

SCALING STRATEGIES AND BUSINESS PERFORMANCE IMPROVEMENTS FOR STARTUPS IN THE DIGITAL ECOSYSTEM

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ABSTRACT,

In the contemporary rapidly evolving digital world, startups face distinct challenges as well as opportunities that have a substantial impact on their growth and performance. Digitalization is becoming increasingly important as businesses attempt to remain competitive and satisfy changing customer expectations. This digital revolution enables startups to take advantage of new technologies like AI, blockchain, and IoT to improve their business models. Digital ecosystems, which include interconnected digital platforms, services, and stakeholders, give companies market access, resources, and collaboration opportunities that are critical for scaling. Navigating these ecosystems, however, requires struggling with the dominance of tech giant corporations, which establish high standards and create competitive pressures. Despite this pressure, this study aims to investigate practical scaling techniques for startups within this dynamic environment in order to remain innovative and increase business performance. Employing a qualitative research design, data was obtained through semi-structured interviews with several entrepreneurs and experts in the field from various industries in the Netherlands. The study demonstrates that successful startups use digital transformation, adaptive capabilities, managerial competencies, and strategic collaborations to negotiate the challenges of the digital environment. The study continues by recommending that companies implement these strategies to improve their scalability and performance. Furthermore, future research on this object should include comparative analysis across countries to validate these strategies and investigate their broader relevance. In addition, this research proposes investigating the benefits of directly collaborating with tech giants in the digital ecosystem.

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Keywords

Digital Ecosystem, Digital Transformation, Startups, Innovation, Entrepreneurs, Evolving Market Dynamics, Strategy Scaling

1. INTRODUCTION

Digital technologies are creating a revolution since businesses try to engage in digitalization efforts to stay competitive, meet changing customer preferences, and improve operational efficiency against traditional methods. The rapid evolution of digital technologies has forced numerous businesses to reassess their company strategies and entrepreneurial approaches. This leads to *digital transformation* which has been defined as the use of new digital technologies, such as mobile, artificial intelligence, cloud, blockchain, and the Internet of Things (IoT) technologies, to enable major business improvements to augment customer experience, streamline operations, or create new business models (Warner & Wäger, 2019b). Likewise, it is vital in globalization since it reduces geographical barriers and allows businesses, including startups, to access global markets, customers, and talent pools (Skare & Soriano, 2021). Organizations can use digital technologies to broaden their reach, establish an international presence, and engage with diverse audiences, encouraging cross-border collaboration and driving global economic growth. In the contemporary business landscape, startups face a dynamic digital-driven environment and successfully navigating digital ecosystems is essential to scaling their operations. These complex networks of digital platforms, services, and stakeholders—known as ecosystems—are essential to the expansion of startups in a variety of industries. *Digital Ecosystems* comprise multiple and independent entities such as individuals, organizations, services, software, and applications that share one or several missions and focus on the interactions and inter-relationships among them (Li et al., 2012). Successfully navigating digital ecosystems is critical for startups looking to scale their operations, as these complex networks provide access to markets, resources, and collaborative partnerships that are critical for driving innovation and accelerating growth. On the other hand, managing relationships within the digital ecosystem successfully adds complexity to their strategic objectives, while navigating the digital ecosystem presents challenges for them. Scaling strategies here requires a deep understanding of industry-specific dynamics, flexibility, and strategic foresight. To cope with these all successfully, businesses need to have special digital capabilities. Santisteban et al. (2021) and Skawińska et al. (2020) propose a multifaceted concept to explain a startup's perspective on success, encompassing factors such as gaining a competitive advantage, ensuring customer satisfaction, achieving high profits, penetrating the market effectively, and meeting organizational goals.

Digital ecosystems enable the scalability of startups through using technological infrastructure, access to resources, and collaborative networks. These ecosystems allow businesses to smoothly interact with digital platforms, increasing their ability to develop and reach larger customers. For example, Suuronen et al. (2022) emphasize the need to “integrate corporate operations” with digital ecosystems in order to achieve unrivaled scaling opportunities via digital platforms. Furthermore, Sobirov et al. (2021) underline that digital ecosystems enable companies to succeed by providing them with “vital resources and access” to a large amount of leads and incoming traffic, supporting growth and scalability. Furthermore, Passaro et al. (2020) show that “collaborative networks” throughout digital ecosystems help startups by recognizing and using startup-friendly conditions, which are critical for their transition from the early stages to scale-up. These findings indicate that strategic usage of digital

ecosystems is not only beneficial but also necessary for startups seeking long-term growth and competitive advantage.

Startups must adapt and innovate to survive in the face of challenges from Big Tech, leveraging digital technologies to carve out their niche and grow within the emerging digital landscape. The big tech companies, such as Google, Apple, Amazon, Microsoft, and Alibaba, continue to grow in size and influence the trajectory of the industry as a result of their expanding acquisition of digital services in the digital landscape (Valdez-De-Leon, 2019). Thus, a few incumbents control the state-of-the-art and advancement of technology with their excessive effect on digital markets, competition, and innovation. They set barriers to future development including achieving exposure, navigating complex regulatory regimes, and accessing resources. Hence, it creates a challenge for smaller businesses including limited market access and difficulties in establishing a presence. In the end, they prefer either to follow these developments or attempt to overthrow the established system.

In a nutshell, startups need to have a good strategic approach within the ecosystem, otherwise, scaling would lead to limited growth. Tech giants act as the orchestrators of the ecosystem and develop strategies by coordinating infrastructure while startups act more like complementors by providing goods and services to complement orchestrators' offerings (Tukiainen et al., 2019). In this case, if startups can seize the opportunities that tech giants present and then establish a good strategy, thus they would have a favorable chance to grow and scale within the digital ecosystem.

1.1 Research Objective and Question

So far, there has been little discussion thus far regarding the complex market dynamics that influence startups' strategies within the Digital Ecosystem. This research aims to provide a nuanced understanding of startups' strategies, tactics, and best practices to scale within Digital Ecosystems by gathering firsthand perspectives and experiences. To reach this objective, this study seeks to address the following questions:

1. *How can startups strategically scale their ventures within the digital ecosystem to remain innovative?*
2. *How can startups improve their business performance within the digital ecosystem to compete with tech giants?*

In this study, several factors were examined to determine how to respond to the research questions above. First, as was already discussed, scaling strategy is crucial for startups striving for expansion. Additionally, entrepreneurial dynamics were investigated because of the effects of specific entrepreneurial behaviors on business performance in the digital landscape. Furthermore, dynamic capabilities were another substantial factor that successful startups needed to possess in order to seize opportunities in the ecosystem. Finally, as networks improve performance and competitiveness by giving entrepreneurs in the digital marketplace access to resources, knowledge, and market prospects, collaboration was incorporated into the research process. In the following sections, startup strategies were discussed through all these factors.

