaS, Software-as-a-Service, freemium

ABSTRACT

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This Master's Thesis assesses what are the success factors of B2B SaaS freemium companies. Additionally, this thesis studies what are the characteristics of a B2B SaaS freemium firm. Freemium in a B2B setting is an under-explored phenomenon and therefore to understand the freemium phenomenon theory on B2C SaaS freemium was studied as it has been explored extensively. Cloud based business, especially freemium business, has become mainstream and ever more popular in the recent past. On the consumer side freemium has played a big role whereas freemium has only recently started to enter the B2B environment. Traditional, sales-led B2B SaaS companies have increasingly begun to turn to freemium and hence, it is important to understand why they have done so and how do they go about it. The empirical qualitative research was conducted as a case study and the data was gathered by interviewing European B2B SaaS freemium businesses. The data was analysed using qualitative thematic analysis and the coding approach used for identifying the concepts was open coding and axial coding. From the data three main success factor themes emerged that were evident in both the B2C as well as the B2B environments. All the ways of operating the business went under these themes: customer success, internal enablers and external enablers. Similarities were found under all three themes but the largest differences between the B2C and the B2B themes were spotted under the internal enablers and external enablers themes.

Keywords: SaaS, Software-as-a-Service, freemium

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1 INTRODUCTION

Software-as-a-service (SaaS) has quite clearly become the go-to business model of the past decade. There are many definitions on what software-as-a-service is but one way to define it is that SaaS is a software distribution model that sees applications being hosted by a vendor / service provider but made available to customers over the internet (Satyanarayana, 2012).

Big and small firms explore opportunities to transform themselves into a service-provider in the hopes of catching some of the pizzazz of the lucrative trend. Even Apple, traditionally viewed as a hardware company, has begun to incline more towards services (Kumparak, 2019). SaaS has been gaining especial familiarity in consumer section as Netflix and the like proliferate in consumer use.

As with any business model, in SaaS too there are myriad ways of going about it on the market. One of them is called freemium. Freemium is a business model where you divide your customer base into at least two groups: to those who use your software for free but do not pay for it, and to those who pay to use an enhanced version of your software (Holm & Günzel-Jensen, 2017). The aim of the service-provider is to convert these freemium users into paying ones and keep them as such. Lately, it has been freemium that has gathered steam. In fact, freemium has become so prevalent that, according to Kim (2015), a whopping 98% of all revenue coming from App Store stems from freemium apps.

Naturally, SaaS has attracted attention from academics but thus far the B2C side of SaaS has received of the majority of the attention, especially in the freemium space (Shankar, Attri & Vigneswara Ilavarasan, 2021). Given the surge of SaaS business model, academia has taken note of the factors driving their success (Walther, Plank, Eymann, Singh & Phadke, 2012) but, again, the research on freemium field is lacklustre. Hence, there exists a gap in the research which this thesis intends to help fill.

The research questions this thesis will revolve around are:

- 1. What are the success factors in B2C freemium business?
- 2. What are the success factors in B2B freemium business?
- 3. How to characterise a B2B freemium model?

The onslaught of digitisation will make sure that SaaS products will stay on people's minds as everyone's workplace continues adopting digital tools without end. More often than not, these tools might just be SaaS designed specifically for organisations to use. Studying what the ingredients of a successful freemium service are will not only steer organisations to develop better services and products but also help them make better decisions that show in their financials and customer satisfaction. SaaS is here to stay and continues transforming the lives of customers and employees alike. Cloud computing continues presenting tempting opportunities for aspiring and existing SaaS providers that the best practices of the business are worth examining. The research will also contribute to the Information Systems (IS) theory and fill the area that has been under-explored in the IS literature. New entrepreneurs nor older SaaS executives do not have any academic sources to turn to when looking for ways to better themselves and find best practices. To find answers and best practices in such an under-explored area academic-wise, one ought to begin by understanding what the players on the other side, that is the B2C freemium firms, are doing. After establishing these factors of the B2C freemium business, the same will be established of the B2B side by interviewing B2B SaaS freemium firms to see if their habits differ from the B2C. Finally, knowing how B2B freemium companies conduct business, it is possible to form the main characteristics of the B2B freemium business and answer the underlying questions.

2 THEORETICAL BACKGROUND

2.1 Software-as-a-service

Cloud computing is taking the world by storm and in the past few years, the world has witnessed a flurry of new subscription services from streaming to various audio and e-book services come into being. The services fall under the category of software-as-a-service (SaaS).

Usually, buyers pay a monthly or an annual fee for the use of a SaaS application. To a layman, the organisations peddling SaaS simply provide a software to use. In reality, the firm does much more than that. They administer all IT support services related to the software from daily software maintenance, data backups, software updates to collecting and storing users' data. Thus, it can be argued, SaaS providers deliver computing utility (Ma 2007). Not that long ago, in corporate use, after its purchase software was delivered by hand to the customer, with the vendor helping in the installation. Afterwards, users had a total ownership of the product but in order to have the software running and keep it in continuous use, they had to provide all IT infrastructure by themselves, including hardware and support services (Ma 2007). The SaaS players upended the traditional software model (sometimes called shrink-wrap software) and ushered in a new order. Instead of the cumbersome process of obtaining and maintaining a software by yourself, in this brave new world software became merely a service to be bought.

Essentially, as stated by Sun et al. (2007), there are three major layers in a SaaS: user interface, business logic and data. Moreover, Lee, Lee & Kim (2009) claim there are six key features that define SaaS.

Reusability: the software is reused for multiple purposes, and it is delivered to users over the Internet.

Data managed by provider: customers of SaaS providers receive a license to use the software as a service, on demand, making providers responsible for the service's installation on their own server, its upkeep and data management. Nearly all data that the customers of the service produce are stored on the data centre of a service provider and the data is managed by the provider. The service customers do not know where their data is stored and how it is managed.

Service customisability: the term means that the service has the ability to be altered to fit for a customer-specific need. This allows individual customers to be served according to their respective needs. To become a customer of a SaaS, one simply needs a working Internet connection making theoretically everyone with such a connection a potential customer and thus, rendering the possibility to serve customers with customisable service non-existent. Offering a one-size-fits-all service puts limits on its usage because all customers can do with the service is to utilise it.

Availability: Service customers access SaaS through the Internet. They do not own the software but merely rent it as a service which makes the availability of the service all-important from user perspective. Providers insist on always having the service available as otherwise, given that the service runs only on the service provider's server, customers cannot use the service and its functionalities they are paying for.

Scalability: Scalability is a highly sought-after property of a system, a network or a process which illustrates its capability to either manage an increasing amount of work or to be effortlessly expanded. Service customers cannot control the resource, e.g., memory, network or CPU, utilisation of the service. They simply wish to use the service and with the ebbs and flows of the service's usage, service providers rescale resources without informing customers about it.

Pay-per-use: the service customers pay only for the usage of the service, whether by the number of invocations, duration or, as mentioned earlier, monthly or annually. Hence, the expenses of using a SaaS are not tied to its ownership, conferring freedom on the users.

SaaS is one of the three main elements of cloud computing. The other two are platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS). Whereas traditional software is run on operating systems, SaaS is built upon PaaS (e.g. Az-ure) which in turn runs on IaaS (Tsai, Bai & Huang, 2014).

As with any new invention, SaaS did not appear overnight. The business model took some time to develop and therefore it is to this paper's credit to delve into how the business came come into existence.

2.2 SaaS business model

Before the birth of SaaS, a multitude of corporations had infused their operations with diverse computing processes and programs. Mainly, firms used mainframe computing which had the users being attached to a central computer that offered them a range of computer programs. The programs were available on-demand and the IT administrators had a total, centralised control over, for example who gets access to which programs and data (Greschler & Mangan, 2002). Because the IT department wielded such an absolute control, many software vendors targeted their sales efforts directly towards the IT department. After purchasing the software, and sometimes even the hardware from the same company, the IT department installed it, trained employees to its ways and handled the maintenance of the applications. Grumbling about the state of affairs was rare. Problems started to arise only when too many people connected to the mainframe simultaneously, slowing everyone's connection (Greschler & Mangan, 2002).

The arrival of personal computers (PC) broke the harmony in which the users and the IT administrators lived. No more were the users tied to the central computers. They began controlling their own computing experience and started choosing the software themselves. The software vendors picked up the scent and reoriented their sales operations to meet the new demand. Having the control of their own computing destinies, users did not experience slow responses anymore since they were the sole customers of their computer's CPU (Greschler & Mangan, 2002).

With great power came great responsibility. The users quickly found themselves in a new position where they had to master IT administrative tasks on top of their own work. People were not trained for it and consequently lost a massive amount of time in the struggle. Incompetence in IT administration coupled with the Internet bursting on the society's psyche led to the point where users, in their attempts to download software from the Internet, ended up infecting their computers with viruses (Greschler & Mangan, 2002). The saga concluded when the IT department came to terms with the new reality and began finding ways to imbue new company policies with technology to assist the PC users. They drew lists of "authorised software", tracked Internet traffic and disabled, among other features, the option to download software on the PCs (Greschler & Mangan, 2002).

Software sellers had troubles too. Their business was hampered by rampant software privacy and their distribution channels were too costly. Customers were vexed with the way they were billed and voiced their desire to start paying based on their actual use of the software. High-speed networks started slowly entering the market, enabling new innovations to take place and proliferating the use of the Internet for individuals and corporations alike. Webbased services saw the change in their fates - the IT administrators began gradually opening up to the possibility of outsourcing to hosting companies. Finally, a revolutionary idea, application service, emerged. The new creation saw allocations of complete sections of IT administration to third parties in an unprecedented fashion (Greschler & Mangan, 2002).

According to Xin & Levina (2008), the SaaS model grew out of the application service provider (ASP) model which was popular in the 1990s amongst industry analysts. In the ASP model, the vendor both managed and distributed software services and solutions through a private network or the Internet (Randeree, Kishore, & Rao, 2015). The model had three distinct features: first, customers rented an access to vendors' commercial off-the-shelf software packages. Second, the customers subscribed to a pay-as-you-go system where they were only billed for the usage of the package. Third, the application was not on the premises of the customer but instead delivered over the network as a customerspecific instance (Xin & Levina, 2008). However, customers had to make an upfront payment in addition to the subscription fee (Choudhary, 2007). Xin & Levina (2008) continue that the ASP vendors then gave their customers the permission to customise their own applications to a certain extent. In fact, this became one of the key issues in ASP adoption as customers desired more customisation which ran against the vendors' interests. To vendors, more customisations led to a loss in efficiency. ASP never really took off the way predicted by the analysts and was promptly reinvented in the form of SaaS which rested on a different architecture (Xin & Levina, 2008).

Waters (2005) calls the business of SaaS a sort of utility computing and likens it to the way electricity is delivered as a utility to organisations and individuals. It is impossible for organisations, not to mention individuals, to build their own power plants to provide electricity so both opt for buying it from utility providers, often for a fixed monthly fee. Much like electricity, which requires a massive capital infrastructure for its production and delivery, the delivering and preservation of the software requires a certain infrastructure of which the vendor bears the burden. As a consequence, customers receive a product / service of high and reliable quality while vendors achieve economies of scale.

The adoption of SaaS accelerated when some key issues were addressed. Universal data communication standards, e.g. HTTP and TCP/IP, were created which, continuing with the electricity analogue, permitted vendors to send electricity without needing to know what kind of a fridge you had. Web-service protocols empowered computers to "talk" to each other as if they resided on the same server. High-speed Internet on the other hand made the physical location of data irrelevant and introduction of service level agreements (SLA) promoted a fair exchange between customers and software vendors (Waters, 2005).

Nonetheless, there were multiple external and internal drivers pushing SaaS to the fore. While software applications enhanced modern business operations, they became a source of constant headaches for business executives. Even though enterprise computing went through a slew of permutations along the years, with each one sprouting a new benefit to organisations from all walks of life, one constant kept afloat throughout the changes: customers' grievance against high, often unexpected and sometimes even hidden costs that accompanied the software initiatives. The unforeseen costs emanated from a range of sources such as, among other factors, arduous implementation of the software, its update and maintenance fees to the software's inability to adapt to sudden changes in the business environment (Waters, 2005).

To fully appreciate how ground-breaking SaaS was for enterprise software buyers, it is worth noting, on top of the abovementioned, that traditionally at the time 50% to 80% of the IT budget was spent on system implementation and its maintenance (Neela & Mein, 2003). Furthermore, 85% of the implementation projects were over budget and delivered behind schedule (Standish, 1994). Even if the vendors sold perpetual licenses, as was the custom in the traditional software model (Choudhary, 2007), the software license fee was merely the tip of the iceberg for the customers.

