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**Digitalization and strategic flexibility
-a recipe for business growth**

Introduction

Digitalization in firms has been extensively researched in terms of capabilities (Rönnerberg, 2016), innovation (Lenka, Parida & Wincent, 2017; Saldanha, Mithas & Krishnan, 2017; Trantopoulos et al., 2017; Nambisan et al., 2017), internationalization (Grönroos, 2016), organizational agility (Kuusisto et al., 2017), business ecosystems and organizational structures (Martin-Pena et al., 2018), but the relationship with company growth and growth strategies has received little attention. Blackburn et al. (2017) studied large organizations to demonstrate that Big Data will have implications on strategy, people, technology, and process integration. Ahmad et al. (2019) investigated the impact of social media technologies on firm performance. Despite the considerable investment in offering digital services, many companies still struggle to create real customer value and generate financial return on their investment (Gebauer et al., 2005; Suarez et al., 2013; Kamalaldin et al., 2020). The aim of this paper is to shed light on digital technology and its influence on business growth and growth strategies.

Digital technologies are having a disruptive impact on entrepreneurship (Broome & Ohlsson, 2018). They include analytical tools, sharing platforms, the internet of things, mobile devices, and applications (Martin-Pena et al., 2018; Andriole, 2017). These can all create new business opportunities, as digitalization and servitization give rise to digital business models (Kraus et al., 2019). In addition, digitalization transforms value-creation logic (Lenka et al., 2017; Andriole, 2017). Kuusisto (2017) categorized the effects of digitalization on organizations according to five areas of influence: 1) organizational structures, 2) digital innovations, 3) organizational learning, 4) organizational agility, and 5) business ecosystems.

Hence, the effects of digitalization are widespread and cover many aspects of business strategy and business operations. The widespread effects create new opportunities for business growth and growth strategies. Digitalization and strategic flexibility are intertwined; strategic flexibility enables the application of new technology and digitalization enables strategic flexibility.

This study outlines the theoretical background of growth strategies and digital technologies affecting business growth. Companies must address the challenges of digitalization in order to improve competitiveness and generate sustainable competitive advantage (Myrthianos, Vendrell-Herrero, Parry, & Bustinza, 2014; Martin-Pena et al., 2018).

Prior studies of firm growth have concentrated on a wide variety of determinants of entrepreneurship and business growth. McKelvie & Wiklund (2010) suggest that there are three main streams in company growth research: the first focuses on growth as an outcome; treats the outcome as a result of growth; explores the growth of pre-factors; and views growth as a dependent variable. Studies in this stream concentrate on the stages of development and a firm's life cycle (Leitch et al., 2010). While a wide variety of growth-predictor measures have been introduced, a consistent growth predictor remains elusive. The second stream focuses on the consequences of growth as measured by the increased magnitude of the changes brought about by the company's operations. Central to this stream is the analysis of changes in decision-making or expertise. The third mainstream focuses more on the growth *process* and thus views growth as neither a dependent nor an independent variable.

The three streams describe the company's growth through research, and although they are presented separately from each other, there are many overlaps between them (McKelvie &

Wiklund 2010: 264). This paper examines how digitalization can affect these three aspects of firm growth. The specific objectives are as follows: 1) to increase understanding of how digitalization affects pre-factors for growth, 2) to examine how digitalization transforms the growth process (especially growth strategies) and 3) to examine how digitalization is apparent in the outcome of growth. This paper contributes to the growing literature on digitalization, providing new insight into its relation to business growth.

Theoretical background

Business growth

Business growth has become one of the most studied topics in entrepreneurship research (Davidsson & Delmar, 2006; Shepherd & Wiklund, 2009; McKelvie & Wiklund, 2010; Henderson & Weiler, 2010). The topic has attracted the sustained interest of scholars for 50 years, and has been studied from various viewpoints, including measures, types, and stages of growth (Davidsson et al., 2010; Leitch et al., 2010; McKelvie & Wiklund, 2010). Various stakeholders can affect the business growth of a company, including the entrepreneur/business owner, customers, suppliers, funders, academics, and policy makers. All these players have different beliefs, values, expectations, and agendas that can potentially alter the growth mode, rate, and motivation of the company (Gibb, 2000).

Prior research identifies entrepreneurs with experience acquired in the same field of operations to be a factor that can contribute to business growth (Barringer et al., 2005). Other studies have shown that the companies with the most impressive growth are younger than average and their owners have a stronger than average educational background. Young firms are also more

growth oriented and innovative than older companies (Zhang et al., 2008; Shane, 2009). Differences between older and younger firms have also been identified in the spheres of experience, level of education, gender, and business management skills (Barringer et al., 2005, Zhang et al. 2008).

The impact of globalization and internationalization have also been studied intensively alongside growth (e.g. Sapienza et al., 2006; Naldi & Davidsson, 2014), as have gender, learning, performance, and strategies affecting growth (Leitch et al., 2010). The conceptual development of business growth studies has however still attracted criticism for being slow (Wiklund et al., 2009: 351; Leitch et al., 2010). Shane (2009) & Barringer et al. (2005) found evidence of the level of higher education attained by a founder/entrepreneur being a predictor of business growth. Song, Wang, & Parry (2010) studied the market research process and its connection to company success. The current study thus aims to stimulate discussion on how digitalization can create opportunities for growth.

