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Organizational ambidexterity during different growth phases of a company

Case Liikennevirta Oy

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ABSTRACT:

Organisatorinen ambideksteriteetti on läsnä jokaisen yrityksen arjessa ja päätökset, jotka koskevat kyseistä aihetta ovat kauaskantoisia ja merkittäviä yrityksen kyvykkyydessä luoda arvoa asiakkaille pitkällä sekä lyhyellä aikavälillä. Organisatorinen ambideksteriteetti koostuu resurssien käytön mahdollisuuksien tutkimisesta ja hyödyntämisestä tässä hetkessä. Näillä on eri painoarvot eri kasvuvaiheiden aikana. Resurssien käytön mahdollisuuksien tutkimisessa pyritään löytämään uusia innovatiivisia ratkaisuja, kun taas resurssien hyödyntämisessä jo olemassa olevia resursseja ja osaamista pyritään kehittämään. Nämä tekijät auttavat yritystä saavuttamaan kestävää kilpailuetua sekä dynaamisilla että staattisilla markkinoilla. Kyseinen kilpailuetu auttaa yrityksiä kasvamaan kestävämmällä tavalla parantaen samalla yrityksen selviytymisen todennäköisyyttä. Organisatorinen ambideksteriteetti ilmenee eri lailla yrityksen eri kasvun vaiheiden aikana ja tämän takia yritysten on tärkeää tiedostaa optimaalisimmat lähestymistavat resurssien käytön mahdollisuuksien tutkimisessa ja hyödyntämisessä tässä hetkessä. Tutkimuksen tavoite on ymmärtää, miten organisatorinen ambideksteriteetti ilmenee yrityksen kasvun eri vaiheissa ja miten yritys pystyy hyödyntämään sen resursseja innovoinnissa mahdollisimman hyvin.

Nykytutkimus organisatorinen ambideksteriteettiä käsittelevien aiheiden ympärillä on tarkastellut sitä, miten innovaatioprosesseja voidaan optimoida ja resursseja hyödyntää, jotta yritys saavuttaisi mahdollisimman vahvan ja kestävän kilpailuedun. Vain vähän on kuitenkin tutkittu sitä, miten amdeksteriteetti toteutuu eri kasvun vaiheiden aikana käytännössä. Tämä tutkimus tarkastelee kyseistä ilmiötä teknologiatoimialalla ja empiirisesti erityisesti case yritys Liikennevirta Oy:n näkökulmasta. Tutkimuksen tulokset pohjautuvat haastatteluista kerättyyn aineistoon sekä tieteellisen diskurssiin aiheesta. Haastateltavina olivat yrityksen johtohenkilöt.

Tutkimus osoittaa, että innovatiiviset prosessit ovat vahvasti resurssiriippuvaisia ja että nämä resurssit vaihtelevat paljon yrityksen eri kasvuvaiheiden aikana. Tämä tarkoittaa, että parhaat käytännöt eroavat merkittävästi yrityksen eri elinkaaren vaiheiden aikana. Tämä tutkimus perehtyy siihen, mitkä resurssit ovat kriittisimmät eri kasvuvaiheiden aikana, pyrkii identifioimaan nämä vaiheet ja argumentoimaan niiden vaikutuksia yrityksen kasvuun. Jos yritys pystyy allokoimaan resurssejaan organisatorista ambideksteriteettiä käsittelevän teorian ja käsitteiden mukaisesti, sillä on paremmat mahdollisuudet menestyä kilpailijoitaan paremmin. Resurssien johtamisen tärkeys nousee vahvasti esille tutkimuksessa sekä se, mitkä strategiset päätökset voivat antaa yritykselle parhaan mahdollisen kilpailuedun kasvun eri vaiheissa. Organisatorisen ambideksteriteetin merkitys kasvaa dynaamisilla aloilla kuten teknologiateollisuudessa, koska kilpailuedut ovat yleensä lyhyempiä näillä aloilla. Tämän takia yrityksen on tärkeää kyetä innovoimaan ja kehittämään omia resurssejaan mahdollisimman ketterästi.

KEYWORDS: Organizational ambidexterity, Exploitation, Exploration, Startup, Resource utilization, Organizational life cycle.

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1 Introduction

The introduction of this thesis is composed of four different parts. The first part discusses the motivation for the study, establishing the purpose and the aim of this thesis. This is followed by the description of the research gap that discusses the relevance of this research. The third part discusses the research problem and the theoretical contribution of this thesis. Finally, the thesis structure is outlined in the final subheader of this chapter.

1.1 Motivation for the study

We can see that innovation is one of the significant factors that accelerates organizational growth. Innovation is present throughout the organizational life cycle, and thus it is important for us to recognize how it behaves at each growth stage. Companies are operating with a finite number of resources; thus, it is important that these resources are utilized to their fullest potential. Innovation aims to enable the short-term and long-term survival of the company. For a company to develop its current resources and capabilities, an exploitative process should be implemented in the company. This form of exploitative innovation enables the company to improve its core processes, resulting in higher efficiency. This can enable a competitive advantage for a company in the short term.

To stay competitive in the future, companies should engage in explorative processes, which cover the future possibilities for the company in the long run. If a company can explore its resources successfully, it is more likely to have a significant competitive advantage in the future (Kim et al. 2012, p. 1190). Exploitation and exploration are two processes that are both ongoing throughout the organization's life cycle, and they utilize different resources in innovation (March, 1991, p. 71). This is referred to as organizational ambidexterity in this study. This thesis investigates how a company can execute exploration and exploitation simultaneously at different stages of its life cycle and how the finite resources of the company affect this organizational ambidexterity.

Growth can be inspected through an organizational life cycle. The organizational life cycle of the firm demonstrates the different stages of growth and highlights the events associated with each stage. Furthermore, the organizational life cycle aims to highlight the importance of certain decisions that enable the company to grow to the next growth phase. The older organizational life cycle studies put marked emphasis on the standardization of processes. However, these might not be quite as relevant in the current business environment, where companies face greater uncertainties. Thus, the organizational and managerial decisions should aim to provide flexibility and agility to respond to changes in a volatile environment.

This thesis aims to investigate how resources are allocated under organizational ambidexterity to foster innovation and growth at different stages of the organizational life cycle. The study will explore how exploration and exploitation are utilized in resource-constrained environments during the different growth phases. The aim is to provide a better understanding of how strategic resources can be allocated to support innovation and sustainable growth.

1.2 Research gap

This thesis studies the organizational ambidexterity at different growth stages of a company. The previous research has focused on identifying how exploitation and exploration can be expressed in the company and how they can help the company to gain a competitive advantage through innovation. Organizational ambidexterity is covered in detail in conventional innovation literature, stating that uncertainty boosts innovation (Peters & Buijs, 2022, p. 174). However, innovative green technology companies tend to face more complex problems than conventional businesses. The greatest differences are in the customer domain, regulatory domain, and the measurement domain (Peters & Buijs, 2022, p. 182). Customer requirements can be unclear, regulations might not cater to the company’s needs, and defining green innovations varies between different stakeholders (Peters & Buijs, 2022, p. 183). Thus, showing that there is a need to conduct further research on green technology companies. Studies have also shown that organizational ambidexterity has not been researched in Northern European countries (Kafetzopoulos et al., 2023, p. 188). The past research on organizational ambidexterity has focused on large companies, and smaller companies have been studied to a lesser extent (Kassotaki, 2022, p. 10). Furthermore, technological companies and scale-up companies have not been studied in great detail in terms of organizational ambidexterity (Kassotaki, 2022, p. 11). The case company Virta represents a Northern European, small-scale up company in green technology.

Furthermore, studies have investigated organizational ambidexterity at different growth stages. This thesis studies the research gap of how finite strategic resources can be utilized to support sustainable innovation at different growth stages. Strategic resources are important when a company is trying to achieve and sustain sustainable growth. From an empirical research point of view, there is a gap in research, as this phenomenon has not been studied in the context of a green technology company. The green technology sector plays a significant role in our daily lives while helping to battle against climate change.

1.3 Research problem and theoretical contribution

This thesis aims to examine how organizational ambidexterity manifests itself at different growth stages of a company. This topic needs to be studied to understand better the complex synergies between strategic resources and how they can be best utilized to gain a competitive advantage. The research question of this study is as follows.

How can finite strategic resources be utilized to support sustainable innovation at different growth stages in green technology companies?

The theoretical contributions formulated by this thesis include the interplay between different strategic resources at different growth stages and how these can create competitive advantage through innovation in a green technology company. The theoretical frameworks around organizational ambidexterity are adapted to a green technology company context. The case study elaborates on how organizational ambidexterity is present in a start-up and scale-up setting.

1.4 Thesis structure

This thesis has five chapters, as we can see from Figure 1. The first chapter includes the introduction of the thesis and discusses the theoretical foundations of the thesis as well as the motivation. This is followed by the literature review, in which academic articles are studied to understand the core theories around the topic better. Once theories are studied in detail, the methodology chapter describes how the research was conducted. Both qualitative and quantitative data were gathered to understand organizational ambidexterity better. This is followed by the findings chapter in which the primary data is analysed in relation to the academic research. Lastly, the conclusions chapter brings together the core findings of the thesis as well as the proposed new academic research topics for future studies.

Motivation of the study and theoretical foundation of ambidexterity and growth

Key concepts and theories on ambidexterity and organizational growth

Research methodology and data collection at case company Virta

Findings on ambidexterity in different growth phases - startup, transition, scaling and maturity

Discussion on theoretical and managerial contributions, and suggestions for future research

Figure 1. Structure of the thesis

2 Conceptual background

This literature review aims to provide the foundation for the findings and conclusions of the study. The literature review of this thesis is composed of four different parts. The first part discusses the concept of organizational ambidexterity, enabling us to understand organizational innovation better. This is followed by a chapter in which organizational ambidexterity is investigated in dynamic business environments, better to understand the market environment of the case company. The third chapter investigates the resource allocation and ambidexterity during different growth phases. Lastly, the organizational growth theories are studied to better understand the factors affecting organizational growth.

2.1 Foundations of organizational ambidexterity

The first chapter of the literature review introduces the concept of organizational ambidexterity. Understanding organizational ambidexterity helps us to better understand the different ways in which innovation can be conducted in an organization. The first subchapter investigates the concept of organizational ambidexterity from a broader view, enabling us to understand the components of organizational ambidexterity. The second subchapter discusses exploration and how it affects organizational ambidexterity. Lastly, the third subchapter investigates exploitation and how it contributes to organizational ambidexterity.

2.1.1 Organizational ambidexterity

Companies strive to achieve greater operational efficiency and develop innovation capabilities to respond better to dynamic market changes (Sinha, 2016, p. 35). The company must gain leverage by utilizing organizational ambidexterity to succeed simultaneously at both features. In this study, organizational ambidexterity refers to the ability of an organization to both exploit and explore, i.e., to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized, and to compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (O'Reilly & Tushman, 2013, p. 324). To better understand how organizational ambidexterity is present in the company during its different growth phases, we need to scrutinize the terms exploration and exploitation. A company has a specific set of resources available for utilization. Exploitation aims to refine and improve the efficiency of these existing resources, and exploration aims to use and develop these resources to best equip them for discovery and innovation (March, 1991, p. 71). Thus, exploration can be seen as activities that aim to capture external opportunities, and exploitation activities aim to find advantages from internal operations (Sirén et al., 2012, p. 18).

Furthermore, exploitation, i.e., refinement of these existing activities, is the result of local research and learning, and on the other hand, the knowledge gained from exploration results from planned experimentation conducted by the company (Gupta et al., 2006, p. 693). This highlights the importance of learning and continuous improvement, which are ever-present during these processes. Strategic learning is the key process that enables the company to access the benefits of exploration strategies, and it will enable the company to adapt to the benefits of exploitation fully (Sirén et al., 2012, p. 35).

When a company decides between exploitation and exploration strategies, there are significant trade-offs between them, which can affect innovation rates and the impact of innovation. Kim et al. (2012, p. 1190) discuss how the skills and expertise of the company formulate the routines within the firm and how these routines are built to support the company's core technology. Exploitative processes are typically utilised to improve and innovate this technology (Kim et al., 2012, p. 1189). Furthermore, if this technology helps the company to achieve positive gains in the market, more money is directed to improve this technology via an exploitation process (Kim et al., 2012, p. 1190). Managerial myopia hinders the company from diverting resources towards explorative activities (Yang et al., 2023, p. 7173). This hinders the company’s ability to innovate and utilize exploration, which can slow down its growth.

Furthermore, this focus on improving existing technology directs finite resources away from the explorative innovation of new rising technologies. Companies that prefer the knowledge around their core are more focused and ignore the rising market opportunities; thus, when the exploitative innovation rate increases, the innovation impact decreases (Kim et al., 2012, p. 1190). This shows that the number of innovations conducted via exploitation started to lose its impact, and these inefficient resource allocations could hinder the company’s ability to achieve sustainable growth in a highly dynamic market.

The impact of exploration on the innovation rate is substantial. Valae’s study shows that SMEs with 51-100 employees tended to be the most innovative and creative because of explorative learning (Valae et al., 2017, p. 957). The size of a firm can execute effective knowledge sharing between different departments if the organizational structure is fit to enable this exchange. The exploration activities have a higher uncertainty of success and significant costs (Kim et al. 2012, p. 1190). Impactful innovations tend to increase the company’s revenue or reduce costs, enabling it to grow faster and more sustainably. Also, the research concluded that the explorative approach had a greater innovational impact. However, the innovation rate was slower when compared to exploitative innovation (Kim et al. 2012, p. 1190). Exploitative innovations follow continuous principles founded on the collected primary knowledge (Soosay & Hyland, 2008, p. 20). This lean approach can help the company build a solid foundation for its growth journey as the core processes are well-developed.

Furthermore, this highlights the importance of explorative innovation in gaining competitive advantage in the long run. Companies need to find a balance between these actions to avoid stagnation and missing out on market opportunities. Also, a dynamic market can influence the weight of each decision in the short term, but the company should aim to find a balance between these activities in the long run (Kim et al. 2012, p. 1192).

Research has shown that the successful execution of organizational ambidexterity is the most relevant in dynamic markets such as high-technology sectors and other knowledge-intensive services (Kassotaki, 2022, p. 2). In highly dynamic markets, the company must innovate and improve its processes as the length of competitive advantage can be highly uncertain (Kassotaki, 2022, p. 2). Companies that are focusing on a specific core capability are most likely going to benefit the most from organizational ambidexterity in dynamic environments (Kafetzopoulos, 2021, p. 922). It can be challenging for a company to develop innovative capabilities and aim to grow at the same time (Peng et al., 2019, p. 3931). Furthermore, the study by Peng et al. (2019, p. 3931) shows that there is an inverse U-shaped correlation between exploration or exploitation and performance. This indicates that focusing too much on one thing can reduce the experienced benefits. The research states that when external forces, such as market conditions, are stable during low environmental munificence, ambidexterity strategies cannot be utilized to their full potential (Kassotaki, 2022, p. 7). Contrarily, when the environmental munificence is high, the companies benefit most from ambidexterity strategies (Kassotaki, 2022, p. 7). There are four main approaches to ambidexterity that a company can adopt: contextual, structural, cyclical, and reciprocal ambidexterity (Kassotaki, 2022, p. 2).

Contextual ambidexterity aims to balance exploitation and exploration within one business unit, which makes it challenging to execute (Kassotaki, 2022, p. 3). This form of ambidexterity requires processes in which the individuals can make an informed decision on which task to focus (Kassotaki, 2022, p. 5). When contextual ambidexterity is inspected from a resource point of view, we can see how this form of ambidexterity can give the company a competitive advantage that is valuable, rare, and hard to imitate (Kassotaki, 2022, p. 5). Organizations that are built around efficient information transformation tend to benefit from that (Kassotaki, 2022, p. 6). On the other hand, companies that have a low level of slack resources tend to struggle to get the most out of this approach (Khan & Mir, 2019, p. 652). This shows that the employees need to have some dedicated time to allocate for this ambidexterity process, or otherwise, it will not reach its full potential.