1.2 Theoretical, Academic, and Practical Contributions

Even though there is some research on strategies for businesses found in the digital ecosystem, the literature is missing in terms of strategies for startups in the digital ecosystems. As theoretical contributions, this study builds on existing knowledge and theories fundamentally, however, it explores them from the perspectives of startups. It supports the development and improvement of theoretical models for startups in fields of innovation, competition, and business performance by offering a holistic understanding of the opportunities and difficulties encountered by startups in the digital world. Secondly, the study offers helpful viewpoints on the tactics and approaches that startups may employ to grow inside digital ecosystems and promote innovations in the context of academics. This advances knowledge of the relationships between innovation, digital ecosystems, and startups. Additionally, it offers evidence-based insights on startup performance within digital ecosystems and validates academic discourse in real-world contexts through empirical analysis of various business types. Lastly, the practical contributions of the study highlight an imperative for managers/entrepreneurs working in the digital ecosystem to develop innovative solutions, improve business performance, and compete with tech giants to not get swallowed by them. This research offers guidance to entrepreneurs/managers to appropriately succeed in scaling their services/products, growing their businesses, promoting resilience, and long-term competitiveness in the changing marketplace in terms of their startup business, by employing a sophisticated understanding of the complex dynamics present in digital ecosystems and the application of creative approaches.

1.3 Outline of Structure

This report reviews the theoretical frameworks related to the research objective in the next section. Then methodology is discussed and the results of the research will be examined with its findings. Theoretical/practical implications and limitations sections will follow these.

2. THEORETICAL FRAMEWORK

2.1 Digital Transformation and Scaling Strategies

Parviainen et al., (2017) define digital transformation as changes in ways of working, roles, and business offerings caused by the adoption of digital technologies in an organization, or in the operation environment of the organization. The rise of digital technologies has reshaped market dynamics, driving businesses to adopt digital transformation strategies to leverage emerging opportunities and sustain competitive advantage (Bouwman et al., 2018). This has resulted in data multiplication, increased connectivity, and the development of new digital technologies, all of which have forced digital transformation programs in various businesses. Businesses that desire to stay relevant and competitive must embrace digital change in their organizations. By utilizing digital technologies, businesses may greatly improve customer experiences, expedite procedures, and increase operational efficiency. Using tactics like online advertising, data analytics, and process digitization allows businesses to broaden their market reach, enhance internal workflows, and foster new creative opportunities (Parviainen, 2017). It enables organizations to be better equipped to achieve resilience and sustainable growth in the digital age, as well as to adjust to

changing market dynamics. To take advantage of these new opportunities, optimize workflows, and improve customer experiences, digital transformation frequently involves building or adopting digital ecosystems.

In an analysis of digital transformation, Subramaniam et al. (2019) found a framework for digital ecosystems as a combination of “production and consumption ecosystems” powered by “digital envelopes and product-in-use information” to help traditional firms better understand changes and empower them to engage in digital transformation. These concepts offer firms innovative strategies to compete effectively in digital ecosystems, enabling them to identify new value opportunities driven by digitization. Firms might choose to strategically focus on production, consumption, or both when it comes to leveraging digital information (Subramaniam et al., 2019). Four quadrants that each show a distinct strategy for competing in digital ecosystems are used to illustrate these strategic possibilities. A few of these are getting ready for the digital revolution, controlling digital orchestration, and using segment-level advantages to increase presence via hybrid strategies. Since each business would be in a different situation, the roadmap, and insights into “how” to work together and manage digital ecosystems that their study provides, would enable businesses to create their strategy well and easily adopt digital transformation.

Subramaniam et al. (2019) also argue that new jockeying for digital monopoly can be best observed in the tactics of technology giants, Amazon and Google, in their contest to control the digital envelopes of most individuals by controlling the flow of product-in-use information across several interconnected ecosystems. According to their recommendation, businesses should identify and leverage the following two main opportunities for value creation: “customization of products and services” and “the implementation of predictive maintenance techniques” meant to proactively prevent possible malfunctions.

In addition to Subramaniam et al.’s findings, Jacobides (2022) established a seven-step framework for building an ecosystem. His study touches on two concepts which are “Multi-actor ecosystems” which involve various entities interacting within a network; and “multi-product ecosystems” which focus on integrating different products or services within a unified framework. His argument relies on the idea that startups must make significant strategic choices to define their scope within digital transformation and these choices are critical issues for firms. The concept of “outside-in” thinking refers to businesses considering external trends and digitization opportunities when shaping their offerings and is required to be also adopted by startups to take advantage of new digital trends. There are four specific “outside-in” strategies that businesses can use: becoming ecosystem pioneers, competing directly with rivals, reshaping competition, or expanding offerings to create customer lock-in. Additively, his study emphasizes the importance of understanding industry dynamics and evaluating the potential value of each strategy/approach in light of the current industry situations that the firm faces. Accordingly, startups can position themselves for success in the competitive online marketplace by comprehending market dynamics and carefully weighing the potential benefits of each strategy.

Furthermore, the recent study by McKinsey (2020) adds some strategies to the field and clarifies some lessons for businesses about the foundational version of the ecosystem (1.0) to overcome organizational challenges besides technological ones.

In the report, Chung et al. (2020) firstly point out lessons as to navigate the complexities and capitalize on the unfamiliar opportunities presented by ecosystems, companies must first make deep strategic thinking for key points and address the comprehensive needs of consumers for their journey. In this point, small but intuitive steps rather than attempting aggressive jumps are seen as important to growth in the new digital era. It is argued that during this strategic deep thinking, foresight plays a crucial role in the significance of careful design and governance planning within the organization to serve the new ecosystem approach. Lastly, partnering among stakeholders in the ecosystem requires a clear and shared vision to avoid missing opportunities and limiting growth potential. McKinsey report (2020) also suggests that identifying control points through strategic mapping and then gathering and attracting the necessary capabilities to enhance customer journeys are other crucial tactics that organizations should take into account to integrate into an ecosystem successfully.

From the viewpoint of startups, digital transformation requires embracing digital change to improve business services&operations and join ecosystems. Digital tools help startups with the transformation process by unlocking growth opportunities to keep up with the trends in an increasingly digitally focused market. While Jacobides' approach (2022) focuses on creating an ecosystem, which may be difficult for startups due to their small size, his ideas on 'outside-in' thinking and strategic positioning are highly relevant. Startups can join the existing ones and strategically decide where to join and survive in the long term. Since every ecosystem has different opportunities and challenges, startups should find which one aligns with their organizational objectives. By adopting Jacobides' 'outside-in thinking' theory (2022), startups can successfully examine external trends and digitalization possibilities, connect their propositions with current customer needs, and define their digital transformation scope. Moreover, to take full advantage of ecosystem opportunities, startups might also benefit from developing governance strategies and encouraging stakeholder collaboration, by engaging in small but strategic steps. For startups aiming to grow through the digital era and successfully integrate into digital ecosystems, mapping methods, identifying control points, and improving customer journeys are critical measures.

2.2 Entrepreneurial Dynamics

For startups that have just entered or are planning to enter the digital ecosystem, some factors affect entrepreneurs reaching the desired goal in the ecosystem and creating a competitive advantage. Many research studies have reached distinct outcomes at that point. A wide range of factors that Kraus et al. (2018) identified, including the technological and architectural choices that support the platform's infrastructure, are critical to the success of digital entrepreneurs. Secondly, building relationship capital via interpersonal connections, dependable business networks, and platform interactions with users and players is essential to promoting collaboration as well as confidence in the digital ecosystem. It enables startups to take advantage of social capital and strategic alliances that are vital for growth (Stam et al., 2008). The venture's viability and competitiveness are other factors that are increased by a market-oriented approach combined with the platform's strategic positioning within the digital business landscape. Furthermore, personal qualities play a big role in becoming a successful entrepreneur by enabling startups to cope with uncertainty and challenges and stay competitive in the constantly evolving digital landscape (Renko et al., 2013). For instance, being open-minded would foster an innovative culture, allowing startups to

explore new approaches, learn from different viewpoints, and stay ahead of emerging trends as well risk-taking would enable entrepreneurs to investigate innovative ideas and opportunities, adapt to evolving market dynamics, and differentiate themselves from competitors (Renko et al., 2013). Additionally, entrepreneurs who have international experience often have a better understanding of how to take advantage of worldwide prospects, drawing from a variety of experiences to promote innovation and expansion globally. Considering startups, an entrepreneur who has these various international experiences, would bring diverse perspectives and different international opportunities to the table (McDougall et al., 2000). This, indirectly, enables the unique position and unique value proposition. Jacobides (2022) also adds to these factors that prior success is hidden in the building ecosystem avoiding a self-centered mindset instead of the ecosystem in which parties focus too much on themselves.