Growth strategies and strategic flexibility

Firms can adopt different growth strategies. Traditionally, according to Ansoff's (1957) matrix, growth strategies are divided into four different strategies. The first is market penetration, where current products and markets are growing. The second is market development, where existing products seek new markets. The third is product development aiming to develop new products for existing markets, and the fourth is diversification aiming to develop completely new products for entirely new markets. A company can leverage more growth strategies at the same time. Information systems researchers have drawn on the resource-based view (Barney, 1991), dynamic capabilities of the firm (Eisenhardt & Martin, 2000), and the business model

canvas, developed by Osterwalder & Pigneurin (2008) addressing these challenges on the impact of information technology (IT) enabled capabilities on organizational performance (Ayabakan, Bardhan & Zheng, 2017). Digitalization offers multiple opportunities to exploit these different growth strategies.

The existing literature has studied strategic flexibility from the viewpoint of multiple configurations and constructs, such as proactive strategic flexibility and its relation to new market creation (TenDam, 1987), the relevance of quality of management (Escrig-Tena et al., 2011; Fernandez-Perez & Gutierrez, 2013), interaction in niche markets (Hamlin et al., 2012), and cooperation and networks (Mason & Mouzas, 2012). Oke's (2005) framework identifies *mix flexibility*, such as the flexibility of the system, depending on other influential elements, including transitional periods, scalability of products, network chains, organizational abilities, and information technology. Mix flexibility directly affects the competitive performance of manufacturing companies (Oke, 2005).

Zhou & Wu (2010) define strategic flexibility as handling the change by exploiting the opportunities arising. Therefore, strategic flexibility is reported to be at its best in a complex business environment (Grewal & Tansuhaj, 2001; Katsuhiko & Hitt, 2004; Nadkarni & Nareyanan, 2007). Weber & Tarba (2014) highlight the importance of strategic agility considering managerial challenges such as a dynamic environment, globalization, and an accelerating rate of innovation. Strategic agility enables a firm to realign its organizational processes and respond to environmental changes with a defined strategy (Ebben & Johnson, 2005; Sanchez, 1995; Zhou & Wu, 2010; Chaston, 2012: 141-142; Brozovic, 2018).

More recently, reviews have appeared evaluating the state of the art of strategic flexibility – introducing advanced definitions (Saleh et al., 2009) – and examining its relation to other emerging theoretical concepts (Roberts & Stockport, 2009; Combe, 2012). Doz & Kosonen (2008, 2010) introduced business model renewal for large enterprises, which involves building on a strategic agility framework incorporating strategic sensitivity, leadership unity, and resource fluidity – each of which can improve a company’s ability to regenerate its business models.

Prior research includes examples reporting empirical research results on strategic flexibility (e.g. Dibrell et al. 2007; Gylling et al., 2012; Guiette & Vandembemt 2014; Verdu-Jover et al., 2014) and the meta-review by Brozovic (2018) incorporating 141 articles and eight book chapters published between 1978 and 2017 (Brozovic, 2018). Singh et al. (2013) and Hamlin et al. (2012) investigated the barriers to strategic flexibility and concluded that most of the obstacles mentioned in research on strategic flexibility relate to organizational stiffness, weak governance practices, lack of resources for cost management, and other closely related obstacles that limit a firm’s suitability and willingness to undertake strategic change (Brozovic, 2018; Singh et al., 2013).

Digitalization

Digital technology challenges the conventional understanding of entrepreneurial and managerial decision-making that results in a dynamic business environment. In this regard, the most challenging objective for a business is to determine how to best enhance the competitiveness of the business operations (Stadtler & Kilger, 2008). Previous studies suggest that information technology (IT) can contribute to network collaboration, and in turn strengthen the company’s competitive abilities (Wu et al., 2006). Digital technology plays a significant

role in almost every successful organization (Setia et al., 2013; Faroudi et al., 2017). Kuusisto (2017) argues the main effects of digitalization are related to organizational learning, digital innovations, organizational agility, business ecosystems, and organizational structures.

The level of the digitalization is difficult to measure. Firm can position itself as digitally advanced, based upon their own knowledge, but the actual level of digitalization could be something else. Digitalization is implemented by firms to respond positively to customer needs to support customer-side operations. It is often used to increase efficiencies by reducing operative costs (Oh and Theo, 2010). Despite the increasing presence of digital technology in today's business environment, there is limited understanding of what constitutes digitalization capabilities, and how these can add value for customers (Lenka et al., 2017; Kohtamäki et al, 2013). There is a global trend towards digitalization in manufacturing firms. Digitalization opens new avenues to connect functionalities alongside products, including value creation through advanced servitization (Porter & Heppelman, 2014; Kowalkowski et al., 2013; Martin-Pena, 2018).

Organizational capabilities are important drivers of a modern organization's performance. Capabilities represent the ability of a firm to efficiently combine several resources to engage in productive activities and attain its objectives (Amit and Schoemaker 1993; Ayabakan et al. 2017). The concept refers to competencies which can provide a company with unique, non-substitutable and non-replicable advantages by competitors (Grant, 1991). In the era of digital transformation, firms with knowledge-based resources are more likely to enhance their IT capabilities to embrace innovative digital technologies, such as mobile and big data analytics (Asiaei & Bontis, 2020; Datta & Roumani, 2015; Tzortzaki, 2014; Borges, 2012; Cohen & Levinthal, 1990). Khin & Ho (2018) illustrate that firms need to have the capability to manage

and make the best use of digital technology in the innovation process; this requires a digital capability integrating and mobilizing both human and technological strengths and resources.