Structural ambidexterity covers an approach where a company has different subunits, with each focusing on either exploration or exploitation while having its own structure, strategies, and incentive systems (Kassotaki, 2022, p. 6). However, structural ambidexterity is not always seen as the best fit option in resource-constrained companies (Marri et al., 2020, p. 307). Cyclical ambidexterity discusses an approach in which the business unit cycles from a long period of exploitation to short periods of exploration (Kassotaki, 2022, p. 3). This puts much emphasis on the structure and routines of the unit as resource allocation and practices are emphasized (Kassotaki, 2022, p. 6). These companies follow the S-shape curve in which brief exploration discovers a competitive advantage, and this is followed by a long period of exploitation in which the advantage is further enhanced and commercialized (Kassotaki, 2022, p. 6).

Reciprocal refers to an approach in which the output of exploration of one unit is the input for exploitation for a different unit (Kassotaki, 2022, p. 4). This approach requires efficient information flow, problem-solving, and joint decision-making between different units (Kassotaki, 2022, p. 6). As a result, this can form strong dependencies between different units. Commonly, different hybrid versions of these different ambidexterity approaches can be found in companies, and it is not uncommon to have multiple different ambidexterity approaches ongoing in the same company simultaneously (Kassotaki, 2022, p. 7).

2.1.2 The role of exploitation

The decision-makers can easily prefer exploitation as it tends to have shorter time horizons and more certain outcomes (March, 1991, p. 73). Research has shown that managers tend to over-explore explorative processes and thus miss out on potential revenues to avoid risks associated with exploration (Ferecatu & De Bruyn, 2022, p. 139). This hinders the company’s ability to innovate its products and processes. March (1991, p. 73) states that performance is the combination of potential returns of an activity and the company’s current competence at it. This can create a strong path of decency as more resources are directed to these profitable activities, and the more resources are invested into exploitation, the greater the barrier to diversifying these investments into exploitation (March, 1991, p. 73). This increase in exploitation can decrease the company's competitiveness in the long run. The company can become blindsided by the short-term returns and not invest enough resources into innovation to secure long-term profits.

Organizational ambidexterity discusses the balance between exploitation and exploration in business models. The paradoxical starting point indicates that trade-offs and opportunity costs will be associated with each strategic decision. Kim et al. (2012, p. 1189) state that while innovation is a key factor in business growth, explorative and exploitative actions foster innovation. Exploitative actions increase the efficiency of a company’s existing resources and processes, while explorative actions aim to create new resources with great significance in the future (Kim et al., 2012, p. 1189). Exploitation puts a significant emphasis on profit creation in the short term while keeping the customers’ current needs on the pedestal, following disciplinary processes to achieve these, and exploration aims to find breakthroughs that would possibly serve a large customer base (Andriopoulos & Lewis, 2009, p. 707). When resources are scarce and funding is relatively limited in startups, compromises must be made to achieve growth. Exploitative innovations aim to improve the current resources and processes, which makes it less attractive to invest funds into explorative actions (Kim et al., 2012, p. 1189).

If these processes are not in a sustainable balance, it can be difficult for the company to develop enough organizational capabilities to move to the next growth stage.

2.1.3 The role of exploration

Exploration is seen as a more vulnerable approach than exploitation. This is because there is greater uncertainty around the profits that the exploration would create in the long-term (March, 1991, p. 73). As time is a more significant factor in exploration strategies, a comprehensive risk management must be in place to reduce the associated risks. March (1991, p. 73) states that what seems like a suitable exploration for a specific period might not be suitable. This can be affected by multiple external factors that the company cannot influence.

Furthermore, the research shows that the decision to focus on either exploration or exploitation can have self-reinforcing effects (Luger et al., 2018, p. 463). This can make it difficult to switch to an alternative strategy in an agile manner, thus negatively affecting the company's ability to achieve sustainable competitive advantage. Also, explorative decisions that are great for one company department can be existential for others (March, 1991, p. 73).

The company's exploration activities foster innovation through experimentation, developing new technologies, and entering new markets. Rapidly evolving markets require businesses to adapt continuously, thus strongly emphasising business model innovation (Fu et al., 2021, p. 9132). Studies have shown that SMEs cannot survive in the long run if they are not continuously seeking new ways to adapt to the market (Andersen et al., 2022, p. 19). This highlights the importance of the adaptation of the business model. However, usually, due to a lack of financial and human resources, SMEs tend to fail to recognize critical opportunities, such as what their competitor is doing, how their customers are behaving on the market, and how these opportunities could be explored (Andersen et al., 2022, p. 19). If SMEs cannot hire the required people, their competitive capabilities will likely be hindered. SMEs tend to suffer from choosing the wrong business models, and, as a result, they are more likely to become dependent on different outside factors.

On the other hand, more agile SMEs can alter their business models faster than larger companies (Andersen et al., 2022, p. 20). The companies that best align their business model with the evolving customer needs will likely achieve the highest market share. SMEs operating in more dynamic markets must adopt more agile business models to compete with their competitors (Fu et al., 2021, p. 9142).

2.2 Organizational ambidexterity in dynamic business environments

Organizational ambidexterity can take different shapes, and thus it is important to understand how it can be balanced in varying business environments. This chapter aims to formulate this understanding in two different sections. The first section discusses the balancing of exploitation and exploration, helping to acknowledge its importance. The second section discusses how resources play a fundamental part in exploration and exploitation.

2.2.1 Balancing exploitation and exploration

Companies have access to finite resources, and as a result, this access to limited resources creates a dilemma for the company management, leading to the Exploration / Exploitation trade-off (March, 1991, p. 72). When a company decides to proceed with exploration, it hinders the development of existing resources, and on the other hand, investing in existing resources via exploitation makes it less appealing to develop or create new resources via exploration (March, 1991, p. 72). Furthermore, companies that prioritize exploitation tend to have stronger cash flow, but a weaker company value when compared to companies that prioritize exploration (Sarkees et al., 2014, p. 7). Thus, the opportunity costs need to be analyzed in close detail by the managers. Companies need to find a sustainable balance between exploration, which aims to refine and improve the efficiency of existing resources, and exploitation, which aims to limit the restrictions of finite resources and find the most suitable opportunity costs for the company. The companies should aim to find the balance between exploitation and exploration to achieve sustainable competitive advantage (Swift, 2016, p. 1688). The more dynamic the market is, the shorter the period of the competitive advantage tends to be.

As discussed in the previous subsection, establishing a sustainable and profitable balance between exploration and exploitation can be difficult. These objectives seemingly conflict with each other. However, organizational ambidexterity aims to resolve this problem and enable their co-existence (Kassotaki, 2022, p. 1). Kassotaki (2022, p. 1) states a positive correlation between the successful management of ambidexterity and a company's performance. This suggests that companies should emphasize enabling successful organizational ambidexterity. Organizational ambidexterity can be divided into evolutionary and revolutionary change processes; evolutionary highlights the need to increase the fitness of strategy, culture, and structure in the short term (Kassotaki, 2022, p. 1). On the other hand, the revolutionary change process covers getting rid of the practices that had made them successful (Kassotaki, 2022, p. 1). Therefore, evolutionary change can be seen more as a part of exploitation and revolutionary change as part of exploration.

Kassotaki (2022, p. 2) states that companies that execute exploitation and exploration strategies simultaneously are more likely to achieve higher revenues than companies that do not follow these processes. The company could utilize its short-term resources to sustain its successful revenue models. These models tend to create predictable returns, but they are not sustainable in the long run (Kassotaki, 2022, p. 2). However, these business models tend to offer a temporary competitive edge over competitors. The renewal and reflection on the current business model can be difficult as it is closely tied to the current revenue stream. Thus, managers can more easily favor exploitation instead of exploration (Minatogawa et al., 2020, p. 2337). Thus, the company needs to actively review its current working methods to eliminate working models that are going to be or are already redundant. In the best-case scenario, the business model cycles should be shorter to ensure that redundant business models waste no finite resources.

Furthermore, organizational ambidexterity has proven to improve sales growth, innovation, market evaluation, and company survival (Kassotaki, 2022, p. 4). Research has shown that ambidexterity is affected by internal factors such as the team's strategic intent, leadership vision and values, and the leadership's ability to manage ambidexterity (Kassotaki, 2022, p. 4). This indicates that organizational ambidexterity stems from managerial decisions, and it is not something that tends to appear organically within the company.

Porter (1980) has stated that a company should focus on being a cost leader or pursuing a differentiation strategy to get the best results possible, and they should avoid the middle ground between these different approaches (Kassotaki, 2022, p. 7). It can be interpreted that exploitation drives the cost leader strategies, and exploration drives the differentiation strategies, and companies should not be stuck in the middle. However, studies have shown that ambidexterity has increased organizational performance in multiple areas when conducted and appropriately managed instead of just choosing between exploitation and exploration (Kassotaki, 2022, p. 7). Simultaneously executing exploration and exploitation puts much pressure on the managers, who might have to decide between contradicting and conflicting goals (Raisch et al., 2009, p. 687). However, these decisions can have significant positive impacts on different business areas. Some areas that can be improved because of this are sales, scalability, profitability, return on investment, market share, and short- and long-term performance (Kassotaki, 2022, p. 8).

There are apparent drawbacks to focusing solely on one aspect of organizational ambidexterity. Companies should avoid solely focusing on exploration as they can never enjoy the potential profits (Kassotaki, 2022, p. 7). This is why smaller startups must exploit their resources to create revenue streams to finance their explorations and provide financial proof of concept for investors and owners. If companies focus solely on exploitation, they will not achieve long-term sustainable growth (Kassotaki, 2022, p. 7). This is because the company is less likely to act agilely to new market trends. When the company allocates its resources between these two activities to meet the current market demands without compromising its ability to meet future demands, it can achieve a sustainable competitive advantage (Chaharbaghi & Lynch, 1999, p. 49). This can be difficult for competitors to imitate, but it also requires constant monitoring of the changing market needs, thus making it difficult to sustain.

Due to the ambidextrous nature of exploitation and exploration activities, significant opportunity costs are present when deciding between these two approaches. Berger-Tal et al. (2014) state that during the exploration process, the company will gain new information at the cost of not benefiting from the existing knowledge; on the other hand, the exploitation process can trap the company into a suboptimal stable equilibrium. These equilibria can be challenging to foresee if the market is young and developing. The strategy should adopt a more dynamic approach to find the balance between these processes, as the need for exploitation and exploration can vary over a set period (Berger-Tal et al., 2014, p. e95693). Companies could adopt a contextual ambidexterity approach in which the employees can simultaneously execute exploration and exploitation without specific time constraints (Chen, 2017, p. 387). This can foster new innovative ways of executing internal processes and possibly lead to a strategic advantage that can help the company gain market share. The strategy is affected by both the external and internal environments in which the company operates. Companies in dynamic markets are more affected by the changes in the external environment.

We can utilise different frameworks to understand the balance between these two approaches better. The framework formulated by Berger-Tal et al. (2014, p. e95694) illustrates the balance between exploitation and exploration over a period. The framework consists of four different parts: knowledge establishment, knowledge accumulation, knowledge maintenance, and knowledge exploitation. Knowledge establishment is always the first part of the four knowledge phases, in which all resources are exploited to gather necessary information about the environment (Berger-Tal et al., 2014, p. e95693). Innovations depend on knowledge availability, which needs to be managed and processed to navigate better and make better knowledge-based decisions (du Plessis, 2007, p. 23). Data-led decisions are likely to yield more predictable outcomes for the company. This is usually a brief activity. However, the more resources the company has available, the more data it can gather, improving its future actions (Berger-Tal et al., 2014, p. e95696). Sometimes, the available information is limited, so that the managers can rely on their experience and knowledge (Berger-Tal et al., 2014, p. e95696). These decisions can lead to more personal biases than data-led ones.

2.2.2 Resource exploration and exploitation in business model innovation

Business model innovation aims to ensure that the design of value creation and the value-capturing processes are adapted and aligned with each other, while this can vary significantly between different markets (Andersen et al., 2022, p. 21). When the processes are aligned, the company can achieve a competitive advantage. Studies have shown that business model innovation creates risks and ambiguity around decision-making due to cognitive and structural constraints because the company cannot be sure about the outcome of the process, and the duration and costs of business model innovation can vary significantly (Andersen et al., 2022, p. 22). To manage this risk, the company needs to practice proactive risk management, and the managers need to be able to adjust the company's resources once a disruption happens (Parker & Ameen, 2018, p. 540). This is not an easy task, but smaller companies can benefit from their small size as they are usually more agile than larger companies.

Andersen et al. (2022, p. 20) state that many companies cannot get the most out of their business model as they cannot recognise the value drivers, and resource decisions are affected negatively by different path dependencies in the company. If the company faces organizational inertia and cannot adapt internally to external changes, the business model innovation is affected very negatively (Moradi et al., 2021, p. 171). This can be difficult to overcome, but for example, changes in culture towards learning and open communication can help to avoid future misalignments.

The adoption of business model innovation varies between industries. Digital start-ups tend to test the validity of their business model and the key processes of their business model innovation (Andersen et al., 2022, p. 22). This agile approach can be divided into two categories: reactive and proactive. The reactive approach can be linked to exploitation, in which the company tries to realize available value, and the proactive approach can be linked to exploration, in which the company aims to create new value in the future (Andersen et al., 2022, p. 22). Previous studies have shown that proactive strategies improve corporate performance in a competitive landscape, while reactive strategies do not significantly affect these aspects (Chan et al., 2022, p. 2127). This shows that innovation is the key driver of long-term success in dynamic markets and, thus, the key to sustainable competitive advantage.

Andersen et al. (2022, p. 28) divide SME business model innovation into four activities: scanning the business environment, conveying a sense of urgency, experimenting with the innovation, and shifting decision-making from intuition to data. The study showed that it was important for SMEs to study the external environment to better prepare for market movements and identify customers' needs and possibly new technologies to make the best decisions with the available resources (Andersen et al., 2022, p. 25). However, sometimes this information can be quite limited, for example, when the industry is new, resulting in a narrow search horizon (Andersen et al., 2022, p. 28). Several technology companies have faced this challenge when creating a product for a new and rising market. However, business intelligence can improve strategic foresight significantly in newly rising markets, highlighting the importance of the entrepreneur’s skill set. (Hijazin et al., 2023, p. 14341). Furthermore, to overcome the narrow search horizon, companies adopt continuous change in a sort of term to wait for the market to develop further (Andersen et al., 2022, p. 28).

Conveying a sense of urgency refers to a company's need to recognize the speed and direction of change and how to respond to it (Andersen et al. 2022, p. 28). If the company cannot respond to the market changes, they are likely to fall behind competitors and be unable to gain competitive advantage. This first-mover advantage can benefit the company. However, there is no clear correlation between the speed and quality of these decisions (Shepherd et al., 2021, p. 133). The more experience the entrepreneurs have in similar situations, the more likely they are to respond with the most suitable action.

Experimenting with the innovations is followed by conveying a sense of urgency and refers to implementing the innovative processes (Andersen et al., 2022, p. 29). This sense of urgency highlights the factors associated with business model innovation, including increased risk of failure and flexibility of the innovation experimentation process (Andersen et al., 2022, p. 28). Without any risk-taking, the company is not likely to be able to produce significant innovations that could benefit it in the long run. To increase the chances of success, the company should set clear innovation targets, have enough resources available, and enable collaboration that supports the innovation process (Giaccone & Magnusson, 2022, p. 102). Andersen et al. (2022, p. 28) highlight the importance of accepting the risks of failure rather than seeing possible mistakes as a value-adding experience. This lean mindset of learning from failures can help the company develop its innovations with real feedback and data. Therefore, the last activity of SME business model innovation is shifting decision-making from intuition to data, which refers to the SME's narrow search horizon and how the SME should overcome this by relying on data during decision-making (Andersen et al., 2022, p. 28). This data can help to mitigate the uncertainty surrounding the decision-making process.