The SaaS model had numerous contributions to the welfare of software shoppers as it does differ quite a bit from the old way of conducting software business. Ultimately, SaaS granted the wish of the many customers in that they would only be required to pay for the iceberg itself and nothing else. SaaS does not lay an upfront burden on customers and instead of big periodic payments, SaaS collects small but stable cash flow from them (Choudhary, 2007). This provides clarity over IT costs and alleviates pressure on cash flow management (Greschler & Mangan, 2002). Traditional players in the market based their business around selling a perpetual license and shelling the customers with upgrades in hopes for a remuneration. They found customers would only buy an upgrade if customers thought it offered a considerable improvement to their current software version. The result to the traditional vendors was that they withheld new updates until a completely new version of the software was ready, in effect making their own updates compete with one another, case example Windows 98 versus newer versions (Choudhary, 2007). Where the traditional software vendors erected a paywall around new software updates, SaaS vendors saw it fit to release latest updates for free as soon as they were ready (Bakos & Brynjolfsson, 1999). Organisations selling perpetual licenses were slow to roll out their new updates and because SaaS vendors were not constrained by the model, they did not face the same challenges as the old guard. To drive the point home, one can consider Windows. The corporation had finished working on their new application features in 2002 but had to wait to release them until 2007 when Windows Vista was released (Choudhary, 2007).

Choudary (2007) extends that SaaS publishers are more likely to invest in software development than their traditional counterparts.

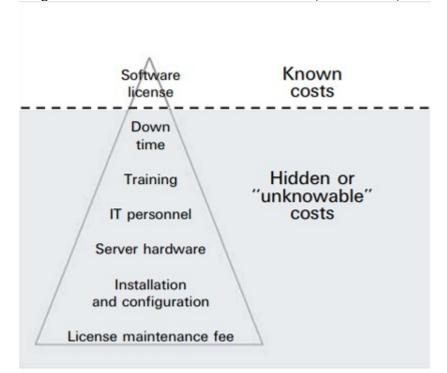


Figure 1 Costs of traditional software model (Waters, 2005)

Nevertheless, every rainbow has its rain. Because in the SaaS model vendors take full responsibility on the service's reliability and availability, they will have to invest heavily on capacities and processes to assure customers of the service's quality. Albeit being simple to implement and use, the SaaS model suffers in performance when compared to the traditional software model (Fan, Kumar & Whinston, 2009).

By avoiding the pitfalls of a perpetual license, which might or might not prove to be a sunk cost, SaaS empowers customers by giving them a chance to switch providers virtually on a whim (Choudhary, 2007). Additionally, the smoothness of SaaS and its ease of utilisation enables corporations' IT staff to concentrate on being the buttress of business operations and releases time to ponder on IT strategy. The IT staff do not need to run around from site to site upgrading the software because SaaS providers ensure their latest versions are at hand for all users at all times. Besides having the latest versions, embracing the SaaS model insured users from IT administrative tasks and boosted their productivity. The software vendors had an abundance of reasons to choose the upcoming SaaS model thanks to its promise of predictable revenues as well as reduction of piracy. The new delivery mechanism, the Internet, shortened the amount of time needed to answer the needs of customers (Greschler & Mangan, 2002). The vendors were relieved of the pain of sending disks to customers which contained the updates (Waters, 2005). Those vendors who chose the new model were usually more competitive in the market (Greschler & Mangan, 2002).

2.3 Freemium business model

SaaS vendors have profoundly changed our way of living both in private as well as at work. It might seem like every week a new subscription-based service springs to life and the modern urbanite cannot help but notice how street advertisement spots are ever more filled by adverts of the service providers. The recent pandemic has exacerbated this phenomenon as citizens in all parts of the world have been more or less confined in their homes, and SaaS businesses vie for their increased leisure and screen time. The SaaS players face difficult choices in the cutthroat and fragmented market. To gain customers, many have opted for luring in potential ones with giving them a free access for some, or all, of the features of their service. This model is called the freemium model. A basic definition of a freemium service is that it describes a business model in which the service provider uses a combination of two products and services. One item is completely free of charge while a complementary item is sold at a profit (Pujol, 2010). In the freemium business model customers get a sort of restricted or a basic version of the application for free.

The word itself derives from the words "free" and "premium" (Wilson, 2006) whereas the model itself is a reworking of a software distribution and monetisation scheme that blossomed from the 1980s onwards, called feature-limited software model. The model let users make use of the software's core components but barred them from utilising the product's remaining functionalities (e.g. saving the progress) unless the users opened their purses (Seufert, 2013). Perhaps in a slightly derogative manner, this type of software has sometimes been called "crippleware" (Parberry, 1997) or "shareware" (Wagner, Benlian & Hess, 2014). The major difference between the freemium model and the featurelimited software model is in their distribution. The latter was distributed on physical discs and the first through the Internet. Besides, the two models had different aims. A feature-limited software merely wished to display the full product, its feel and look, and it could not be used for the primary use cases in the free version. A freemium product in turn does not restrict its users from gaining access to the most basic functions of the software but rather passes out advanced or extra functionalities for a fee (Seufert, 2013).

A SaaS provider seeks to persuade the freemium version users to convert into paying ones by offering them more advanced versions of the application (Holm & Günzel-Jensen, 2017). As mentioned above, this demand can be done through, for example making the application a bit inconvenient to use without a payment (Hamari, Hanner & Koivisto 2020).

Seufert (2013) claims that even though the freemium business model does not have fixed rules or boundaries, it is composed of three design elements or trends that are fundamental for all freemium products. Firstly, the wider the applicability of the product, the broader the likely user base is. Kumar (2014) even goes as far as saying that the sole point of having a freemium service at place is to generate as much traffic towards your service as possible. Seufert (2013) asserts a SaaS must, just like any other service, sooth a pain of a customer and have a clear use case. In contrast with a regular SaaS, a freemium service should have a potential to be used for a wide range of purposes and this virtue is something all freemium service designers covet. Freemium providers' reasoning for the design decision is straight-forward and is neatly tied with the second design element: only a handful of all freemium users ever convert into paying customers. In fact, the industry has come up with a "five percent" rule which states that of the total user base of a freemium product only about five percent are paying customers. In other words, it is extremely difficult to monetise the users of a freemium product and that is why it is so popular to make the service as widely applicable as possible. Fortuitously, Seufert (2013) writes the third observable trend of a freemium service is that a very small number of users spend immense amounts of money within the product. Successfully combining the three patterns with effortless distribution yields formidable results for the provider.

The business model is favoured by firms offering simple products and services, like Dropbox. Their freemium service offers customers two gigabytes of free cloud-based storage but after running out of space, the user can get an additional 100 GB of storage space if they pay about \$10 per month (Kumar, 2014).

According to Seufert (2013), embarking on a journey of developing a freemium service that encapsulates the aforementioned attributes and thoroughly leverages the freemium model's advantages requires more than just meekly following a set of design decisions. Freemium is easy to be misapplied so it is essential for the success of a freemium service to always have the paradigm in mind when developing the service.

It is not difficult to understand why firms operating particularly in consumer markets have taken the advice to heart and made freemium a predominant business model in the B2C sector. As Kotler & Pfoertsch (2006) note in their research, there are some drastic differences between the B2B and B2C markets and the same can be said about the research of freemium. While the freemium in the consumer business has garnered a heap of attention of the academics, freemium in B2B has been left to its own devices.

2.4 Freemium in B2B

Firms in the B2C sector have found colourful ways to employ the freemium model. Some have begun, for example, displaying advertisements to freemium users when they are using the service (Koch & Benlian, 2016) but it is fair to assume that this style of gathering revenue does not function all too well for B2B freemium providers. Business users would most likely find the ads highly inconvenient so it is reasonable for freemium service vendors to walk the tried-and-true avenue of offering freemium service in the original way.

Freemium has especially been one of the go-to business models in gaming for quite some time now (Evans, 2016; Hamari, Hanner & Koivisto, 2017; Montag, Lachmann, Herrlich & Zweig, 2019). The phenomenon has been widely researched in the games industry and some of these learnings can be utilised in other freemium markets. One drastic difference between the games industry's freemium to B2B freemium is that games industry develops its products to addict the user but the freemium vendors outside of the games industry simply want to put out so good of a product that it lures users to the paying side of the service.

There is not much to say about previous studies regarding freemium in the B2B environment. The study by Wagner, Benlian & Hess (2014) laments that there are simply too few studies focusing on the B2B side of freemium. Even though the research on freemium in B2B context is somewhat underwhelming, another quite similar business model has drawn the attention of researchers: opensource software (OSS) business model. It works much in the same way as the freemium model. OSS is a business model in which individuals and companies release their code into the open for communities to develop and benefit from (Bonaccorsi, Giannangeli & Rossi, 2006). Perr, Applevard & Sullivan (2010) explain that there are two factors that have propagated the model. The first is market pull. It states that there is a demand for lower development costs and better product margins, so some firms have, in effect, pulled OSS into being. OSS communities amplify innovating of the OSS projects, they have reduced time-to-market and they are able to avoid certain costs associated with proprietary software such as licensing fees. The second factor is technology push which goes to show the most obvious motivation for OSS organisations. The organisations deliberately push their product out in the open for everyone to use and develop because The Holy Grail they are after is the possibility of capturing a huge user base. The user base can then be monetised.

Munga, Fogwill & Williams (2009) portrays the story of a company called Red Hat which has been heralded as one of the paragons on the OSS field. The firm, through open-source development, offers enterprise software for everyone to use for free. Extracting value from open-source projects can prove to be a gargantuan task for companies so Red Hat sells these firms subscriptions for services. Red Hat has a prominent service repertoire: they can provide their customers an all-inclusive solution, deliver bug fixes and enhancements, assist in product delivery, help in problem resolution and suchlike. Being a purely opensource company, i.e. letting the community be the chauffeur of the software product, nudges the firm to make the support service their primary product. To the uninitiated, the model might seem ludicrous as the product itself is completely free for everyone to take advantage of but to reiterate, OSS organisations help companies both make sense of the sprawling open-source world and utilise its fragments in a coherent way. As discussed, some of the innerworkings of the OSS model resemble the freemium model and some companies choosing the OSS path have been found to be very successful, tempting to extrapolate the findings on freemium.

In the past, B2B SaaS firms have been loth to turn towards the freemium model (Needleman & Loten, 2012). The enterprise clients nowadays have clear budgets for software and are not inclined towards trying out freemium versions of varying software (Needleman & Loten, 2012). Even so, some B2B firms have found success with freemium by exploiting "prosumers" who sign up to use the service for free and over time these users become so attached to the service they go to their workplaces to promote the service to their colleagues and bosses. Slowly, the advocates help the service creep everywhere in the organisation (Holm & Günzel-Jensen, 2017). Using prosumers seems to be a clever way to avoid the typical gatekeepers that stand in the way of B2B salespeople.

2.5 Success factors of SaaS

Aside from running into gatekeepers, the salesmen and women of SaaS face all sorts of obstacles on their way to close deals. Before we can dig into the success factors of SaaS, we must first examine the very reasons why a SaaS is selected in the first place from a buyer's point of view. Just as it has been discussed earlier in this thesis, there are many factors affecting the choice of a SaaS. Ultimately, purchasing one cannot be done based on intuition or personal judgement. Often, especially for businesses, buyers might entertain offers from multiple vendors making the process a multi-criteria decision-making one. Yiming & Yiwei (2011) lay out the principles of selecting a SaaS vendor for an enterprise. The first principle to be obeyed is that the buyer must be sure that the software and services of a SaaS vendor must aid enterprise users to reach their strategic goals. To achieve this, the users are of course required to clarify their strategic goals. The second principle to be heeded is that the buyer should be certain of the abilities and capabilities of a SaaS vendor to deliver a high-quality service for a long period of time. Enterprise buyers are most likely looking for a long-term solution which means that they value like-mindedness in their SaaS vendors.

Yiming & Yiwei (2011) have come up with an elaborate procedure for selecting a SaaS vendor. It is one that takes into account numerous attributes of a SaaS provider and analyses them through an analytic hierarchy model. It is good to keep in mind that surely not all SaaS buyers abide by the rules of the analysis but given that there are many things a buyer has to keep in mind during the purchasing process, it is apt to go through the attributes.