One key question in today's knowledge-intensive business environment is that of how to integrate digital technology and various information systems with business strategies (Eze, 2008; Wang & Shi, 2009). Adopting new digital technologies, such as Big data, AI and machine learning, should be an investment, and moreover there should be a return on that investment (Henderson & Venkataraman, 1993). Therefore, the technology itself should be used to formulate new business models or strategies and use existing capabilities effectively (Weill et al., 2002). Those enterprises with greater IT capability are better able to integrate and exploit new information resources (Yeh et al., 2015). In their case study, Blackburn et al. (2017) studied large organizations to demonstrate that Big Data will have implications on strategy, people, technology, and process integration. Their findings indicate significant impact for R&D and innovation management in different industry sectors.

Big data is a term that is widely used but has no commonly accepted definition. In the literature, the term is highly diverse, including analysis of large data sets (Bunger, 2015), artificial intelligence (Wigley et al., 2016), machine learning (Li, 2011), pattern recognition, image and text analytics (Markham, Kowolenko, and Michaelis 2015), virtual experimentation and simulation and forecasting (Huang et al. 2015). It is commonly defined in terms of five Vs: volume, variety, velocity, value, and veracity.

Big data is large in volume, varied in type and source, and accessible quickly once it is gathered. It is increasingly diffusive tool, changing how we understand the world. It can be gathered from social media streams, sensors embedded in consumer products, and other sources, to identify

issues with product launches, before they escalate. It can be used to develop ideas for enhancements to existing products based on their observed performance. As technology has enabled more organizations to access and analyse big data, it has become more common (Blackburn, Alexander, Legan & Klabjan, 2017). Big data is so pervasive and well-established that it cannot be called no longer emerging as a term (Sharwood 2015). The use of big data enables firms to develop their growth strategies, especially regarding product and service development. It can also be used to enhance market penetration and market development strategies.

Research framework

The research framework of this study is based on prior research on business growth, digitalization, and strategic flexibility. We propose that business growth includes three aspects of growth: pre-factors of growth, growth as a process, and growth as an outcome. Digitalization may affect all of these aspects and strategic flexibility can affect business growth. Digitalization and strategic flexibility are intertwined; strategic flexibility enables the application of new technology, and digitalization enables flexibility. The framework is presented in Figure 1.

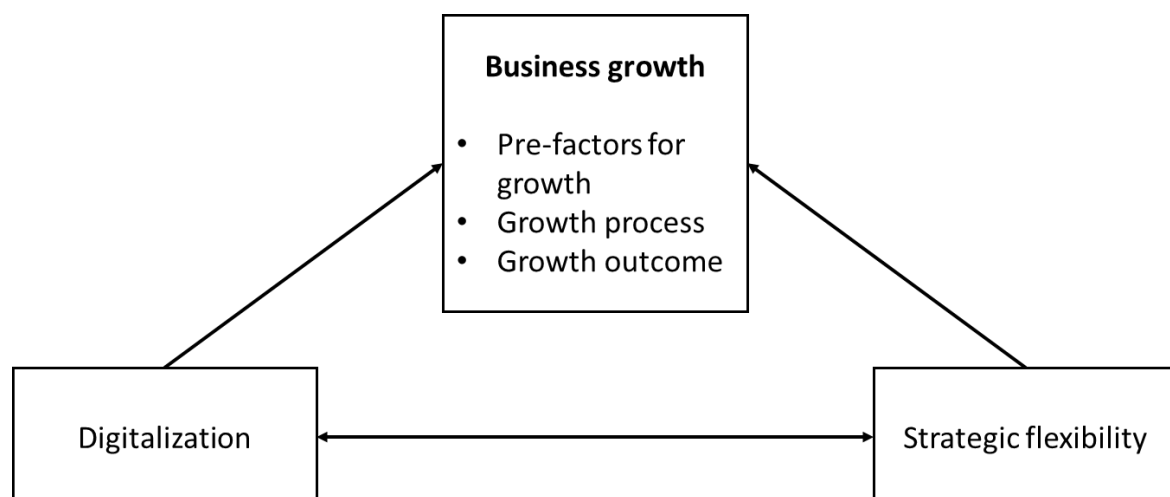


Figure 1. Research framework

Methodology

Data collection

Case companies were selected from the Voitto+ database of 6403 companies (Finland's most extensive database of financial statements run by Asiakastieto Ltd) in the southern Ostrobothnia region in western Finland. The area was chosen because of the regional funding supporting the research. The companies' financial statements were investigated to identify the growth companies among the group, meaning those that had an average annual growth rate greater than 10% a year, over a three-year period, and that had ten or more employees at the beginning of the observation period. A high growth firm is a firm with at least 10 employees initially that increases sales turnover by at least 20% per year, over at least a three-year period (Parker, Storey & Witteloostuijn, 2010).

We excluded agricultural, governmental, real estate, and construction companies that had managed a growth spurt in one year due to landing a big contract. Initial screening revealed 31 potential companies apparently suited to closer evaluation. It was decided to constrain the investigation to six companies initially and increase the number of informants if the authors felt the saturation point of the information was not achieved.

Shepherd and Wiklund (2009) identified the five indicators for firm growth: growth in 1) turnover, 2) employees, 3) profit, 4) assets, and 5) equity. Achtenhagen et al. (2010), Delmar (2006) & Weinzimmer et al. (1998) have presented supporting results. To measure growth, we used turnover growth, the most often used empirical growth indicator in the field of entrepreneurship and small business research (Murphy, Trailer & Hill, 1996). We applied a

longitudinal three-year perspective to gather data on the financial records. The number of employees of the studied companies varied from 16 to 209, with an average-size of 87 employees. The annual turnover ranged from EUR 16 million to EUR 85 million in 2018. Three of the six companies represent manufacturing industry and three companies operate in the service sector.