Andersen et al. (2022, p. 28) conclude that SMEs that adopt an agile approach can overcome the lack of resources available. SMEs can improve their agility by improving resource fluidity and leadership unity even when limited resources are available (Seyadi & Elali, 2021, p. 31). Furthermore, SMEs with dominant agile logic in their decision-making process are more likely to withstand market changes by adapting quickly. Business model innovation covers transformational change, experimentation, adaptation, and learning on the macro level. Moreover, due to the explorative nature of these activities, SMEs should avoid the possibly paralyzing fear of failure and instead embrace the trial-and-error aspect of this process (Andersen et al., 2022, p. 31). Ultimately, the ability to fail quickly can be critical for the company to achieve competitive advantage in highly dynamic markets.

Once the company completes the knowledge establishment phase, it can accumulate knowledge. This knowledge accumulation refers to the exploration stage during which the company aims to gather as much information as possible and keep the exploitation of existing resources at the bare minimum, thus sacrificing the short-term gains to achieve greater returns in the future (Berger-Tal et al., 2014, p. e95696). This strategic decision can hinder the current revenue streams, increasing operational risks. These knowledge activities are even seen as intellectual property, enabling the company to develop capabilities to trigger innovation activities (Chang & Lee, 2008, p. 6). This highlights the importance of analysing and managing the acquired data. If the knowledge gained is directed to improve the existing processes, the exploitation process becomes more efficient, and thus, more resources can be directed towards exploration (Berger-Tal et al. 2014, p. e95697). Increasing exploitation efficiency via knowledge acquired from exploration can help the company consolidate its current market position if the market is not dynamic.

Furthermore, this lowers the risks associated with exploitation if the knowledge is utilized to improve current activities instead of solely focusing on the next possible big thing in the market. Berger-Tal et al. (2014, p.e95697) state that there is a limit after which the benefits of an exploitation process become obsolete. This is affected by the knowledge accumulation efficiency and the exploitation process's length (Berger-Tal et al., 2014, p. e95697). This efficiency could be improved drastically by access to new technologies such as artificial intelligence, which would further decrease the resources needed for knowledge accumulation.

The knowledge maintenance stage follows knowledge accumulation. During this phase, the company's exploitation of the new knowledge becomes important, and exploration is utilized to improve existing knowledge and replace lost information (Berger-Tal et al., 2014, p. e95698). Knowledge maintenance is utilized to avoid getting stuck in the old ways of doing things in a dynamic market (Berger-Tal et al., 2014, p. e956938). Companies can avoid this by collaborating with their business partners and by adopting a culture of learning and knowledge sharing (Muklis et al., 2023, p. 208).

On the other hand, exploitation can help to maintain the current market position. However, if more drastic changes are wanted, more resources should be driven into exploration activities, and resources could be streamlined to match better the exploration needs. The more consolidated the market, the greater the importance of efficient market maintenance, as this can help the company to streamline its operations to increase its profit margins. The longer the knowledge maintenance stage, the longer the company can enjoy the work of past exploitations (Berger-Tal et al., 2014, p. e956939). However, this stage is only temporary; thus, continuous learning must be adopted to avoid falling behind the competition. The greater the market predictability and the longer the knowledge maintenance period, the more resources should be allocated to exploitation. Naturally, this would be the opposite in highly dynamic markets (Berger-Tal et al., 2014, p. e956939). The firm can forecast market developments more easily when the market is more predictable. However, it is also important to foster the company’s data governance capabilities (Amardas et al., 2024, p. 1997). This helps the company make better data-led decisions, which can help them set the foundations for sustainable growth.

Knowledge exploitation marks the final part of the four knowledge phases. During this stage, exploration activities should stop, and the company should focus on exploitative activities (Berger-Tal et al., 2014, p. e956939). Once the knowledge exploitation process is over, a company could investigate whether specific processes should be improved or stopped. These decisions are ideally based on the most recent data available.

2.3 Resource allocation and ambidexterity across organizational growth phases

This chapter dives deeper into the resources discussion of the previous chapter, linking it to the company's growth phases. This chapter is divided into three different parts to show how organizational ambidexterity varies between growth phases. The first part discusses resource exploitation and exploration in startups. This is followed by the transition phase of the company, during which the company aims to prepare its resources for scaling. Lastly, the study looks at how resources are utilized during the maturity phase and scaling of the firm.

2.3.1 Resource exploitation and exploration in startups

The first stage of growth is the startup stage. During a startup's early growth, access to resources tends to be limited, and as a result, the startup needs to adopt agile strategies that can better respond to the startup's changing needs. Experimentation and resource allocation support the agile strategies. As a new startup is established, the management must decide whether to focus on a single internal functional capability or develop multiple internal functional capabilities (Symeonidou et al., 2022, p. 106208). Focusing on a single internal functional capability can help the company concentrate its resources towards one goal, which can be beneficial in highly competitive markets. However, the effect is less significant if the entrepreneurs have an entrepreneurial background or significant financial support (Symeonidou et al., 2022, p. 106209). The startup needs to develop its core capabilities and resources to formulate a stable revenue stream when the company is still new by utilizing exploitation, enabling future exploration. This can create a stable revenue source for the company to support future financial growth.

Also, startups need to reach a legitimacy threshold before they run out of resources. This enables them to reach legitimacy, which can draw in more resources, which can be utilized to increase the company's revenue (Symeonidou et al., 2022, p. 106209). The chosen resource allocation tends to positively correlate with the long-term competitive advantage and the company’s survival (Symeonidou et al., 2022, p. 106209). This can help the company grow faster than its competitors. Also, new companies must create their capabilities from scratch, while existing companies can develop new capabilities on top of existing ones (Zimmerman & Zeitz, 2002, p. 428). This increases the risk of failure for the startups; however, this can help to exploit new opportunities without the possible burden of path dependency.

Startups face the significant problem of allocating their finite resources to developing functional capabilities in production, marketing, and R&D to deliver their value promise and execute their different tasks (Symeonidou et al., 2022, p. 106210). The company can better understand all functions by adopting a broad resource allocation strategy. However, this will increase the cost, and the level of depth is likely to decrease (Symeonidou et al., 2022, p. 106210). Resource allocation can be significantly affected once the firm starts to grow and information asymmetries arise (Hoang et al., 2025, p. 6398). This can enable specific business functions to scale quickly due to their having access to more resources.

Furthermore, path dependency can become a significant issue in the exploration processes. To better respond to market changes, companies need to have a broad selection of capabilities that can be utilized if the market changes (Symeonidou et al., 2022, p. 106210). The company can prepare for these changes by conducting market research. This can help companies grow even during market changes if they can be more agile than their competitors.

Resource allocation and capability development decisions are affected by path dependency, time dependency, asset mass efficiency, and asset interconnectedness (Symeonidou et al., 2022, p. 106211). Path dependency refers to the process of building on already established resources. This exploitation-heavy approach can be challenging to change agilely and may cause significant sunk costs (Symeonidou et al., 2022, p. 106211). Sunken costs may play a significant role in the early stages of the startup journey as the available resources are limited. Due to this, it is crucial to start on the right path to avoid this phenomenon. Furthermore, early decisions on the business model can affect future growth paths (Löfsten et al., 2025, p. 29). These decisions can have significant impacts on the company's future growth.

Time dependency affects the decision-making process; for example, if a competitor has been on the market longer, it usually takes more resources to catch up (Symeonidou et al., 2022, p. 106211). This is affected by the market dynamics, as in dynamic markets, this time dependency might not play a significant role, as the market is changing rapidly, and competitive advantages can be lost and gained rapidly. Also, if the product is difficult to imitate, the market leader can enjoy the benefits of time dependency (Pacheco-de-Almeida & Zemsky, 2007, p. 651). Furthermore, dependency loses some significance if a company can exploit or explore its resources more efficiently. This can be reflected in the company’s access to capital and available knowledge (Symeonidou et al., 2022, p. 106211). These resources can help explore more sustainable ways of working and sustain the longevity of resource allocation to catch up with the competition.

Mass efficiency refers to the knowledge of best practices once the resource allocation to a project has reached a certain mass (Symeonidou et al., 2022, p. 106211).). To get the most out of the best practices, the company needs to identify these practices and structure them for effective sharing (Dani et al., 2006, p. 1717).). This helps to produce more efficient resource allocation and thus helps the startup gain competitive advantage. However, this can increase path dependency and sunk costs (Symeonidou et al., 2022, p.

106211). This mass efficiency could help solidify the startup's revenue generation, enabling it to start putting more resources into purely explorative activities to gain a significant competitive edge on future technologies or ways of working. This will enable the company to grow and possibly increase its revenue in the future.

Asset interconnectedness refers to how different assets are connected and how they are affected between systems if one is improved or altered (Symeonidou et al., 2022, p. 106211). This can help identify the effects of resource utilization and how all these decisions are linked. This makes it challenging to manage finite resources as these tend to have a more significant impact and are interconnected with each other during the early stages of a startup.

Startups should focus on functional capability development instead of a broad capability strategy to achieve quicker sales growth. This is because a more focused strategy enables more efficient learning and thus helps the startup reach its legitimacy threshold quicker with the help of the founders’ entrepreneurial experience (Symeonidou et al., 2022, p. 106212). This knowledge is fundamental during the early stages of the startup, as this will help the startup to coordinate multiple capabilities better and thus gain more organizational knowledge while avoiding resource-wasting management decisions (Symeonidou et al., 2022, p. 106212). Startups should also develop dynamic capabilities to better respond to external changes (Pigola et al., 2023, p. 1163). This can help them navigate through uncertain environments.

Furthermore, experienced entrepreneurs can manage different capabilities simultaneously and are likely to do more thorough research when facing the unknown (Symeonidou et al., 2022, p. 106212). This is important during the exploration processes as this deeper knowledge can help the company to gain competitive advantage, and technology startups are prone to operate in blue oceans, meaning less existing information is present for interpretations (Chan Kim & Mauborgne, 2005, p. 27). This combination of deeper market research and existing organizational knowledge can give the company a competitive advantage and help it build its core business and exploit it to increase its revenue while investigating future opportunities. If the startup can create a source of steady income, it shows that it can execute the important milestones to demonstrate that the startup can deliver on its commitments, which helps the startup to build legitimacy, and this draws in investors and new clients (Symeonidou et al., 2022, p. 106212). This can further boost company growth.

Also, entrepreneurial knowledge helps the management decide which resources are needed and how they can be combined (Symeonidou et al., 2022, p. 106213). This can improve resource utilisation efficiency, which can, for example, help the startup gain knowledge faster. When resources are used more efficiently, fewer resources are required to execute a task. This can enable the startup to direct more resources into exploration, enabling future revenue streams. Furthermore, established entrepreneurs can utilize their existing networks to gain better access to external resources, enabling them to access external funding more easily (Symeonidou et al., 2022, p. 106213). Startups that rely more on cooperation should aim to network more than conventional startups to bridge possible knowledge gaps that can stagnate the company (Witt, 2004, p. 401). Furthermore, if an external funder wants to fund the startup, it signals quality and trust, which can further help bring more external funding to the company (Symeonidou et al., 2022, p. 106213). This funding can enable faster growth by investing in and developing capabilities.

Startups should specialize during their early stages as this helps them gain recognition and achieve the legitimacy threshold quicker (Symeonidou et al., 2022, p. 106212). When the startup’s focus is narrowed down and its core competences and networks are in check, it will likely scale up (Farhana & Swietlicki, 2020, p. 83). This can also help it gain a better competitive advantage quickly. This is especially important in dynamic markets, as these changes can happen quickly. On the other hand, this creates path dependency, which increases the risk of sunk costs.

The board approach is considered inefficient as this creates the need for managerial capabilities to be spread over multiple different functions, which can be challenging to execute effectively with scarce resources, which can slow the company's journey towards the legitimacy threshold (Symeonidou et al., 2022, p. 106212). This is not ideal for the startup as they are likely to fall behind their competitors, and catching up can be difficult, especially if resources are not invested in long-term growth possibilities via exploration activities.

2.3.2 Transition from a startup to a scale-up

The second stage of growth is the scaling stage. For startups to reach scaling maturity, they need to go through the transition phase, which enables the startup to scale its operations (Picken, 2017, p. 587). The transition phase consolidates different business functions to enable the scalable utilization of the company's resources (Picken, 2017, p. 587). Some startups try to decrease imitation risk by scaling up early, but this increases the commitment risks. To minimize the commitment risk, the startup should spend sufficient time in the market to ensure they have the best product-market fit and not rush scaling with the wrong product (Lee & Kim, 2024, p. 1633). This can take longer. However, the company does not want to build its foundations on the wrong product. The transition phase starts when the company gains attention in its marketplace. This phase lasts usually around 1.5 to 3 years (Picken, 2017, p. 588). This can be seen as one of the most important years for the company when it comes to enabling its longevity Picken (2017, p. 586) argues that there are eight hurdles during this transition period, which are setting a direction and maintaining focus, positioning products/services in an expanded market, maintaining customer/market responsiveness, building an organization and management team, developing effective processes and infrastructure, building financial capabilities, developing an appropriate culture, and managing risks and vulnerabilities. If a startup neglects one of these topics, it will likely fail during the scaling phase as the organizational resources and capabilities cannot withstand the rising business activity

(Picken, 2017, p. 595). Thus, startups must pay close attention to these topics to avoid business failure.

The rapid growth and expansion of the firm are also further associated with demand exceeding supply, higher margins, and less competition. The market leader enjoys the highest profits (Picken, 2017, p. 590). These market leaders tend to be the preferred choice; they can scale their supporting functions rapidly and set the market price (Picken, 2017, p. 590). However, all this could be lost during transition and scaling if the eight transition hurdles are not appropriately addressed. Furthermore, these firms tend to be the best equipped to meet flexibly both existing and emerging market needs when compared to more established market players (Skawińska & Zalewski, 2020, p. 2800). This gives them a unique market position to serve customers better, which can help them grow their market share.

The first hurdle of setting a direction and maintaining focus discusses the importance of understanding the customers' needs and the industry dynamics (Picken, 2017, p. 590). This value proposition can catalyse customer-focused innovations that aim to meet customer expectations (Lindi & Marques da Silva, 2011, p. 1696). When customer needs are at the focal point, the company can expect to grow faster than its competitors. The company needs to have a clear value proposition highlighting the customer relationships, channels for sales and distribution, after-market support, profit formula, and the required partnerships, processes, and activities to deliver this value (Picken, 2017, p. 590). These topics could have been more fluid during the startup stage, but that fluid approach will not likely withstand the forces of expansion and scaling up. Also, the startup needs to have a clear market entry strategy, which will help them to enter new markets with existing competition (Picken, 2017, p. 590). Strategic priorities need to be clear to be achieved as efficiently as possible, and communication needs to be improved, which helps to share the strategy and reduces resource wastage (Picken, 2017, p. 590). This process helps to formulate a clear direction for the company. Without clear direction, the company will likely drain itself of resources and fail.

The positioning of products and services in an expanding market refers to understanding the market dynamics and needs of a more mature market (Picken, 2017, p. 591). Companies in the scaling phase tend to focus on offering a simpler core product rather than a complete product offering for the customer because the complete product offering requires supporting functions such as marketing and customer support (Picken, 2017, p. 591). Scaling companies tend not to have these resources available at an early stage. As a result, customer loyalty can be challenging to foster when these supporting functions are under-resourced, and the startup cannot resolve all customer concerns (Liladhar et al., 2023, p. 427). This lack of creating customer loyalty through supporting functions can be overcome by offering a product that resolves customers' problems better than competing products. Also, Picken (2017, p. 591) states that early adopters are more willing to buy the core product, but most customers want access to the more complete offering. This can create challenges for the scale-up in deciding how they would like to improve their core product to match the needs of the larger customer base. Furthermore, customer needs could change in dynamic markets, increasing the risks of sunk costs and path dependencies.