Attributes	Explanation
Rent	The recurring expense of each user
Functionalities	The ability of the functions of the
	software to satisfy users' needs
Expansibility	The ability of the software to adapt to
	changing needs of a business
Security	The safety of data both in storage and
	in transmission
System's building time & disposing	The quickness of the software to
speed of failures	match a business process & the quick-
	ness of the vendor to solve a failure
Share of market & reputation	The market share of the SaaS vendor
	and how its users have evaluated it
R&D capability & financial situa-	Annual R&D investment budget and
tion	secure the vendor is financially
Upgrading expenses	The cost of upgrading the service
Stability	The amount of system failures of the
	software per year
Integrations	The ability of the software to integrate
	with the software already in use
Convenience	The software's ease of use from a us-
	er's point of view
Consultant service	The quality of consulting service of
	the SaaS vendor
Maintenance interval & upgrading	The frequency of system updates and
cycle	the duration of the updates
Implementation capability	The SaaS vendor's ability to success-
	fully implement its software

Table 1 SaaS buyers' considerations according to Yiming & Yiwei (2011)

There are as many SaaS products and vendors as there are individual and business needs and many of them have been researched. Many of them, if not all, write about the same attributes as presented above. There are some minor tweaks and additions here and there, for example Oyekola & Xu (2020) write that a selection team is to be formed that gets the firm through a purchasing process of a Customer Relationship Management (CRM) system, a SaaS product. The team leads the process and comes up with strategic objectives and combs through potential SaaS vendors. Godse & Mulik (2009) go along the same lines. They have found five SaaS product selection parameters that are considered during the buying process. Even though the parameters are mainly formulated from a sales force automation buyer's perspective, it is fair to say they are applicable to any SaaS product whatsoever. The authors might use different names for some of the attributes (e.g. reliability vs. stability) but their explanations do not differ.

It only makes sense that at least some of the success of a SaaS vendor goes hand-in-hand with its competence to meet the demands set by the buyers. In a sense, the attributes scrutinised by the buyers are success factors. In the context of SaaS, success factors refer to certain areas that are crucial to a successful adoption and usage from either a customer's or vendor's perspective (Walther et al., 2012).

Every business has to make a value proposition to entice potential customers and that is the case for SaaS vendors too. As it has been brought up previously in this thesis, SaaS rose up to threaten the traditional software model's stance on the market, so it is only fitting that the very definition for a value proposition in SaaS context is as follows: it is a benefit that creates added value compared to the traditional and on-premise software (Walther et al., 2012).

The authors of the article found several success factors and value propositions of SaaS. The most talked about success factor by far, the paper finds, is performance and the most important value proposition of SaaS is definitely cost saving. The least of the concerns regarding SaaS is the social risk (employee resistance and the like) of using and implementing a SaaS pose. (Walther et al., 2012).

Table 2 SaaS success factors according to Walther et al. (2012)

Success factor	Description
Performance	Within a certain timeframe, how much workload can a SaaS process measured against a specific amount of resources
Security	Describes technical security issues such as data loss or its manipulation. How well the software responds to cyber threats e.g. denial-of-service at- tacks
Individualization	To achieve a possibility of high scale, SaaS vendors offer often a single standard software for all to use, no matter the firm's size or its type
Privacy	Shielding personal data of users from unauthorised eyes. Security and priva- cy aspects are heavily interlinked but a system can be secure and not private at the same time. This is the reason for the dichotomy
Availability	The less downtime a SaaS faces, the better
Compliance	The level of adherence to the service- level-agreement by a SaaS vendor
Flexibility	A SaaS provider's flexibility in provid- ing a customer the right amount of re- sources when requested
Interoperability	Describes how well a SaaS can be inte- grated with the existing IT systems
Implementation	The easiness of getting up to speed with the service
Legal aspects	Data-security laws are different all over the world so how a SaaS can manage all the legal expectations
Charging	Everything related to pricing for ex- ample, how transparent the pricing is, the service's expensiveness etc.
Opportunity costs of inhouse IT sys- tems	SaaS vendors compete with customers' own IT infrastructure so how does a SaaS compare to the existing IT sys- tems and infrastructure
Social aspects	The resistance of employees against SaaS and outsourcing

Table 3 SaaS value propositions according to Walther et al. (2012)

Value proposition	Definition
Cost savings	Potential cost savings by adopting a SaaS.
Financing	The reduction of investment when comparing a SaaS to on-premise.
Concentration on core competencies	Greater focus on core competencies
Functionality	when outsourcing IT to SaaS vendors
Functionality	Industry-specific modifications can
	be built upon the existing software solutions
Cost flowibility	
Cost flexibility	Renting does not tie down capital
Installation	SaaS providers are responsible for
	installations which helps customers
	to control IT-related costs
Planning	Cash-flow estimation is easy with the
	continuous payments of SaaS
Strategic flexibility	SaaS allows for greater flexibility in
	business decisions as there are no
	sunk costs or lock-ins to a system
Actuality	SaaS always gives access to the latest
	version of the software
Innovation ability	SaaS can enhance innovativeness by
	integrating new functions
Helpdesk quality	The low lock-in effect make SaaS
	firms compete with, for example bet-
	ter helpdesk functions
Ease of use	The user base of a SaaS product is
	diverse which leads the developers to
	make sure the usability is great for all
Availability	SaaS can give better availability than
	on-premise systems
Mobility	Access to the service from any loca-
	tion.
Data security	Higher protection against cyber
	threats as SaaS vendors must be ex-
	cellent in IT security
Higher investment security	Lower risk to spend a lot on a bad
	service.
Replacement of old infrastructure	Companies can simply replace old
	infrastructure with SaaS
Energy savings	SaaS vendors do not need as much
	energy as the single user might need
Accounting benefits	Lessen the tax load because initial
0	costs transform into operational costs

In general, Walther et al. (2012) continue that there are four main metrics, that determine the success of a SaaS altogether. The metrics are system quality, information quality, service quality and net benefits. System quality includes attributes such as service's ease of use, functionality, performance and so forth. Information quality means how the software takes into account security, privacy and compliance and service quality refers to how well the IT support of the SaaS is arranged. Lastly there are the net benefits the purchaser of the SaaS reaps from its use. They range from cost savings to strategic flexibility. The authors do not include user satisfaction nor system use since they cannot be put under the abovementioned categories.

System Quality	Information	Service Quality	Net Benefits
	Quality		
Performance	Security	Helpdesk quality	Cost savings
Availability	Privacy		Financing
Flexibility	Compliance		Concentration on core competen- cies
Ease of imple-			Cost flexibility
mentation			
Interoperability			Planning
Functionality			Strategic flexibi-
			lity
Installation			Innovation abili-
			ty
Actuality			Mobility
Ease of u se			Higher invest-
			ment security
			Accounting be-
			nefits

Table 4 SaaS success metrics according to Walther et al. (2012)

2.6 Success factors of freemium

There are plenty of research to read about the success factors of freemium too. Be that as it may, it would be useful to bear in mind the nuance distinctions between the success factors of regular SaaS and freemium SaaS. Satyanarayana (2012) states the success of a SaaS provider is heavily linked to the provider's customers' success and the same conclusion can be drawn from the tables in the previous chapter. The customers can very easily unsubscribe and thus, leave the provider penniless. This phenomenon is even more accentuated by the freemium model itself whose way of operating allows users to hop in without a charge. The freemium service vendors aim to keep the users on the platform in the first place so that, down the road, vendors get to turn them into paying customers. Maltz & Barney (2012) argue that freemium only works for products that have a massive market because of the extremely low conversion rate (the five percent rule). In other words, the authors imply that if you want to achieve a great valuation and high revenues, you need to choose a market that has a potential for accruing millions of users. Indeed, one of the critical aspects for freemium's success is attracting a massive amount of freemium users (Holm & Günzel-Jensen, 2017). Maltz & Barney (2012) also argue that one of the keys to success in a freemium business model is to keep the marginal costs low and minimise marketing and sales expenses. The product itself should do most of the marketing. That can be tricky and since all firms have limited resources to go about their business, having both the freemium and premium users on the "payroll" might prove challenging to the financial side of a freemium firm. That is why the executives of a freemium ought to make sure that the return a freemium vendor receives from converting users into paying ones should exceed the costs of servicing all users (Maltz & Barney, 2012).

To convert freemium users, one must first understand their present state and their prevailing thoughts of the service. Freemium service providers are keen on understanding how people perceive their service's economic value (Hamari, Hanner & Koivisto 2020) and it has been noted in the literature that the most important factors for the success of the freemium model are customer satisfaction and good user experience (Shankar, Attri & Vigneswara Ilavarasan, 2021). Maltz & Barney (2012) concur with this sentiment. Their research says a freemium vendor should steer its business through the heavy utilisation of data, more specifically cohort data. The research aptly notes that in freemium customers might have signed up on the service as a freemium user years before they turn into a paying customer. The only way to measure and determine that a freemium user is on the path towards conversion is through cohort data. Grouping users into cohorts grants freemium businesses the ability to measure trends in user acquisition, engagement, conversion and retention. Much like a winemaker tastes his or her wine from the barrel, business leaders of a freemium service should track cohort events to make sure their business is ripening appropriately.

The research by Maltz & Barney (2012) holds that a freemium service vendor stands to gain in two respects from monitoring and understanding its cohorts. The first is a better understanding of the freemium service's conversion and retention. Maltz & Barney (2012) assert that one of the most used freemium cohort analyses is tracking cumulative conversion rates over time. In an ideal world, a freemium vendor expects their cumulative conversion rate to rise, say, quarter after quarter. In the same vein, each successive cohort should fare better than the last when looking through the prism of conversion metrics. Among other things, time-based cohort data can answer to the following questions:

- What is the typical behaviour of a user in a given time period after signup (e.g. three months, a year and so on)?
- What is the lifetime value of a free and / or a premium user?
- If a user X and a user Y were acquired through different channels, do their conversion rates differ?
- How does a product change affect cohort behaviour?
- How does a pricing change affect usage or conversion?

The second bit is visibility. The better and more vigorous is the cohort data and its usage, the more predictable a freemium service becomes as it matures. There is probably nothing else in the whole world a stakeholder of a business loves more than predictability. A freemium provider makes money out of three distinct user groups:

- Earlier converted premium users who continue paying
- Free users acquired in the past but who now convert for the first time
- Newly acquired users who instantly convert

A freemium service loaded and equipped with historical cohort data will enter a quarter after another with a clear head of how many users pay now and how many users will *start* paying. In terms of income sources in general, the single uncertainty left is the group of new users (Maltz & Barney, 2012).

There is more to the success of a freemium than the accumulation and adequate handling of data. Holm & Günzel-Jensen (2017) have found there are also nine strategical choices for freemium vendors that are integral in their aspirations for success.

1. Maintain high value in both the free and premium offerings

In order to succeed in the freemium space, vendors must pursue continuous development and improvement of their value propositions. Value propositions can range from creating a better user interface or giving more free space to giving access to new, better features. In freemium the lock-in effect and switching cost is virtually non-existent due to the service being free to use, so non-stop system development is key to increased customer loyalty and better customer retention.

2. Strike a balance between free and premium offerings

Finding the right balance between the two is a question of life and death for freemium vendors. Giving away too much in the freemium version will ruin your chances to upgrade users from freemium to the paid version.

3. Maximise the value from free users

Instead of reducing the role of freemium users to a simple operational cost of the business, they should be treated as a valuable resource and sometimes even a marketing tool.

4. Mine user behaviour data

Practically speaking all businesses nowadays use data in a form or another. More so in the freemium space. The most successful freemium businesses constantly hone their data analytics capabilities, pouring a great deal of resources into perfecting the prowess. Data analytics guide the development of their service and optimise their user-management as well as have a hand in tailoring a better premium service.

5. Take advantage of social media

Free product distribution is possible with the use of social media. When freemium vendors harness social networks in a proper manner, they might achieve a rapid rise in product awareness and reach new markets.

6. Exploit well-established market players

A freemium service can stretch out to a large pool of potential users through product bundling and integration with strong and entrenched market players.

7. Mind the costs of free-user management

Freemium users can do many things but what they do not is generate revenue. Rather, they chip away a freemium vendor's resources from, among other things, cloud computing. Successful freemium businesses then put emphasis on mitigating user-servicing costs by implementing automated and mass-customised customer relationship platforms. As mentioned previously, the best freemium firms use these free users as a means to reduce actual marketing costs.

