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International expansion of SaaS companies: a network perspective

Faculty of International Business
Bachelor's thesis

Author:
Atte Vitikainen

Supervisor:
D.Sc Jonathan Mumford

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Turku

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This thesis investigates the dynamics of international expansion within the Software as a Service (SaaS) industry, integrating theoretical frameworks such as the network theory of internationalization (NTI) and International New Venture (INV) research. The study begins with an exploration of the SaaS business model, outlining its fundamental principles and key characteristics. Subsequently, foundational theories including the network theory of internationalization and International New Venture research are introduced and analysed. Through a structured examination of these theories, the thesis demonstrates the strategic imperatives and growth trajectories inherent to SaaS enterprises. Furthermore, the study offers insights into accelerated growth strategies employed by SaaS companies and proposes recommendations for leveraging networks to facilitate international expansion. By synthesizing theoretical insights with practical implications, this thesis contributes to a deeper understanding of the mechanisms driving the internationalization of SaaS firms and provides new insights on how SaaS firms can utilize networks in their international expansion.

Key words: Software as a service (SaaS), network theory of internationalization (NTI), interpersonal relationships approach, International New Venture (INV).

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Tämä kandidaatintutkielma tutkii, miten ohjelmistopalveluyritykset, eli SaaS-yritykset kasvavat kansainvälisesti, tutkien erityisesti verkostojen vaikutusta. Tutkimuksessa yhdistetään erilaisia kansainvälistymisteorioita, kuten kansainvälistymisen verkkoteoriaa (NTI) ja International New Venture (INV) -tutkimusta. Tutkielma alkaa SaaS-liiketoimintamallin tutkimisella, jossa hahmotellaan sen perusperiaatteet ja keskeiset ominaisuudet. Tämän jälkeen esitellään ja analysoidaan jo tehtyä tutkimusta verkostoteorian ja muiden keskeisten teorioiden osalta. Näiden teorioiden jäsennellyn tarkastelun avulla tutkielma selvittää SaaS-yrityksille ominaisia kansainvälisiä kasvustrategioita ja polkuja kansainväliseen kasvuun. Lisäksi tutkielma tarjoaa oivalluksia SaaS-yritysten käyttämiin nopeutettuihin kasvustrategioihin ja antaa suosituksia miten verkostojen hyödyntäminen voi helpottaa kansainvälistä laajenemista. Yhdistämällä aiempaa tutkimusta uuteen kontekstiin, tämä tutkielma parantaa SaaS-yritysten kansainvälistymistä edistävien mekanismien syvempää ymmärtämistä ja tarjoaa uusia oivalluksia siitä, miten SaaS-yritykset voivat hyödyntää verkostoja kansainvälisessä laajentumisessaan.

Avainsanat: kansainvälistyminen, software as a service (SaaS), kansainvälistymisen verkkoteoria, International New Venture

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1 Introduction

1.1 Background

Emerging technologies, such as cloud computing have changed the international business environment drastically. Cloud computing has opened a new market for software vendors, as they can offer their software as a subscription-based service. The increase of companies offering Software as a Service (SaaS) products has increased dramatically in the last decade as approximately 73% of all 70 000 SaaS companies have been founded after 2010 (Honkanen 2022).

While the global business environment has changed a lot in the last few decades, academic literature has tried to follow the change. However, the traditional internationalisation theories, such as Uppsala model and internalization theory, do not suit the newer web-based services that well, as the scaling and international growth is drastically faster compared to traditional manufacturing firms. Even the creators of Uppsala model, Johanson and Vahlne, have discussed that the incremental market entry strategies need to be developed towards with integrated business network model for internationalization (Glowik 2020, 45). The reality of the current business environment is that relationships and networks are crucial in international expansion (Hohenthal 2001). Many scholars, like Johanson and Vahlne, have developed their internationalization theories towards a more integrated model that includes the role of networks in international expansion (Johanson & Vahlne 2009).

The Software as a service (SaaS) refers to a business model where the vendor sells the software they have developed as a subscription-based service rather than licensing it directly to the client. The SaaS vendor hosts their application in the public cloud and buys the server space needed from a third party. This advancement in IT has decreased the time and resources for a new company to enter the market, compared to a time when software companies needed to own their servers in order to stay in business (Mell & Grance 2010). The growth of SaaS companies in the 21st century has been rapid, as the total market revenue has grown from 62 billion USD in 2016 to 258 billion USD in 2023 (Statista 2024). Cloud computing has enabled this growth, as the SaaS business model wasn’t really feasible to execute before that (Mell & Grance 2010)

SaaS firms are usually small or medium-sized enterprises (SMEs) that are heavily dependent on the founder of the company. Approximately 90% of SaaS vendors employ less than 50 people (Honkanen 2022). Many SaaS vendors can be classified as International New Ventures (INVs). One definition of an INV is that a company needs to scale its product to multiple markets and get 50% of their revenue abroad within three years of inception, the speed of expansion needs to be high (Glowik 2020).

The experience and connections the founder and the company possess is crucial in international expansion. In academic literature, this relates to the network theory of internationalization (NTI) or more specifically the interpersonal relationships approach. The approach is linked to INVs as these firms want to expand their business quickly. The academic literature that combines the expansion of SaaS companies utilizing the network theory is quite limited at the moment of writing this thesis. Therefore, further research regarding the expansion of SaaS companies through networks is needed. The motivation behind this thesis, in addition to the author's own interest on the matter, is to contribute to academic literature, and combine the principles of the network theory of internationalization into SaaS companies.

1.2 Aim of the thesis

The goal of the thesis is to combine new international theories, such as interpersonal relationships approach, into a growing industry of SaaS companies. The thesis contributes to an increasing demand of research that needs to be done in the SaaS-industry. The aim of the thesis is to explore this under-represented view by researching *How can SaaS companies utilize networks in their international expansion?* I will approach this question by examining 1) How does the SaaS business model work, 2) How does network theory of internationalization (NTI) work and how does it relate to the SaaS industy, and 3) What relationships are the most important for SaaS companies?