When the market grows and matures, the core product's importance decreases, and the importance of supporting functions increases (Picken, 2017, p. 591). Companies can utilize mergers and acquisitions to gather supporting capabilities around their core product (Kowalkowski et al., 2017, p. 86). These supporting functions will become increasingly more valuable as the company matures and can help it to establish a competitive advantage. This puts pressure on, for example, sales, marketing, and management processes to adapt to the market changes; thus, the company should always reflect on the customer needs while growing (Picken, 2017, p. 591). If these are not addressed, the oldest customers might not have their needs met anymore, and this can create customer dissatisfaction. In the long run, this can lead to customer churn. However, sometimes, this can be a natural part of the market adaptation in which new customers join, and old customers churn when the product changes.

Maintaining a customer/market focus requires more specialized employees to better respond to sustainable scalability (Picken, 2017, p. 591). Startups whose founder has entrepreneurial experience tend to have a great impact on the startup's growth and future trajectories (Hashai & Zahra, 2022, p. 156). When the startup is a young couple, people tend to do most of the tasks in the company with a very informal approach to processes and communication (Picken, 2017, p. 591). This can lead to quicker decision-making, which can be beneficial when testing and improving the core product and trying to find the best product-market fit. However, to scale the operation, the company needs a straightforward process, communication, and organizational structure to keep the customer focused on the focal point of all doing (Picken, 2017, p. 591).

In this stage, building an organization and management team of talented individuals helps the company have the right skills at the right place and time, further improving the decision-making process and better responding to market changes (Picken, 2017, p. 592). This should be accommodated with a clear organizational structure to ensure no information will get lost along the command chain (Picken, 2017, p. 592).). If the communication does not work, the decisions made by the managers can become redundant. Talent management can be utilized to get the best out of these talented employees; therefore, HR managers must foster these employee relationships after acquisitions (Pushpa & Kinange, 2020, p. 72). If these talented individuals are unsatisfied, they will likely leave the company and maybe even join a competitor.

Developing effective processes and infrastructure refers to the startup's ability to foster customer relationships, develop projects, and manage operations and finances (Picken, 2017, p. 592). Customer-facing processes require flexibility, responsiveness, and tailored attention, while internal operations require structure and standardized processes (Picken, 2017, p. 592). Furthermore, to increase its chances of survival, a startup should focus on larger gross profit margins and employee productivity (Tatikonda et al., 2013, p. 1401). These processes need to be in place to reduce the risk of not having the means to respond to increasing demand; furthermore, if the company fails to execute these processes, customer dissatisfaction can increase, resources can be misallocated, and sales could be lost (Picken, 2017, p. 593). These processes help the company to better respond to unforeseen events and thus increase the company's risk-bearing.

Building financial capability refers to the company's ability to showcase to the investors and lenders that they are utilizing its finances effectively, and this credibility can help the company secure future funding (Picken, 2017, p. 594). This funding is one of the key enablers of achieving that rapid growth during the scaling phase. Startups rarely have revenue streams supporting their growth at the desired phase. Venture capitalists can also bring knowledge and networks to the company, facilitating growth and reducing the adverse effects of liability of newness (Jeong et al., 2020, p. 3450). These networks can give a tremendous competitive advantage in highly competitive and dynamic markets.

Developing and nurturing a culture refers to the company's ability to create a culture that helps the company withstand hardships without the employees losing their morale (Picken, 2017, p. 594). Culture can develop as a response to challenges and difficulties, or it can be consciously created by the employees (Shamsudin & Velmurugan, 2023, p. e01023). Thus showcasing the complexity of cultural formation. If the company adopts, for example, a blaming culture, the company is not likely to survive hardships (Picken, 2017, p. 594). Staff turnover starts to increase in a toxic work environment, which increases the recruitment costs for the company and can hinder the efficiency of the operations as people are coming and going.

Managing risks and vulnerabilities refers to the ability of a company to manage technical, market, competitive, and execution risks (Picken, 2017, p. 594). Picken (2017, p. 591) discusses the importance of proactive management, which aims to recognize potential risks and weak links and combat these vulnerabilities before they become problematic. This highlights the importance of managerial experience in foreseeing these possible problems.

2.3.3 Resource management in mature companies

The third stage of growth is the exit stage. It is still important for companies to allocate their resources to remain competitive when the market consolidates. One way mature companies can stay competitive is through innovation. Innovation is present during all stages of company growth. However, the form of it can vary significantly during different growth stages. Companies aim to grow over time, and studies have shown that organic growth provides greater returns than external growth (Carnes et al., 2017, p. 472). This highlights the importance of effectively developing and managing your existing resources to gain competitive advantage. Leifer et al. (2001, p. 102) found that radical innovation is key to long-term success in mature markets. These innovations can give competitive advantage but can be challenging to formulate. On the other hand, organic growth can open new markets and customer bases by utilizing innovation (Carnes et al., 2017, p. 472).

When companies are in their early growth stage in the startup, transition, or early scaling, they tend to face more competitors who are trying to fulfill the exact niche needs, and to overcome this, the growth stage company needs to innovate to stay ahead of its competitors actively (Carnes et al., 2017, p. 472). This innovation can take the form of resource-exploitative or explorative behaviours. Companies in the mature stage phase have fewer market opportunities but still rely on innovation to gain competitive advantage (Carnes et al., 2017, p. 472). Radical innovation draws in a high number of resources and high uncertainty. Thus, a company must manage resource portfolios to minimize potential risks (Li et al., 2017, p. 471).

Companies with high resource flexibility, which foster radical innovation under high uncertainty, tend to interact more with resource accumulation; on the other hand, companies with high coordination flexibility foster resource acquisition under similar circumstances (Li et al., 2017, p. 471). Thus, it highlights how companies can approach innovation from different angles based on their core capabilities. The innovation process starts when a manager's decisions and actions to structure and bundle the company's resources and capabilities are implemented (Carnes et al., 2017, p. 473). Structuring refers to the company acquiring external resources, divesting existing resources, and accumulating resources within the company. Bundling refers to the company's improving existing capabilities, creating new ones, and stabilizing existing ones (Carnes et al., 2017, p. 473). We can see that both processes are utilizing exploration and exploitation. It can be challenging to alter existing capabilities and processes as these can be firmly part of the organizational structure (Carnes et al., 2017, p. 473). The company must research these topics before implementing actions to reduce the associated risks.

When a company has reached maturity, it tends to enjoy predictable revenue streams and steady growth rates. However, their decision-making is slowed down by bureaucracy and rigid organizational structure (Carnes et al., 2017, p. 474). This makes responding to significant market changes difficult if explorative research is not conducted correctly. Growth-stage companies can develop these new capabilities rapidly; however, maturity-stage companies may have the financial needs to acquire these smaller companies to gain this new competitive advantage. Companies that engage in acquisition activities struggle with innovation capabilities before the acquisition (Zhao, 2009, p. 1170). Therefore, the newly acquired capabilities should be improved to be more competitive. Growth-stage companies do not usually have the capabilities to conduct large-scale product development in depth, like how maturity-stage companies could potentially do (Carnes et al., 2017, p. 474). This can help mature companies explore and develop multiple potential innovations, giving them a competitive edge, as not all the resources are tied to one solution.

Furthermore, maturity-stage companies tend to exhibit path dependency due to past decisions, which can limit their capability to enter new markets (Carnes et al., 2017, p. 474). Also, this can make the company's future strategic moves more predictable for external stakeholders such as competitors. This could help the competitors to formulate their strategies better.

Companies operate with finite resources, and thus, they must be able to identify which resources or operations are inefficient. The company should aim to eliminate these to direct its resources better so that it can enable it to achieve sustainable growth (Carnes et al., 2017, p. 474). These divestments are triggered by contextual feedback regarding the company's performance, aspirations, and whether it can reach them (Moliterno & Wiersema, 2007, p. 1065). These resources can sometimes be difficult to eliminate or diverge, as strong path dependencies exist behind these decisions. Also, mature companies are more likely to outsource some of their processes to increase efficiency by reducing the number of employees (Carnes et al., 2017, p. 474). This can concentrate more power and know-how on a smaller group of people while reducing the costs for the company.

When a company can identify obsolete resources, those that have tied up the slack will become flexible cash resources that the company can utilize on profitable projects (Carnes et al., 2017, p. 475). This can help the company to keep up better and respond to dynamic markets. Also, managers should aim to identify which dynamic capabilities are needed to increase the flow of resources across different business segments (Lovallo et al., 2020, p. 1365). The company could get rid of capabilities that do not create extra value. These changes can further help to streamline the organization chart (Carnes et al., 2017, p. 475). This can enhance internal communication, enabling better, streamlined managerial decision-making when information flows more freely, enabling future growth. Maturity-stage companies' path decency behaviour can foster exploitation as processes are more set and routinized (Carnes et al., 2017, p. 475). This exploitation enables the company to improve its cash cows, and explorative activities are further implemented to find the next competitive advantage (Carnes et al., 2017, p. 475). This shows that companies should not just be content with the existing revenue models, as these can become redundant in the long run. Moreover, if a large, mature company falls behind in innovations, its organizational structure can come its way when it tries to catch up with its competitors. If the company cannot match the market demands, its revenue can decline, hindering its ability to gather resources that could help it create a competitive product for the market.

Maturity-stage companies tend to follow others' innovations and aim to benefit from the second-mover advantage (Carnes et al., 2017, p. 476). Companies with access to superior market knowledge tend to delay their action and act as second movers (Rasmusen & Yoon, 2012, p. 374). This can give them a chance to analyse better how the market reacts to the first mover, and thus, they can better formulate their product to match the customer's needs. The vast resources available for these mature companies enable them to quickly utilize their R&D capabilities and bring out a different version of the innovation that better meets the customer needs (Carnes et al., 2017, p. 476). This helps them to streamline their exploitation processes and reduces the need to be a leader in market research (Carnes et al., 2017, p. 476). Furthermore, this reduces the risk of wasting resources on the wrong projects.

2.4 Organizational growth theories and ambidexterity

This chapter investigates different growth theories to understand how resources are utilized to enable organizational growth using organizational ambidexterity. This chapter is composed of two sub-sections. The first section discusses growth theories and the organizational life cycle to better understand the different growth phases of a company. The last subsection discusses the importance of resources in enabling growth.

2.4.1 Growth theories and the organizational life cycle

Most companies aim to grow over time, which is a natural part of the organizational life cycle. Organizational life cycle states that companies move between different phases of growth (Mosca et al., 2021, p. 4). These different growth phases of founding, growth, maturity, decline, and revival do not always follow this order, and the growth rate can vary drastically between markets (Jirásek & Bílek, 2018, p. 1). Organizational ambidexterity is present during every growth phase, having a different emphasis on exploitation and exploration at each stage, trying to achieve different business performance metrics (Kassotaki, 2022, p. 8). To support organizational growth, companies need to develop their resources accordingly at different stages of growth. The modern organizational environment has created more complex, holistic challenges around this capability development, which previous studies have not explored (Mosca et al., 2021, p. 3). Mosca et al. (2021, p. 3) investigated five studies that scrutinized the organizational life cycle from the perspective that growth creates issues for companies, and companies must adapt to overcome these obstacles. These studies were Lippitt and Schmidt's (1967) model, Greiner's (1972) model, Adizes's (1979) model, Galbraith's (1982) model, and Churchill and Levis's (1983) model.

Lippit and Schmicht's (1967, p. 103) organizational lifecycle model states that growth happens through three stages of development: birth, youth, and maturity. The birth stage covers the company’s formulation of a business model and achieving a survival threshold (Mosca et al., 2021, p. 5). The youth stage aims to build stability and reputation, and the maturity phase aims to consolidate the company’s unique selling points (Mosca et al., 2021, p. 5). For a company to have the best capabilities to respond to these crises effectively, it needs to develop resilience capacity in its resources and processes (Do et al., 2022, p. 808). These capabilities are built over time utilizing resource exploitation, and these can be difficult for competitors to imitate (Pacheco-de-Almeida & Zemsky, 2007, p. 651).

External factors put pressure on the company to adjust to the market demands, and internal factors refer to how the company needs to adjust internally to meet these changing demands (Mosca et al., 2021, p. 7). This shows that the need for change tends to be led by external factors, and internal factors aim to enable the best response to this change. Therefore, companies need to be actively on the lookout for changes that best equip the company for it and give it time to be implemented (Dobrovič & Timková, 2017, p. 5). These changes can require extensive resource exploitation and exploration (Pigola et al., 2023, p. 1163).

Companies are often faced with different crises during their life cycle. These crises can be challenging to navigate and require much know-how from managers. Furthermore, to have a better chance of navigating successfully through crises, the companies should be flexible, agile, and adaptable while having close relationships with different stakeholders (Silva et al., 2023, p. 84). However, these capabilities can be limited during the early stages of the company.

Lippit and Schmicht (1967) state that when the company moves from birth to youth, its organizational structure becomes taller, and different functional areas of the company create specific departments, furthermore, stating that decentralized power will be the best solution for the company as it helps to motivate people and attracts more talented employees (Mosca et al., 2021, p. 11). This can help the company gain competitive advantage over its competitors.

Adizes (1979) emphasizes long-term planning, which can help it to respond better and foresee future movements within the market (Mosca et al., 2021, p. 7). This can help the company better respond to market changes, enabling a possible first-mover advantage. The managers need to find the optimal balance of organizational ambidexterity to best respond to the dynamic markets to achieve short- and long-term performance (Kassotaki, 2022, p. 8). Furthermore, decentralization in decision-making helps motivate individuals, thus being the best power distribution (Adizes, 1979, p. 17).

Galbraith's theory (1982) states that startups first develop the business idea, focusing on the market needs, followed by selling products, and niche dominance is achieved by successful resource allocation. If executed successfully, this ultimately leads the company to be a market leader in its specific market. The model has five stages: proof-of-principle prototype, model shop, startup volume production, natural growth, and strategic maneuvering (Gaibraith, 1982, p. 73; Mosca et al., 2021, p. 5). When the growth is tied to market growth, many uncertainties can be present. This requires intense risk management in which organizational ambidexterity is firmly present (Parker & Ameen, 2018, p. 540).

2.4.2 A resource-based approach to growth

Growth depends mainly on how well the company can utilize and develop its current assets. The resource-based view investigates how tangible and intangible resources are utilized to gain competitive advantage (Zahra, 2021, p. 1841). The resource-based theory aims to help managers identify the resources most likely to give them a strategic advantage. This competitive advantage usually stems from the company's intangible assets and capabilities, which tend to be the hardest to imitate (Jeremy & Galvin, 2004, p. 979). Thus, knowing this framework can give the manager and the company a significant advantage, making them more likely to handle the associated risks and execute effective organizational ambidexterity. Resource scarcity is seen as the consequence of poor organizational performance or unexpected demands (Zahra, 2021, p. 1841). Resource scarcity and poor resource management are something the company should avoid, as this can have a negative impact on some of the business functions temporarily while inhibiting exploitation and exploration (Symeonidou et al., 2022, p. 106212).

The process of resource management starts with resource definition, in which the company assesses which resources it currently has and what they need in the future (Zahra, 2021, p. 1841). This is followed by resource assembly, in which the firm gets the resources, followed by valuation and selection of the resources (Zahra, 2021, p. 1841). Orchestration refers to how to utilize these resources best, and deployment refers to how to allocate the resources best; and these decisions are heavily affected by the market uncertainty and the previous experiences of the managers and owners (Zahra, 2021, p. 1841). Studies have shown that investing in resources associated with operational expenses positively affects profitability over time (Hughes et al., 2018, p. 1139). These decisions are the bases of organizational ambidexterity, and some of them will increase running costs in the short term, but they can enable the company to go faster in the future (Kassotaki, 2022, p. 8).