From the broader perspective, in line with factors that some researchers determined, they can affect startups in several ways. Some of these ways are "navigating challenges, predicting all potentials for growth, understanding the competitive landscape, and then establishing a unique position in the market". These factors can allow startups to seize every opportunity from the beginning, strengthen their roots, and drive their growth by ensuring long-term success. Overall, in the end, understanding the variety of factors impacting entrepreneurial achievement enables startups to make informed decisions, improve their resilience, and eventually prosper in a competitive marketplace.

2.3 Capabilities

In the era of digitalization, against digital ecosystem challenges, some capabilities are essential for startups to survive in difficulties. With the ongoing evolution of market dynamics and significant challenges to established business models, organizations need to ensure that they have the appropriate skills and competencies to effectively tackle this complex landscape. According to a study by Liang Li and Fang Su (2017), these capabilities are categorized as "managerial and organizational capabilities" and then they are detailed more.

"The first is that *managerial cognition renewal* is critical because entrepreneurs need to constantly change their perspectives to respond to possibilities and problems that are always changing. This entails refreshing their managerial cognition, considering new managerial problems, and learning from benchmarking techniques. Secondly, the *development of managerial social capital* requires the establishment and maintenance of social networks with other small and medium-sized enterprises (SMEs) and suppliers of digital platform services to give support, mentoring, and knowledge exchange. Thirdly, *platform utilization skills*, meaning SMEs must leverage technology features, adjust to frequent updates, and evaluate data to identify customer needs and react to market developments. Fourthly, *business development capabilities* allow SMEs to obtain resources or services for the improvement of e-commerce businesses. By utilizing the value-added services provided by digital platforms, SMEs can expand globally and get around trade obstacles. Finally, effective *business team creation* lays the groundwork for executing digital transformation and developing platform usage and business development skills." (Li et al., 2017).

As these capabilities are considered, it becomes apparent that the digital ecosystem necessitates proactive steps and ongoing adaptation to maintain competitiveness and promote growth, in the rapidly changing. To effectively navigate the challenges of digital transformation, this perspective emphasizes the intrinsic

importance of embracing change, promoting innovation, and establishing collaborative partnerships with external stakeholders. Together, these skills enable SMEs and startups to meet digital issues, adapt to changing market conditions, preserve client connections, and maximize company expansion in the digital arena. Additionally, they play a vital role for startups as potential drivers for success and solutions to overcome challenges within the digital ecosystem. Essentially, startups may take advantage of opportunities, reduce risks, and prosper in the constantly changing digital landscape by adopting proactive and forward-thinking strategies.

2.4 Collaboration Within Digital Ecosystems

Business ecosystems achieve higher efficiency through well-coordinated activities and mutual adaptation, which improves overall functionality and resilience. Collaboration within these ecosystems assists with managing a variety of issues, including increased competitiveness, platform dependency, and interoperability issues (Razavi et al., 2010). Working together, ecosystem participants may leverage each other's abilities to solve these problems, creating a more robust and flexible ecosystem. Collaboration enables startups to quickly adapt and grow in the ecosystem while providing some opportunities between businesses such as mutual support, risk mitigation, and access to resources. It would provide continuous improvement to businesses and add value to them while integrating into the digital ecosystem. On the other hand, between users and businesses, Nguyen, Alaoui, and Llosa (2020) focus on the dynamics of the interchangeability side in the context of peer-to-peer collaborative services enabled by digital platforms. Following construal level theory, perceived social proximity mediates the relationship between interchangeability and trust, thereby influencing participation intention. In the end, it is highlighted that the idea of interchangeability affects how people feel and behave when using collaborative services. (Nguyen et al., 2020) Likewise, Subramaniam et al. (2019) claim that this collaboration reduces rework as part of a shared consumption ecosystem by enabling connectivity and information sharing across the assets. In addition to these claims, Tukiainen et al. (2019) explore collaboration within the digital ecosystem in the light of different roles that startups play within the ecosystem. Their research identifies these roles as ecosystem leaders (as it is mentioned here as tech giants), niche players, complementors, and lastly challengers. Firstly, *leaders* in the ecosystem are described as dominating and guiding the ecosystem greatly influencing the logic inside. *Niche players* use complementary resources from others to improve their own capabilities while *complementors* offer a wide range of innovations to the ecosystem, with a focus on incremental improvements to increase the value of the ecosystem. Meanwhile, *challengers* use radical innovations to challenge the logic of the current ecosystem and develop new, dominating designs (Tukiainen et al., 2019). These roles have distinct consequences, such as differing degrees of dependency of startups on ecosystem leaders, differing degrees of technological risk, and the requirement for flexibility and interpretive abilities in addition to the traditional perspective that small startups tend to be seen as passive followers of ecosystem leaders. What the researchers highlighted here is the importance of analyzing the business ecosystem, then developing appropriate strategies and plans based on main objectives, understanding fundamental interdependencies, and value-sharing mechanisms. Another issue that startups need to face is the complexity of network connections within the ecosystem which depends on the strategy of the organization and the type of ecosystem. and it impacts the startup's capacity

to interact with ecosystem leaders, control risk, and add value to the ecosystem (Tukiainen et al., 2019)

3. METHODOLOGY

3.1 Research Context

Ecosystems serve as crucial for startups to navigate the complexity of the digital world. They offer accessibility to the markets, resources, and knowledge required for development and innovation. Startups frequently encounter difficulties like scarce resources, fierce rivalry, and quick changes in technology because of tech giants. They require digital platforms and technology to overcome these obstacles, increase reach, and maintain competitiveness. It makes it possible for entrepreneurs to work with other organizations, enter new industries, and more skillfully adjust to shifting consumer needs. Consequently, the study concentrated on figuring out the strategies that startups employ to achieve this. In this research, the qualitative method was preferred to collect relevant data, and interviews were conducted with entrepreneurs and experts in the companies. All companies in the sample are found in the same location, the Netherlands since the companies in different regions could have different legislative frameworks, market dynamics, and cultural settings, which could cause variations in their approaches to and experiences with digital transformation. It aimed to reduce these external factors and preserve a more homogeneous sample by concentrating on Dutch businesses. This would enable a more accurate comparison and analysis of their strategies for navigating the digital environment. In deep, according to the research by the Digital Economy and Society Index (DESI) that measures the digital performance of EU countries in 2022, the Netherlands is found as one of the top countries that have the most advanced digital ecosystem in the EU (see Figure 1). In addition to having the highest scores on aspects such as digital technology integration and human capital (StartupDelta, 2022), the Netherlands also has the highest internet penetration rate (99%) in the EU. (Kemp, 2024). It would be advantageous to employ research samples from the Netherlands considering the country's advanced digital ecosystem and cutting-edge digitalization methods.