8. Internationalise

Once the foothold has been gained in the home market, a freemium service should venture out to foreign lands in the hopes of expanding its user base. Given the nature of the business, continuing the unyielding expansion of the user base in the international markets is highly logical.

9. Acquire new technologies through mergers and acquisitions

The competition in the freemium market is brutal and the most successful freemium companies are constantly on the lookout for ways to leapfrog their competitors. One swift way to do so is by buying complementary and supplementary capabilities that align with the buyer's existing strategic orientation. With new acquisitions often come new users and customers which are always a welcome addition for a manager of a freemium service.

As per usual, there are many opinions on what makes or breaks a freemium. Even though slightly deviating from the points discussed above, Seufert (2013) offers many of the same elements that go into the success of a freemium service. The author claims there are four main pillars of success for freemium: scale, insight, monetisation and optimisation.

Albeit some research suggests one of the defining goals of freemium to be amassing a big number of users, Seufert (2013) argues that is not a necessity for a freemium service to succeed. Freemium services can be successful at any number of user base sizes but the service must be able to accommodate massive scaling so that a desired level of adoption can be met to drive revenue. The characteristics of a product that facilitates massive scale are low marginal distribution and production costs. Research by Holm & Günzel-Jensen (2017) agrees with Seufert's assertation which is that because the entire user base does not contribute to the revenue stream, it makes the two characteristics central for the success for a freemium product. Marginal cost in this context means the cost incurred when delivering an additional purchased unit to a client. Through economics of scale, physical products can cut these costs (for example shipping, storage, retail fees) and make the function work: the more products shipped, the lesser the cost of marginal distribution. Digital products are shipped through different channels entirely. Usually, the only costs related to their distribution are hosting expenses and platform fees, the marginal level of which can effectively reach \$0. Production costs differ too for digital and physical goods. Physical goods are made of physical materials, which must be purchased before-hand. To top it off, their creation process is an expense as the product must parsed together from the materials by a man or a machine. Digital products lay no such burdens on the producer because they can be replicated with very little or no cost at all. A product of such characteristics can be adopted, for an extremely low price for its developer, by a large number of people.

Insight is just as important as scale. In the context of freemium SaaS, insight refers, according to Seufert (2013), to the freemium product's entire data supply chain. From data collection to its analysis, the usage of the product is instru-

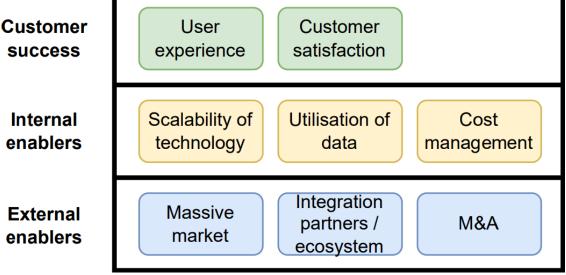
mented through the use of data collection mechanisms. Data of the interactions between the product and the user is aggregated, audited and parsed to better serve the user. From data, developers gain valuable knowledge on what works and what to change. Insight too is divided into two separate parts that are equally integral to the process. First is the collection of data. Data collection is often done by the developer of the product and it consists of tracking and storing of user interactions but also how this is made available to data consumers. The software and hardware part of the equation (i.e. the technical infrastructure) which are responsible for data's retrieval, its storage and end-user access is referred to as analytics. The second part of insight is the business intelligence side of things. The data must be analysed and understood, after all, to make it have any impact on the business. The work might be a regular report of certain key metrics or an analysis of a product feature to understand how well it is performing at the hands of users. Part of the analysis work is user segmentation which means splitting user base into different camps based on, for example the commonalities among them, just like the research by Maltz & Barney (2012) attests. Some user archetypes might share similar payment behaviours which might bring about new opportunities in optimising revenues. Analysing them is vital because, as mentioned many times before in this thesis, not all users are expected to become paying users and those that can become contributors to the revenue of the service provider must be identified and catered to with extreme zeal. To sort the wheat from the chaff, service providers have to understand what the converted customers pay for as well as why and when are they most inclined to do so. Because of the nature of the business, the service being free to use for all, the user bases are broad and diverse. Leaning on intuition just does not cut it in the freemium market.

Monetisation, Seufert (2013) claims, is at the heart of all freemium experience. Everything in freemium revolves around monetisation since a paying customer is essentially buying an enhanced experience compared to the free one. Regular SaaS raises a barrier to adoption with its upfront cost if they lack the cash or income to buy the product or the belief in its value, hence deterring potential users from using the product. Only the users with both the disposable income and the trust in the product become customers of a regular SaaS. Therefore, there are two groups of potential users who are left out - those who see the product to sufficiently meet their needs were the price lower and those who are simply unconvinced and / or do not trust that the product can treat whatever ailments they have, which leads them to pass on the SaaS. Freemium pampers both as all sign up for free. The group of doubters are more easily won over by giving them access for free and letting them try the product out for themselves. By the time the members of the group with the poorer financial stature have mustered together enough funds to be potential customers for a regular SaaS, they might have already found an alternative freemium product or they might have forgotten about the regular SaaS they ran into in the first place. Yet as freemium users they are more likely to become premium users. The real rainmakers for freemium providers, though, is the group who *can* afford and *want* to buy the premium product, *and* who are able to get more bang for their buck. It is exactly this group the freemium providers are most keen on hunting. The service's revenue strategy should accommodate a whole gamut of levels across which users can monetise. Consequently, each user enjoys the product to the fullest extent of their wallet. Service managers should aim to optimise their project for this group, that finds the most value in their service, the freedom to extract as much value from it as humanly possible. If a freemium provider achieves this goal, they have unlocked the benefits of the business model and devise such a revenue machine which would have been impossible had they chosen a regular SaaS model.

Finally, Seufert (2013) concludes that the faster a freemium service is optimised based on the prior points, the faster the vendor can harvest the fruits of the labour. Optimisation in the freemium context means the process of translating data of user behaviour into product improvements that have a positive effect on a certain performance metric. The improvements, the author says, are generally incremental and thus, made in an iterative manner. However, as in all things, so should balance be found in the optimisation of a freemium service. A developer should not lose sight of the longer-term performance when pursuing short-term optimisation. Seufert (2013) continues to add that there are two kinds of optimisation in freemium space: local and global optimisation. Local optimisation betters the performance of a process and global optimisation boosts the overall performance of the whole product. Both forms are needed but the first is easier than the latter. Local optimisation's improvements can be quickly undertaken and measured but global optimisation's repercussions take much longer to see. Finding the perfect balance between the two is tantamount to success in the freemium model.

2.7 Theoretical framework

Considering the freemium success factor theory covered here, one can recognise three main themes surfacing: customer success, internal enablers and external enablers. All the success factor components discussed in this chapter are assimilated in these overarching themes. How successful a freemium service is, or is going to be, can be appreciated when juxtaposing its developer's actions with the themes.



Under customer success falls both user experience and customer satisfaction. A customer should have a great time using the service and it must satisfy the needs of the customer. Theory does not go too into details on these two aspects but maintains their importance as the underlying causes for overall success.

Internal enablers are more of a multifaceted bunch. The theme contains freemium service vendor's personal capabilities to conduct business. Scalability of technology refers to a vendor's proficiency in keeping the service usable despite the rising user numbers. Even though a vendor would earn a healthy number of users, the developer must act as a shepherd for them and acting as the shepherd's crook is data. As established, using data is tremendously important for a freemium vendor. The utilisation of data subtheme consists of the service vendor's competence in gathering data (e.g. user behaviour) and moulding the service based on the analysed data. Moulding encompasses everything from balancing the freemium and premium offerings to monetising users at the right time to the development choices of the service. Regardless of how great the analytics capabilities or the service balance are, obsessing over costs is very much the mindset of a successful freemium vendor. The subtheme of cost management subsumes, fittingly, all things cost management. To effectuate sound finance management, freemium vendors, for example, make use of prosumers, social media and automatization. To triumph, and to bat away the costs of servicing freemium users, a freemium developer has no choice but thrive in these activities so that user acquisition and conversion does not cost more than what it costs to carry out the aforesaid.

Under the roof of external enablers are the articles which are not completely under the authority of the freemium vendor. The first item here is having a massive market for the freemium service. The conversion rate of freemium services is notoriously low so it is imperative for a freemium to have the possibility of enchanting as many pairs of eyes as possible. Quite rightly, a vendor can choose to develop one's product to appeal to a vast audience but all the same a new and big market can materialise down the road. Whatever the means is (e.g. internationalisation), the destination must be that the freemium service has a substantial number of potential users. Secondly, the prior research notifies us that hooking the freemium service up with bigger fish, either by the agency of integrations, product bundling or both, is a handy backdoor for winning new users. Lastly, theory makes the case for mergers and acquisitions to spread the gospel of a freemium product, and thereupon capture new acolytes and skills for the vendor.

2.8 Summary of theory

First and foremost, the review of the literature focused on understanding the success factors of both SaaS and its outgrowth freemium, whilst defining the two and exploring briefly their origins.

Before SaaS nor ASP was even a blip on the radar of IT administrators nor users, traditional software ruled the waves of the software market. The model had and still has grave flaws and retrospectively it might be alluring to brush off the model, calling the rise of ASP and SaaS inevitable. The reality, though, is that ASP, the forefather of SaaS did not achieve as big of a breakthrough on market as many had hoped due to its own shortcomings and despite PCs and the Internet changing the dynamics in IT in many respects, the fate of SaaS was not written in the stars. It was the bettering of infrastructure and the creation of industry standards that paved the way for SaaS vendors to enter the market and consolidate their commercial positions. Heeding customers' demands of better cost management absolutely helped their standing as a viable option compared to the traditional software.

The SaaS industry came up with new ways of serving users. Again, drawing from experiences of earlier software business models, one of the innovations was freemium. Freemium modernised an older software model and gave users a chance to try out a piece of software without having to commit oneself financially into the endeavour. The advent of freemium was a boon to B2C companies but in the B2B SaaS context the model has been overlooked to some extent. In the B2B SaaS setting, the business model has not been widely researched but there are some examples where firms have found success with it or with something closely resembling it.

Broadly speaking, when buying SaaS of any kind, buyers tend to consider a host of factors. As it happens, these factors echo the actual success factors of SaaS that researchers have been able to find. The success of a SaaS depends on a sundry of things, from security to the availability of the service. The most im-

portant success factor of a SaaS is its performance. It refers to the service's capability to handle rising workloads when measured against a certain number of resources. The least important success factor is social risk that new SaaS poses to the firm. Social risk in this context means that firms are not that concerned about employees throwing temper-tantrums over the adoption of a new software. The value SaaS offers to its customers are manifold and they are in relation to the old, traditional software model. Compared to the traditional software model, the biggest value proposition by far a SaaS can make to a customer is its cost saving property. Out of the value propositions and success factors, theory suggests a category of success metrics for the SaaS context. They are divided into four major success metric categories: system quality, information quality, service quality and the net benefits of a service.

The success factors for a freemium service differ from a regular SaaS. It is natural seeing that freemium operates on unique business fundamentals. Because of the traditionally low conversion rate of a freemium service, to succeed it needs a big market to play on. As the users can use the service for free, the vendor must take care of the service's costs so as to not let the free users run the business aground.

Converting users into paying customers requires understanding them. Successful freemium services employ cohort data to gauge what works and what does not work in the service. The data is ever so important in helping to steer the service's development towards more lucrative directions and to estimate future revenue. Theory posits nine strategical choices that freemium services face when seeking success. Much of the research approves the choices which include minding the costs of free-user management, mining user data and so forth but undoubtedly the most conspicuous key for freemium success is the service vendor's ability to find balance between the two offerings, freemium and premium. Monetisation is closely associated with this exercise.

3 METHODOLOGY

The research will be of qualitative nature as getting access to the data requires interviewing converted freemium users. Qualitative research methods in general enable researchers to examine complex phenomena in their social and cultural context (Myers, 1997).

For making the data pool as varied as possible, this study will be conducted as a multi-case study. The more diverse the backgrounds of the companies whose customers are interviewed, the better results and practical implications are because then true generalisability is achieved.

Google and LinkedIn were used to search for B2B SaaS firms who have a freemium service. After identifying these firms, they will be contacted. From then on, interview questions and topics were crafted based on the literature's views on success factors for freemium business.