Table 1. Case companies, industry, year of establishment, number of employees and turnover (thousand euros).

	Industry	Established	Employees	Turnover 2015	Turnover 2016	Turnover 2017	Turnover 2018
Case 1	Digitalized service industry	2008	25	1000	1100	1400	1600
Case 2	Metal manufacturing industry	2002	209	62000	66000	73000	85000
Case 3	Information service industry	2014	82	800	2000	3200	2600
Case 4	Engineering service industry	2015	16	40	223	562	751
Case 5	Metal manufacturing industry	2009	80	12000	12500	14300	16000
Case 6	Electric manufacturing industry	1980	110	15800	16100	20400	22200

The Digimat measurement test

The goal of this research was to explore six Finnish growth companies in order to understand the relationship between digitalization and growth. We used qualitative data collection and the Digimat measurement test for analysing patterns, themes, and best practices to generate a deeper understanding of the impact of digital technologies on business growth and growth strategies in these companies.

First, we conducted a Digimat measurement test on each selected company, to understand the current state of digitalization. The method was developed in a research project coordinated by Tampere University of Technology between 2013 and 2015 (Halme, Majuri, Nylund, Kopra & Tuokko, 2015). The tool is designed to determine the current state of digitalization, the digitalization target level of a company, and its capability to digitize its operations.

The tests were carried out in the course of a structured group interview with employees from different departments of the company who were asked to explain different aspects of the company. The results show the difference between the target level and the current level of digitalization of the respondent company in each area. The test results could thus steer the company to invest in the most productive areas as it develops its level of digitalization.

Semi-structured interviews

We used multiple data sources; archives and field observation, but the hub of this study is the semi-structured interview and real-time processing by those people experiencing the phenomenon. The unit of analysis of this study is the firm, but narrative analysis of the input of the owners/managers in charge was chosen as the methodological approach. The qualitative data works well with the selected theory, but also seemed appropriate for the target group of this study, as narratives can help understand these unique growth processes.

The interviewees were company owners or operational managers. Before starting the interviews, the interviewers briefly explained the research, secured the interviewees' permission to record their responses, and guaranteed them anonymity. As people relate narratives of their personal experiences, they also weave, mould, and fashion their sense of self in the process (Kenny, Whittle & Willmott 2011, p. 27). One major risk of this practice is being too close to the informant and losing the perspective necessary to theorize on the information gathered (Gioia, Corley & Hamilton, 2012). To ensure the quality of our interpretations remained high, we always had a member of our team adopt an outsider perspective.

The interviews took place in a comfortable environment conducive to eliciting narratives (Malhotra et al., 2000). The interviews commenced with background questions. The operational managers were asked to reflect on their history, development, growth strategies, digitalization, and future goals for digitalization. The first theme of the interview was based on Ansoff's (1957) growth strategies. The second theme was intended to explore digital orientation (Zhou et al., 2005; 2010) and how to formulate new business models or strategies and use existing capabilities effectively (Weill et al., 2002). The third theme reviews IT capabilities and their integration and exploitation of new information resources (Zhou & Wu, 2010; Yeh et al., 2015; Matzler et al., 2018). The fourth theme addresses IT capabilities in order to integrate new innovative technologies into the processes, concentrating on digital technology and various information systems with business strategies (Zhou & Wu, 2010; Kuusisto, 2017).

The focus was on capturing key decisions made before and during the growth period. The interviewees were asked in their own words to outline the significant factors they thought might have influenced the firm's growth. Subsequently, the interviewer asked questions to elicit certain themes that the interviewee had not raised spontaneously. The interviews lasted from two to three hours, and all interviews were conducted by two researchers. The interviews were recorded, transcribed, and annotated with a short case history, to ensure the reliability of the data (Andriopoulos & Lewis, 2009). The unabridged transcriptions of the interviews were used for the final analysis. Once the interviews had been conducted, the case histories for each company were written based on their respondents' narratives.

After the data gathering and initial stages of analysis, we begin cycling between data, dimensions, themes, and the previous literature to determine how our findings align with the

existing knowledge. The data were examined to derive the key constructs for interrelationships. Researcher triangulation was applied during the data evaluation to assess the qualitative results and improve validity and reliability (Creswell & Miller, 2000).

Results

Case descriptions

The dataset comprises three industrial companies and three service companies. All the companies are growth companies, which may explain them all recording an advanced level of digitalization.

Case company 1 operates in the service sector. The company has long grown and developed its own operations. The result from the Digimat measurement test indicates that the company is at an advanced level of digitalization, meaning that digitalization is widely used in various company processes. However, according to the company, the current state and the target state differed. The company thus has very ambitious goals to become a pioneer in the field of digitalization and to utilize artificial intelligence and big data in the development of its own services in the future. The CEO and Development Director of the company were interviewed. Based on the preliminary results, the following factors can be identified in the context of business growth and digitalization:

1. Digitalization created markets that helped the company grow. This means that the strong growth of the company has been driven by a major shift in the market that created demand for digital services.
2. Leading the way in digitalization skills. At a time when markets were changing as demand for various electronic marketing channels grew, the company was developing its own digital capabilities. Networking enabled the company to grow with its customers. However, this required expertise that competitors did not have. At the core of this expertise was digitalization expertise.
3. Digitalization in growth strategies. The extent of digitalization in a company's operations can be seen in many ways in its growth strategies. Market penetration has leveraged digital marketing communications to help existing customers purchase more current products and services. The company has been particularly successful in its product development strategy. The company invested in product and service

development at the right time by designing new digital products. The company was able to anticipate market changes and future demand. As the demand grew, the company had to offer both expertise and products, which also enabled the company to grow. In the future, the company will seek new international markets through both existing products and new products based on artificial intelligence. Therefore, future growth strategy will be both market development and diversification.