3.2 Sampling

The objective of the methodology was determined with the intention of sampling. The research aimed to investigate a relatively new phenomenon that is under development and not yet mature in addition to reviewing the existing ones. Relying on the research context, to gather data, consideration has been taken to decide on businesses in the Netherlands that are directly involved in digital transformation, are undoubtedly impacted by digitalization, and operate in a digital ecosystem. It matters for the reliability, validity, and accuracy of the research objectives and findings. Another consideration involved criteria for interviewees. Interviews were conducted with entrepreneurs, managers, consultants, or decision-makers *only* who possess reliable knowledge and expertise in digitalization in their businesses. In the end, 7 interviews were made with different kinds of companies such as startups, large businesses, and consultancy firms. Firstly, since startups require digitalization to remain competitive and innovative, illustrating the difficulties and opportunities present in navigating the digital ecosystem, they were the first candidates to be interviewed. They are currently looking for the right strategies to grow and compete which this research tried to find out (Thomas et al., 2020). Therefore, getting their valuable insights on current approaches and strategic adaptability enabled me to analyze how they work and how the current environment and system are. Then, a few large businesses were connected. Because they

were a startup in the past and, then over time, gained extensive experience expanding from the ground up in the digital world. That is why they were able to help answer the research questions of this study. Additionally, consulting firms were involved in the process to obtain their recommendations. Since these firms directly work with startups require them to thrive in the emerging digital environment, they possess the latest knowledge about the challenges that startups face in digitalization as well as the opportunities that startups should seize. Their extensive knowledge and real-world expertise working with different kinds of startups were crucial in obtaining their recommendations at this point.

3.3 Data Collection

The research employed a qualitative approach by conducting interviews since qualitative methods are particularly beneficial in studying complex phenomena and obtaining rich, nuanced perspectives from participants (Smith, 2015). Qualitative interviews provided the flexibility to probe extensively into participants' experiences, viewpoints, and decision-making processes, given the complex nature of companies' strategies within digital ecosystems. Furthermore, the interview guide was prepared that served as a framework for the interviews, indicating the main topics and questions to be made during the discussions by facilitating the exploration of key themes.

Considering semi-structured interviews maintain a balance between structure and flexibility, it was selected as the primary method of data collecting. With this method, respondents could expand on their responses and present novel subjects in addition to exploring predetermined topics (Liamputtong, 2013). Semi-structured interviews were the most suitable method for documenting the various approaches and experiences of entrepreneurs and experts negotiating digital ecosystems in the context of this study. The semi-structured interviews, including open-ended questions, encouraged participants to provide detailed, rich answers. Participants were invited to openly share their ideas and experiences through open-ended questions, which yielded insightful information on their approaches, difficulties, and achievements in digital transformation and ecosystem navigation. Additionally, a few closed-ended questions were included, making it easier to collect targeted data quickly and offering chances to verify and confirm qualitative results. To be able to analyze data, following rigorous data management guidelines, interviews were recorded with the interviewee's permission, at the length of 45-60 minutes, and then transcribed to guarantee the accuracy and authenticity of the participants' responses. Moreover, every identification in all answers within the transcripts was anonymized to protect privacy and ethical guidelines. To validate and enhance the results of the interviews, document analysis was used as a secondary data collection technique. This strategy confirmed the insights gained from interviews and added useful context by extracting textual information from company websites and reports. On the other hand, in order to validate the interviewee's comments from the consulting firm, a professor who offers a "Digital Transformation course" at the business university, as a specialist in this field, was contacted and asked whether he agrees with their all statements. Since it was not possible to validate experts' answers from their websites, they were required to get another validation from a different expert. In the end, the research findings gained greater credibility and depth due to the evaluation of the companies' defined strategy, objectives, and outcomes made possible via document analysis or the approval of another expert.

3.4 Data Analysis

After all interviews had been completed, the data was aggregated thoroughly analyzed, and interpreted following the objectives and research questions of the study. In the next step, in order to interpret transcripts, "*inductive data-driven coding*" was employed with the ground-up approach in which codes are generated directly from the data. It involves systematically organizing and categorizing data based on patterns, themes, and relationships that emerge during the analysis process, allowing for a more flexible and open-ended approach to data interpretation. This method begins with organizing the raw data that comes from transcripts of interviews and allows the theory to emerge from the data while enabling a more flexible approach to interpretation (Chandra et al., 2019). It consists of four phases as in-depth analysis of raw data, first-order codes, second-order codes, and aggregate dimensions respectively while deploying thematic analysis described by Braun and Clarke (2006).

The first phase of data analysis was an in-depth analysis of the raw data (the interview transcripts). This analysis consisted of reading every interview several times, highlighting phrases and passages related to the overarching research purpose of understanding how startup strategies are developed and applied. By coding the common words, phrases, terms, and labels mentioned by respondents, the first-order categories of codes that reflect the views of the respondents in their own words are identified. (Sjödin et al., 2023) Finding connections and patterns among the first-order categories was the focus of the analysis's second phase. Second-order themes, which are conceptually separate notions formed by mixing first-order categories, were produced through this iterative process. This process involved consulting insights from the literature on collaboration, entrepreneurship, digital ecosystem & transformation, and organizational capabilities to continuously refine the themes of the research. By taking this phase, redundant sub-themes and codes that had no impact on the study subject could have been removed. The generation of aggregate dimensions that reflected a higher level of abstraction in the coding, was the next stage. Here, theoretically, sound dimensions were formed by consulting information from the literature. After a thorough discussion, the aggregate dimension, themes, and codes were checked to ensure the results were relevant to the research question. Consequently, the aggregate dimensions provided a theoretically and practically validated categorization by building upon the first-order categories and second-order themes (Sjödin et al., 2023).

4. RESULTS

The purpose of this research is to identify and comprehend the critical aspects and techniques that startups should employ to successfully scale within the digital ecosystem. This study attempts to provide actionable insights into how these characteristics might be efficiently exploited to achieve long-term growth. The findings have been structured to highlight the main themes and their relevance, with a more detailed data structure provided in the appendix (see Figure 2).

4.1 Digital Transformation and Strategy Scaling

As the world changes by affecting companies' business models, companies need to change by transforming themselves and their strategies from traditional to digital ways. In order to transform themselves successfully in this direction, it is a prerequisite for

them to be comfortable with digital stuff. This transformation requires a significant change management process for traditional companies, which can only be accomplished with a good leader. Therefore, **operational efficiency**, identified by the respondents as the primary category for digital transformation, is crucial to achieving these changes. Operational efficiency is vital for digital transformation as it minimizes operational redundancy and improves overall performance. In this respect, it first involves **streamlining data information structures and storing necessary information related to business processes and strategic documents**. The respondents noted, *"We provide various digital tools to help them structure their information systematically, ensuring that all necessary information gathered during validation processes is organized and stored efficiently."* At the same time, respondents acknowledged that **improving workflows** related to project management and product development and **implementing automation for repetitive tasks** are closely related to operational efficiency. They affirmed that *"utilizing appropriate digital tools from the outset can significantly achieve these."* Moreover, **cost-efficiency** was achieved through the use of digital tools, as highlighted by an interviewee who stated, *"We saved a lot of money by using new digital tools to do that."*

In addition to operational efficiency, **global developments** is another significant focus of digital transformation because it allows businesses to engage with worldwide audiences and adjust their offers accordingly. Indeed, respondents believe that **reaching global customers and gathering global insights over preferences and trends** brings globalization to the company. Entrepreneurs mentioned these as, *"The advent of digital transformation has enabled the global expansion of our customer base and the use of digital tools to gather indispensable insights on global market trends and customer preferences, allowing us to tailor our products and services to diverse needs."*

Consultancy firms and startups also referred to the **market reach and customer engagement**. Utilizing digital tools to enhance market reach and customer engagement ensures gaining a competitive advantage and driving growth. It involves **enhancing customer experience and satisfaction via communication, utilizing digital marketing channels and strategies**, and lastly **staying responsive and adapting to evolving market trends**. The respondents summarized these elements as *"Our digital marketing strategies are crafted to penetrate international markets. Through active engagement on social media platforms, we gather valuable insights that enable us to stay responsive to market trends, thereby improving customer satisfaction."* emphasizing that they are all interconnected.