The aim of this study is to find regularities and generalisability in the answers of the interviewees. Thus, data will be analysed systematically in an iterative manner using open coding and axial coding. Axial coding is used to synthesise and organise data into structured categories and subcategories and discover their potential relationship to one another (Scott & Medaugh, 2017).

3.1 Case study research method

This thesis is done as a case study. The purpose of this study is to find similarities between the B2B SaaS freemium firms and their ways on how to do business in the field so the method fits the study more than adequately. Case study is "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units" (Gerring, 2004).

3.2 Data collection

Four European B2B SaaS freemium service providers were interviewed for this study. The interviews were unstructured in nature and contained of openended questions. The interview topics were based on the findings from the theory part of the study.

3.3 Data analysis

The data was analysed using qualitative thematic analysis. The aim of the theming was to identify central concepts from the data. Thematic analysis was used to find out how the B2B SaaS freemium businesses in the sample described their ways to conduct freemium business in a B2B environment. The coding approach used for identifying the concepts was open coding and axial coding. Khandkar (2009) illuminates this type of process as something that will make the concepts emerge from the raw data and then later grouped into conceptual categories. Khandkar (2009) continues by arguing that the validity of the analysis stands on a firm ground because it builds directly from the raw data. To form the list of common themes, the interviewees' answers were gone through to find what kind of commonalities they described in their practices when striving towards fulfilling these basic tenets of B2B freemium.

4 EMPIRICAL FINDINGS

This chapter depicts the empirical findings of this thesis. The goal of the analysis was to understand how modern B2B SaaS freemium service providers conduct their business and what kind of generalisations can be made out of the findings.

4.1 A way to conduct B2B freemium business

4.1.1 A way to get into B2B freemium business

Three out of the total four interviewees their companies had first embraced what they call "sales-led growth" model before coming up with their freemium offerings. Sales-led growth model is a model where salespeople are responsible for bringing in the revenue. Interviewees refer to the growth strategy that is spearheaded by a freemium service as "product-led growth". In these three cases the two growth models co-existed.

"At the same time, we have also a sales-led growth strategy but these two will merge into one at some point" – Respondent 2 $\,$

EC1: B2B SaaS firms tend to start with sales-led growth strategies.

One reason for the firms to conduct business with two differing strategies at the same time is that sales-led and product-led growth target different audiences. The sales-led approach targets mainly enterprise, that is large clients, whereas the product-led approach targets SMEs.

"The decision where sales-led or product-led approach is needed is tied to the decision-making process. In enterprise sales there are often a lot of people involved in making a decision... it can be very challenging to address everyone's concerns through a product-led strategy." – Respondent 1 Another response echoed the sentiment:

"Our outbound sales targets more mid-market, enterprise level companies." – Respondent 4

One response reminded that product-led approach cannot even reach enterprise users:

"On enterprise level some users cannot even use the software because their IT department has restricted access to software" – Respondent 1

EC2: Freemium in B2B SaaS targets small and medium sized enterprises.

A firm of one of the interviewees was roped into product-led growth strategy because of the market potential and the scaling opportunities it presents:

"We are an enterprise product that is only now transitioning into more product-led growth with which we specifically seek better scaling and bigger market potential. We have big ambitions but we do not know yet if they are realistic." – Respondent 1

EC3: For B2B SaaS providers, freemium offers a chance to go after a bigger market and better one's scalability.

All interviewees agreed that it is extremely difficult to make the switch to salesled approach to a product-led one.

"Some have been able to pull it off and some have not. You might have to make radical changes to your product once you have chosen product-led growth strategy" – Respondent 1

One interviewee admitted that their new freemium service had cannibalised their premium offering, expressing the difficulty in finding the balance between the two offerings:

"When we launched our freemium service, one of our enterprise customers paid X amount of euros and now they pay zero euros and well, of course it hurts a bit." – Respondent 2

Two interviewees added that there is an on-going debate within their firms on what to do with the freemium service since it is causing so much headache for the management. They do not seem to be certain on the course they should chart:

"There is debating with the board of the firm and others if we should have freemium at all... should everything be behind paywall, are they just distractions, why are you letting someone use your intellectual property for free." – Respondent 3

To sum up the mood on dithering between the two strategies, one response put it bluntly:

"Let's just say we are thinking of which we way we want to go." - Respondent 2

EC4: Making the switch from sales-led model to a product-led one is difficult and requires much from the service provider.

Three out of four interviewees gave erratic responses on their strategy regarding freemium. Either it seemed like the choice to jump into the freemium world was not always a thoroughly thought decision or there were still a lot of moving parts with which they did not know what to do. Much of this can be attributed to the fact that one firm had only recently begun its freemium journey whereas two others had not gain much from their freemium service thus far.

"Well, just purely revenue wise, [freemium] does not have relevance. We have not seen any significant number of users upgrading [to premium] nor have we found ways how to get them to upgrade." - Respondent 2

It seems to be difficult crack the code of freemium revenue model. One interviewee commented thusly:

"Money wise it is... well, absolutely awful." - Respondent 3

EC5: Turning profit out of a B2B freemium service is laborious and takes long. This might in turn lead to internal bickering about the product-led growth strategy.

As described above, there was a plurality of motivations for developing a freemium service. Some were motivated by the opportunity to seize the first-mover advantage and stand out from competition:

"There is a lot of talk of free trials and freemiums and they have some differences, so in this kind of market situation we are the first and, as far as I know, the only ones who offers a pure freemium solution. Everyone else has free trial solutions meaning they have a certain time limit on how long a user can use and test the software and then it ends and the user has to buy the software. We are, in a way, the trailblazer and it is quite a bold move." - Respondent 1

Another response brought up how their firm can differentiate themselves from competitors when potential customers hesitate between them and their competitors:

"We get to direct a lot of customers towards us [by offering them the freemium service]" - Respondent 3

EC6: Differentiating oneself from competitors is a big motivator to switch from salesled model to a product-led one in the B2B freemium scene.

The interviewee whose firm was the only one amongst the interviewed firms that had taken the product-led growth approach from the get-go evidently looked the business through a dissimilar lens when compared to the other interviewees. His take on the topic was to acknowledge how hard it is for a SaaS firm to switch from sales-led to product-led growth strategy:

"From what I have talked with [name of a SaaS executive of another firm] and others, switching from outbound led strategy to product-led one is not easy. It is not easy to do that that way around." - Respondent 4

PEC1: B2B SaaS firms usually approach business from a sales-led perspective but invest in freemium services when they want to expand into bigger markets, achieve better scalability, differentiate from competitors and bring in more SME customers. Turning profit is difficult and can lead to internal bickering.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 7.

IDENTIFIER	
EC1	B2B SaaS firms tend to start with sales-led growth strategies.
EC2	Freemium in B2B SaaS targets small and medium sized enter-
	prises.
EC3	For B2B SaaS providers, freemium offers a chance to go after a
	bigger market and better one's scalability.
EC4	Making the switch from sales-led model to a product-led one is
	difficult and requires much from the service provider.
EC5	Turning profit out of a B2B freemium service is laborious and
	takes long. This might in turn lead to internal bickering about
	the product-led growth strategy.
EC6	Differentiating oneself from competitors is a big motivator to
	switch from sales-led model to a product-led one in the B2B
	freemium scene.
PEC1	B2B SaaS firms usually approach business from a sales-led per-
	spective but invest in freemium services when they want to ex-
	pand into bigger markets, achieve better scalability, differentiate
	from competitors and bring in more SME customers. Turning
	profit is difficult and can lead to internal bickering.

Table 5 Empirical conclusions for A way to get into B2B freemium businessIDENTIFIEREMPIRICAL CONCLUSION

4.1.2 Operating a freemium business

Judging by their answers, the other three, the firms that had adopted the product-led strategy after starting out with the sales-led growth model, treat their freemium offerings more like a feature than the focal point of their strategy.

"In our case, the freemium product serves as an enabling factor for our product-led growth strategy. It enables our users to try out our product without paying a dime

and therefore, the threshold to start using a new software lowers significantly." - Respondent 1 $\,$

Another response goes further:

"[Freemium] is a feature" - Respondent 3

EC7: In B2B SaaS, freemium is seen as a feature rather than a product itself.

Everyone swears by the name of all-might data. However, the difference between Respondent 4 and the three others is conspicuous. Where Respondent 4 lays out a rigorous and a zealous approach towards the utilisation of data, the other three wail about the lack of resources and backing by the firm for the freemium endeavour.

"[Freemium development] is headed by our Customer Insights team which practically is me. It is me for who the free plan is important." - Respondent 3

Nor are their decisions always purely driven by data:

"We rather give too much for free than have a situation where you do not get any value from the free version" - Respondent 2

EC8: B2B freemium companies transitioning from a sales-led approach to a productled one vacillate between the two which leads to freemium development becoming under-resourced.

PEC2: Sales-led B2B SaaS providers who created a freemium version of their product see freemium as a feature that enables them to pursue product-led growth strategy. Their decisions are not always based purely on data and the ascending growth model is often under-resourced.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 8.

Table 6 Empirical conclusions for Operating a freemium business**IDENTIFIEREMPIRICAL CONCLUSIONS**

EC7	In B2B SaaS, freemium is seen as a feature rather than a product
	itself.
EC8	B2B freemium companies transitioning from a sales-led approach to a product-led one vacillate between the two which leads to freemium development becoming under-resourced.
PEC2	Sales-led B2B SaaS providers who created a freemium version of their product see freemium as a feature that enables them to pursue product-led growth strategy. Their decisions are not al- ways based purely on data and the ascending growth model is often under-resourced.

4.1.3 Freemium and marketing

The reason for the philosophy gap between Respondent 4 and others is that the product has dictated the pace of the firm from its inception.

"In the beginning we declared that 'we do not need any sale speople'." - Respondent $\mathbf{4}$

Salespeople are not needed when freemium itself is seen as a marketing tool.

"For us, freemium is a marketing apparatus, in other words it is like a word-of-mouth generator" - Respondent 4

EC9: Freemium is a marketing tool for B2B service providers.

Marketing was a topic all interviewees found common ground. All participants described the array of marketing methods in nearly the exactly same way. Each firm creates a ton of content on their websites to lure people to get to know the firm.

"We have a pretty big blog archive where we have blog posts of what problems our software can solve. When people google these problems, we are quite often at the top" - Respondent 2

EC10: B2B freemium firms write a massive amount of content with which they raise awareness of their product and its capabilities to solve problems.

The blog posts are a way to boost firms' search engine optimisation (SEO) but search engines are not the only place where blog posts can be of value. SaaS companies turn towards paid advertisement and in paid ads firms can leverage the blog posts.

"We can share a blog post throughout social media as a paid ad, and you can call this phase 'the prospecting phase'. We figure out who is interested [in the material] and

then someone visits our website and does some actions there after which, based on what actions the person has taken on our website, we target remarketing advertising to the person and try to convert the person into a user of our software if he / she has not done that yet." - Respondent 1

Paid ads, SEO and blogs are at the heart of freemium marketing for the firms attending this study. The bulk of the traffic is organic traffic:

"Of all our traffic around 20% comes from paid ads. Anyway, the majority of the traffic is organic which comes indirectly through our blog and SEO work." - Respondent 4

EC11: B2B freemium providers use loads of paid ads to direct traffic on their websites but the greatest contributor in this regard are the content and SEO.

Blog posts of showcasing a way of solving a certain problem is one of the many ways of buying the trust of potential users. One way to build credibility are software review sites.

"We, of course, try to persuade the satisfied customers to write reviews of us" - Respondent 3 $\,$

EC12: B2B freemium providers cajole their most satisfied customers to write favourable reviews of the providers to increase their credibility.

The requirement for achieving a stellar performance in not only driving in traffic but succeeding with the freemium service in general is developing an ideal customer profile (ICP). Forming of an ICP is meant to help marketing focus on the types of potential users that are more susceptible to conversion. If the ICP is spot on, customer retention numbers are better as well.

"[Product-led growth strategy] has a lot to do with what is our ICP, where do we acquire the users, because it can differ a lot from what our enterprise client's profile is." - Respondent 1

EC13: ICP and its polishing is a high priority for all B2B freemium companies. It is used for marketing and sales purposes especially.

No matter how clever your ICP is, it will not matter if the market is too small. All interviewees agreed on the importance of having a big market for their freemium service.

"You cannot operate this kind of inbound business if you cannot guarantee the volume... yes, I would say it is a prerequisite" - Respondent 4

Another response went in the same vein:

"Of course we would like it to be an infinite market and in fact it is the goal. The will is to design the product in the way that its market potential would expand." - Respondent 1

EC14: A massive market is essential for a freemium business to flourish.