4. Digitalization throughput. The company has incorporated digitalization into all processes. Future growth targets are linked to the opportunities offered by digitalization.

For this case company, its past growth will stimulate growth in the future and the company has clear growth goals. Digitalization is at the core of the company's past growth, which has created new markets and enabled the development of new products and services. However, all of this has required the company to have a learning orientation and ability to utilize resources. One such resource is digital capability. Digitalization is clearly reflected in growth strategies, both past and future. There is a clear link between digitalization and growth in the company.

Case company 2 operates in the industrial sector. The company has one big contract customer, whose success has long been based on its own growth. Now the company has also acquired new, smaller customers and developed its own products. The Digimat measurement test showed that this case company was also at an advanced level in terms of its digitalization. Digitalization is at the heart of all processes, both in production and in management. However, this had not been noticed in the company, because digitalization had been mainly a tool for process development. The interview data showed that, for example, the digitalization of production had enabled close cooperation with the firm's main customer, which in turn had led to growth. Without digitalization, the company would not have been as successful in the face of competition. In summary, the interview showed the following links between digitalization and growth:

1. Digitalization and operational efficiency. The company has heavily digitalized its production processes and introduced robotics. This has led to cost savings and significantly improved efficiency. Efficiency, in turn, creates a competitive advantage that enables success and growth. The company leverages data for optimization and optimizes the production process with digital tools, helping to gain new customers and serve existing customers through competitive advantage.
2. Active development through digitalization. The company has improved several processes through digitalization. Digitalization is seen as a tool that can be used in

development work - so digitalization is not an intrinsic value but a tool. Development, in turn, leads to better operations, which in turn creates a competitive advantage.

3. Digitalization and company reputation. Utilizing digitalization in business development has led the company to acquire a good reputation. The main customer knows the company is reliable and the processes have been developed through digitalization. Reputation capital, in turn, opens avenues to new markets.

Digitalization mainly manifests itself in the production processes developing through the application of robotics, data, automation, and optimization to create a clear competitive advantage. As a result, it indirectly influences the success of the company and thereby enables growth. Digitalization is seen as a tool in the company. At the same time, however, the use of digitalization creates digital capability, which in turn is a valuable resource for the company. In this context, digitalization has made processes more efficient than those of competitors.

Case company 3 has been operating in the service industry for 25 years, initially as a software company. It recorded a high degree of digitalization in all its activities. The early main products were very different from the firm's current offering; for example, an application developed for the world's leading mobile phone manufacturer that determined the start-up times of the case company. Subsequently, the company made a strategic decision to change its business and began a transition from software development to a service concept offering customers a complete information management service. The market for such services grew strongly in the early 2000s and the firm was a pioneer in this sector in Finland. As information management services began to suffer from tougher competition, the company actively investigated new growth opportunities.

One of the opportunities for growth identified was the rapidly growing market for HR services which could utilize existing synergies and leverage their potential. This decision proved a sound one, and in recent years, this business sector has been the firm's fastest growing business. The strength of the company today is its consulting expertise in services supporting business and other organizations. The current business model would not have been possible 20 years ago, so the company has taken advantage of digital technology by creating new types of business throughout its life cycle. The potentials of artificial intelligence and big data are of interest to the company, as well as various opportunities in the platform economy.

Although the firm's product is a comprehensive service, software engineering expertise is seen as increasingly important within the company. In addition, security issues, especially in mobile and cloud services, and the multiple liability issues associated with them, as well as their risks, are threats that the company takes seriously. Nevertheless, this is an opportunity as well, as the company's own analytics software can be used to forecast scenarios, which is a new service for the customer. The extensive use of digital technology used in the company supports scalability.

1. A pioneer of digitalization. The company's pioneering and technical expertise has given it an advantage in developing new digital service products.
2. Strategic flexibility. The company seeks to anticipate market changes and today acts as a consulting, strategic partner that enables not only the customer but also the company to grow. The use of digitalization guides all the firm's processes.
3. Synergies. The company has grown with new service products for existing and new customers. The company has been successful in expanding its service offering and in new digital services, as existing service products reach the limits of growth.
4. The potentials of artificial intelligence and big data are of interest to the company, as well as the various opportunities offered by the platform economy. Even though the product being sold is a comprehensive service, software engineering expertise is seen as increasingly important in the company.

Case company 4 specializes in mechanical and automation engineering services. The company was launched in 2015 with two founders unifying their two one-man businesses. From the beginning, the goal was to grow the company, which is why the two co-founders recruited a like-minded but economically oriented person as CEO and partner. The company started with three people and four years later already employs 16 people. Although the goal was originally to grow, the actual growth has exceeded the target level.

From the beginning, digitalization has been a main driver of growth. The Digimat test showed that the company is at an advanced level of digital maturity: the important role of digitalization is evident in all company processes, including personnel, management, sales and marketing, innovation and development, production, collaboration, and information systems. Digitalization is a tool in the company that has enabled its rapid growth.