To identify the most valuable resources for growth, companies can leverage the VRIO framework. The VRIO framework studies the resources to see which will likely give the company a competitive advantage by looking at the resources' value, rarity, inimitability, and organizational match (Zahra, 2021, p. 1841). The VRIO framework can be utilized for both exploration and exploitation of resources to identify their values. VRIO framework studies the resources in comparison to the competitors and competitive dynamics, and this makes it difficult to highlight their disadvantages and limitations (Knott, 2015, p. 1806). Thus, it is difficult to see which resources bring the most competitive advantage in the long term when the markets change. Startups rarely have an abundance of resources, which would have all the desired characteristics of the VRIO framework, and thus, they need to creatively combine their existing resources (Zahra, 2021, p. 1841). This creative combining can enable the companies to gain a competitive advantage, and these new combinations can create new markets and industries in the long run (Zahra, 2021, p. 1841). Startups do not tend to have access to the best human capital or finances straight away, and therefore, they need to be efficient with their resources. The resource-based view argues that access to capital will not be the determining factor for the long-term survival of the startup, but it is how the resources are utilized (Zahra, 2021, p. 1841). This highlights the importance of managerial decisions when it comes to growth.

2.5 Literature review summary

Organizational ambidexterity was investigated closely in the literature review, highlighting how it behaves in dynamic business environments across different organizational growth phases. Furthermore, the literature review studied how companies allocate their resources to enable sustainable organizational ambidexterity. This interplay between exploitation and exploration, resources and capabilities, is illustrated in Figure 2, showing how they together aim to achieve sustainable competitive advantage. The framework is relevant at each stage of the growth of a company. The central aspect that changes at different growth stages is the emphasis between exploitation and exploration to meet the changing organizational demands. The role of exploration tends to be more prominent during the early stages of the company's growth. Furthermore, exploitation starts to play an increasingly significant role once the company starts to mature.

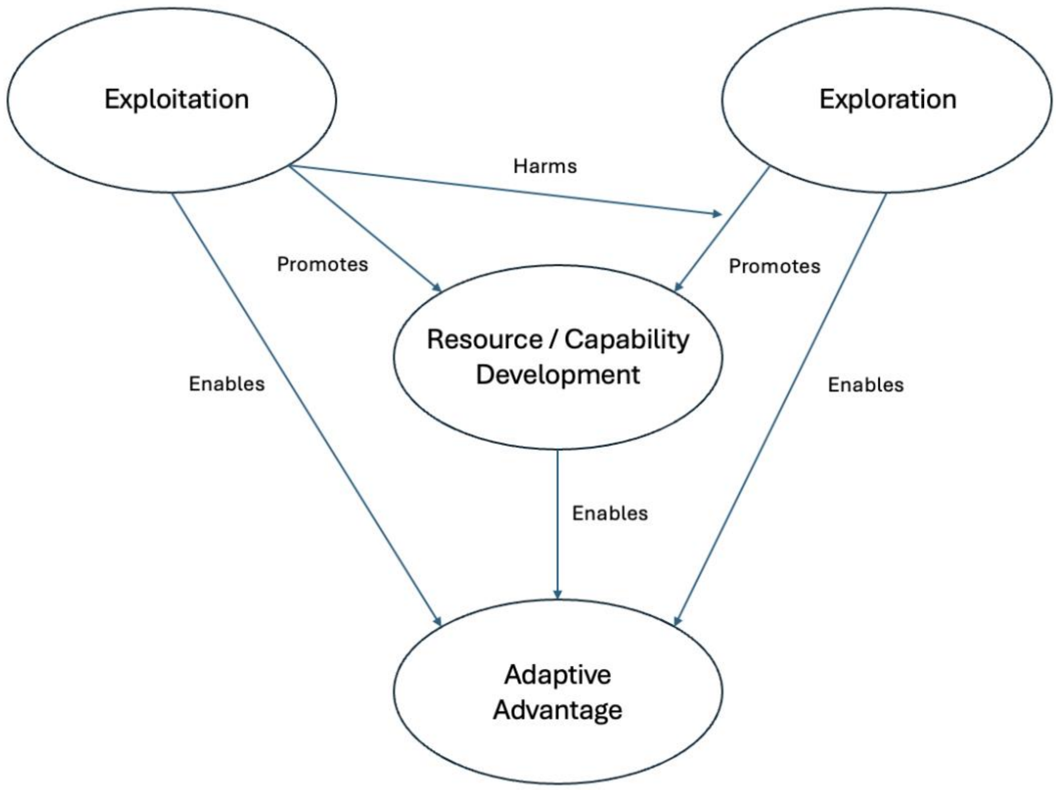

Figure 2. Organizational ambidexterity framework. Adapted from (Sirén et al., 2012)

Figure 2 showcases how exploration strategy helps the company to improve its strategic capabilities, and how exploration can help a company to achieve adaptive advantage over its competitors in a highly dynamic market. Figure 2 highlights how exploitation can hinder explorative ventures as fewer resources are available to explore new capabilities, thus hindering the innovation capabilities of a company. Exploitation helps a company to get the most out of its existing resources and capabilities. On the other hand, exploration helps to develop these resources and capabilities to meet the future needs of a company. All these together in balance help the company to gain an adaptable competitive advantage.

3 Methodology

This chapter aims to introduce the research strategy and design, present the case company, and discuss how and why specific data sets were collected and how the interview data helped to better understand the organizational ambidexterity present in the case company during its different growth phases.

The qualitative research strategy was used to gather and analyze qualitative data from the case company Liikennevirta Oy (Virta), which operates in a fast-paced green technology sector. The single-case study method was selected to gather data because it was seen as the best approach to formulate an in-depth understanding of a complex topic such as organisational ambidexterity. The case study comprised semi-structured interviews, which helped to gather rich and contextual data to better understand the significant events during the growth of the case company. The following chapter will discuss the topics under the headings: research methodology, case company, data collection, data analysis, and data quality assessment.

3.1 Research methodology

The research design of this research methodology is based on a case method approach. No universal laws have been established in social sciences; thus, it is important to conduct case studies to better explain causation in a specific applicable context, like the one in Virta (David Byrne, 2009, p. 2). Thus, this research method aimed to develop a deeper understanding of the conceptual link between organizational ambidexterity and different growth phases of a technology company represented by Virta. The case study method is the best-suited research method for this thesis, as the existing research on organizational ambidexterity within technology scale-ups is inadequate, and the purpose of developing new insights in a novel context (Eisenhardt, 1989, p. 549). Furthermore, a case study focuses on a single setting, giving more in-depth information regarding the topic (Eisenhardt, 1989, p. 534). This can help to better understand the causalities in the chosen setting, which can help with theory building.

The case study approach was chosen to understand Virta's strategic decision-making. Case studies are one of the best research methods when context plays a significant role in understanding the phenomenon (Ruzzene, 2011, p. 294). On the other hand, the data between different business environments can vary significantly. However, well-conducted and interpreted case studies can improve the validity of the data substantially (Smith, 1990, p. 131). Data this detailed can be challenging to collect using different methods. Virta was chosen as the case company because Virta has successfully managed its way from a startup to a scale-up and to a mature company stage in the EV industry, which has been under drastic changes while approaching market consolidation. Additionally, it was relevant to choose Virta as a case company as it has demonstrated to be one of the leading EV-charging solutions companies in the industry, and it has undergone a business model innovation process to stay competitive.

3.2 Case company

The case company Virta offers end-to-end charging solutions for EV drivers and charge point owners. Virta's charging platform has over 100,000 charging stations in over 35 different countries (Virta solutions to EV charging, 2024). Virta is one of the market leaders in the EV-charging market, and they have been ranked as one of the top Greentech companies of 2025 by TIME Magazine (World's Top GreenTech Companies of 2025, 2025). Therefore, Virta is an ideal case company to study the organizational ambidexterity in technology scale-ups. Virta suits the purpose well to answer my research question on how finite strategic resources can be utilized to support sustainable innovation at different growth stages in green technology companies.

The market size of the EV charging industry is rapidly expanding. The market's total value of USD 32.26 billion in 2024 is forecasted to reach USD 125.39 billion by 2030, thus showing a CAGR of 24.5% by 2030 (Key Companies & Market Share Insights , 2023). This shows us that the market is far from consolidation, and innovative solutions will shape the industry heavily in the coming years.

Virta's customer segments include real estate owners, fleet operators, energy companies, and utilities (Business industries, 2024). Virta offers these companies different software as a service SaaS and a platform as a service PaaS solution. Virta's platform allows access to Virta Hub, in which Virta's charge point management system allows the customer to control their whole charging network, which supports over 450 charger models. Additionally, Virta offers charging stations that are preconfigured for the customers and come with a plug-and-play solution (Virta, 2025). Furthermore, Virta offers energy management solutions that help to optimize the electricity grid usage and save costs for the customer (Virta, 2025). This highlights the complexity and dynamism of the market space in which Virta operates.

Virta was selected to be the case company for this study because it operates in a dynamic market, has gone through an organizational transition recently, and because of the researcher's access to internal insights due to prior work experience at the company. Firstly, Virta operates in a fast-paced and dynamic green technology industry, which gives an interesting view of organizational ambidexterity in such a fast-paced environment. Furthermore, Virta has quite recently moved from the startup growth stage to a more mature scaling phase. Thus, seeing how this growth journey has affected its strategic decisions has been interesting. Also, prior work experience at the case company during this transition phase sparked my interest in examining organizational ambidexterity in closer detail in this thesis.

Virta has been experiencing significant growth over its lifetime since the CAGR was +87% between 2014 and 2024 (Virta joins an elite group in the 2025 Financial Times FT 1000 list as one of only ten companies ranked for six consecutive years, 2025). This showcases that Virta utilized its resources effectively through exploitation and exploration, and responded to market changes and growth by implementing effective strategic decisions and developing innovations.

3.3 Data collection

The interviews that were carried out were semi-structured interviews utilizing open-ended questions. One of the benefits of this interview technique is the ability to form thematic relationships from the data (Galletta, 2013, p. 124). This can help with the analysis of the data. The topics that were discussed during these interviews were related to strategic decisions made by Virta at its different growth stages. Additionally, the role of these decisions was discussed in terms of how innovation enabled the support of sustainable growth. Semi-structured interviews were chosen because they helped gather the most relevant primary data on the research topic, enabling follow-up questions to be conducted whenever needed. Three of the interviewees belong to Virta's leadership team, i.e., the CIO, CRO, and the COO.

Additionally, one manager was interviewed to get a holistic understanding of the decision-making and the resources utilized in growth. Table 1 shows the general roles of the interviewees. These interviewees were chosen as they have the best knowledge of the strategic decisions, and they can therefore provide the most accurate primary data. Each interviewee participated in one interview. The duration of the interviews was between 30 and 60 minutes.

Table 1. Interviewees' roles at Virta.

Interviewee number	General role in Virta
Interviewee #1	Executive decision maker
Interviewee #2	Member of the executive leadership team
Interviewee #3	Member of the executive leadership team
Interviewee #4	Member of the executive leadership team

The secondary data was collected from company reports, existing academic literature, and academic reports. These reports were Virta's financial reports and strategy documents. The secondary data was analysed to help build the context for the primary data findings. Having secondary data helps to establish a chain of evidence which can construct validity (Yin, 1994, p. 33). Four interviewees were selected based on their strategic role and knowledge of the strategic decision-making at Virta. Four participants were selected together with the case company so that they were the ones best able to provide sufficient data to consolidate the understanding around the topics studied.

The primary qualitative data collection was conducted via interviews. Quantitative data provided by the company was utilized to support the analysis and conclusions made from the qualitative data. A case study method was utilized to gain a better contextual understanding of how the resources were managed during the different growth phases. Case research has been regarded as the best method when developing new theory around operations management (Voss et al., 2002, p. 195). The primary data of this thesis will be based on the qualitative data collected from the interviews to gain a better understanding of the execution of the case company's organizational ambidexterity. Interviews were chosen as the primary data collection method because they helped to gain a deeper understanding of the research topic, and the interviews also enabled presenting follow-up questions to gain deeper insights into the topic. The interviews were conducted in person, and the responses were recorded and anonymized.

3.4 Data analysis

The data collected from the primary research were analysed by conducting a thematic analysis. Thematic analysis was chosen to identify patterns in qualitative data. By using this data collection, the research aims to find the most frequently appearing concepts and base the theory around them (Lochmiller, 2021, p. 2029). The thematic analysis began with the analysis of the interview data and secondary sources such as financial statements. This concurrent method of combining qualitative and quantitative data helped to formulate an analysis which, when iterated in reflection to existing data, deepened the knowledge around the phenomenon (Ayre & McCaffery, 2022, p. 77). Once the interviews were conducted, the data needed to be transcribed by using Microsoft Teams, which turned the spoken words into text. The interviews were conducted in Finnish, so they needed to be translated into English. Once this data had been familiarized, it was bundled into different groups based on their themes to compare them to the existing academic research. This thematic coding process helped to link the interview data to the academic research. Triangulation will be utilized to determine the study's reliability. This is conducted using multiple data sources, the primary data from the interviews and secondary data from the data provided by the company reports and published academic research.

Ethical considerations needed to be considered when data was handled. The interviewees are provided with consent stating the purpose of the study and their rights to withdraw their given information before the thesis is published. Also, the participation of the interviewees and collected data are anonymous, and the study is voluntary. Furthermore, the interviewees were provided with enough information regarding the study to understand the interview's objective fully.

The data collection had some limitations as well. The case study gives only one perspective from a specific industry and, therefore, challenges the validity of the findings in other industries. Furthermore, the primary data provided by the interviewees can be biased as the interviewees were from a similar organizational level.

3.5 Data quality assessment

To assess the validity of the results, the data quality needed to be assessed. Construct validity assesses how well the research processes and collected data contribute to the development of theory (Bedford & Speklé, 2018, p. 23). Semi-structured interviews provided relevant data for this case study because the interviewees could answer the questions from the point of view of their specific expertise, therefore increasing the validity of the method and results. The credibility of this study can be regarded as high due to the nature of the responses. The interviews provided consistent answers. This is illustrated by having multiple different quotes from different interviewees supporting the same themes. Also, the interviewees were selected based on their relevant experience regarding the research topic. To improve the credibility of the data, more interviewees could have been interviewed.

Reliability of qualitative research can fluctuate; thus, emphasis needs to be put on the consistency within the research projects elements (Edmondson & Mcmanus, 2007, p. 1555). The reliability of the data can be regarded as high as the data collection methods utilized, including the collection of primary interview data, which were consistent in content, and each interviewee was asked the same questions. Also, the interviewees were recorded, so it was easier to recall precisely what the participants had stated, meaning no information was lost or wrongly recorded. Furthermore, this helped to see whether the participants had different views on specific topics.

Triangulation of data by collecting data using both qualitative and quantitative sources of data increases the validity of the results while reducing biases (Jonsen & Jehn, 2009, p. 124). Furthermore, the validity of the interview data can be regarded as high, as the questions asked throughout the interviews were accurate and relevant to the research topic. Also, the knowledge gained was validated by the interviewees, increasing the relevance of the findings. Furthermore, the quantitative data was collected from internal company reports, increasing the data accuracy.

The transferability of the data could have been better, as these results are precise for the dynamic technology industry, and thus, these results cannot be generalized to companies that operate in more static industries. Data saturation was not reached with four interviewees, even though multiple interviewees gave similar responses. If no complete saturation occurs, there are still gaps to be filled around the theory (Naeem et al., 2024, p. 1). This could have been improved by interviewing several members of the management team at Virta, but on the other hand, not that many managers could respond to the interview questions accurately due to the complexity of the topic.