The research questions selected serve as a roadmap, outlining the structure of the thesis into distinct sections. This approach allows for a thorough exploration of key theories and models before delving into their practical application. Following the introductory section, the thesis unfolds in a structured manner. Chapter 2 focuses on the explanation of the Software as a Service (SaaS) business model, highlighting its core characteristics, and introducing foundational theories such as the network theory of internationalization and International New Venture research. Chapter 3 synthesizes and critically analyses the

findings from Chapter 2, offering insights into accelerated growth strategies utilized by SaaS enterprises and providing recommendations for effectively leveraging networks in the international expansion efforts of SaaS companies. The subsequent sections are the conclusion chapter and a list of the references used in this thesis.

2 SaaS and network theory

This chapter focuses on explaining how the software as a Service business model works, what kind of SaaS companies have potential to grow internationally and what are the basic principles of network theory. I will examine SaaS in the scope of how the business model works rather than focusing on technical aspects.

2.1 Software as a Service business model

Cloud computing has enabled new ways of doing business, as the capabilities of information technology and pure computing power have increased dramatically in the last few decades. The Software as a Service business model is the continuum of this development, as SaaS is a cloud application, where the application can be used without installing it to the user device (Vaquero et al. 2009). Tyrväinen and Selin (2011) have compiled the following criteria for SaaS business model: 1) Software is used with a Web browser or other thin client making use of standard internet protocol, 2) A standardized software product is provided with no customization, 3) There is no need to install software to the customer site, 4) Deployment requires no major integration or installation, 5) Customers pay for use of the software rather than licenses, 6) The same multitenant installation is provided for several customers.

As the number of SaaS companies has increased drastically it's almost impossible to include every kind of modification of that has been made to the SaaS business model over the years. However, Luoma et al. (2012) found that most SaaS firms can be divided into three different types of business models: "Pure-play SaaS", "Enterprise-SaaS" and "Self-service SaaS". When a company uses the "Pure-play SaaS" business model, the customers are mainly SMEs, and the value proposition is a standardized, horizontal web-native application. The SaaS products in this category are usually simpler, as the revenue streams are obtained through recurring fees, and sometimes a small entry fee. In the "Enterprise-SaaS" model, the customers are larger enterprises, and the product is more complex. Therefore, the sales are more consultative, and the revenue comes more from service and entry fees on top of the recurring fees. In the "Self-service SaaS" model the vendor offers a very simple application, which is easy to adopt. The revenue comes from small recurring fees and ads, some vendors utilizing the freemium model. The goal is to have as little interaction with the customer as possible and minimize marginal costs.

When attempting to simplify the various stages of a business model, there arises the opportunity to construct a structured framework describing the operational mechanics of the Software as a Service (SaaS) business model at a broad, conceptual level. This conceptualization is demonstrated in the figure below.

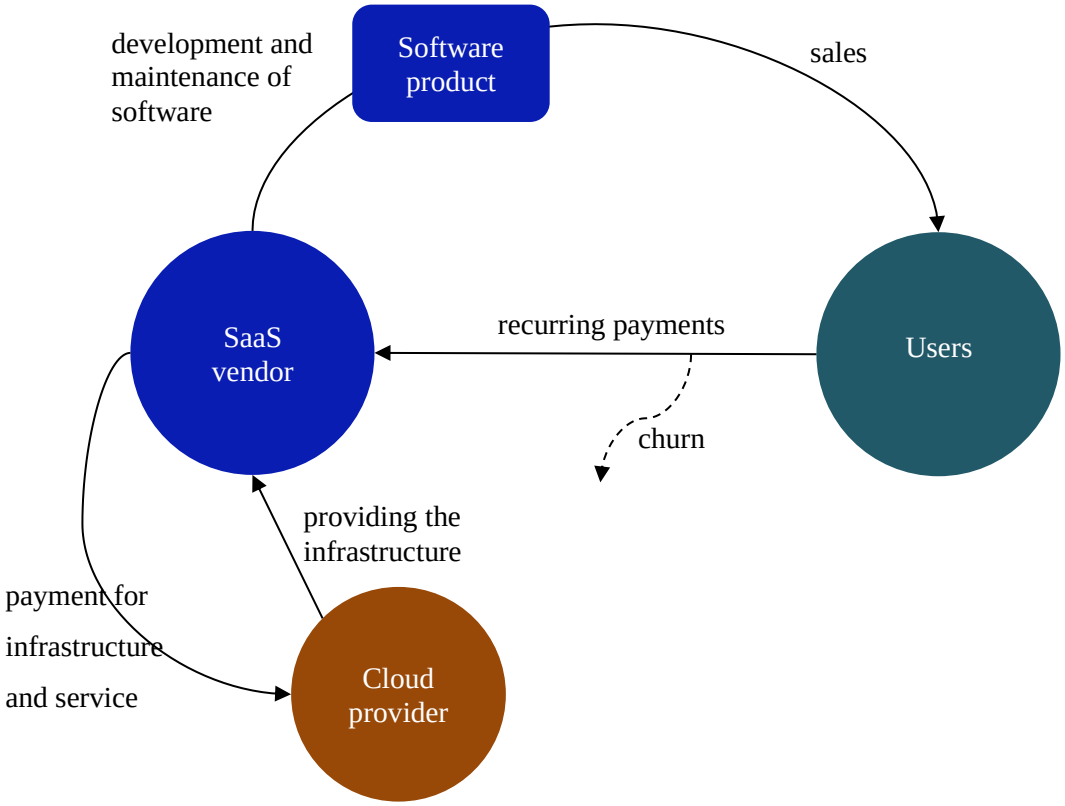

Figure 1 - SaaS business model simplified (inspired from Luoma et al. 2012)

First, the SaaS vendor develops the software product and chooses the partner who can provide the infrastructure on which the cloud application can be hosted. Once the product is ready, the vendor will start to initiate sales in some form and try to get paying customers. When the SaaS vendor has managed to secure customers, they get revenue by recurring fees. Depending on the kind of software the company is selling, there can also be entry fees and service fees. (Luoma et al. 2012).