The company invests heavily in education and training. The training utilizes digitalization and online communication channels. The approach can reduce costs by reducing unnecessary travel for participants.

1. Since the beginning, the company has utilized digitalization in its growth strategy.
2. The electronic environment was carefully considered during the start-up phase. Preparing for growth through digitalization, the company acquired an easily scalable, slightly oversized ERP system.
3. The company uses data extensively to guide its own operations, which helps it anticipate the resources and the actions required to meet market demand. It is an essential element of agility that creates a competitive advantage for the company.
4. The company leverages advanced digitalization solutions in its new customer acquisition process.

Case company 5 is a growth company, a pioneer and a developer of industrial services for the last ten years. The firm's goal is to serve customers through long-term and in-depth cooperation so that both will succeed in their own business. Understanding the customers' needs and providing quality products and services are key objectives defined in the firm's business strategy. The firm is also at an advanced level in terms of digitalization. Continuous improvement and utilization of digitalized solutions is an integral part of the business. Digimat test revealed a high degree of digitalization in various activities affecting to the company's growth. This had not been particularly noticed in the company, because digitalization had mainly been a tool for process development. However, the interview showed that, for example, the digitalization of production had enabled close cooperation with customers, which in turn had led to growth. The interview elicited the following links between digitalization and growth:

1. Digitalization and operational efficiency. The company has heavily digitalized its production processes and introduced robotics. This action has led to cost savings and significantly improved efficiency. Efficiency, in turn, creates a competitive advantage that enables success and growth. The company leverages data for optimization and optimizes the production process with digital tools.
2. Active development through digitalization. The company has improved several processes through digitalization and digitalization is seen as a tool that can be used in development work, indicating that the firm's view of digitalization is not as an intrinsic value but a tool. Development, in turn, leads to better operations, which in turn creates a competitive advantage.

3. Digitalization and company reputation. Utilizing digitalization in business development has led to the company acquiring a good reputation. The main customer knows the company is reliable and the processes have been developed through digitalization. Reputation capital has in turn enabled the firm to reach new markets.

Case company 6 is a growth company with 40 years of experience in control systems. The company specializes in intelligent control systems and information systems, and it cooperates with large international customers. In addition to control systems, the company offers engineering services, training services, and services related to the internet of things. Digitalization is a core strategy of the company. It has been at the forefront of developing digitalized products and services, and it invests in continuous research and development related to digitalization. The company sees new opportunities in artificial intelligence. The Digimat test showed that the company has a high degree of digitalization in various activities. Moreover, the interview highlighted the fact that digitalization has been the main reason behind company growth and success. It was the first company in the field to provide digitalized products, which in turn attracted interest from large international companies. There was a strong emphasis on innovativeness and risk-taking ability in the firm's research and development activities. The interview elicited the following links between digitalization and growth:

1. Digitalization as a core strategy. The company has invested heavily in research, development and innovation activities, and uses digitalization to support its product and service development. Its growth strategy lies in the development of new and existing products and services through digitalization. This has led to success with customers and created beneficial networks. Those networks enabled the company to progress its forerunner strategy that involves implementing digitalization in its core activities. This in turn has led to growth.
2. Digitalization and learning. The company has learned to use digitalization in development activities and emphasizes continuous learning among its staff. The company has learned to grow through digitalization, and strategic flexibility is apparent in the use of different networks and the firm's ability to foresee megatrends. The company discusses the impact of megatrends on its strategy, and steers renewal based on digitalization. It emphasizes that the company has to continuously develop and learn, and to build new capabilities with strategic partners.
3. Digitalization and entrepreneurial orientation. Entrepreneurial orientation – as defined through the three dimensions of innovativeness, risk-taking, and proactiveness – is strongly emphasized in the company. The success of the chosen strategy has relied on high levels of entrepreneurial orientation. Courage, strategic renewal through digitalization, and investments in RDI have been key factors for growth.

Findings

The results strengthen previous findings showing that digitalization seems to suit small and medium-sized companies of the type studied here. That suitability stems particularly from such firms tending to have limited resources, a propensity to focus on one or a few projects, and an ability to retain a flexible approach to their business. The company can start seeking growth through digitalization even in the start-up phase, which would seem to act as a clear impact factor for the actual growth. The ecosystem perspective is also important, companies are growing in networks, most commonly with the customers, and access to the network requires digital pioneering or at least relevant digital capabilities.

The results show a clear link between digitalization and growth at all stages of growth; whether as a pre-factor of growth, in an actual growth process, or an outcome of growth in the following ways.

Digitalization occurs as a **pre-factor of growth** in two ways:

- 1) Digitalization creates new markets and opportunities.
- 2) The company's digital capability creates new business and growth (capabilities).

A pioneering approach to the exploitation of digitalization creates a competitive advantage. This requires the company to have digital capabilities, which involves the use of digital technology in the development of innovative products/services, management of the latest digital technology, responding to digital change, identifying new digital opportunities, and adoption of relevant digital technologies. A digital orientation is also important as it nurtures the adoption of new digital technologies and stimulates the constant search for new opportunities for digitalization.

Digitalization has been utilized in growth strategies such as market penetration, product development and also market development opportunities for diversification. Digitalization permeates all the company's processes, in which case it is also connected to the growth process, especially from the point of view of management.