4 Findings

This chapter discusses how organizational ambidexterity was present at different growth stages during Virta's growth journey. This chapter aims to link the theoretical concepts discussed in the literature review chapter to the interview data gathered by the primary research. Case company Virta was founded in 2014. Virta's growth journey can be divided into three stages: startup, transition, and scaling. During the early startup phase between 2014 and 2018, Virta launched its product and developed it to match the market needs. Figure 3 highlights how Virta entered the transition phase in 2019 and lasted until 2022. During this transition phase, processes were consolidated, new markets were entered, and the headcount increased rapidly. These actions were taken to lay a solid foundation for the scaling phase. The foundations were laid during this period and were important to the company's success during its rapid growth phase. Virta entered a scaling phase in 2023 when the EV-charging market started slowly consolidating as the number of competitors decreased and economic turmoil hit the market. The total market was still expanding rapidly in 2023. Different growth strategies were discussed during these stages to enable sustainable scaling, in which exploration and exploitation of the resources played a key part. Virta is a good example of a company that has overcome the challenges of organizational ambidexterity by executing exploitation and exploration simultaneously. Virta has made decisions that have proven successful in dynamic, technology and knowledge-heavy markets.

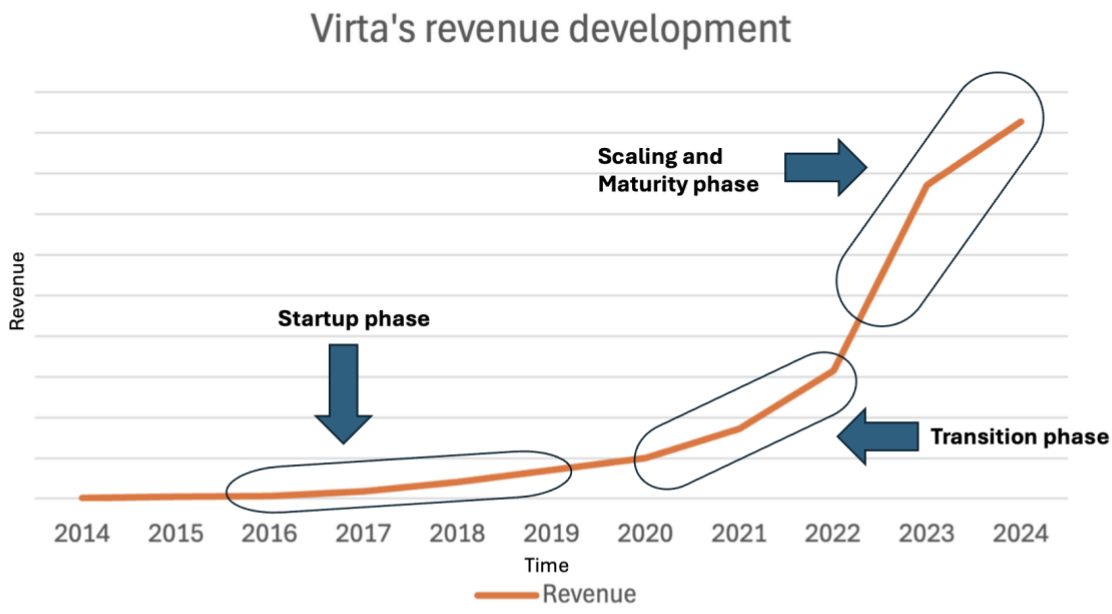

Figure 3. Virta's revenue development.

4.1 The startup phase

The startup phase of Virta focuses on agile and innovative resource allocation, which enabled experimentation and learning. This phase in Virta's growth depicts significant explorative strategic decisions and actions by which the company aimed to find the best product-market fit. Like what previous studies have shown, of successful companies, Virta has been able to offer the best product-market fit and could gain market share from its competitors. In 2014, Virta introduced its first minimum viable product (MVP). The MVP was a cloud-based EV charging platform that enabled features such as basic charging station communication, customer identification and billing, and charging station management capabilities. The payment and billing feature created plenty of value for the CPOs, helping them to run their charging business better. More advanced features, like roaming solutions, were introduced at a later stage to resolve a significant customer pain point. Capital investments made these investments in R&D possible. Interviewee highlights the importance of investors' capital in the development of the MVP.

> *"Most of the investors' invested capital was utilized in the R&D process as the MVP was not commercially widely viable yet." Interviewee #3*

As the quote from the interview shows, the MVP was not a commercially ready product, and thus, an intense R&D process was required to improve it. This resource-heavy process could not have been possible without external capital. This highlights how exploration tends to require more capital than exploitation.

Investments in the R&D process are usually supported by significant market research as well. Studies state that strategic decisions require thorough market research and analysis to minimize the risk of failure. When startups create a product for a market that is not established, it can be easy to base their strategic decisions on market analysis. One of the interviewees discussed the use of market research.

> "*No market research was necessary to be conducted to find out whether there would be a demand for this product in the future. The main concern was when the market was going to be big enough to create profits." Interviewee #1*

In Virta's case, the founders were sure that if EVs became the future of mobility, there would be a substantial need for EV-charging systems. However, back in the startup's early days, the market could have turned around and started favouring hydrogen cars. This supports Picken's view of overcoming the first hurdle of setting direction and maintaining focus, highlighting the importance of understanding customer needs. This value promise helps to set the direction for other company functions, such as sales and distribution channels and customer relationships. When the company has a clear value proposition and can define its critical functions, it can better allocate its resources. This effective resource allocation can help to formulate competitive advantage by, for example, coming up with innovations. The interviewees discussed the importance of patents and innovations.

> *"As a result of these heavy R&D investments, Virta has managed to develop one of the most diverse patent portfolios on the market." Interviewee #3*

This highlights how intellectual property can create a significant competitive advantage, which is crucial in technology. Being an innovation leader can help startups build up legitimacy thresholds, which can help them grow faster. This is one of the advantages of being one of the first movers on the market. When these resources are evaluated using the VRIO framework, they show high rarity, imitability, and value, thus indicating a strong market position against the competitors, which was the point in Virta's case.

Startups should focus on developing their core capability to get the most out of their limited resources. This is especially important in highly competitive markets such as the EV charging industry. This narrow focus can help the company to learn quickly, thus getting more out of its explorative and exploitative processes. As the research has highlighted, human capital played a key role during this exploitation process, as the founders had a strong engineering background and in-depth knowledge of this merging blue market of EV charging.

When entrepreneurs have extensive knowledge of the market, they can widen their scope, and they do not have to focus on just one operational capability to perform better than their competitors. This further highlights the competitive advantage brought by extensive industry knowledge. This existing knowledge can be looked at through the VRIO framework, and we can see that this business and engineering knowledge helped them to formulate the business idea of a cloud-based EV charging platform, which brought much value, helping the startup to gain competitive advantage. The EV charging solution offered by Virta created much value for the CPOs and EV drivers, and the first-mover advantage helped them significantly to gain market share. During the early startup days, the offered solution was rare; however, the scalability was heavily affected by the number of EVs on the road, and the external environment slowed down the potential growth.

> *"If the company does not draw resources into innovations, they are not likely to succeed in this field. Interviewee #2*

> *"As a result of these heavy R&D investments, Virta has managed to develop one of the most diverse patent portfolios on the market". Interviewee #3*

The above quotes highlight how intellectual property can create a significant competitive advantage, which is crucial in the dynamic and fast-moving technology sector. Being an innovation leader can help the startup build up a legitimacy threshold, which can help it grow faster. This is one of the advantages of being among the first movers on the market. When these resources are evaluated using the VRIO framework, they show high rarity, imitability, and value, thus indicating Virta's strong market position against the competitors.

During the startup phase, resources are limited, and to foster growth effectively, the company must allocate its resources effectively. Organizational ambidexterity is strongly present throughout the company's life cycle and raises the dilemma of resource allocation, as resource exploitation hinders exploration processes and vice versa. The finite resources were discussed by one of the interviewees.

> *"One bottleneck during the startup phase was the almost chronic lack of human capital. This limited the growth capabilities." Interviewee #1*

This shows how the finite number of human resources can hinder the company's capability to improve its exploitative and explorative processes. To overcome this, the startup could hire people who have a broad skill set so that they could be utilized in different areas of the company. This was also highlighted by one of the interviewees.

> *"When the company is small, it can get away with a more adaptable and improvising approach." Interviewee #2*

When a startup develops its MVP, the organizational structure is usually agile. This enables them to better learn through trial and error and adapt their product to the changing market demands. The organizational life cycle theories support this agility to enable a quick resource allocation to where they are most needed at a given time. Sometimes, money is not the most important resource during the early stages, as agile and knowledgeable human capital will be a stronger indicator of startup success.

There tends to be more emphasis on exploration during the early stages of the startup, and exploitation starts to catch up towards the transition phase. The exploration efforts aim to establish an MVP in fast fashion. The exploitation aims to improve this MVP to a stage where it can be scaled to enjoy the benefits of economies of scale. Once the MVP product has been successfully created and has started to create revenue for the company, the startup can improve it by utilizing exploitation. This exploitation enables the company to match its product to customer needs better. Also, the MVP can help the startup to build credibility among stakeholders. This credibility can show, for example, investors and financiers that the company can offer a product that could become a business. Investors and financiers will not take out loans or invest their money if they cannot see the company possibly making money in the future.

> *"The successful MVP helped to validate the business idea, which helped to get financing." Interviewee #3*

The lack of finances can stunt the startup's growth, and competing against competitors who have had steadier growth over time can be challenging.

During its early startup phase, tailoring the solution precisely to customer liking for each specific customer was not highly important, as the competition was relatively small, and the resources were limited to offer tailored solutions. Instead, the startup should aim to create an MVP that can create steady revenues in the long term. This revenue stream can further finance the exploitation processes in the future, which could enable more customizable products. This was further discussed with an interviewee.

> *"The product is developed by listening closely to the customer's needs and wants. We need to choose and focus on the customers who have the greatest growth potential in the long-term, evaluate their needs, and try to fulfil those." Interviewee #4*

Virta had a different approach from the one proposed by the literature, as they developed the product features based on the customers' requests. However, these developments still needed to align well with Virta's overall strategy. This showcases a more exploitation-heavy approach to product development at Virta, as the production is closely tied to customer needs.

According to studies, founders should focus on one core capability or MVP instead of multiple to increase the chance of successful resource allocation. Virta's first MVP was heavily focused on SaaS offerings. Companies also need to be able to analyse their product critically and not fall in love with the idea if it shows no business validity. Therefore, the MVPs should "fail fast" to free the finite resources for a different product. If the company gets stuck on developing failing products, it will likely run out of money and lose its market share.

On the other hand, it can be challenging to see whether these resources are being wasted, as the market is only starting to take shape, and the ultimate winning product might not have been established by the market yet. Therefore, if the company has substantial financial resources backing it up, it could be wise to direct some resources into exploring a different product solution to spread the risk.

Different organizational lifecycle theories aim to understand better how companies grow during their lifecycles. When the company operates in its startup stage, it is at the early stages of its organizational life cycle. Academic literature argues that during the early days of company development, the company aims to formulate its business model and achieve a survival threshold. To achieve this, the company needs the right human capital to formulate a product that can survive in the market. Financial resources are needed to sustain this process. For the company to move to the next growth stage, a crisis needs to occur due to external or internal events, and the company needs to resolve these to move to the next growth stage. This responsiveness to changes can be easily managed if the startup follows an agile resource allocation. One crisis that could have happened during the startup's early days was when a competitor started to offer new product features that Virta is not currently offering, which could result in the loss of market share. This was further discussed with an interviewee.

> *"First, Virta offered SaaS-type solutions for the customers; however, around 2016 and 2017, an increasing number of customers wanted a value-added solution, and a whole-round solution was introduced covering the chargers and the software. Smaller companies started to win market share by offering products, including a charger and a primitive software solution." Interviewee #3*

Virta decided to respond to this market demand and ended up developing a function that would help them achieve significant growth in the future. This decision helped Virta to consolidate its position as one of the market leaders. The decision helped to mitigate operational risk by not solely relying on the software business.

Studies argue that there are no specific growth stages and that the startup grows approximately at the same speed as the product market during the early days of the startup. Startups should aim to dominate their niche through effective resource allocation. When the growth of the startup is closely linked to market growth, the risks become more significant. Virta's growth was strongly linked to market growth, showcasing how vulnerable Virta was to market changes.

During the startup phase, exploitation tends to get less emphasis. On the other hand, explorative strategies have a significant influence on the longevity of the company as they aim to show the shareholders that the startup can create profit.

> *"The MVP was developed to facilitate the process of identifying and developing the best possible product market fit." Interviewee #3*

This helped to establish a legitimacy threshold, and this can attract more investors and clients, which can help the company to grow. At the same time, exploitation can hinder explorative behaviour. When resources are drawn into exploitation, it can create heavy path dependency due to sunk costs; thus, the company is less likely to draw resources away from the existing product to exploration.

4.2 The transition phase

The transition phase aims to consolidate the company's business functions to utilize the increasing resources needed to enter and thrive in the scaling phase. If these measures are not in place, the company is not likely to be able to sustain its business operations in the long term. The transition phase tends to last between 1.5 and 3 years.

> *"The transition period at Virta lasted around two to three years, and it was followed by rapid scaling." Interviewee #4*

The market develops faster during this phase, and new companies enter. During this stage, Virta entered new markets in Europe and Asia and introduced new partnerships with hardware suppliers, enabling Virta to expand its product offering from software solutions to hardware. Also, a Romanian office was established, and the original owners were bought out. Resources like funding and human capital were needed to facilitate these new changes.

Virta decided to expand its operations outside of Finland to unlock more growth potential. During Virta's transition phase, they entered new markets in Europe and Asia and partnered with EV charger providers, as the interviewee described.

> *"Virta chose to expand to new markets utilizing a partnership approach." Interviewee #2*

> *"We soon noticed that there were not enough potential customers in Finland to operate here solely. Thus, we decided to span our operations in different countries." Interviewee #1*

These explorative decisions helped Virta expand into new markets. Much market research must be conducted before entering a new market, as these investments are resource-heavy. The interviewee gives examples of the analysis that Virta conducted.

> *"Virta investigates different parameters such as the number of EVs in the target country and the number of existing EV charging networks, before deciding whether to enter a new market or not." Interviewee #4*

> *"Virta preferred to enter new markets with a local partner. This benefitted both parties and created substantial end customer value, while also providing a cheaper method of market entry." Interviewee #2*

Such partnerships can reduce the capital needed to enter a new market and help introduce the product to local consumers. This enabled Virta to enter more markets more quickly without astronomical investments. Lower market entry costs also meant that Virta could enter more countries faster. However, these ventures needed to be financed by investors. The interviewees discussed this.

> *"The investor market slowed down during the years 2022 and 2023, and as a result, companies with substantial debt and unprofitable business models quickly faced insolvency." Interviewee #4*

This highlights the risks associated with this explorative behaviour. Expanding into too many markets puts a significant financial burden on the company. Furthermore, the markets in countries with lower market risk tended to be more saturated, meaning more resources were needed to acquire customers in such markets. The risks and opportunities were highlighted in the interviews.

> *"We have found some of the best market success when we have entered markets where the charging infrastructure is just about to take off. Our value proposition with our end-to-end solution has allowed us to gain significant market share in these markets." Interviewee #4*

The opportunity cost of focusing on a specific market over another was significant, especially during the transition and early scaling phase. Virta had investigated whether they would expand to North America, but they have chosen to focus on other markets such as Europe and Asia instead.

> *"Setting up business in Asia was more challenging than in Europe due to different country legislations, and the number of EVs was much smaller than in Europe". Interviewee #2*

When Virta was in its scale-up phase, investments like expanding to Asia required significant resources. The opportunity cost of utilizing resources in markets that were only about to develop, when compared to markets where the demand already existed, was significant.

> *"Nordics was the organic first step in expanding into new markets, and the risks were lower as the markets behaved similarly to the Finnish market." Interviewee#1*

These ventures require much money gathered from financing rounds. These finances played a key role in enabling the explorative growth actions. Also, new employees needed to be hired to set up these operations in new countries. These new sales executives enabled market exploration and acquired new clients for Virta.