One way to expand the user base and exploit the market potential of a freemium product is through referral programs.

"[In a freemium service] you try to get the user either to make a purchase at some point or invite more people to use the software." - Respondent 1

Freemium firms can entice users to invite more and more people by doling out all sorts of benefits at the direction of the inviters.

"Either they can get premium time for free or access to some features or then they can earn a little side revenue." - Respondent 4

EC15: B2B freemium providers use referral programs to widen their user base. They incentivise referrals with a multitude of methods.

PEC3: Freemium itself serves as a marketing tool but B2B freemium providers also create original content and, with clever targeting, use ads to lure in new users. The providers must be excellent at SEO and tempt satisfied customers to write favourable reviews. Success is underpinned by a big market potential.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 9.

Table 7 Empirical conclusions for Freemium and marketingIDENTIFIEREMPIRICAL CONCLUSIONS

IDENTIFIER	
EC9	Freemium is a marketing tool for B2B service providers.
EC10	B2B freemium firms write a massive amount of content with which they raise awareness of their product and its capabilities to solve problems.
EC11	B2B freemium providers use loads of paid ads to direct traffic on their websites but the greatest contributor in this regard are the content and SEO.
EC12	B2B freemium providers cajole their most satisfied customers to write favourable reviews of the providers to increase their cred- ibility.
EC13	ICP and its polishing is a high priority for all B2B freemium companies. It is used for marketing and sales purposes especial- ly.
EC14	A massive market is essential for a freemium business to flour- ish.
EC15	B2B freemium providers use referral programs to widen their user base. They incentivise referrals with a multitude of meth- ods.
PEC3	Freemium itself serves as a marketing tool but B2B freemium providers also create original content and, with clever targeting, use ads to lure in new users. The providers must be excellent at SEO and tempt satisfied customers to write favourable reviews. Success is underpinned by a big market potential.

4.1.4 Integrations in B2B freemium

These features can be, for example, integrations. In B2B freemium it would seem like all integrations are behind a paywall, i.e. designed for premium users only.

"[In the freemium version] you cannot even export an excel sheet out of the software." - Respondent 3

EC16: B2B SaaS firms do not give freemium users access to any of their integrations because they are used as carrots for user conversion.

Integrations in B2B freemium are made with the premium customers in mind.

"Paying customers have mentioned that they would like to have them here because they are using these [certain tools]." - Respondent 2 It seems to be easier to develop a certain integration when you know for sure there is a demand for that.

"The current integrations are based largely on the needs of our enterprise clients." - Respondent 1 $\,$

There are many ways to gather the intel on what do the customers really need and want, such as through basic customer success work, from salespeople, surveys and so forth. One way to enable customers and give them agency in the product development is by letting them vote on what kind of features they most want.

"A customer has the possibility to affect our product development in certain ways. We might flag different topics and then customers can vote on them and that way we can prioritise certain things." - Respondent 4

EC17: Integrations are developed with enterprise clients in mind but then given out to all premium customers.

PEC4: B2B freemium providers do not give freemium users access to integrations but they play an important role in converting freemium users into premium ones. All integration development projects are kickstarted only when premium customers express interest in them.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 8.

EMPTRICAL CONCLUSIONS
B2B SaaS firms do not give freemium users access to any of their
integrations because they are used as carrots for user conver-
sion.
Integrations are developed with enterprise clients in mind but
then given out to all premium customers.
B2B freemium providers do not give freemium users access to
integrations but they play an important role in converting free-
mium users into premium ones. All integration development
projects are kickstarted only when premium customers express
interest in them.

Table 8 Empirical conclusions for Integrations in B2B freemiumIDENTIFIEREMPIRICAL CONCLUSIONS

4.1.5 M&A in B2B freemium business

Acquiring new features and integrations is something SaaS providers think constantly but there are limits what they would do to obtain them. None of the

interviewees saw M&A action as an essential way to amass more features or complement their existing product portfolio.

"If we are already serving the same customers and our product architectures are completely different, and maybe the other product caters to some niche need a little better, it is not necessarily smart to buy that business but rather develop it by ourselves." - Respondent 1

Another response confirms M&A is not a necessity:

"I would say that it is not necessarily a requirement [for success]." - Respondent 4

EC18: B2B freemium providers see M&A as too risky and as an inconvenient way for acquiring new capabilities.

PEC5: M&A is difficult and resource consuming way to acquire new features and customers and hence, it is not seen as an important way to expand one's B2B SaaS freemium business.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 9.

Table 9 Empirical conclusions for M&A in B2B freemium businessIDENTIFIEREMPIRICAL CONCLUSIONS

EC18	M&A is difficult and resource consuming way to acquire new
	features and customers and hence, it is not seen as an important way to expand one's B2B SaaS freemium business.
PEC5	M&A is difficult and resource consuming way to acquire new features and customers and hence, it is not seen as an important way to expand one's B2B SaaS freemium business.

4.2 A way to conduct B2B freemium business

Given that the firm of Respondent 4 plays in a league of its own, we will focus on that firm.

4.2.1 Zealously data-oriented

Everything begins when a user signs up to use the software.

"It all begins from the free trial. Firstly, our marketing drives traffic on our website and there is a free trial button" - Respondent 4

Then, what the freemium service provider that Respondent 4 represents calls *sign-up flow* begins. Every new user gets a free trial for first two weeks and the trial includes all the features of the software.

"In the beginning, marketing optimises the conversion and from there begins the sign-up flow, which is continuously optimised by the marketing team and the product team in tandem." - Respondent 4

EC19: All new users go through a carefully choreographed sign-up process and get two weeks of premium time.

In the theory part of this thesis, there was discussion of cohort reports. Respondent 4 was the only person among the interviewees who mentioned gathering and acting on cohort data.

"We go through different cohort reports where we can see certain things in different months from retention point of view, for example. We gather data of all our demos, such as trainings score. We gather "how confident are you" and "how helpful was the call" and with those we evaluate product confidence." - Respondent 4

These will lead to discussions on how the software has been changed and developed and compare these ruminations to adoption reports made of the users of the software.

"We can look at a monthly cohort from varying angles and see how the retention of the acquired users of this month differ from the ones who were acquired earlier. That, in turn, can be connected, for example, to the product or feature launches or something that we have done exactly during that month. So, we are able to compare the data." - Respondent 4

EC20: Fervent use of cohort data is key to success because it gives you clarity on the development choices you have made.

The cohort reports also, in part, measure the performance of CSMs and sales personnel but the data arsenal that Respondent 4 lists is imposing and comprises of more than mere cohort data. To ease the onboarding of new users the firm collects a mountain of data.

"We gather all click events etc. and heat maps of how the product is being used and with these we develop the product's automatic onboarding flow." - Respondent 4

EC21: All actions of a user are recorded and exploited to update both the product and the sign-up flow.

The firm is keen on understanding at which point during the flow did the customer stop and find out why. The answers regarding the data they glean include, for example, Net Promoter Score (NPS), gross and net churn, retention rate and health score. The latter is to spot the customers who pose a churn risk and thus, the customer success can act accordingly and in advance. Conversion points that are being followed are plentiful:

"Have they, for example, integrated their CRM and if not, at which point during the flow did they stop and for what reason." - Respondent 4

Every single data point, no matter from where it is gathered or of what, goes to one master database:

"From all of our tools, all data goes to our internal database where it gets enmeshed with our own data, and it is used by our Business Operations team." - Respondent 4

EC22: All data points, whether it is indicating customer satisfaction or the health of the business, are aggregated into a single master database as it helps with deducting actionable knowledge out of the data.

Whereas other respondents could be heard lamenting the lack of resources for the freemium development, this is not the case for Respondent 4. The provider has a very own team dedicated to analysing data of the freemium service.

"On our business side, we have a three-person Business Operations / Analytics team that focuses internal systems and makes internal business reports and analyses. Then we have, of course, separately product analysts." – Respondent 4

EC23: Proper resources should be given to teams working with data to enable them to deduct useful insights from the data.

PEC6: All users go through a sign-up flow and receive limited premium time. Data is constantly gathered of users, of their actions, choices as well as their predilections. The teams running the data handle it delicately and they are given adequate resources to draw conclusions from data.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 10.

Table 10 Empirical conclusions for Zealously data-orientedIDENTIFIEREMPIRICAL CONCLUSIONS

EC19	All new users go through a carefully choreographed sign-up process and get two weeks of premium time.
EC20	Fervent use of cohort data is key to success because it gives you clarity on the development choices you have made.
EC21	All actions of a user are recorded and exploited to update both the product and the sign-up flow.
EC22	All data points, whether it is indicating customer satisfaction or the health of the business, are aggregated into a single master database as it helps with deducting actionable knowledge out of the data.
EC23	Proper resources should be given to teams working with data to enable them to deduct useful insights from the data.
PEC6	All users go through a sign-up flow and receive limited premi- um time. Data is constantly gathered of users, of their actions, choices as well as their predilections. The teams running the data handle it delicately and they are given adequate resources to draw conclusions from data.

4.2.2 Conversion from freemium to premium

With the ardent exploitation of data comes insight into the minds of customers which goes a long way in monetising them. The insight will help vendors make better monetising choices such as lowering the days of a free trial period.

"Earlier we had a 30-day trial but we realised that the majority of users do all the main tricks during the first two weeks, hence we decided to cut the trial off there and make it a 14-day trial. We constantly optimise these kinds of things." – Respondent 4

EC24: Data steers development decisions in all domains.

Clever employment of data bolsters the automatization of the service. Automatization brings many benefits, one of which is the ability to better spot monetisation opportunities. The product then automatically seizes on these newlyfound opportunities and the service provider gains more revenue without the need for a "middleman", like a salesperson, to be in contact with the customer.

"We have this auto upgrade flow where we identify that your 12-month average is higher than your current package so we upgrade you automatically to the next package. Therefore, we get expansion sales." – Respondent 4

EC25: In the product-led growth model, the product itself should do sales and in an automatised way.

The interviewee states that the main conversion point for them is at the end of the trial or a little bit after its end. If the user continues using the software after the trial (after the trial the user gets automatically switched to the freemium version), the respondent says it is unlikely to see the user converting into a paying customer.

"Of course, every now and then we get someone from them but we optimise everything so that the user would convert during the free trial phase." – Respondent 4

EC26: Efforts to maximise conversion in B2B freemium should focus on the free trial period.

Once a user has jumped through a certain hoop, a conversion point, the user will go through a sales qualification system.

"With the criteria [of the system] the lead will be either assigned to the sales team or not. [In the case of no] the lead will go to our no-touch pipeline." – Respondent 4

EC27: Lead qualification should be automatised and the ICPs should be heavily leveraged when creating and honing both lead qualification and pipelines.

No-touch pipeline means that the user will not be in contact with humans. The messages the user receives in the no-touch pipeline differs slightly from the ones that the assigned users. The assigned users are peppered with prompts through a chat service to book a meeting with a salesperson.

"When it comes to our product, there is heavy automatization: product onboarding helps the user to use the product, we have chat service there through which we automatically send messages and such. If the user has been assigned to a salesperson, the product will also prompt the user to book a demo with the assigned salesperson. When the user is not a sales qualified lead, all the demo links point towards our academy, which is a sort of self-learning centre." – Respondent 4

The firm has found that the prompting towards having a demo call with a salesperson is an excellent source of conversion. The prompts have increased the conversion rate of the interviewee's firm to 50%.

"At some point we realised that if someone agreed to have a demo during his / her free trial, the conversion towards premium rose from the normal 15-20% to 50%. In other words, half of all the people who took the demo became paying customers." – Respondent 4

EC28: Automatization should be sophisticated so that all actions the product takes towards the user should be tailored.

However, quite like the other interviewees, also the firm of Respondent 4 decided to create a sales-led growth team, i.e. an outbound sales team. Nevertheless the route that a person takes to become a user, every single user goes through the same sign-up flow. "Why this model is way better is that the product is optimised for the whole flow. It helps the salesperson so much, it removes lots of unnecessary friction when the salesperson can just focus on selling rather than helping with setups." – Respondent 4

EC29: Automatization saves salespeople's time and alleviates pressure from them when they do not need to perform unnecessary tasks.

PEC7: The most efficient way to boost conversion is to focus on the free trial period and tailor the content for a given user. Data should determine lead qualification and the development of the product and the product itself should be equipped to do sales in automatised way.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 11.