Digitalization is visible in the **growth process** in four ways:

- 1) Market penetration: harnessing digitalization in acquiring new customers and developing existing customer relationships, especially in terms of digital marketing communications.
- 2) Product development: adding intelligence to products, utilizing digital technology in product development processes, especially big data and information management.
- 3) Market development: new geographical areas, digital marketing communications targeting new segments.
- 4) Diversification: completely new digital products and new markets reached through digital channels.

Digitalization is reflected in the **outcome of growth** in four ways:

- 1) Realized growth affects future growth goals, creating learning for growth. A firm can continue to pursue growth by investing in digitalization.
- 2) A pioneering approach to digitalization and realized growth will continue to contribute to the development of absorptive capacity. Staff development and learning is a key factor, as is investment in competence development and continuous learning. A pioneering strategy can open access to new networks, which in turn enable new growth opportunities.
- 3) Materialized growth also creates challenges for the development of processes through digitalization. Digitalization enables growth management in many processes.
- 4) Growth and a pioneering approach to digitalization create reputation capital for a company, reputation capital in turn creates competitive advantage.

Digital capability and a resource-based vision manifest in the way that companies utilize different resources to respond to different situations. Strategic flexibility and agility are visible among our cases and also relate to digital capability, hence, digitalization creates agility. Digital capability is a valuable resource for the firm. It is a dynamic capability creating competitive advantage. This supports the discussion about dynamic capabilities in firms, especially in rapidly changing environments (Teece et al., 1997; Teece, 2013). Learning orientation and absorptive capacity are important, digitalization requires new abilities that need to be adapted to the situation. Digital pioneering creates reputation capital, which in turn helps a company succeed and grow.

The growth in all the studied companies appears to be based at least to some extent on the utilization of digitalization in their operating environment. The capability of companies to benefit from changes in their operating environment can be considered one of the main factors explaining the growth. Flexibility is a key strength of small firms (Fiegenbaum & Karnani, 1991), they are relatively unfettered by internal bureaucracy and are often managed by an owner/director who can take key decisions quickly; they also tend to develop strong networks with their customers.

The characteristics of digitalization enable a rapid response to market changes (Chandy & Tellis, 2000; Verhees & Meulenbergh, 2004; Kogut, 1997; Qian & Li, 2003). The size of the studied companies made them easily manageable, and the company owners usually conducted the company's operations management, which permitted decision-making to be streamlined more than it could in larger counterparts. It also emerged that the flow of information (e.g. regarding customer feedback) was smooth in the companies, and they were able to quickly respond to feedback on their activities.

Building on the results of the case studies, this research identifies the following underlying relationships between digitalization, business growth, and strategic flexibility. Figure 2 presents the summary of the conceptualization of the phenomena described above.

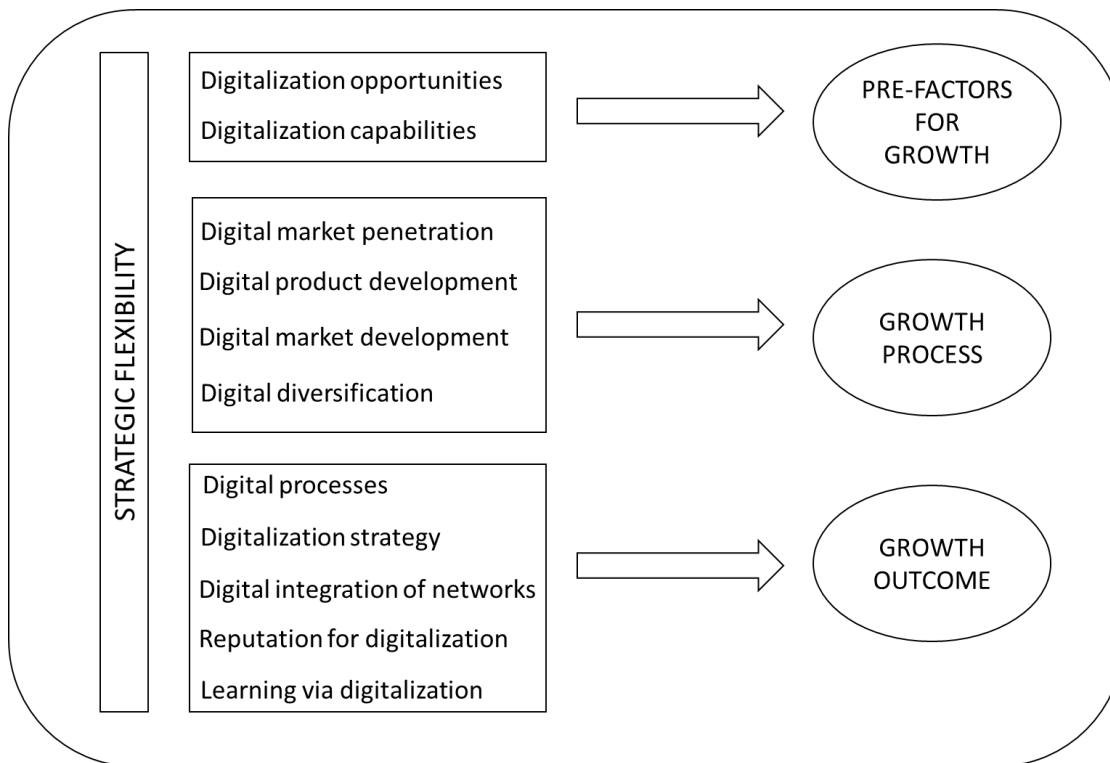


Figure 2. Conceptualization of the phenomena

Implications, limitations, and avenues for future research

When evaluating the theoretical contribution and managerial implications of this research, it is important to remember that the empirical results originate from the real-life context of the companies and therefore offer some potentially useful ideas for managers and entrepreneurs. Our aim was to explain the relationship between digitalization and business growth. We therefore advocate further research to test other mediating variables that could reveal the true nature of the relationship between digitalization and business growth.