These factors underscore the significance of digital transformation for streamlining processes and broadening global reach. Handling digital transformation is critical for startups to remain agile and competitive in a rapidly changing digital environment.

4.2 Managerial Competencies and Leadership

Interview findings pointed out managerial competencies in two dimensions. In the first step, **core entrepreneurial competencies** focus on critical abilities and attitudes required for entrepreneurial success and these are key for handling the difficulties and possibilities in the startup ecosystem. Firstly, **embracing well-assessed risk-taking** was demonstrated with this expression in one of the interviews: *"For startups, taking calculated risks is crucial. They need to assess the potential*

gains against the possible setbacks and make informed decisions that could drive their business forward." Secondly, consultants emphasized the importance of **investing significant time and energy** for managers to develop new digital skills, integrate new technology, and cultivate an innovative culture within the organization. *"Startups require a lot of dedication to turn their ideas into reality."* **Learning from past experiences and other startups' mistakes** is another crucial point that is explained by an entrepreneur as *"Reflecting on past failures and learning from them helps in avoiding similar mistakes and improving future strategies."* It also means that proper managerial competence enables startups to monitor the actions of competitors or the relevant market players and, then take a lesson from them. Furthermore, respondents highlighted **being open to constructive feedback** into core competencies and added that *"Listening to feedback, whether from customers, peers, or mentors, can provide valuable insights for refining business models."* At the same time, **building strong professional networks** is another key competency. Entrepreneurs believe that *"it can open doors to new opportunities, partnerships, and resources."* Additionally, **maintaining a specific drive with persistence** is what sets successful entrepreneurs apart, from consultants' perspective. *"Persistence is essential to stay focused and overcome obstacles."* The last aspects are **staying market-aware and developing an entrepreneurial mindset**. The respondents noted, *"Keeping an eye on market trends and understanding the competitive landscape helps in making informed business decisions."* Therefore, *"An entrepreneurial mindset involves being innovative, adaptable, and resilient. It's about seeing opportunities where others see challenges."*

In addition to core entrepreneurial competencies, **visionary leadership, and effective management** is vital for building a collaborative and high-performance organizational culture. It was first seen as related to **continuously communicating in an effective structure**. *"Everyone should be aligned and work towards the same goals"*. Further, the respondents acknowledged that **inspiring and leading with vision** *"motivates teams to strive for excellence, even during tough times."* as part of effective management. These two criteria, in particular, emphasize the need for strong leadership that will support the new idea or business approach and raise trust and commitment from other team members by developing a sense of shared goals. Lastly, **fostering collaboration within teams and managing changes in the organization** are the last aspects of this dimension. Respondents stated that *"It involves preparing the team for transitions and ensuring that they have the support needed to navigate through changes."* This implies that the main task of the leader in the change management process that will occur due to digital transformation is to manage possible resistance to this change in the organization and, as previously stated, to foster an environment of trust and shared goals among employees by reflecting what/how/why they will need.

These factors address the important managerial and leadership qualities required for startup success. Effective leadership and excellent competencies drive long-term success and team management in the digital ecosystem.

4.3 Development of Collaboration

They must make a strategic choice between joining the existing ecosystem and creating a fully new one. When businesses join an existing ecosystem that is most convenient for them, the orchestrator establishes the rules for how relationships should be conducted, and the only alternative is to follow them. However, on the other hand, if a new one is formed, the founder

takes on the role of orchestrator, despite it is a startup, and they set the rules of interactions and collaboration. In this regard, the primary focus for the development of collaboration was indicated as **strategic partnership and collaboration** since it utilizes supportive strengths and accomplishes shared objectives leading competitive business ecosystems. Firstly, **enhancing relationship dynamics within a partnership** was emphasized by one entrepreneur as *"Having relationships with other startups or companies and establishing trust meanwhile are the cornerstones of our partnership strategy."* Indeed, respondents stated *"To build a strong partnership, it's crucial to deliver what you've promised and be honest about the details. Trust is the foundation of any successful collaboration. Sometimes, over-deliver with unexpected positive outcomes to strengthen the relationship further, and give a positive impact."* Moreover, **enabling cross-organizational learning and information exchange** was underlined as a part of strategic partnership. A few respondents noted, *"Collaborating with other organizations has allowed us to exchange valuable information and learn from each other's experiences."*, and also, *"Partners could really help to fulfill our needs and especially the needs of the startups."* **Promoting mutually advantageous outcomes** is also considered another significant part of strategic partnership. *"When we collaborate with other companies, we always look for ways to create a mutually beneficial relationship, making it a win-win situation."*

According to the strategic choice made in the beginning regarding the ecosystem and the strategic partnership and collaboration development, then the resource base must be understood by startups. Thus, they need to decide whether to leverage the current resources within the existing ecosystem or acquire the new ones. So, in this regard, **leveraging external sources** was underscored as the second crucial point for increasing their reach and lowering operational risks in the digital ecosystem. In this regard, it involves **engaging with external expertise and industry specialists**. One consultant claimed, *"Working with other expertise has brought a wealth of knowledge and insight that did not possess internally."* In an interconnected way, **broadening professional and strategic networks and reducing operational risks** were seen as other essential elements by respondents. *"Established organizations have a legacy of specialized knowledge and bigger networks that they can use to help their partners. So you need specialists in certain fields that can help you out."*, consequently *"It all comes down to risk reduction."* Finally, the respondents acknowledged that **securing funding and strategic investments** is related to leveraging external sources regarding collaborative ecosystem development. One entrepreneur claimed, *"Consultancy firms help us in different ways such as offering advice, and especially giving funding."*

Leveraging relationships regarding these elements proves essential for startups seeking to access opportunities, decrease risks, and increase competitiveness in the digital marketplace.