In the Software as a Service (SaaS) industry, several key terms play pivotal roles in understanding the performance and dynamics of subscription-based businesses. Churn, referring to the rate at which customers discontinue their subscriptions, is a critical metric for assessing customer retention and satisfaction. A high churn rate may indicate issues

with product quality or customer service, while a low churn rate suggests strong customer loyalty (Yizhe et al. 2017). Monthly Recurring Revenue (MRR) and Annual Recurring Revenue (ARR) are fundamental financial metrics used to gauge the stability and growth of SaaS businesses. MRR represents the total revenue generated from subscription fees on a monthly basis, providing insights into the company's short-term revenue stream. On the other hand, ARR aggregates the annualized value of recurring revenue, offering a longer-term perspective on revenue generation and forecasting (Venkatesh & Manglick 2021, 351). Understanding and effectively managing these terms are essential for SaaS companies to sustainably grow and thrive in the competitive landscape of subscription-based services.

In the SaaS business the deployment costs are usually high, as vendors need to use a lot of resources to get the software product developed. Once the product is ready to be deployed, the goal is to keep marginal costs at a minimum. In some cases, SaaS vendors also offer to tailor the software to suit the needs of the customer more. If this is the case, the entry fee is higher and the vendor will also charge service fees from the customer (Luoma et al. 2012). The deployment costs of a SaaS vendor involve multiple factors, encompassing infrastructure requirements, quality of service parameters, configurability, customization options, security measures, interoperability, application and data isolation, fault tolerance, SLAs, portability, TCO, and ROI considerations. These factors collectively contribute to different cost types, including IaaS costs for infrastructure setup or leasing. Each aspect is crucial for accurately estimating expenses and ensuring a comprehensive understanding of the investment required for SaaS provisioning. (Kaur et al. 2014, 737).

For a more comprehensive understanding of the fundamental characteristics inherent to Software as a Service enterprises, a closer examination of the research conducted by Luoma et al. (2012) is warranted. Their study involved an evaluation of two SaaS companies and their respective business models, offering valuable insights into this domain. The companies in question are Sopima Ltd., a greenfield SaaS company founded in 2009 and Qvantel Ltd. a Scandinavian IT solutions company, established in 1995.

The cases of Sopima and Qvantel exemplify contrasting configurations within the SaaS business model landscape. Sopima adopts a strategy focused on delivering a standardized software application suitable for multiple domains, catering primarily to small and

medium-sized enterprises (SMEs) through an inside sales model with low-cost monthly fees. This approach emphasizes cost-efficiency, with outsourced software development and infrastructure hosting allowing the majority of the team to concentrate on marketing and sales activities. In contrast, Qvantel specializes in providing tailor-made solutions for a specific vertical market, supplementing software provision with a range of services to enhance customer effectiveness. This model prioritizes long-term customer relationships and revenue-sharing arrangements, with service fees comprising a substantial portion of revenue. (Luoma et al. 2012).

While Sopima's model emphasizes simplicity and automation to maintain cost-effectiveness, Qvantel's approach emphasizes customer intimacy and customization, with an aim to standardize offerings across vertical markets. This diversity in SaaS business model configurations underscores the continuum of possibilities within the SaaS landscape, ranging from ultra-simple applications with freemium models to specialized solutions with comprehensive support and value-added services. These findings highlight the strategic considerations and evolving dynamics shaping SaaS business models, with implications for both incumbent firms and new entrants in the software market. (Luoma et al. 2012).

Moreover, apart from the instances mentioned earlier, numerous other case studies have examined the distinct characteristics of Software as a Service (SaaS) business models (e.g. Churakova et al. 2010; Stuckenberg et al. 2011; Sun et al. 2007). It is evident that SaaS companies are driven by a desire to rapidly scale their operations. However, the reasons behind this endeavour warrant further investigation. Hollensen (2011, 81) suggests that the companies operating in the “internet market space” have a different model of economic efficiency when compared to companies operating in the physical market space.

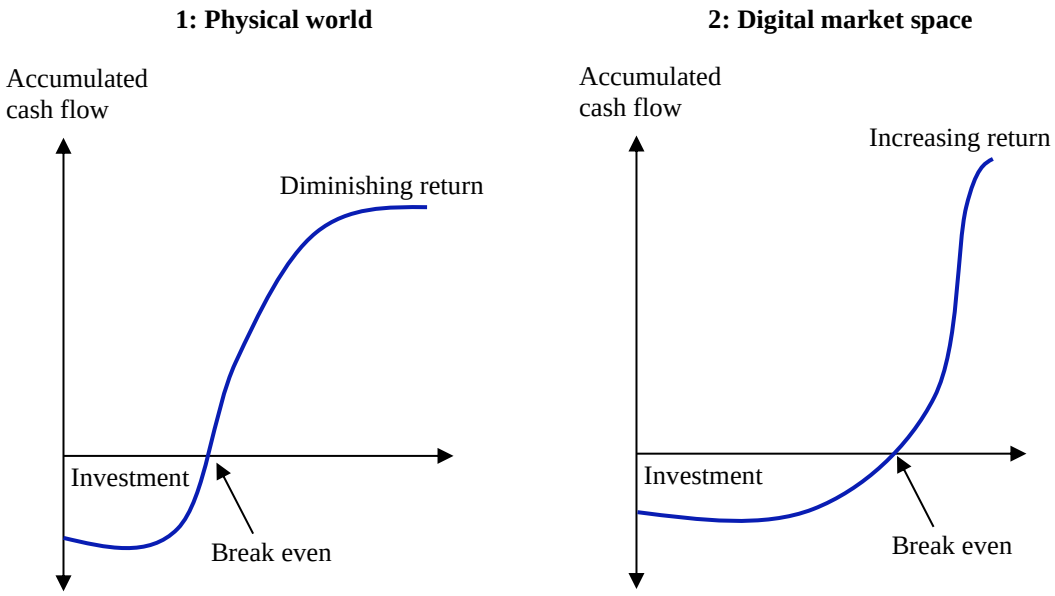

Figure 2 - Models of economic efficiency (Hollensen 2011, 81)