Virta had to overcome critical hurdles to enable rapid growth. Setting direction and maintaining focus were clear targets for Virta when it moved from the startup phase towards the scale-up phase.

> *"When Virta moved away from startup to scale-up, the product needed further development. The product was built with startup resources; thus, more resources were needed to scale. Some features had to be deprioritized to develop the future core offering better." Interviewee #4*

> *"Processes need to be standardized to allow operations to scale faster than the resources. When the company is small, it can get away with a more adaptive and improvising approach." Interviewee #2*

This shows that compromises need to be made under scarce resources to better respond to market needs. Virta needed to develop its capabilities, and thus, new employees needed to be hired. One significant investment was to open an R&D department in Romania.

> *"Virta soon realized that the number of software developers was the bottleneck in responding to customer needs. Thus, a new R&D department was set up in Romania. Interviewee." Interviewee #2*

> *"Customer demands had become increasingly specific, and this put a bit of pressure on Virta's roadmap when operating with tight resources." Interviewee #1*

These investments helped Virta to maintain and deepen its focus on software development. This helped them to offer an attractive solution to the customers. Having a clear focus helped Virta to get the most out of its resources and prepare its operations for scaling.

Positioning services in an expanded market and maintaining market responsiveness led Virta to offer hardware solutions for customers alongside software solutions. The interviewees discussed this as follows.

> *"Virta realized that some smaller companies had started to win market share by offering EV chargers with a primitive software solution." Interviewee #3*

> *"Virta wanted to offer a similar solution with a curated package for the customer in which they got everything that was required to run a charging business, from the charger to the software." Interviewee #2*

> *"Adding hardware sales as a business function created a new type of complexity which differed notably from the core SaaS approach." Interviewee #2*

This made Virta explore combining hardware offerings with superior software solutions. Also, customers get all their needs met by one solution. This new offering had all the customers' needs with one solution. However, Virta had to reallocate and acquire resources to accommodate this new change. Studies have shown that the company will likely phase out external pressure from the market to adapt to new market changes. It could become tempting for the company to replicate its better-performing competitor's business model to respond to the changes. However, the company is more likely to survive long-term if it develops its product through exploitation and exploration rather than trying to innovate its business model. This assumes that the business model has been found to work in the first place and that organizational capabilities are in place to support this growth. Different business models can thrive simultaneously in the same market, and during the early stages of market development, the business model with the best foundations for sustainable scaling is likely to come to the top. Virta demonstrated how two business models could co-exist and benefit from each other.

> *"Hardware solutions enabled Virta to increase its revenue, which was larger in quantity, and it arrived faster than the revenue generated from the SaaS operations." #Interviewee #2*

This new revenue stream helped to build financial capabilities. These revenue streams improved profitability and created a market with significant revenue potential. Also, these operations were relatively easy to scale up, and the successful model could be replicated in new markets. On the other hand, it is important to remember that not all explorative decisions conducted in one successful project can be utilized to replicate successes in every setting.

Furthermore, while developing existing products via exploitation can be seen as a good thing, as these products tend to accumulate the most revenue in the short term, it can create dangerous path dependencies. While increasing finances are poured into exploitative projects, diverting these resources into other activities, such as exploration, becomes increasingly challenging. In Virta’s case, the core product brought the most revenue in the long term; thus, the new hardware solutions helped to balance the revenue streams.

Building an organization and management team is one of the crucial steps in the transition period. When the company moves from the startup to the transition stage, the company’s organizational structure starts to evolve and become taller. This can help manage the company's resources better. As the company structure starts to gain a more complex hierarchy, the company's agility starts to suffer, and due to this, they are less likely to react quickly to external and internal changes. Different organizational growth theories argue whether decision-making should be centralized or decentralized to respond better to these changes. Different organizational growth theories argue whether decision-making should be centralized or decentralized to better respond to these changes. Centralized power distribution could help Virta to direct better and utilize its resources. This topic was further discussed with an interviewee.

> *“Virta operated under centralized management until 2023 before undergoing geographic decentralization.” Interviewee #4*

This centralized management structure helped manage the company's growing resources better. Enabling them to be best organized for scalable, sustainable growth. This new decentralized decision-making approach can enable Virta’s subsidiaries around the world to best align their resources for the unique demands in the market.

When new functional areas are developed, the company needs to aim to hire the most talented individuals. These talented individuals are likely to be more efficient and able to solve more complex problems autonomously.

> *“During the early startup days, Virta recruited employees with a wide knowledge and skill set. However, once the company started to grow, more specific niche knowledge was needed, and thus more specialised experts were hired.” Interviewee #2*

Managers should be the ones in charge of resource allocation when the startup starts to grow. Furthermore, these talented employees could help Virta to create patentable technical solutions that can help Virta gain competitive advantage.

These patents can become a significant resource for the company, increasing the company's value and possibly creating a revenue source.

> *"Virta has invested many resources into extensive R&D throughout the years, and they have given Virta multiple patents, which have made Virta the innovation leader in the EV charging market". Interviewee #1*

These patents have helped Virta offer high-quality products for the customer, which has created an industry standard. It is much more expensive for companies to develop these intellectual properties than to copy them. Thus, patents are needed to protect these inventions. These patents give a solid foundation for technological development, which enables Virta to better respond to the challenges of technological development during the scaling phase, enabling exploitation activities.

4.3 The scaling and Maturity phase

The scaling and maturity phase covers the organizational growth period after the transitioning phase. During this phase, the market consolidates, and the competition between companies becomes fiercer. This chapter discusses how resource allocation can be utilized to stay competitive and how to scale existing operations when the market matures. Innovation is ever-present during all stages of the organizational growth journey. Radical innovation in Virta will be investigated further in this chapter. Also, organic growth in Virta will be investigated alongside acquisitions made by Virta. The interviewee discussed how capabilities needed to be developed to enable scaling.

> *When Virta moved to a more distinguishable scaling phase in 2021, the organization had to develop some of the internal capabilities to support this new growth phase. Plenty of resources were invested in sales and sales-supporting functions to enable this growth. Interviewee #4*

> *"Our sales department focuses on customer acquisitions and developing existing customer relationships. Digital marketing is heavily utilized to help acquire new customers, and currently, it takes 3 to 4 times more resources to acquire new customers than to serve current ones. New customers are seen as a necessity for us to thrive in the future, and thus resources are drawn into these acquisitions." Interviewee #4*

This shows that without extensive investments, Virta would not have been able to grow at a rapid rate. Also, this highlights how we concentrated on customer acquisition, showing clear focus on resource and capabilities management.

Innovations are ever-present in technological sector companies such as Virta. Innovations give a competitive advantage to companies, but these cycles can sometimes only last for a short period due to the dynamic market. Thus, Virta needs to draw resources to support this innovation. This was highlighted by one of the interviewees.

> *"Virta is constantly looking for ways to innovate its processes and products. New technologies such as artificial intelligence create opportunities to improve the efficiency of multiple operations from product to process." Interviewee #1*

Artificial intelligence provides a platform for Virta to facilitate radical innovations that can help it achieve greater growth than its competitors. Another radical innovation that Virta has started to explore is operating in the energy business market. The interviewee discussed how Virta could play a significant part in that market.

> *The energy transfer market creates interesting opportunities for Virta and the EV sector. As an increasing number of high electricity consumption investments are made to the grid, it requires capabilities to balance the fluctuating electricity demands. One promising approach is to leverage electric vehicle (EV) batteries as decentralized energy storage units, enabling them to store excess electricity and feed it back into the grid when needed." Interviewee #4*

It is important for a company to be able to achieve radical innovation to secure long-term success in the more mature markets. Operating in the energy market can help Virta gain a significant competitive advantage over competitors by being one of the first movers in this field with technological innovations such as vehicle-to-grid (V2G) charging. Explorative activities, such as developing a V2G charger, are seen as a method to develop future capabilities and offer a product in a blue ocean market that is only starting to take form. This blue ocean has been identified by extensive market research, and a small team has developed this product over the years. This requires a lot of technical know-how and the right timing to offer the product when the market is ready.

The first-mover advantage is not always the best-case scenario for the company. Larger companies tend to adopt a second-mover approach so they can better observe how the first movers are performing and then introduce their solution to the market. Mature companies tend to have better R&D capabilities available and thus, they can produce a product in a rapid way, better matching the customer needs while reducing the strategic risks. One example in which Virta utilized this second-mover advantage was when hardware solutions were introduced to the market during the transition phase.

Organic growth is increasingly important when the company matures and enjoys higher returns. The interviews brought up the possibility of looking into acquisitions to pay back some of the technological debt accumulated during the rapid growth.

> *"Virta had intentionally taken some technological debt during its rapid scaling of operations, and it is time to pay this debt back when the company is starting to mature. One way this could be paid back is by looking into M&As. They tend to be a quicker and even cheaper opportunity than developing these capabilities in-house." Interviewee #4*

This highlights some of the opportunity costs associated with rapid growth. Virta had to choose which capabilities needed to be prioritized to offer the products that would help it gain the most market share. Also, because Virta is one of the market's larger players, it could raise the finances more easily to execute M&A decisions.

> *"M&A financing would be easy to gather. These M&As could also help facilitate the development of the energy sector's capabilities. Also, the market has started consolidating, and there is less financing due to market conditions. As a result, more small companies are acquiring or merging to avoid going bankrupt." Interviewee #4*

These explorative measures could help Virta acquire new resources and capabilities to help their radical innovation and strategic decision-making better. This radical innovation can help Virta avoid path dependency, which makes it more difficult for competitors to predict their strategic moves. Also, these new capabilities can be difficult for competitors to imitate due to their complex nature, giving Virta a competitive advantage.

The interview data highlighted that after years of rapid growth during the scaling and early maturity phases, Virta has started to look more into improving gross profit margins.

> *"After years of rapid growth, we have started to put significant emphasis on improving the gross profits." Interviewee #3*

Virta has managed to gain substantial market share during its growth period, and now it has started to put increasing emphasis on maintaining and fostering these relationships. Also, the challenging global market conditions have guided us towards this decision. This is utilized to achieve longevity. To improve the cost structure, the company should aim to get rid of slack resources. The interviewees discussed this topic.

> *"We need to choose carefully in which countries we want to operate, and this can result in lowering our presence in some current markets." Interviewee #3*

These divestments and reduction of slack resources help Virta to improve its cost structure. On the other hand, this can hinder Virta's explorative strategies and, as a result, slow down the growth. This tends to be a regular part of the maturity process in which resources are directed towards improving core capabilities. This shows how strategic exploitation decisions can be existential to some of the explorative ventures.

As a company enters the maturity stage, the importance of supporting functions starts to play a more pivotal role. Virta has noted the importance of this, and they have started to develop their supporting functions, aiming to scale them to meet customer demands. Interviewees discussed this topic during the interviews.

> *"Scaling the support functions has now started to be more important than ever before during Virta's growth journey. Processes need to be developed, and AI and automation need to be leveraged to their maximum potential." Interviewee #4*

> *"We have also opened a new customer support team in Romania alongside the one in Finland to meet the rising customer support demand better." Interviewee #2*

This shows that well-operated customer support functions are needed to offer the best customer experience. Technology is utilized to improve these processes' efficiency, aiming to scale the output quicker than the resources. Supporting functions such as customer support can help to foster longer-lasting customer relationships, which will decrease customer churn rate.

When the company moves to the scale-up phase, the business model and value promise must be stated clearly so that they will collectively work towards the same goal when they acquire new resources. If the company has not decided where it wants to focus, it will not be able to scale up successfully. Resources that are not working towards the set goal will consume financial resources, which play a key part in enabling the company's growth and achieving profitability.

5 Discussion

This chapter will bring together the empirical findings and the concepts and theory on the topic, enabling a better understanding of organizational ambidexterity at Virta during its different growth stages. The conclusions of the study are discussed under the theoretical contribution sub-chapter from a theoretical point of view. This is followed by managerial contributions aiming at transferring the conclusions into more actionable items for the company. The limitations sub-chapter discusses the limitations of this study, and this is followed by the suggestions for future research.

This study aimed to investigate how resources are allocated under organizational ambidexterity to foster innovation and growth at different stages of the organizational life cycle. We were able to see how the exploitation and exploration of resources were ever-present at the different growth stages, and see how they were prioritized at different growth stages to meet the changing demands. We could conclude that the role of exploration tends to be more prominent during the early stages of the company's growth. On the other hand, exploitation starts to play an increasingly significant role once the company starts to mature.

Furthermore, we were able to see that the exploration strategy helps the company to improve its strategic capabilities and enables it to achieve adaptive advantage over its competitors in a highly dynamic market. On the other hand, Virta’s case supported the finding that exploitation can harm explorative ventures as fewer resources are available to explore new capabilities. This can hinder the innovation capabilities of a company. Also, we can see that exploitation helps a company to get the most out of its existing resources and capabilities. On the other hand, exploration helps to develop these resources and capabilities to meet the future needs of a company better. When these strategic resources are in balance and allocated efficiently, they support the innovation process, enabling sustainable growth and adaptable competitive advantage.

5.1 Theoretical contributions

This thesis builds on the prior research on organizational ambidexterity, aiming to better understand how this phenomenon is present during different growth stages of a technology company. To better scrutinize the findings, we can investigate the different growth phases of the case company. The growth stages identified were the startup, the transition, the scaling, and the maturity phase. To gain deeper insight into the effects of organizational ambidexterity, we can analyse where the case company succeeded and where it failed, and reflect the reasons for success and failure back to the theory.

The startup stage shows the greatest difference between exploitation and exploration. The findings of this study support Berger-Tal et al.'s (2014) findings that startups put a heavy emphasis on exploration during their knowledge establishment phase. This exploration process is R&D heavy, but as a result, the company can accumulate patents, which, according to the VRIO framework, can create a significant sustainable competitive advantage. The case company had gained an extensive patent portfolio from the R&D processes, which enabled it to become a technology leader.

Multiple researchers have discussed the importance of the founder's experience. Symeonidou et al. (2022) argue that the more skilled the entrepreneurs are, the more likely the company is to succeed. The entrepreneurs of the case company had extensive knowledge of the market, and thus they were able to offer and develop a product that had a great product-market fit. The developed MVP was a result of an explorative and extensive R&D process, and it helped the case company to establish a legitimacy threshold. Symeonidou et al. (2022) discuss how important it is for startups to develop a legitimacy threshold as quickly as possible before they run out of finances.

One key attribute that helped the case company to develop its MVP was its agile organization structure and research allocation, which enabled it to conduct experimentation to innovate its product. Andersen et al. (2022) discuss the benefits that startups gain from having an agile structure, highlighting how this ability can give the companies a competitive advantage over more rigid and larger competitors when the market is changing rapidly. This agility increases the rate of exploration and reduces the risks associated with exploitation during the early startup stage. The agility can help the company to discard developments that no longer match the market needs. On the other hand, the company should try to avoid developing wrong capabilities as the resources are limited during the startup phase.

When capabilities are developed, different resources are invested in these ventures without a guarantee of success. Farhana & Swietlicki (2020) discuss how these sunk costs are developed when a company focuses on one core capability. In contrast, developing multiple capabilities can help to find the best product market fit, but it can be too expensive for a startup to sustain. Virta had chosen to focus more on one core capability, and this decision enabled them to gain competitive advantage. Symeonidou et al. (2022) state that the more knowledge the founders have, the more likely the startup is to survive by developing multiple capabilities. The chances of success can be increased by conducting market research. Chan Kim & Mauborgne (2005) discuss the importance of extensive research when operating in blue water markets. The case company had acquired the knowledge mainly from the founder’s personal knowledge, as there was minimal data available on the EV-charging market during the early days. Lippit and Schmicht (1967) discuss how companies need to face crises to move to the next growth stage. The case company had experienced a similar crisis event, which had helped them to rearrange their resources to respond to a rising market demand. This had ultimately enabled them to tap into a new revenue stream, which improved their profitability.