4.4 Adaptive Digital Capabilities

According to the respondents, one of the crucial elements of the startup strategies within the digital ecosystem is associated with **Adaptability and Responsiveness** regarding adaptive capabilities. It is crucial for maintaining efficiency and successfully managing risks in a dynamic environment. First of all, **utilizing real-time analytics for informed decision-making** was noted and one consultant stated, *"I love this product and I really recommend it to somebody else. That's great, but how do you measure that? So to keep notice of your potential customers, how they behave, what they do, I think is*

crucial." Secondly, **applying predictive analytics for problem-solving** was included in the adaptability-responsiveness perspective. *"We use digital tools for analyzing where the users get lost and then improving it, "you can measure that based on usage retention and referral."* The respondents also consider **implementing proactive strategies into risk management** as a crucial element and explained as *"They should take risks. Because if they won't take the risk, then the chances of being out-competed are way higher. But eventually they can reduce their risk by doing the homework properly."*, *"So, it all comes down to figuring out things like, 'Hey, what's the specific niche that I will focus on in the beginning and how can I make sure that I will be the best in this specific niche?'"* Furthermore, the respondents acknowledged that **implementing customer feedback mechanisms into business processes** is one of the most important elements. *"Feedback is integrated into our business processes to ensure that we are meeting their needs and continuously improving our offering. That's just getting, gathering feedback and making sure that everything is backed by information."* A practical example is the 'toothbrush method', which evaluates a product's value based on regular user interaction, preferably at least twice a day, like using a toothbrush. Companies may use this method to analyze their goods by evaluating ongoing customer engagement. As a last element of the side, **continuously monitoring and reacting to the market changes** was also involved and one respondent shared, *"It all comes down also to a bit of gut feeling and market timing. The only influence that you can have is to just really keep track of all the trends and the news that's going on in your market."*

In addition to adaptability and responsiveness, **flexibility and innovation** was determined in startup success by the respondents because it is vital for ongoing improvement and maintaining market trends. The first focus of this side involves **fostering a culture of ongoing innovation and improvement**. One entrepreneur shared, *"We align with the founder's vision, embrace risk-taking, and gather feedback through workshops. Hiring the right people and maintaining effective management are essential. We stay updated on the latest tools, communicate advancements, and encourage team experimentation. Our commitment to daily product improvement drives continuous excellence."* Moreover, respondents considered **developing and maintaining flexible/adaptable business models**. *"Startups are more flexible because they can quickly make decisions and implement changes, avoiding the bureaucratic delays seen in larger organizations. Keeping processes simple and manageable, while effectively using digital tools and remote work, helps them adapt and thrive."* The final element was emphasized as **adopting new technologies early** by the respondents. They stated, *"The biggest challenge is that the technology is going so fast. You should implement a new tool almost monthly because there's always one that improves or has some features that are a bit better than the others."*

Cultivating these capabilities allows startups to respond quickly to market changes, effectively manage risks, and maintain long-term innovation and success in the digital ecosystem.

5. DISCUSSION

This study aimed at responding to the following research questions: *"How can startups strategically scale their ventures within the digital ecosystem to remain innovative? and How can startups improve their business performance?"* In this respect, this study conducted interviews with several startups

and consultancy firms to gather data and the findings revealed some factors and strategies for startups to successfully navigate the digital ecosystem. These factors are categorized under some dimensions such as *digital transformation and strategy scaling, managerial competencies and leadership, collaborative ecosystem development*, and, lastly, *adaptive digital capabilities*. Even though these factors have a general order to be carried out, all of them are interconnected and built with the support of each other. Regarding these findings, some similarities and also differences with existing literature were found at the end of the analysis.

Preliminarily, it is widely acknowledged that there is no precise recipe for being a great entrepreneur. The paths to either success or failure are quite diverse for them. Entrepreneurial orientation captures this variability by reflecting the numerous approaches and strategies entrepreneurs employ to navigate their journeys (Wales et al., 2013). In order to be successful, first of all, having strong managerial leadership is essential for the starting point of startups. Startups require leaders who comprehend the value of digital ecosystems and have a vision that is consistent with this viewpoint. Without good leadership, integrating into the digital environment and navigating it would be unsuccessful. An executive leader with a clear vision and knowledge of digital ecosystems must guide the company's digital transformation. Effective management ensures that the organization meets its strategic objectives and is well-positioned to capitalize on digital opportunities. Once strong management is in place, the next stage is kicking off digital transformation across the organization. This includes optimizing operations, increasing operational efficiency, and leveraging digital tools, including new emerging technologies such as AI, to access global markets and collect important insights. AI has become essential in many domains, including optimizing processes by automating operations, anticipating real-time analytics, and improving decision-making and forecasting capabilities, all of which drive agility. This transformation in a digital world requires a leader who manages the change process well, driving reforming the internal culture and obtaining commitment from every individual in the organization. Moreover, it requires ongoing effort to develop and strengthen digital capabilities. Startups must focus on incorporating digital technology in order to improve operational efficiency and expand their market reach. To thrive, as stated by Renko (2013), taking risks is a crucial personal quality that entrepreneurs should have in their journeys. It fosters innovation and creates new possibilities, both of which are critical for remaining competitive and attaining long-term success in the entrepreneurial landscape. Indeed, startups must take calculated risks; risk-averse behavior does not ensure failure, but it does raise the probability of falling behind rivals. However, excessive risk-taking might result in definitive failure. As a result, entrepreneurs should strive for a balanced strategy, taking risks supported by facts and thorough validation. Thus, at that point, it also matters to do the right things at the right time with the right qualified staff in addition to utilizing the right tools to ensure that activities are timely and in line with the changing needs and complexities of the present business landscape. In order to achieve it, startups need to develop some digital capabilities meanwhile. The findings of this study are seen as relevant with the existing literature in terms of capabilities that were provided by Li et al. (2017). For instance, the interviews revealed points like being advanced in utilizing the platform, being able to team up, developing existing capabilities for obtaining resources&services, and networking emerged. From this study's analysis, these capabilities should include both "Adaptability and

Responsiveness" as well as "Innovation and Flexibility". Thereby, startups can respond quickly to market changes and developing trends, and their emphasis on innovation and flexibility guarantees that they continue to foster new ideas while retaining operational flexibility. This dual approach not only helps startups stay innovative but it also dramatically enhances their overall business performance, allowing them to negotiate the complexity of the digital ecosystem more efficiently. In addition, it is important that these happen in the lean approach that is important for startups while positive feedback is driving development and negative feedback generates rapid iterations as well. This cycle of incremental changes promotes efficiency, quick pivots, and effective time and resource loss, exemplifying agile development and lean thinking through rapid adaptation in response to customer input. Moreover, establishing collaborative ecosystem partnerships should be considered then as a component of collaboration within the digital ecosystem. Digital ecosystems enable the establishment of collaborative networks, giving startups access to critical resources, knowledge, and market prospects. Strategic partnerships and using external expertise and resources from these collaborations are critical, as they have a direct impact on how startups can strategically scale their operations within the digital ecosystem while remaining innovative. It also complements Subramaniam et al. (2019)'s claim regarding collaboration effects on information sharing and reducing reworks. Effective collaboration within the ecosystem enables startups to decrease operational risks, gain a competitive advantage, and drastically boost business performance. Startups can access a larger network of knowledge and technology by integrating into a collaborative ecosystem, enabling ongoing innovation and growth. This collaborative approach is critical for startups to both survive and succeed in today's changing digital market, as demonstrated by its importance in both strategic scaling and performance improvement. Additionally, even though building professional and strategic networks matters for *both* an entrepreneurial and organizational standpoint, the digital world adds additional value to this perspective. Against the traditional way, digital ecosystems enable collaborations without a need for any close or formal relationship/partnership. It provides a working-together environment by adding something on the shared platforms without actually knowing each other. This approach allows flexible collaboration, allowing developers to participate independently. As the platform's success grows, it draws additional participants, raising its total value and encouraging collaboration without the limits of traditional corporate collaborations.