In comparing the economic efficiency of the two cases, notable differences emerge concerning the application of the "law of diminishing returns to scale" within physical companies and the dynamics observed in successful internet companies. In physical companies, the law often manifests, where variable costs outweigh fixed costs, leading to diminishing returns as production scales up. However, in digital markets and industries with high investment in intellectual content, such as pharmaceuticals, the optimal production point is not solely determined by factory size but by meeting total market demand. In contrast, successful digital companies experience increasing returns to scale as they gain larger market shares over time. This necessitates rapid market share acquisition, prompting innovative strategies such as Software as a Service model, that can attract millions of users. Thus, while physical companies may encounter diminishing returns, internet companies benefit from increasing returns, shaping their respective approaches to market expansion and resource allocation. (Hollensen 2011).

2.2 Network theory of internationalization

Internationalization theories have evolved in tandem with globalization, reflecting shifts in economic, political, and technological landscapes. Network theory of internationalization (NTI) is relatively new phenomenon among internationalization theories. The network model was first introduced by Johanson and Mattson in 1988 and

has been developed ever since (Glowik 2020; Johanson & Mattsson 1988, 2013). Rather than focusing on the liability of foreignness the model focuses more on the liability of outsidership (Johanson & Vahlne 2009).

The role of networks in internationalization of firms is well demonstrated by a number of studies (Johanson & Vahlne 2009, 3). Network theory of internationalization is a more integrative model of company internationalization, that takes more into account the role of inter-organisational and interpersonal relationships between companies and individuals. The network model explains how firms expand into international markets through the cultivation and utilization of networks and relationships. It posits that firms leverage various types of relationships, such as those with customers, suppliers, partners, and other stakeholders, to access foreign markets, acquire market knowledge, and mitigate the risks associated with international expansion (Bell et al. 2003; Hollensen 2011; Johanson & Mattsson 1988).

As stated in the introduction, almost 95% of SaaS companies are SMEs (Honkanen 2022). Unlike regular SMEs, SaaS firms see the whole world as a potential market as the business model is easier to scale due to its nature. Therefore, it is obvious that incremental internationalisation theories cannot be utilized when examining the international growth of SaaS companies. Thus, the network model suits the scope of the thesis better, as the role of business networks are demonstrated to be important in international SaaS expansion (Ojala 2009). The definition of business networks varies between different scholars. Johanson and Vahlne (2009, 1414) define business networks as “webs of connected relationships”. This implies that the exchange within one relationship is interconnected with the exchange within another relationship when put into practice. Quite similarly, Durrieu and Solberg (2006, 59) define networks “as interlinked relationships both at the individual and the organizational level”.

The creators of Network theory of internationalization (NTI), Johanson and Mattson (1988), have specified that a firm can have relationships with various actors. To understand the meaning of different relationships in internationalization, it is possible to divide the relationships into three categories: formal, informal and intermediary relationships (Ojala 2009, 52). The formal relationships are related to the relationships between other business actors, whereas the informal relationships are related to contacts outside the business, like family and friends (Coviello 2006; Ojala 2009). The

intermediary relationships refer to a third party that facilitates the establishment the relationship between the buyer and the seller (Oviatt & McDougall 2005). In addition to the three categories mentioned above, firms' activities in network building can be also divided into two categories: active and passive (Ojala 2009, 55). To deepen our understanding of the significance of networks, it is instructive to examine Ojala's study more in depth.

Ojala (2009) examined eight Finnish software SMEs and how they conducted their market entry to Japan. The study demonstrates what kind of effects can networks have if a firm wants to expand their business into a psychically distant market. Previous studies (e.g. Bell 1995; Coviello & Martin 1999; Zain & Ng 2006) have examined the concept proposed in the original network model by Johanson and Mattsson (1988). These studies suggest that existing relationships play a significant role in initiating market selection. Contrary to previous findings, Ojala found out that preexisting network relationships have a limited influence on the choice of the target country, as only two out of eight companies were affected by their preexisting networks. The other six companies started to actively seek partnerships and intermediaries after they had made the decision to enter the Japanese market.

To summarize the findings from Ojala's study, knowledge-intensive small and medium-sized enterprises (SMEs) employ various strategies to enter physically distant markets. Firstly, they actively cultivate new relationships or leverage existing ones to facilitate market entry. Secondly, SMEs lacking established formal or informal networks can capitalize on mediated relationships to access distant markets. Thirdly, these SMEs often choose target countries for entry independently of network influences, later establishing or utilizing relationships to facilitate market entry. Lastly, their entry mode decisions in distant markets are predominantly driven by strategic considerations aimed at proximity to customers rather than being primarily influenced by network relationships. (Ojala 2009).

The comprehension of the network theory of internationalization may initially appear straightforward, given the intuitive recognition of the profound influence that networks have over the success of enterprises. However, the theory's inherent breadth and conceptual fluidity have created the development of numerous different models grounded in the network theory of internationalization. To describe the configuration of a traditional

international business network, a visual representation is provided in Figure 2.