This study highlights that companies opting for a customer-oriented approach seem to have achieved success and growth regardless of the prevailing conditions in their field of operations. The results of this study strengthen the previous findings that digitalization seems to suit SMEs, particularly because such firms tend to have limited resources, a propensity to focus on one or just a few projects, and an ability to retain a flexible strategic approach to their business.

We open new avenues for understanding digitalization in relation to business growth by contributing qualitative results reflecting the phenomenon. The results suggest that growth companies leverage new information to deliver greater value for their customers. As an extension to this study, forthcoming research could explore a wider range of constructs explaining the business growth derived from digitalization. We therefore propose further research tests for control variables to elicit the essence of the relationship between digitalization and business growth. While different entrepreneurial constructs were explored to some extent, it was not possible to explore all interesting aspects. The wider range of constructs open to exploration could include internationalization, entrepreneurial orientation, and environmental effects.

Berends et al. (2014) raised the question of how organizational size affects the degree to which the principles of strategic flexibility are applied in companies. According to Ates et al. (2013) SMEs suffer from resources related to skills, time and finance. Our findings suggest that strategic flexibility combined with dynamic digital capability can overcome the problems with limited resources. The use of big data and artificial intelligence creates skills and time as they offer possibilities for SMEs to easily access knowledge about markets.

Firm growth has been widely researched area in entrepreneurship starting from the ideas of Penrose (1959), who introduced the importance of firm's resources as a base for growth. Wiklund et al. (2009) explained growth through integrative model, in which growth is seen as a combination of firm's resources, the agent (attitudes and human capital) and industry as a setting. Our study suggests that digitalization can transform these different variables of growth. It changes the setting in which firms operate, transforming the foundations of value-creation logic. It is not just one resource in a firm but rather a way to multiply current resources. Digitalization in a form of big data and artificial intelligence alters human capital. Hence, digitalization affects all the growth variables. Levie & Lichtenstein (2010) introduced an idea of a dynamic stages approach to understand firm growth. The basic idea of the model is that growth is not a straight path with specific stages but an adaptive process of altering resources through learning to retain the sustainability of a business model. Our results suggest that digitalization can act in these processes of learning, altering and retaining.

There may be other factors explaining the relationship between digitalization and growth. We would encourage quantitative studies on the impact of company age as a control variable in

determining if digitalization is truly one of the key competitive factors for companies. Another factor that might affect this phenomenon relates to differences in national culture, since all the informants in our study are from the same country. Cross cultural sampling in future studies could provide more versatile and generalizable results.

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Annex 1

Theme interview for CEO's

Introduction (Malhotra et al., 2000)

- Briefly tell the story of your business (past growth and current situation).
- If you look at the company's past and present, whether (and if so how) digitalization has affected growth or the conditions for growth.

Theme 1: Growth targets and growth strategies (Ansoff, 1957)

What kind of growth goals does the company have (how tough growth goals, on what schedule)
How is growth thought to be achieved with?

- Current products / current customers
- Existing products / new customers
- New products / existing customers
- New products / new customers
- Organic growth vs. mergers and acquisitions

Theme 2: Digital orientation and growth strategies (Zhou et al., 2005 and 2010; Gatignon and Xuereb; (1997; Weill et al, 2002)

Please describe your level of agreement or disagreement to statements below:

- We are committed to use digital technologies in developing our new solutions
- Our solutions have superior digital technology
- New digital technology is readily accepted in our organization
- We always look out for opportunities to use digital technology in our innovation
- How does your company see digitalization as creating new opportunities OR has it already used:
- Development of existing products / services
- Scalability of products / services
- To serve existing customers more broadly (share of customer)
- Development of new products / services (new business models)
- To reach new customers (new markets, sales channels, internationalization?)
- For cooperation with various stakeholders
- Acquisitions and changes of ownership
- Goal setting and measurement

Theme 3: Digital capabilities (Zhou and Wu, 2010; Yeh et al., 2015; Matzler et al., 2018)

Please describe the level of your company's capabilities in following areas

- How is the company currently taking advantage of digitalization?
- Acquiring important digital technologies
- Identifying new digital opportunities
- Responding to digital transformation
- Mastering the state-of-the-art digital technologies
- Developing innovative products/service/process using digital technology
- How do you intend to take advantage of digitalization in the future, the opportunities it brings?
- Products / services, own processes, business models (Matzler et al. 2018)
- Digitalization of production (digital manufacturing, automation, robotics)
- ERP systems
- Customer relationship management
- Staff Development and learning

- Sales channels (e-commerce)
- Other stakeholder relations, own networks

Theme 4: Information technology capabilities (Zhou and Wu, 2010; Kuusisto 2017)

Please indicate a level of agreement in:

- Utilization of artificial intelligence
- Industrial internet
- Digital marketing communication tools
- Scalability of services / products through digitalization
- Platforms and their utilization
- Data collection and utilization
- The ability to embrace the opportunities brought by digitalization, to learn something new
- Organizational learning, digital Innovations, organizational agility, business ecosystems, and organizational structures
- Competence development (dynamic capabilities)
- How has the company developed its skills in relation to digitalization (management vs. staff)?
- What are your future goals for it?