In case the startups have all these dimensions, they can exist and thrive in the digital ecosystems. However, it is important to remember that these factors are built gradually rather than all at once. So, if startups have most of these factors, at least two of these significant dimensions, they can still join the digital ecosystems and develop themselves by the time to successfully navigate the environment. At this point, they have reached an important point that requires them to do strategic thinking. The McKinsey report (2020) had already supported this. Being a part of this ecosystem allows them access to a larger network, greater opportunities, and the capacity to stay ahead in the competitive market. However, they need to notice different roles in the ecosystem and the effects of big techs within the ecosystem while determining one of these roles indeed. According to the roles defined by Tukiainen (2019), big techs, such as Google or Amazon, play the orchestrator role as a leader in the ecosystem. They dominate the platform, set the rules, provide some resources, and other opportunities they

offer for other players there. Meanwhile, the competitive environment that big techs create causes the atmosphere to foster innovation for startups. Thus, startups can choose whether to use other's resources to improve their capabilities as a niche player, or offer incremental innovations and improvements as a complementor, or challenge the system by using radical innovations as a challenger. Thus, as it was mentioned before, startups may choose their role according to their organizational objectives and plans, attractive opportunities, competitive landscape, and finally strengths and capabilities they have. After committing to the ecosystem and choosing the role, startups can still adjust their own resources and capabilities to fit these giants while coexisting within an ecosystem. When viewed from a broader perspective, startups frequently get stuck with tech giants, potentially leading in technological lock-in, or they may position themselves as extremely adaptable, stealthy, and tactically competent. Thus, startups can always look for new potentially interesting ecosystems to connect. Whenever they see new value or opportunities from ecosystems, startups should analyze which one fits better with their goals and then can join one or more of them. Moreover, they might even try to create their own one and prefer to be the "orchestrator" of their ecosystem at this time. Yet, since entering or creating the ecosystem does not guarantee staying in the ecosystem, continuous monitoring of performance is always imperative. Key performance indicators (KPIs) such as product-market fit, user retention, website traffic, and interest from other companies serve as essential for determining continuous success and guaranteeing long-term survival within the ecosystem. This means that all these processes have a special importance, and for startups, being able to stay there and improve themselves is as important as entering this ecosystem.

5.1 Theoretical Implications

The research findings support the existing literature on the objective of startups in the digital ecosystem. However, this study extends the current literature by emphasizing additional factors for each dimension.

Firstly, from the entrepreneurial side, findings are seen as relevant to the existing literature. For example, the importance of personal qualities (such as risk-taking) and building relationships are still relevant as Stam et al. (2008) and Renko et al. (2013) already demonstrated. Additionally, interview findings show that effective entrepreneurship is not solely about the visionary leader, but also about being reflective, observing, and learning from the other companies at their expense. These allow them to improve decision-making procedures and avoid repeating the same challenges for professional growth. To improve decision-making and the internal business environment, entrepreneurs also should continuously communicate in an effective structure to ensure cohesion within the team. To achieve it all, it is crucial that leaders, undoubtedly, should be able to understand the relevance of digital ecosystems and can lead digital transformation, besides it is mentioned by Kraus et al. (2018) as technological and architectural choices that support the platform's infrastructure.

Secondly, this study's theoretical contributions are closely aligned with previous studies on digital transformation and scaling strategies. As Parviainen et al. (2017) and Bouwman et al. (2018) emphasized the crucial significance of digital transformation in increasing competitiveness, our empirical findings prove that. Startups, specifically, perceive considerable advantages in storing critical business data and achieving cost effectiveness through the careful implementation of digital tools. These tools accelerate data management and improve

operational procedures, as well as allow startups to better allocate resources, lowering operating costs. Afterward, from the capabilities part, Liang Li and Fang Su (2017) pointed out managerial cognition renewal, social capital growth, platform use, company development competencies, and successful team building. The interview findings are consistent with these areas, stressing the value of taking advantage of technology and sustaining social networks. According to the results, the importance of early adoption of new technologies, and also implementing feedback mechanisms were very much emphasized. As technology evolves fast, then startups need to catch them as quickly as possible in order to stay innovative and prevent losing the competition. In this regard, employing the internal and external feedback mechanism allows startups to constantly improve their products and services, according to changing market demands. Finally, with respect to collaboration within digital ecosystems, in addition to the mutual exchange of information, resources, and benefits between partners to enhance their business performance, the relationship dynamics of this partnership are very important for them to successfully navigate the digital ecosystem. Startups can strategically leverage these partnerships to efficiently scale their ventures, positioning themselves to compete more effectively with tech giants.

5.2 Practical Implications

This research has several practical implications for entrepreneurs seeking to improve business performance and successfully navigate digital ecosystems. First of all, the effectiveness of leadership is essential for driving digital transformation and the change management process within an organization during the transformation. Entrepreneurs must acquire an extensive understanding of digital tools, processes, and ecosystems; express a clear vision, and promote an environment that values creativity, trust, and relevant growth. Startups should not only focus on operational efficiency during digital transformation but also need to be aware of how to manage this possible resistance process. In light of this understanding and awareness, they must inspire and commit teams to embrace change and eliminate the organization members' resistance. They should also take some lessons for the future by analyzing their own improper past experiences and the mistakes that competitors had in the market in order to refine their decision-making processes and strategies.

In addition to managerial competencies, entrepreneurs must capitalize on digital ecosystems to gain access to critical resources, collaborative networks, and growth opportunities as well. Then, startups should connect corporate activities to digital platforms and identify startup-friendly situations, resulting in considerable development. To build on this basis, entrepreneurs must combine calculated risk-taking with innovative-agile thinking and continuous lean development to increase competitiveness and effectiveness. To reinforce this competitive advantage, startups should cultivate some capabilities through real-time analytics and proactive risk management to thrive within the digital ecosystem and adapt to market dynamics. They should also implement feedback mechanisms for both customers and organization-inside into business processes to maintain effectiveness and meet customer needs constantly. Furthermore, entrepreneurs should be aware of prioritizing the early adoption of emerging technologies in order to quickly adapt to market changes. Last but not least, entrepreneurs can create smoother and more effective working environments by understanding the benefits of collaboration and considering the convenience provided by digital transformation, which eliminates the need to establish close

relationships. In a nutshell, by concentrating on these practical implications, entrepreneurs may better manage the complexities of digital ecosystems, achieve long-term development with innovation, and enhance business performance.

5.3 Limitations

Despite the comprehensive findings, the research has several limitations. This research mainly concentrated on Dutch companies since the Netherlands has highly advanced digital infrastructure (StartupDelta, 2022). Therefore, the findings of this study aim to contribute to the development of more robust strategies in the future. However, these strategies may not be equally suitable for less technologically advanced countries and also less digitized companies. Instead, they can be improved further and provide valuable assistance to industries and countries with greater levels of digital integration. Lastly, since the qualitative approach was utilized in this research to provide significant insights, it may lack the statistical accuracy and broader scope of quantitative research. Rather, this approach facilitated research in capturing the complex and context-specific experiences necessary to comprehend the complexities of the topic under investigation.

5.4 Recommendations for Future Research

To elaborate on the findings of this study, obviously, a few recommendations will be given for future research about startup strategies in the digital ecosystem. Future researchers could adopt a broader perspective for possible startup strategies within the digital ecosystem. Since every country has different levels of digital technology integration into their businesses, further studies can conduct the same research in many countries and then compare all in the manner of the strategies of digital ecosystems in many countries, focused on government policies, digital infrastructure, and cultural attitudes toward technology adoption. Thus, it can be analyzed to what extent the findings of this research overlap or differ according to the level of digital integration.