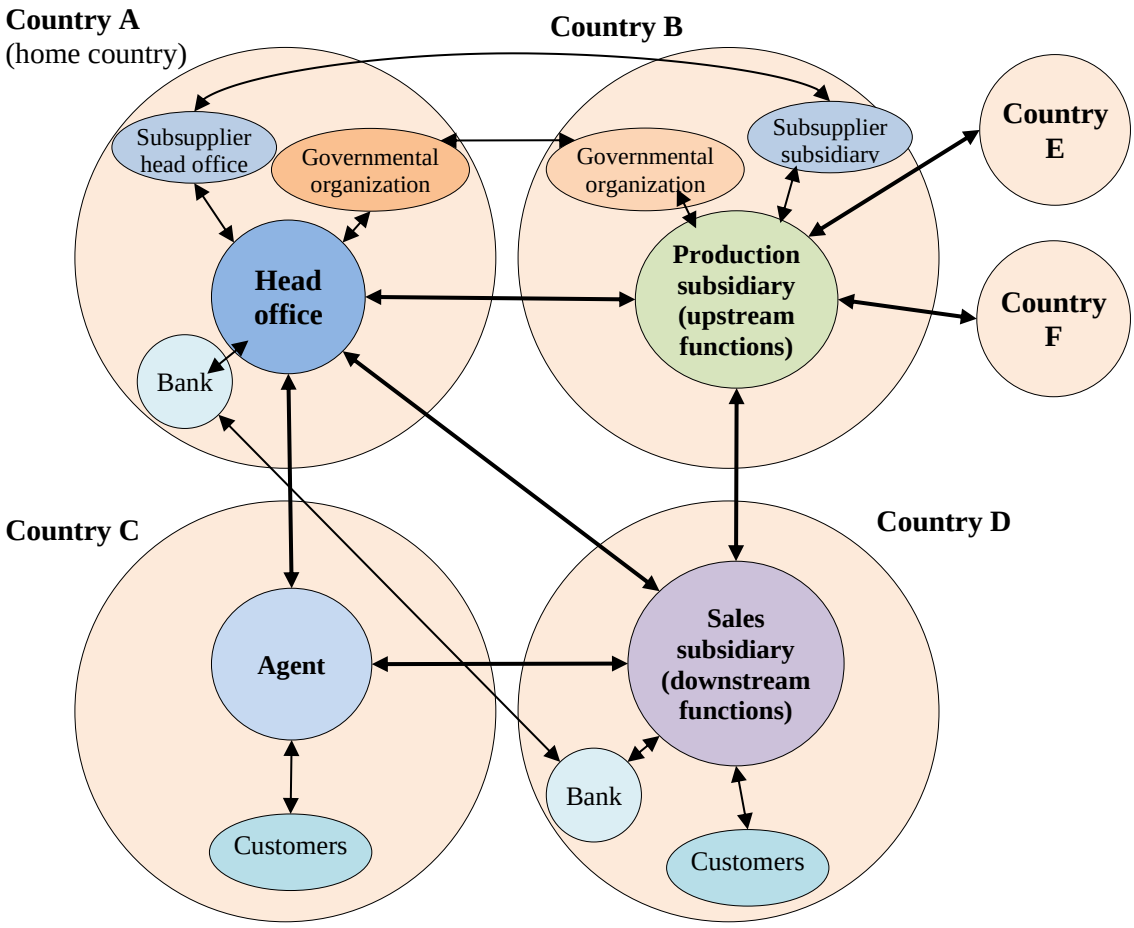

Figure 3 - An example of a traditional international network (Hollensen 2011, 71)

Figure 3 defines the interconnections among various network agents in both the home and target countries. Country A serves as the firm's home base, wherein it maintains a subsupplier. Notably, this subsupplier has expanded its operations by establishing a subsidiary in Country B. Concurrently, the firm has also set up a production subsidiary in Country B. Leveraging an existing relationship between the firm and the subsupplier in Country A, the firm's production subsidiary seamlessly integrates with the subsupplier's subsidiary in Country B. Analogous linkages exist among other entities within the model. Collectively, these linkages serve as conduits bridging the networks of firms in one country with those in foreign territories (Hollensen 2011, 71).

2.3 Interpersonal relationships approach

> Firms that are able to internationalize rapidly often have established personal relationships with firms abroad. Consequently, they are intensively embedded in international business structures (Hohenthal 2001).

Since the network model of internationalisation was created in 1988, the research done about it has evolved over the years. The interpersonal relationships approach sees internationalisation not as a linear and forward-going process, but rather as a cyclical and dynamic reflection of time and the usage of the network the entrepreneur possesses. Interpersonal relationships approach examines the risk awareness, managerial international competence and innovativeness that is done by the entrepreneur in order to rapidly grow the business internationally. The limitation of the model is that it tends to focus on small firms and the influence of the key decision maker. Also, the model is influenced by sociological, psychological, and business aspects, which leads to an enormous complexity, and therefore it is hard to create a standardized and structured model (Glowik 2020, 56).

In theory, the interpersonal relationships approach can be utilized quite well in the context of SaaS company internationalization. As established before, many SaaS companies internationalize quickly from inception and are heavily dependent on the founder and their team. According to Honkanen (2022), approximately 90% of SaaS companies are small companies with under 50 employees, making the interpersonal relationships approach suitable for the demographic and the purpose of this thesis. However, in order to give concrete insights on how interpersonal relationships can be utilized in international expansion, we must take into account research outside of the SaaS industry, as there are not many studies done on the matter, at least to the writer's knowledge.

Boeker et al. (2021) have studied how different knowledge sources have affected the growth of 632 biotechnology ventures founded over a ten-year period. They deliberate on how the past interpersonal relationships of the manager might impact the successful expansion of their company. Boeker et al. take into account the effects the relationships the manager could have with their former company and the informal ties with former coworkers, the innovativeness of their coinventors, the innovativeness of geographically proximate firms working in the same industry. The study also discusses the impact of the geographically proximate clusters of innovative companies and the knowledge that the manager might possess from their former employment.

The study confirms that entrepreneurial ventures, despite limited resources and formal access to external knowledge, leverage the innovativeness of parent firms, co-inventors, and nearby firms. Digital technologies play a crucial role in this process. Specifically, ventures benefit more from innovations from parent firms and prior co-inventors when developed within robust information technology systems, facilitating internal knowledge exchange. Regional advancements in digital technologies may reduce the importance of geographic proximity in informal knowledge exchange. (Boeker et al. 2021).

2.4 SaaS relation to International New Ventures

As the academic literature of interpersonal relationships approach is heavily intertwined with the literature covering International New Ventures (INVs), it is essential to cover it in this thesis. Oviatt and McDougall (1994, 49) define an INV as a business that "from inception, seeks to derive significant competitive advantage from use of resources and the sale of outputs in multiple countries". SaaS businesses are scalable by nature, as the market is not tied to physical restraints, because it is a web-native application.