IDENTIFIER	EMPIRICAL CONCLUSIONS
EC24	Data steers development decisions in all domains.
EC25	In the product-led growth model, the product itself should do
	sales and in an automatised way.
EC26	Efforts to maximise conversion in B2B freemium should focus
	on the free trial period.
EC27	Automatization should be sophisticated so that all actions the
	product takes towards the user should be tailored.
EC28	Automatization should be sophisticated so that all actions the
	product takes towards the user should be tailored.
EC29	Automatization saves salespeople's time and alleviates pressure
	from them when they do not need to perform unnecessary
	tasks.
PEC7	The most efficient way to boost conversion is to focus on the
	free trial period and tailor the content for a given user. Data
	should determine lead qualification and the development of the
	product and the product itself should be equipped to do sales in
	automatised way.

Table 11 Empirical conclusions for Conversion from freemium to premiumIDENTIFIEREMPIRICAL CONCLUSIONS

4.2.3 A way to marketing in B2B freemium business

Equally important to acquiring users is musing over what kind of users are most susceptible to conversion. SaaS firms, as earlier responses have shown, emphasise the importance of having an ICP. The firm of Respondent 4 takes forming of an ICP to another level by coming up with two separate ICPs for different needs. "Of course we have the firm ICP but then we also have a user ICP." - Respondent 4

EC30: B2B freemium companies should have ICPs for a user and a company.

Tweaking the ICP is a never-ending task and the process of reinforcing the ICP is a constant loop.

"We gather data of the conversion points so that our salespeople know what kind of users convert the best. We can use that data, for example, directly in our Google Analytics from where it is used for targeting of our Google Ads. It is a sort of a loop." – Respondent 4

In freemium business, one cannot escape acquiring users who do not conform to the ideal of the ICP.

"We try to continuously improve the targeting so that it would be as accurate as possible." – Respondent 4

An interesting way to increase conversion percentage is to optimise your own website according to the profile of the visitor. Pulling this off successfully requires excellent data management and targeting.

"From the [sign-up flow] pipeline we get around a couple thousand free trial per month so with that kind of volume also the website optimisation is crucial. We get 100 000 visitors and of them a couple of thousand start the free trial." – Respondent 4

EC31: B2B freemium companies should invest in website optimisation.

As covered earlier, the way to get people visit your website is creating alluring content.

"There is top-of-funnel marketing which pertains to our backlinking in SEO... we do various content collaborations and we generate content on our own blog." – Respondent 4

The content creation and its marketing have international audiences in mind so all content is done in English.

"We do everything in English and precisely in product/marketing driven way." – Respondent 4 $\,$

The attitude of creating the content in English has been there since the beginning since the proficiency of English is high in most European countries and you get to attract American prospects with English content.

"From the very start we went abroad, through Google Ads and other blog posts and creating of content. We garnered English speaking prospects in a creaming off kind of way from all over Europe where English is spoken on an okay level. American prospects started coming in a bit later too. 51

The abundance of English content has led to a situation where the visitors come from all over the world making it possible for revenue streams to be more diversified. It is a neat way to ensure bigger market for your freemium product when you have the content in the global *lingua franca*.

Around 40% of our website visitors come from the States and around 60% from Europe." – Respondent 4

EC32: The content's main language should be English.

PEC8: The content that is used for driving traffic to the website should be in English so as to reach as wide audience as possible and it helps with international aspirations. Websites should be optimised for different ICPs and B2B freemium providers ought to have ICPs separately for users and companies.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 12.

Table 12 Empirical conclusions for A way to marketing in B2B freemium business	
IDENTIFIER EMPIRICAL CONCLUSIONS	

EC30	B2B freemium companies should have ICPs for a user and a company.
EC31	B2B freemium companies should invest in website optimisation.
EC32	The content's main language should be English.
PEC8	The content that is used for driving traffic to the website should be in English so as to reach as wide audience as possible and it helps with international aspirations. Websites should be opti- mised for different ICPs and B2B freemium providers ought to have ICPs separately for users and companies.

4.2.4 Cost management

Running such an intense marketing operation requires financial prudence of B2B freemium providers.

"We always track the spend-return of marketing to see that everything is on point." – Respondent 4 $\,$

Much like following the data coming out of the freemium service, the same rigorousness is applied to cost management. Before committing to marketing efforts their spend-returns must be carefully examined so that the money is not wasted. "Together with our CFO, we check every month our lifetime value, customer acquisition cost numbers and payback times and... we want to make sure they are efficient. For example, we will not run Google Ads unless we get at least threefold return compared to the costs." – Respondent 4

EC33: Running analyses on costs is extremely important for B2B freemium firms.

PEC9: Executives should be held accountable for the costs their operations incur to the business and only engage in business acts when the return is manifold compared to the costs incurred by them.

Empirical conclusions and the primary empirical conclusion for the subchapter are presented below in Table 13.

Table 13 Empirical conclusions for Cost managementIDENTIFIEREMPIRICAL CONCLUSIONS

EC33	Running analyses on costs is extremely important for B2B free-
	mium firms.
PEC9	Executives should be held accountable for the costs their opera-
	tions incur to the business and only engage in business acts
	when the return is manifold compared to the costs incurred by
	them.

4.3 Summary

Altogether nine primary empirical conclusions were found when the empirical data was analysed. All except for one corroborated with the findings presented in Figure 2. The only exception was M&A – none of the B2B freemium service providers saw it as a factor towards success. The B2B freemium providers were also gave a much more detailed description on their ways of marketing. The theory talked about the use of social media but on the B2B side it was seen as one of the ingredients in the marketing mix. The common themes identified between the B2B service providers differ slightly from the ones in Figure 2. The providers omitted user experience itself in their parlance but given the abundance of metrics that they use to track customer retention and satisfaction, one can derive that user experience is a major contributor to the success of the vendors. The complete framework of the success factor themes of B2B freemium is presented in Figure 3.

Table 14 Primary empirical conclusions from the dataIDENTIFIEREMPIRICAL CONCLUSIONS

IDENTIFIEK	EMPIRICAL CONCLUSIONS
PEC1	B2B SaaS firms usually approach business from a sales-led per- spective but invest in freemium services when they want to ex- pand into bigger markets, achieve better scalability, differentiate from competitors and bring in more SME customers. Turning profit is difficult and can lead to internal bickering.
PEC2	Sales-led B2B SaaS providers who created a freemium version of their product see freemium as a feature that enables them to pursue product-led growth strategy. Their decisions are not al- ways based purely on data and the ascending growth model is often under-resourced.
PEC3	Freemium itself serves as a marketing tool but B2B freemium providers also create original content and, with clever targeting, use ads to lure in new users. The providers must be excellent at SEO and tempt satisfied customers to write favourable reviews. Success is underpinned by a big market potential.
PEC4	B2B freemium providers do not give freemium users access to integrations but they play an important role in converting free- mium users into premium ones. All integration development projects are kickstarted only when premium customers express interest in them.
PEC5	M&A is difficult and resource consuming way to acquire new features and customers and hence, it is not seen as an important way to expand one's B2B SaaS freemium business.
PEC6	All users go through a sign-up flow and receive limited premi- um time. Data is constantly gathered of users, of their actions, choices as well as their predilections. The teams running the data handle it delicately and they are given adequate resources to draw conclusions from data.
PEC7	The most efficient way to boost conversion is to focus on the free trial period and tailor the content for a given user. Data should determine lead qualification and the development of the product and the product itself should be equipped to do sales in automatised way.
PEC8	The content that is used for driving traffic to the website should be in English so as to reach as wide audience as possible and it helps with international aspirations. Websites should be opti- mised for different ICPs and B2B freemium providers ought to have ICPs separately for users and companies.
PEC9	Executives should be held accountable for the costs their opera- tions incur to the business and only engage in business acts when the return is manifold compared to the costs incurred by them.

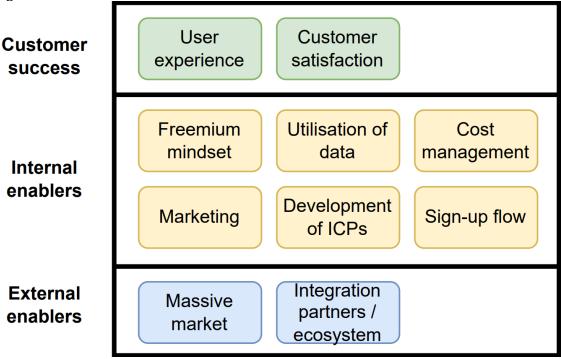


Figure 3 Success factor themes of B2B freemium

5 DISCUSSION

5.1 Theoretical implications

The goal of this study was to shed light on the under-explored area of IS literature that is B2B SaaS freemium business. The empirical evidence is testament to the fact that there are differences between the explored B2C freemium business and B2B freemium business models.

Given that the users of B2C freemium services are regular consumers, it is imperative for the vendors to have a colossal market for the service. This is not always the case for sales-led B2B SaaS vendors but B2B SaaS freemium services, the service providers swearing by product-led growth strategy, must have a big market, and therefore PEC1 confirms previous research. Additionally, differentiating from competitors through a freemium service is virtually out of the question since nearly all B2C SaaS vendors seem to operate some sort of a freemium service anyway. Attaining the right mindset seems to come more naturally to B2C freemium vendors than the B2B ones. PEC1 mentioned in passing the scalability of technology and that is, quite like in B2C freemium, an important part of the model.

PEC2 offers new information. As PEC2 suggests, freemium has not yet secured a foothold among B2B SaaS companies as a go-to business model so some of its fundamentals seem to be arcane to sales-led B2B SaaS firms whereas B2C freemium firms seem to be more acquainted with the utilisation of data. B2C SaaS companies might view freemium as the only viable business model but B2B SaaS companies have other avenues to choose from.

PEC3 confirms the findings on B2C freemium that marketing is crucial for freemium firms of all walks of life, whether B2C or B2B. In both cases having a massive market is paramount to success.

Although PEC4 deviates, or adds to the earlier finding by stating why the integrations are developed, slightly from the findings on B2C freemium companies, it does agree that integrations are important for a freemium business of any kind.

The most drastic difference of the primary empirical conclusions compared to the findings on B2C freemium is that PEC5 argues that in B2B freemium M&A should not be pursued. PEC5 completely contradicts the finding on B2C freemium. PEC6, on the other hand, completely agrees with the earlier findings by stating that data plays a larger-than-life role in freemium business. PEC6 also goes to show how both the B2B and the B2C freemium vendors go to great lengths to understand their customers and hence, enhance the user experience and customer satisfaction.

Just like for B2C freemium vendors, PEC7 endorses the theory's findings on the importance of dishing out tailored content to users through the heavy use of data. The findings based on theory did not cover the lead qualification part but on other fronts PEC7 hits a vein when compared to the findings on B2C freemium.

While B2C freemium should seek to internationalise, according to the earlier findings, the findings do not specify the route B2C freemium vendors should take to get there. PEC8 complements the finding by stating that the content, that is created to attract visitors to the website of the freemium vendor, should be made in English so as to pave the way towards international markets. B2C freemium findings do not discuss anything about ICPs that result on B2B freemium firms is very much a new information on the topic.

Last but definitely not least is the matter of cost management. PEC9 touched the topic by stating the exact same arguments that the earlier studies had stated – a stellar cost management is extremely important for a freemium business of any kind.

 Table 15 Primary empirical conclusions and their relation to existing research

Identifier	Relation to existing research
PEC1	Corresponding with the previous research in the massive market
	and scalability bits but has novel findings especially regarding the
	freemium mindset and the internal conflicts
PEC2	Novel, previous research about the problems regarding utilisation
	of data among B2B freemium firms was not identified
PEC3	Corresponding with previous research, as marketing is an integral
	success factor for freemium services
PEC4	Corresponding with previous research, as integrations are im-
	portant for freemiums but with a hint of novelty on the reasoning
	for their development
PEC5	Contradicting, M&A is not an important success factor for B2B
	freemium vendors
PEC6	Corresponding with previous research, as data is an integral part
	of a freemium service's success and freemium businesses take
	scrupulous care of their customers' satisfaction and making sure
	their users have a great experience on the product
PEC7	Corresponding with previous research in all but one aspect, lead
	qualification, of which it adds a novel finding
PEC8	Novel, previous research about website optimisation, ICPs or con-
	tent creation mainly in English was not identified
PEC9	Corresponding with previous research, as the importance cost
	management was identified

5.2 Practical implications

On the practical side, this study aimed to highlight the characteristics of a B2B SaaS freemium model and how it differs from the B2C one.