Secondly, in addition to the competitiveness issue and efforts to thrive in the digital ecosystem, further research could delve into the advantages of direct collaboration with tech giants, focusing on strategies and approaches for effectively engaging in the digital ecosystems. In this way, the reverse paths could be illuminated regarding the digital ecosystem. By addressing these areas, further investigations might provide nuanced and useful suggestions for entrepreneurs in a variety of scenarios

6. CONCLUSION

This research aimed to investigate the strategic approaches startups can utilize to scale and enhance their business performance within digital ecosystems. It was centralized on these research questions *“How can startups strategically scale their ventures within the digital ecosystem to remain innovative?”* and *“How can startups improve their business performance within the digital ecosystem to compete with tech giants?”*. To answer these questions, interviews were conducted with experts in the field from startups, large companies, and consultancy firms and analyzed by utilizing an inductive data-driven method as a qualitative approach. The research progressed to identify four essential dimensions that are critical to startup success such as digital transformation and strategy scaling, managerial competencies and leadership, ecosystem partnership development, and adaptive digital capabilities.

Finally, this research presented novel insights and approaches in four areas, in addition to supporting existing theories and strategies for startups in digital ecosystems. These findings set the basis for future research and practical applications that will assist startups in enhancing the understanding of the dynamics of digital ecosystems and achieving long-term success in an ever-changing digital world.

7. ACKNOWLEDGEMENTS

Hereby, I would like to express my great appreciation to Dr. Igor Skute for supervising me with all his support, valuable feedback, and insightful guidance throughout the entire process of this bachelor thesis. Secondly, I would like to thank my second supervisor, MSc. Franziska Koefer, for her helpful feedback and insights to improve my research. Furthermore, I would like to extend my sincere thanks to all the participants who shared their time and insights during the interviews. Their contributions were valuable in establishing the empirical basis for my research. Finally, I would like to express my gratitude to my family and friends for their continuous precious support and motivation in this journey.

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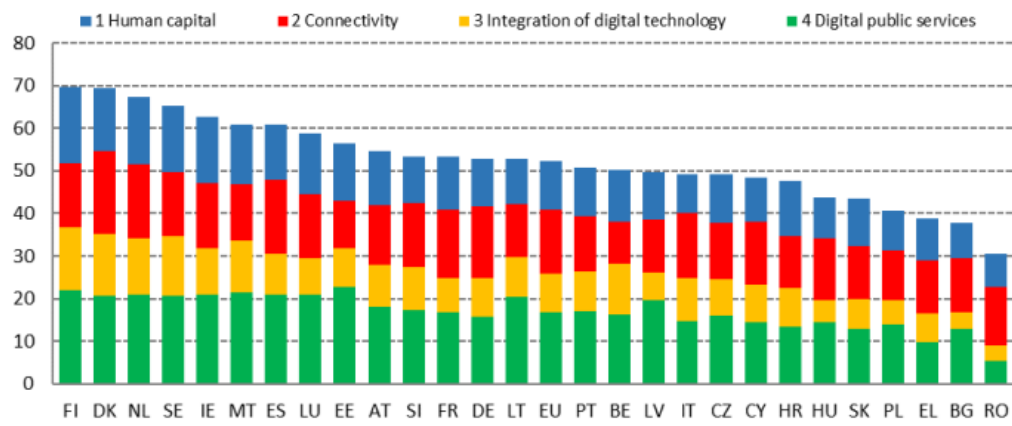
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APPENDIX



Source: DESI 2022, European Commission

Figure 1. Digital Economy and Society Index by StartupDelta (2022)

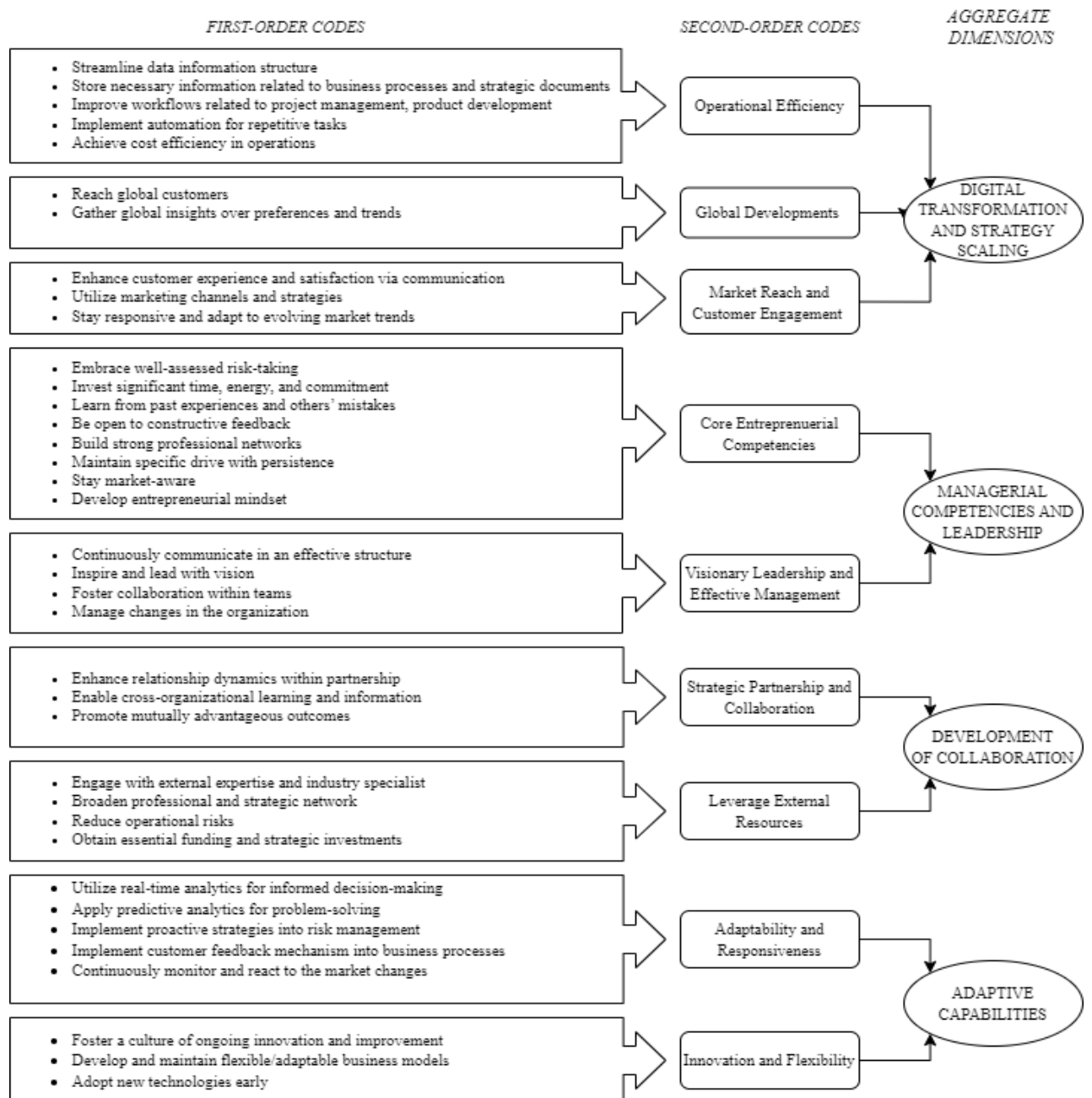


Figure 2. Data-Structure