To avoid confusion between the terms "International New Venture" and "born global", a quick discussion between the differences and similarities of these terms is warranted. Bell et al. (2003, 349) define born global firms to be "knowledge intensive" businesses that internationalise "very rapidly". Chetty and Campbell-Hunt (2004, 61) suggests that born global firms, in their early stages, swiftly penetrate multiple national markets. And, despite their small size, they target niche global markets or emerging technology-friendly markets, leveraging extensive business networks for rapid global expansion. In addition to the conceptualization of International New Ventures (INVs) proposed by Oviatt and McDougall, numerous alternative definitions have emerged within academic discourse. Coviello (2006, 713) characterizes International New Ventures (INVs) as distinct from their inception due to their early orientation towards global markets and their allocation of resources to international endeavours. Abrahamsson et al. (2019, 83) assert that INVs exhibit a higher degree of dynamic capability in reconfiguring their external relationships compared to other firms. As per Madsen (2013, 70), International New Ventures (INVs) align value chain operations across borders within three years of establishment.

Both terms essentially deal with the same phenomenon – firm's that want to scale their business quickly to multiple countries. In this thesis I will use the term International New Venture more, as it is used widely in the academic literature at the point of writing this

thesis. When we look at the definitions of a INV and the key characteristics of successful SaaS companies it's apparent that there are many similarities. Firstly, many SaaS firms want to internationalize rapidly to multiple countries from inception. This is easier to achieve compared to normal SMEs, as SaaS companies are operating in the digital market space. Secondly, SaaS companies possess the ability due to their nature to realign their value chain operations across borders quickly. Thirdly, many SaaS vendors have a product that serves a niche market, and that forces them to expand beyond their home market, because the volume of sales is not high enough in their home market.

Since the need for a more integrative internationalisation model was recognized and the concept of INVs created there has been a lot of development by multiple scholars. One of the most cited models was created by Bell et al. (2003) when they created an integrative model for small firm internationalisation. The concepts of the model are relevant in the SaaS industry and therefore relevant to this thesis.

Bell et al. (2003) devised an integrative model for contrasting traditional and larger firms with modern entrepreneurial small businesses regarding their diversified internationalization strategies. The authors suggest that firms can pursue various pathways of internationalization, including the traditional, "born global", and "born again global" trajectories. This model endeavours to investigate and describe potential disparities in the pace, patterns, and mechanisms of international expansion. The authors outline different internationalization patterns, encompassing disparate motivations, objectives, strategies, and modes of market entry. The traditional entry mode that is introduced in the model illustrates the incremental process of internationalisation, much like the Uppsala theory. The born global path is quite similar to the models discussed in the international new venture research. Many SaaS companies are categorized in the "born global" path, thus making it relevant to this thesis.

3 Growth opportunities for SaaS companies

In this chapter I will discuss the different ways SaaS companies expand their business abroad and combine the key principles of network theory of internationalization and International New Venture research into the context of SaaS companies. Prior to delving into further analysis, it is imperative to provide a concise summary of the pivotal concepts discussed in Chapter 2, including various theories and models relevant to the SaaS industry.

Table 1 – Conclusive comparison between theories and models

	Network theory of internationalisation	**Interpersonal relationships approach**	**International New Venture**
Author(s):	(Hollensen 2011; Johanson & Mattsson 1988; Johanson & Vahlne 2009)	(Boeker et al. 2021; Hohenthal 2001; Johanson & Vahlne 1977; Oviatt & McDougall 1994)	(Bell et al. 2003; Chetty & Campbell-Hunt 2004; Oviatt & McDougall 1994)
Key concept:	Explains how firms expand into international markets through the cultivation and utilization of networks and relationships	Internationalisation not as a linear and forward-going process, but rather as a cyclical and dynamic reflection of time and the usage of the network the entrepreneur possesses	From inception, seeks to derive significant competitive advantage from use of resources and the sale of outputs in multiple countries
Major limitation:	Empirically hard to test due to the complexity of international networks and their influencing variables	Hard to get a standardized and structured model	A lot of differences in definitions and usage, and therefore research results vary

The conclusions made on the Table 1 provide a clear comparison between the essential theories regarding internationalisation that are crucial to understand moving forward. It states the most cited authors of the theory, the key concept summarized into one sentence and the major limitations the theory faces. It is noteworthy that same scholars have been working on these theories throughout, as for instance Johanson and Vahlne have

developed their model and created other publications regarding internationalisation theories.

3.1 Accelerated growth of a SaaS company

Äijö et al. (2005) have compiled an internationalization handbook for Software businesses. They discuss the various factors and patterns how Finnish software companies can grow their business internationally. The handbook covers all companies operating in the software industry and discusses the “accelerated growth” pathway in which many SaaS companies want to be categorized. The pathway has been developed through the research made about International New Ventures and “born global” companies. As stated in Chapter 2, many SaaS companies want to grow their products to multiple countries quickly from inception. The accelerated growth pathway includes four stages: pre-start, start, growth and maturity (Äijö et al. 2005, 21).

To progress along this trajectory, the firm must satisfy several prerequisites. These include possessing an experienced management team equipped with international business acumen and a global perspective. Additionally, a robust product offering characterized by customer-centricity and strong market potential is essential. The firm must also demonstrate the capacity to attract external funding and establish credibility to create "fast trust" and attract lead customers. Moving towards maturity and navigating the high-growth phase inherent in this pathway necessitates leveraging accelerators. This entail effectively harnessing the firm's capabilities through efficient knowledge management, recruitment, and training initiatives. In most cases regarding software companies in this pathway, the firm must attract additional funding, often from foreign investors, given the relatively modest average size of Finnish investments. Furthermore, the ability to introduce new product generations swiftly and continuously is vital for sustained success. (Äijö et al. 2005).