As stated in PEC1, running a freemium business in a B2B environment is not easy and it requires a mindset fit for freemium. PEC1 suggests too few companies think thoroughly the changes they are required to go through both in organisation and strategic culture levels to make freemium work as intended. To avoid internal fighting and consequentially swinging wildly from one business decision and strategy to another, the executives should start by examining how committed they truly are in long-term as getting results is slow work in this line of business. To B2B SaaS vendors, freemium does offer access to a likely more lucrative market and SME customers. It does also entail better scalability for the service as the new architecture has to be accommodated and a chance to stand out from competition but PEC1 suggests B2B SaaS firms should think hard before jumping on the freemium bandwagon and only when they can be sure they can handle the rocky ride should they commit themselves into the endeavour of developing a freemium service.

PEC2 implied that if the B2B SaaS firm has made a half-hearted decision on creating a freemium service, they will not always make their business decisions logically with data but they will not allocate enough resources for promoting the freemium service worldwide. The takeaway from PEC2 is that the sales-led B2B SaaS companies ought to put not only their minds, as stated in PEC1, but also their money to freemium if they desire to succeed with the freemium model. They can view the model as a feature for their overall business but they should remind themselves not to overlook the model's needs, lest the productled growth strategy becomes a vanity project that is a waste of resources.

As PEC3 suggests, freemium is seen as a word-of-mouth marketing in itself. B2B SaaS freemium firms should encourage users to invite and spread the message of the service far and wide by, for example, giving the inviters premium time for free or other comparable benefits. The B2B freemium providers that wish to achieve success with their freemium should put an emphasis on their marketing operations – namely SEO, creating riveting content that gets people click the ad cleverly targeted advertisements and visit service provider's website. However, the executives of such an operation should bear in mind that this kind of marketing operations can only succeed in a vast market.

PEC4 pointed out the fact that the B2B SaaS are not developing integrations, despite their importance in converting freemium users to premium, according to the needs of freemium users but the premium ones. The premium customers have already indicated their willingness to invest to the service and thus, are more likely to continue using it when their needs are heard and satisfied. Besides, asking their opinion on the next development steps can help B2B freemium providers make more clear-headed development decisions that are based on data.

PEC5 indicated that M&A is strenuous business. So much so that B2B freemium vendors do not see it worth their time and effort. The practical implication of the primary empirical conclusion is that aspiring, and most likely opulent, B2B freemium companies can and should find better use for their money and energy than going after other B2B freemium companies an acquisition or a merger in mind.

PEC6 addressed the first steps of a new user in a B2B freemium service. All new freemium users should receive a certain amount of premium time at the start of their freemium path, essentially creating a limited time free trial with all perks. The users go through a sign-up flow which provides ample data for the B2B freemium vendor that can be later used for various purposes. Data gathering

does not end after the sign-up flow but it is carefully cultivated throughout the user's lifetime. The data should then be passed to dedicated teams that can make adequate and lucid decisions based on data rather than intuition. The teams, nevertheless, cannot perform their jobs as intended unless they are given enough resources to do what they are paid to do. This hints that the service should gather data on enough data points so that the teams working with the data can make data-oriented decisions and hence, the development of the freemium service does not get compromised by development decisions made by pure hunch.

PEC7 builds on PEC6 as it suggests that the best way to boost conversion from freemium to premium is focusing on the free trial period and direct tailored content to a given user. The tailored content is determined, of course, through the use of data and the analysing the data should enable the product to spot and execute sales in the service itself, in an automatised way and steer the user down the lead qualification path according to the data of the user. B2B freemium companies should make sure the development of their freemium service is led by data.

PEC8 argued that the content that the B2B freemium providers create should be made first and foremost in English in order for the content to reach as massive an audience as possible. All freemium firms, be it B2C or B2B, should aim to reach a massive market, and because English is the language that the majority of humanity can understand at least to an extent and the content is the tool with which to reach people over the Internet, reaching to an international market should be a priority for B2B freemium firms. It is easier achieved when the content is in a language all can understand and it can streamline the work of content creation when everything is first done in one specific language. When a visitor arrives to the website of a B2B freemium vendor, the visitor should see a tailored website depending on the ICPs he / she matches. B2B freemium service providers should seek to develop two profiles of ICPs: one for companies and one for a user. Data is the moulding ingredient of the ICPs and the ICPs help in targeting better content to both companies and users which, in turn, should help with conversion.

Finally, PEC9 raises the issue of cost management. With all said and done in previous PECs, nothing can be possible without a financial prudence of the highest level. B2B freemium firms, no matter how flush with cash, must pay heed to the basics of finance and cost management. All business decisions, especially the ones concerning marketing, should be made after a meticulous inspection of spend-returns. The B2B freemium companies should have practices in place which prevent executives from doing reckless business decisions financially.

Identifier	Implication for practice
PEC1	Before changing tack, executives of a sales-led B2B SaaS vendor
	should examine their reasoning and commitment to freemium if
	they decide to make the switch from sales-led growth model to
	product-led growth model
PEC2	B2B SaaS firms switching from sales-led growth model to prod-
	uct-led growth model should allocate adequate resources to the
	development of their freemium service
PEC3	B2B freemium providers should make sure their potential market
	is vast and invest heavily in marketing from making sure the
	word of the service travels through a grapevine to creating con-
DEC(tent to targeted advertisement
PEC4	Developing integrations is necessary but B2B freemium providers
	should be asking the premium customers on what integrations
DECE	should be developed
PEC5	B2B freemium vendors have better things to do with their re-
PEC6	sources than pursuing ostentatious M&A projects B2B freemium vendors ought to give a limited time free trial that
ILCO	is laden with virtually all premium perks. Data of the users
	should be gathered at all times and it should be used to steer de-
	velopment of the freemium service
PEC7	B2B freemium service providers should target user and website
	visitors with tailored content. Furthermore, they should make
	sure the product can perform sales in an automatised way should
	the product spot an opportunity for expansion sales
PEC8	B2B freemium companies should create content first in English as
	it helps in going after international markets. They should create
	and constantly hone ICPs for both company profiles and user
	profiles to aid in precise targeting
PEC9	B2B freemium firms should not commit themselves to business
	decisions without a proper due diligence of the costs and proba-
	ble returns

6 CONCLUSIONS

6.1 Answer to research questions

Looking at what has been researched on freemium, majority of which is of B2C freemium, answering the first research question, 'what are the success factors in *B2C freemium business?*', proves to be of no trouble: there are three main themes of success factors: customer success, internal enablers and external enablers. They incorporate, inter alia, the following: the provider must be advanced at gathering and utilising user data and let the data guide the service's development. The developer must excel in juggling between freemium and premium offerings – the qualities of both sides should be first-rate but different enough to encourage switching to the premium service. In the end, the developer of the service is exposed to costs by the freemium users. The costs must be taken close care of, and the developer should aspire maximum automatization to drive down costs. The costs of serving freemium users shall not exceed the money needed to deliver an additional purchased unit to a customer. Lastly, the infrastructure of a freemium service has to accommodate large numbers of users.

Given the lack of theory on B2B freemium business, these notions led to two research questions: *What are the success factors in B2B freemium business?* and *how to characterise a B2B freemium model?*

Considering the primary empirical conclusions, the second research question, *'what are the success factors in B2B freemium business?'*, seems answerable. The success factors of B2B freemium business are presented in Figure 3 and they are explained thusly:

In the first batch are the themes under customer success. User experience is a top priority since without a great user experience, software's users will not con-

tinue to be users for long. B2B SaaS freemium firms measure the happiness of users in a multitude of ways so it is only logical to derive the importance of user experience from these signs. By the same token, it is clear that customer satisfaction is critical for all the providers in the field. Logically, no company would ever put so much effort into understanding whether customers are satisfied if it was not a top priority and a factor towards success.

It is in the internal enablers where the common themes between the freemiums of B2C and B2B diverge. In B2B freemium, one of the basic tenets on which to build on a thriving freemium business is the right mindset. As was evident in the answers of the interviewees, one must be absolutely committed into the ways of freemium development if one is to find success with a freemium service. It will be a difficult feat for many B2B SaaS companies turning towards freemium but they should have a clear understanding that with both poor planning and lacklustre execution the new freemium service is going to take more than give, both in short and long-term. With a proper mindset, freemium can be harnessed into a powerful word-of-mouth marketing machine. On a general level, marketing is one of the key aspects of freemium business that B2B freemium companies must learn to master. In B2B freemium business it is the norm to produce a massive amount of content, namely blog posts that are of interest for people searching the topic on search engines, and make sure these blog posts are shown high in the results of search engines through SEO work. On top of SEO, B2B freemium providers advertise themselves and their content throughout the Internet. Adequate cost management is at the centre of marketing and B2B freemium business as a whole. For example, new ads will not be shown if it cannot be calculated for certain that they will yield a certain amount of more revenue than what it costs to put the ads out there. When a curious website visitor converts into a freemium user, he / she goes through a sign-up flow that both gathers data of the user and guides the new user in taking the first steps in using the software. Additionally, the new user will immediately receive a limited time of premium time, i.e. a short free trial. As the user delves deeper into the software, ever more data of his / her actions and harvested and analysed. Data, and its usage, is deeply intertwined with everything in and out of a freemium service. How well data is harnessed to address business problems and development choices, the better the service will become. When the service providers receive data of their users, service providers' understanding of their customers increases. The better understanding will help in forming of the ICP of which the service providers should have two - of users and of companies. The ICPs, and their never-ending honing, will raise the conversion rate of users since the actions, starting from early marketing to pandering of the user inside the service, will be better targeted and tailored to deal with the problems of a given user and company type. In any case, freemium services attract users from all walks of life so developing ICPs not only helps the provider to find the potential rough diamonds among all the freemium users but also to optimise

the website of the service provider for different kind of users. Optimisation, as all targeting with the use of accurate data, enhances the chances of conversion.

All the above-mentioned clever things that B2B freemiums pull off come to nought if the market the freemium service operates in is too small. As it happens, massive market too is one of the common themes in B2B freemium business. Quite like for B2C freemium companies, operating in a vast market is essential for a B2B freemium service to prosper. One neat way to make a freemium service more accessible to a wide audience is to create the content used for marketing purposes in English. Content in English will open doors towards international markets and hence, help in broadening the market for the freemium service. The other common theme in external enablers category was integrations. For B2B freemium firms, integrations pose a carrot to be used to get users converting to the premium side for good. Losing access to important integrations might be as itself a good reason to continue the premium time beyond the initial free trial phase. Since the impact of integrations seems to be somewhat hazy, all the integrations are developed according to the needs of premium users.

The answer to the final research question, *how to characterise a B2B freemium model?*, can be answered by assessing the fulfilment of the criteria set in the Figure 3. B2B SaaS freemium business is characterised by the Figure 3 and thereby, a B2B SaaS freemium service provider that seeks success has to excel in the success factor themes of B2B freemium which were expanded by the primary empirical conclusions.

6.2 Limitations of the study

The most striking limitation of this study is the size of the data sample. The ability to draw wider conclusions for the whole the sphere of business on the topic requires more data. There might be quite a few companies around the world who conduct their B2B SaaS freemium operations in a very different manner than the ones interviewed for this study and the generalisability of the study is limited. Another factor to take into account is that the sample consisted only of European companies. Firms operating outside of the continent might see the business through a different lens.

6.3 Future research topics

Three future research opportunities were identified.

Since the data sample consisted only of European B2B freemium firms, it would be beneficial for both the academia as well as the companies themselves to understand if there are some prevailing differences between how American companies operate in the field versus how the European ones do. After all, the biggest software and IT companies come from the States and hence, it could be that their views on freemium SaaS in the B2B environment could differ from the European ones.

Now that there is a framework on which to build on in the B2B freemium space, it would be extremely interesting to see if the framework holds water in a wider context – that is in a larger data sample.

As the study found out, the correct mindset is a factor in the success of B2B freemium firms and becoming a ravenous data hoarder is not an easy feat. The study suggests that freemium is an ascendant business model in the B2B SaaS field and firms tend to switch from sales-led approach to a product-led one rather than starting out as product-led from the very beginning. Therefore, it would be useful for executives who are thinking of changing the course of their B2B SaaS business to understand thoroughly what kind of challenges companies have faced on a practical level when they have made the switch.

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