The transition phase aims to consolidate the critical foundations for scalable organizational growth, lasting around one to three years. Picken (2017) argues that these years are going to determine the chances of company success in the long run. One of the defining explorative strategic decisions at Virta was to expand operations into new countries. New partnerships were formulated with established local players to reduce the capital needed to enter a new market. This further helped to accelerate the market penetration as the customer already knew the existing partner, and thus helped to build trust between the customer and the case company.

The explorative expansions and increasing customer volume required investments in human capital. Differing from the startup phase, these human capital investments started to be task or function-specific, and more niche knowledge was required. Hiring people to resolve more niche problems enabled the further development of that function and prepared it for scaling at Virta. Mosca et al. (2021) stated that typically, more managers were needed to organize these experts to get the most out of the resources. As a result of hiring more employees, the organizational structure became taller at Virta. The exploitation of existing products required more topic-specific knowledge, enabling the case company to keep innovating. The case company suffered from a chronic lack of human capital, but after achieving the legitimacy threshold, it was easier to get access to funding to overcome this problem. Symeonidou et al. (2022) argue that achieving the legitimacy threshold is one of the key indicators of long-term competitive advantage, similar to what was the case at Virta.

During the scaling phase, the company started to develop its capabilities further to better respond to the crisis events identified during the startup phase. Virta’s crisis event was highlighted as a competitor’s end-to-end solution offering. This was overcome by Virta introducing its own end-to-end solution. Mosca et al. (2021) state that a company cannot move to the next growth stage without a crisis event. Findings at Virta supported this conclusion. The case company had decided to offer end-to-end solutions with the software and the hardware as a response to market changes. This meant that they had started to offer hardware solutions alongside SaaS solutions, creating a new revenue stream.

To achieve sustainable scaling and competitive advantage in the long term, the company should start to develop supporting functions. These tend to be underdeveloped, as this is not usually needed during the startup phase. Liladhar et al. (2023) state that a lack of supporting functions can hinder a company's ability to sustain and improve customer relations. This was evident at Virta as well. The case company prepared for this by establishing customer support and R&D functions in Romania to support the existing ones in Finland. Supporting functions become a significant competitive advantage in the scaling and the maturity phases as the product offering starts to become similar amongst the competitors.

The scaling phase begins after the transition phase and is marked by market consolidation and increasing competition. For companies to be able to scale up, they need to have strong internal capabilities in sales and customer acquisition. The company should also find a balance between exploration and exploitation. Scale-ups tend to engage in radical innovation to support exploration. This can be balanced by improving operational efficiency through exploitation.

The scaling and maturity phases highlight the importance of scaling the supporting functions to be better equipped for rapid growth. Carnes et al. (2017) argue that being able to innovate effectively during the scaling phase will give the company a significant competitive advantage. The internal capabilities can be developed through exploitation. One way the company can conduct this is by adopting new technology. The case company highlighted the adoption of AI and automation to exploit the current capabilities in supporting functions. These adoptions helped Virta become more efficient at its current supporting functions.

Customer acquisition becomes increasingly important when the competition increases and the company is scaling up. This explorative approach is supported by the functions developed at the transition phase. The case company had invested significant resources into sales operations by entering new markets and into digital marketing to help with demand creation. After rapid growth, the market starts to consolidate, typically, and companies need to put increasing efforts into keeping the customers satisfied. Thus, during the maturity phase, Virta invested significantly in customer relationships. The case company had also started to shift its company targets towards profitability once a certain level of market consolidation had taken place. Exploitation strategies were used at Virta to develop the existing products to achieve a superior customer experience.

When the company starts to enter the maturity phase, exploitation tends to consume more resources than exploration. However, innovation cannot be disregarded, or otherwise the company is likely to lose its market share; thus, continuous innovation is highly valued in the tech sector. One significant source of innovations is radical innovations. One example of this is the company's innovations regarding the V2G technology. Li et al. (2017) argue that flexibility is the key to success in radical innovation. The case company had identified the market opportunity over a decade ago, but only now is the market starting to get ripe for their solution. This market would have been more difficult to penetrate if the company had not been able to allocate resources for this innovation process over time. Also, this shows how explorative ventures can be long-lasting and resource-intensive, as illustrated by the Virta case.

When the market starts to consolidate, the second and first mover advantages start to play an increasingly important role. Virta had established itself as one of the key players in the industry, and when the market started to consolidate, it could sometimes be seen as better for companies like Virta to be second movers rather than first movers. Rasmusen and Yoon (2012) discuss how companies with superior market knowledge tend to rely on the second-mover advantage. As a result of this knowledge, they can observe the best practices and free some of their exploitative resources into exploration and offer a better product market fit in a rapid succession. On the other hand, if the company decides to develop similar products, it can do that more rapidly due to having more resources to allocate. The case company had done this with the end-to-end product offering, and they were able to offer a better solution than the smaller competitors.

When a company enters the maturity phase and the market starts to consolidate, the company's objectives tend to shift from rapid growth towards profitability. Furthermore, the growth tends to be more organic or through M&As. Carnes et al. (2017) state that organic growth provides greater returns in the long run when compared to external growth. Once the market had started to consolidate, the case company had put more emphasis on profitability rather than on growth. The global market challenges had driven the companies towards cost efficiency. As a result of this, most of the resources were in exploitative ventures. The M&As were seen as a quick way of paying back some of the technological debt that the company had incurred when focusing on growth. Zhao (2009) states that companies tend to rely on M&A if they have not been successful with innovation in the past; however, this does not quite apply to the case company, as they have been able to innovate successfully, but finite resources have led them to prioritize specific projects over others.

5.2 Managerial contributions

Based on the findings, we can state that organizational ambidexterity is ever-present at all stages of the company life cycle. Explorative and exploitative innovations take different forms, and they hold different value at different stages of the company's growth. These innovations are vital for company longevity. Organizations can get more out of their resource allocation when they are aware of these innovations and how they are best managed to achieve the optimal organizational ambidexterity at a given moment.

The explorative and exploitative ventures are affected by internal and external changes, thus making each case unique. The more knowledge the managers have available, the more likely they are to make the optimal decision. These decisions can have significant long-term impacts, and thus, it is important to understand the opportunity costs of each decision.

The resource-based view argues that financing is not the critical factor in assessing whether the company is going to survive in the long run, and instead, it highlights the importance of resource allocation as the most significant indicator of the company's future success. However, companies need to be careful not to focus too intensely on solely knowledge that is around their core capabilities, as they can miss significant rising trends, thus hindering exploration.

Research has shown that the ability to execute organizational ambidexterity becomes increasingly important in highly dynamic sectors such as the tech sector. The market changes can be rapid, and thus managers sometimes need to act quickly with limited information. Managers could prepare for these changes by making sure that the resources can be adjusted agilely. Furthermore, studies state that organic growth generates larger returns than external growth, thus highlighting the importance of resource management.

5.3 Limitations

This thesis aimed to improve the organizational ambidexterity at different growth stages of a company; however, this thesis had some limitations. The limited sample size of four interviewees limits the in-depthness of the collected primary data. Also, the interviewees were from the same company, which limits the generalization of the results to some extent. The company operated in a dynamic technology market, and thus, the results might not be the same for more static markets. Furthermore, interviewees' own opinions and experiences can have a significant impact on the collected data. The sample size of four participants reduces the diversity of the collected data; however, the selected interviewees had the most specific knowledge regarding the market and the company's capabilities and resources. To improve the validity of the results, more employees and companies could be interviewed from the same market. This would help to broaden the company-specific results.

Time constraints were another limiting factor alongside changing market dynamics. To get more detailed results, a longitudinal study could have been conducted over the years to better analyse the effects of organizational ambidexterity associated with each growth phase. Furthermore, the company and market-specific approach meant that the late maturity phase could not be studied as the market had not developed to that stage yet. Also, due to the market being dynamic, the rapid external market changes can have a higher impact on the collected results. Additionally, the restricted time frame limited the number of interviews that were conducted.

Reacher bias can be discussed as one of the limitations of this thesis. The interviewer's personal experiences and assumptions could have affected how the data was interpreted due to the researcher working at the case company. The selection of specific participants may have limited the depth of data and potentially directed the data collection towards a particular perspective.

5.4 Suggestions for future research

Organizational ambidexterity is a multidimensional and large topic, and not all of it was discussed in this thesis, leaving room for future research. Future research could focus on studying organizational ambidexterity over the different growth phases in more static markets. These results could differ significantly from the more dynamic markets, as organizational ambidexterity is strongly linked to external market changes. Also, the late maturity is not investigated in this thesis as the case company had not reached that stage yet. However, this late maturity could be something to be studied to better understand how larger companies organize their resources to enable innovation processes and to achieve competitive advantage.

Future research could also investigate how M&As impact organizational ambidexterity. M&As can be a significant part of a company's maturity journey, and they can bring new resources and capabilities for the company, but simultaneously demand more from resource management. The company can gain a significant competitive advantage from M&As, and thus, this could be studied in more detail. Longitudinal studies could help to understand this complex process and its effects.

Also, future research could investigate what kind of effects new disruptive technologies, such as AI, have on organizational ambidexterity. AI could help to allocate company resources more efficiently, better enabling the company to grow larger and quicker, with fewer resources. Disruptive technologies such as AI can help companies to exploit and explore resources in a way that has not been experienced before, and this can have a significant impact on the existing business processes by reducing innovation cycles and improving customer experiences.

Comparative studies can be conducted to understand better how organizational ambidexterity is conducted in the EV industry. This can help to understand industry-wide patterns and how resources are allocated in dynamic markets. This approach could investigate how different types of innovations can be utilized in mature markets to sustain continuous innovation.

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Appendix

Thesis questionnaire - Finnish and English language versions

- Milloin Virta sai ensimmäisen maksavan asiakkaan? - When did Virta get its first paying customer?
- Millä Virta sai houkuteltua ensimmäisiä sijoittajia? – How did Virta attract first investors?
- Minkälaista tuotekehitys oli alkuaikoina? – What was product development like in the early days?
- Miten alkuvaiheessa saatiin rahoitusta kasaan ja mihin sitä käytettiin? - How did you get the funding together in the early stages and what was it used for?
- Milloin alkuperäiset omistajat / investoijat ostettiin ulos? - When were the original owners/investors bought out?
- Onko tuotekehittelyssä syntynyt ikinä vahvoja polkuriippuvuuksia, mitkä ovat vaikuttaneet negatiivisesti uusien mahdollisuuksien tutkimiseen? - Have there ever been strong path dependencies in product development, which have had a negative impact on exploring new opportunities?
- Minkälaista yritys- tai teknologiaosaamista perustajilla oli ja miten se vaikutti alun kasvuun? - What kind of business or technology expertise did the founders have and how did it affect the initial growth?

- Kuinka paljon alussa tuotetta kehitettiin suoraan tarkkojen asiakkaiden toiveiden mukaan? - How much of the product was developed directly in the beginning according to the exact wishes of the customers?

- Oliko alussa sellaista tilannetta, että kilpailija oli alkanut kehittämään jotain ominaisuutta mitä Virralla ei ollut ja olisi huomattu, että ne alkavat saamaan markkinaosuutta itselleen sillä, ja sitten on jälkikäteen kehitetty tai paranneltu sitä kyvykkyyttä? - Was there a situation in the beginning where a competitor had started to develop some feature that Virta did not have and it would have been noticed that they were starting to gain market share for themselves with it, and then that capability was subsequently developed or improved?

- Mikä on patenttien merkitys ollut Virralle? Onko niistä saatu tulon lähteitä vai ovatko ne kasvattaneet lähinnä yrityksen arvoa? - What has been the significance of patents for Virta? Have they been a source of income or have they mainly increased the value of the company?

- Miten Virran strategia on kehittynyt yrityksen kasvaessa, jotta vakaus ja innovaatio säilyisivät? - How has Virta's strategy evolved as the company has grown to maintain stability and innovation?

- Onko ollut mitään keskeisiä isoja organisaation muutoksia millä on pyritty parantamaan tulosta tai liikevaihdon kasvua? - Have there been any major organizational changes aimed at improving the result or revenue growth?

INNOVOINTI - INNOVATION

- Miten Virta varmistaa sen, että ne se pystyy jatkuvasti innovoida samalla kun pitää jo olemassa olevat asiakkaat tyytyväisenä? - How does Virta ensure that it is able to continuously innovate them while keeping its existing customers satisfied?

- Minkälaisia mahdollisia haasteita on noussut esiin, kun yritetään ylläpitää innovaatio prosesseja ja samalla kun parannetaan operatiivista tehokkuutta ja skaalataan tukitoimia niin kuin esim. asiakastuki? - What kind of potential challenges have emerged when trying to maintain innovation processes and at the same time improve operational efficiency and scale support measures such as e.g. customer support?

- Onko mitään esimerkkiä missä asiakkaiden palaute olisi ohjannut päätöksen tekoa exploitation and explorationin välillä? - Is there any example where customer feedback has guided the decision between exploitation and exploration?

UUDET MARKKINAT – NEW MARKETS

- Miten Virta päättää, milloin on oikea hetki laajentua uusille markkinoille? - How does Virta decide when is the right time to expand into new markets?

- Miten tasapainotatte uusille markkinoille laajentumisen ja nykyisten markkinaosuuksien optimoinnin? - How do you balance expanding into new markets and optimizing existing market shares?

- Miten Virta tasapainottaa lyhyen aikavälin liikevaihdon ja pitkän aikavälin kasvumahdollisuudet? - How does Virta balance short-term revenue and long-term growth opportunities?

- Onko tullut vastaan tilanteita missä on pitänyt päättää, että skaalaako nykyisiä tulonlähteitä vai investoi vähän tuntemattomammille markkinoille? - Have you encountered situations where you have had to decide whether to scale your current sources of income or invest in a slightly less familiar market?

- Miten Virran tulostrategia on kehittynyt yrityksen kasvaessa, jotta sekä vakaus että innovaatio säilyvät? - How has Virta's revenue strategy evolved as the company has grown to maintain both stability and innovation?

- Miten saadaan varmistettua, että myynti tiimit keskittyvät sekä uusien asiakkaiden hankkimiseen ja nykyisten asiakassuhteiden ylläpitoon? - How can we ensure that sales teams focus on both acquiring new customers and maintaining existing customer relationships?

- Miten Virralla on varmistettu, että myyntitiimit panostavat sekä uusasiakashankintaan että asiakkuuksien pitkäaikaiseen kehittämiseen? - How has Virta ensured that sales teams invest in both new customer acquisition and long-term customer development?

- Oletteko joutuneet muuttamaan hinnoittelumalleja eri kasvuvaiheissa tehokkuuden ja skaalautuvuuden varmistamiseksi? - Have you had to change pricing models at different stages of growth to ensure efficiency and scalability?

- Miten tasapainotatte uusille markkinoille laajentumisen ja nykyisten markkinaosuuksien optimoinnin? - How do you balance expanding into new markets and optimizing existing market shares?

- Miten myyntistrategia eroaa uusille markkinoille siirtyessä verrattuna nykyisten markkinoiden optimointiin? - How does the sales strategy differ when entering a new market compared to optimizing the current market?

- Onko ollut mitään keskeisiä isoja organisaation muutoksia millä on pyritty parantamaan tulos tai liikevaihdon kasvua? - Have there been any major organizational changes aimed at improving profit or revenue growth?

- Miten olette optimoineet operatiivisia prosesseja kasvun eri vaiheissa ilman, että joustavuus kärsii? - How have you optimized operational processes at different stages of growth without compromising flexibility?

- Milloin ja miten olette päättäneet investoida uusiin teknologioihin tai järjestelmiin parantaaksenne tehokkuutta? - When and how have you decided to invest in new technologies or systems to improve efficiency?