In many cases firms operating in this accelerated growth pathway, the time span of the activities that were discussed above happen in two or three years. After this time period has passed, many companies need to make a crucial decision if they want to exit the company or grow it into a steady state and progress into the maturity phase. If they choose the latter option, they need to have the relevant management tools ready for global operations. The international operations also need to be functional in most of the countries (Äijö et al. 2005).

In the pursuit of accelerated growth, risk management emerges as a critical component for SaaS companies navigating international expansion. Risk management encompasses the identification, assessment, and mitigation of potential risks that may impede the firm's progress along the accelerated growth pathway. This entails a proactive approach to anticipating and addressing various types of risks, including market risks, regulatory risks, operational risks, and financial risks (Bromiley et al. 2015). Market risks may arise from uncertainties in customer demand, competitive dynamics, and market saturation, necessitating market research and competitor analysis to inform strategic decision-making. Regulatory risks pertain to compliance with international laws and regulations governing data privacy, intellectual property rights, and taxation, requiring diligent legal counsel and compliance frameworks. Operational risks encompass challenges related to scalability, infrastructure reliability, and talent acquisition, demanding robust operational processes and contingency plans. Financial risks include currency exchange fluctuations, capital constraints, and investment risks, underscoring the importance of financial planning, hedging strategies, and diversification of funding sources. By proactively managing these risks, SaaS companies can enhance their resilience and agility, positioning themselves for sustained success in the global marketplace. (Biehl & Kulangara 2023).

Many case studies of SaaS company and digital venture internationalization (Stallkamp et al. 2022; Äijö et al. 2005) have shown that external financing is needed if the firm wants to grow rapidly to multiple foreign markets. Utilizing external financing can provide valuable resources that can speed up the pace of international growth. The downside is that the pressure from investors is usually high, what pushes the founder/team to speed up their speed of execution dramatically, which can make or break the company.

3.2 Growth through networks

According to Äijö et al. (2005) software companies who seek rapid growth often gain the growth they seek “through networking/use of partners or acquisitions enabled by external financing”. This is aligned with Hohenthal (2001) who suggests that rapid internationalization of a firm is often enabled by personal relationships with firms abroad. There have been many case studies done that discuss the importance of networks in international expansion of high-technology companies (e.g. Bell 1995; Coviello & Munro 1995; Moen et al. 2004; Ojala 2009). By synthesizing the outcomes of these studies with

existing scholarly inquiries into the network theory of internationalization, a conceptual framework can be formulated to illustrate the configuration of an international network within a SaaS company. This framework is visualized in the figure below.

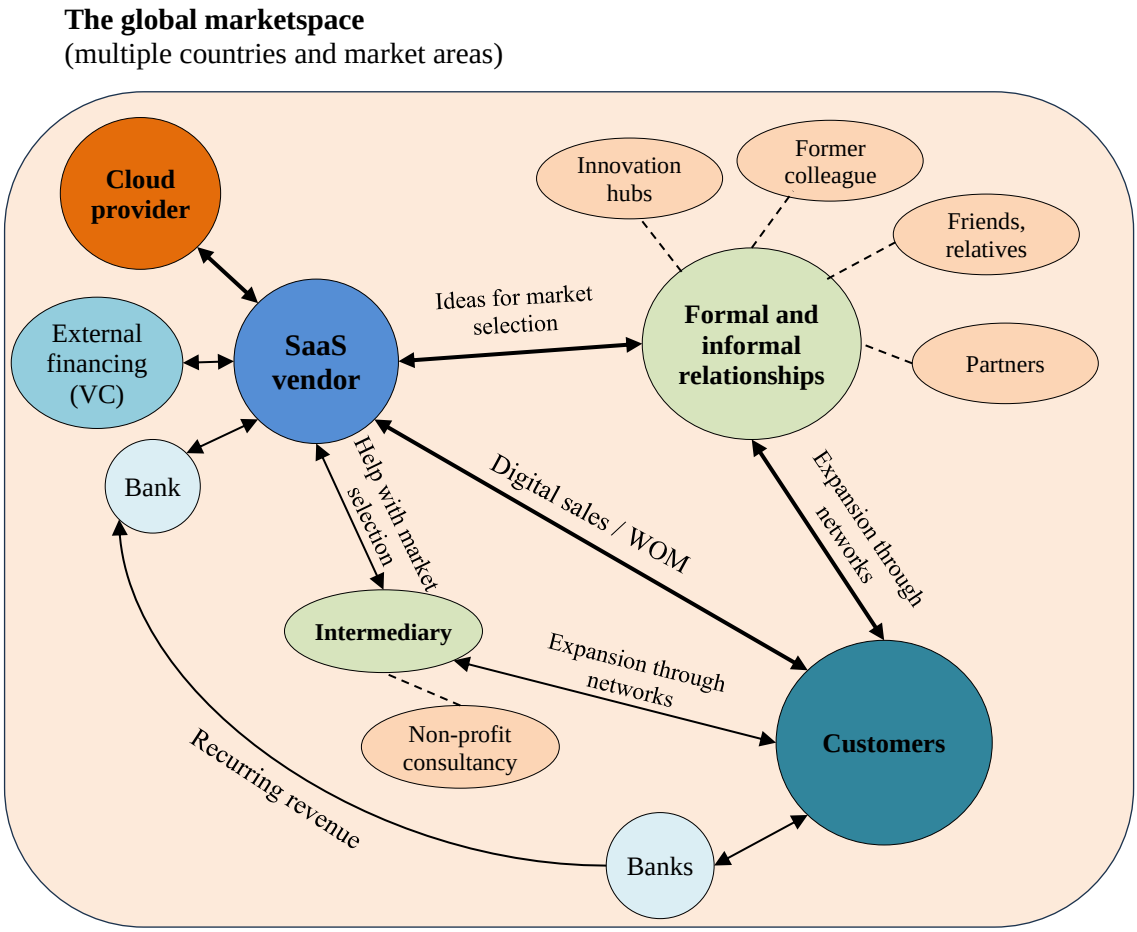

Figure 4 - An international network of a SaaS company (inspired from Boeker et al. 2021; Coviello & Munro 1995; Ojala 2009)

Successful companies often exhibit unique characteristics that are challenging to standardize due to the inherent complexity and randomness of networks, where connections are often established through a series of chance encounters and introductions. Within these networks, formal relationships typically include customers, partners, distributors, and other contractual arrangements, while informal connections may involve individuals such as friends, former colleagues, or relatives. Additionally, intermediaries, whether formal or informal, active or passive, such as non-profit consultancies, play a crucial role in facilitating connections and collaborations between various entities within the network ecosystem. (Ojala 2009). The digital nature of the SaaS firms also presents the possibility of digital sales through their website, that are generated by the firm's online

presence, marketing and word-of-mouth (Stuckenberg et al. 2011, 9). Unfortunately, the current literature covering the expansion through networks does not give a clear answer about which type of relationships are the most important.

The internationalization behaviour of a small firm can be described as a “fingerprint pattern”, explaining the unique patterns that occur when companies want to grow their business (Jones & Coviello 2005). The impact of the founder/team can be substantial in the growth of a company, whether they possess a vast international network beforehand or not. For instance, research conducted by Loane and Bell (2006) demonstrates that a company lacking appropriate network connections can proactively engage in building new relationships to facilitate its entry into the market. The study examined 53 small rapidly internationalising small firms that operate in Australia, Canada, Ireland and New Zealand. 25 per cent of these firms utilized their existing networks to gain more knowledge about foreign markets and improve their international competitiveness. Loane and Bell (2006) also found that 34 per cent of these firms had to develop new networks when expanding to foreign markets due to their offering being complex.

The world has never been this connected, as the rapid development of ICT industry has enabled individuals and businesses to connect instantly. This has caused a new way for businesses to leverage network effects to create value and drive innovation (Parker et al. 2016). Network effects, occur when the value of a product or service increases as more users join the network. For SaaS companies, network effects can lead to exponential growth by enhancing the value proposition of their software products through increased user adoption. As more customers use the platform, the network becomes more valuable due to enhanced data insights, network effects, and collaboration opportunities. This positive feedback loop encourages more users to join the platform, further amplifying the network effects and solidifying the company's competitive advantage. By harnessing network effects effectively, SaaS companies can accelerate their international expansion efforts and establish dominant positions in their target markets (Easley & Kleinberg 2010).

To further elaborate on the significance of networks in the international expansion of SaaS companies, it's essential to explore the dynamics of network formation and evolution within this context. While existing literature provides valuable insights into the role of networks in facilitating growth, there remains a need to delve deeper into the

specific mechanisms through which SaaS companies leverage networks for strategic advantage. Moreover, it's important to recognize the evolving nature of networks in the digital age and the emergence of new network models and platforms. With the advent of social media, online marketplaces, and digital ecosystems, SaaS companies have unprecedented opportunities to engage with customers and partners on a global scale. However, this also introduces new challenges related to network governance, privacy, and security. Although these areas are not part of the scope of the thesis, it demonstrates that there is a lot of research to be done in this field.

4 Conclusion

In conclusion, this thesis has delved into the intricate dynamics of the Software as a Service (SaaS) industry and its relation to network theory of internationalization and International New Ventures (INVs). The examination commenced with a visualization of the SaaS business model, highlighting its evolution within the broader context of cloud computing and outlining key criteria for categorizing SaaS firms. Furthermore, the thesis explored the operational mechanics of the SaaS business model through a structured framework, which underscored the diverse configurations and strategic considerations inherent in SaaS enterprises. Subsequently, the thesis transitioned to a comprehensive discussion of network theory of internationalization, discussing its fundamental principles and examining its applicability to the rapid internationalization observed in the SaaS industry.

The interpersonal relationships approach was scrutinized, revealing its relevance in understanding the pivotal role of personal networks in facilitating international expansion, particularly for small and medium-sized enterprises (SMEs) in the SaaS industry. Drawing upon empirical evidence and theoretical frameworks, the thesis outlined a pathway for accelerated growth in SaaS companies, emphasizing the importance of leveraging networks and partnerships to penetrate foreign markets effectively.

By synthesizing findings from various studies and conceptual frameworks, the thesis proposed a nuanced understanding of the internationalization behaviour of SaaS firms, recognizing the intricate interplay between entrepreneurial agency, network dynamics, and strategic imperatives. Ultimately, this thesis contributes to the growing body of literature discussing the complex nexus between technology-driven entrepreneurship, internationalization strategies, and network dynamics in the context of the SaaS industry.

To conclude, there are a lot of different applications of the SaaS business model, but by examining the different variations it is possible to describe how the model works on a general level, as visualized in Figure 1. It is clear that the international network of a SaaS company differs a lot from the international network of a traditional manufacturing firm. Furthermore, the research shows that 95% of SaaS companies are SMEs and many of these firms operate in a niche market forcing them to internationalize quickly. Therefore,

many SaaS companies want to grow rapidly. This accelerated growth requires usually experienced management team, external funding and efficient knowledge management. Finally, the research shows that the relationships a company possesses can be divided into three categories: formal, informal and intermediary. Unfortunately, the current research does not give a clear answer to what relationships are the most important in the context of SaaS companies.

The thesis encountered certain limitations due to its nature as a bachelor's thesis, primarily stemming from the absence of empirical investigation into the discussed models. The research presented in the thesis is partly based on specific case studies or theoretical frameworks that have limitations in their generalizability. Factors such as industry context, geographic location, company size, and market dynamics can influence the relevance and applicability of the findings to different contexts. The thesis is based on certain theoretical assumptions or models that have inherent limitations or biases. Different scholars may have divergent views on the validity or applicability of these theories, which could impact the interpretation of the findings. As the thesis lacks empirical evidence, it is simultaneously a pathway for future research. Cross-sectional case studies regarding the use of networks in the SaaS industry could help clarify the findings made on this thesis.

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