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**THE ONLY CONSTANT IS CHANGE: A CASE STUDY OF BUSINESS MODEL CHANGE
IN THE CONTEXT OF COVID-19 PANDEMIC**

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<p>Abstract</p> <p>The spread of the COVID-19 pandemic has led to major changes across different sectors of the economy. The difficult situation of the business environments in various industries caused by the COVID-19 virus made companies struggle, some more than others. Profitable functioning in the market has therefore become more difficult. What is interesting, some companies survived, or even succeeded, during restrictions and managed to understand and operate with the changed customer behavior during and after worst phases of the world-wide pandemic.</p> <p>The aim of this research study is to find out if there are dynamic capabilities as business model change enablers by understanding the activities in the design and trans-forming new, successful business model and to explain, how it was possible for these case companies to change the existing business model. The underlying assumption is, that companies which have changed their existing business model to a new one due to COVID-19 pandemic and its effect to their market environment, have had certain dynamic capabilities and a process in a form of actions in place to succeed.</p> <p>This research study presents empirical findings to support theories of dynamic capabilities as enablers for business model change. One of the concrete goals of this research is to provide insights and learnings about what do the capabilities of successful companies look like, and how do they act, when they sense the change in their company's business environment, mobilize their resources to act on those findings and finally execute and implement the change.</p> <p>The empirical findings show, that dynamic capabilities work as enablers for business model innovation and business model transformation. Thus, findings support the importance of knowing and understanding your customers' behavior and needs, as well as the knowledge of the resource potential in and outside of the company, in order to design viable business models and implement them.</p> <p>Learnings gained from this research are valuable and interesting for strategists and leaders in companies when trying to improve their readiness for future environment changes. In addition, organizations, who are helping companies either to 1) grow their business or 2) survive from difficulties caused by rapid market environment change, can adopt learnings from this research study.</p> <p>The methods of this research study are qualitative. In this research study, a case study method was applied and the data was collected by in-depth semi-structured interviews, complemented with questions and answers via email and by collecting articles and other media content in public sources.</p>			
Keywords Business model change, business model, dynamic capabilities, covid-19			
Additional information			

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1 INTRODUCTION

1.1 Introduction

The spread of the COVID-19 pandemic has led to major changes across different sectors of the economy. The difficult situation of the business environments in various industries caused by the COVID-19 virus made companies struggle, some more than others. Profitable functioning in the market has therefore become more difficult. What is interesting, some companies survived, or even succeeded, during restrictions and managed to understand and operate with the changed customer behavior during and after worst phases of the world-wide pandemic.

Based on the changes in the business environment caused by the pandemic and restrictions set by authorities, some companies did develop new methods in the form of different types of business activities to find a workable way to manage the changes and survive within the market. Even though management issues caused by COVID-19 pandemic have gained interest amongst scientists, they have mainly focused on planning and forecasting new business needs (Donthu, 2020) and have been mainly related to strategic issues and without detailed approach to many different sectors. In parallel, a gap was recognized in providing more insights about business model changes and capabilities of the companies succeeding in them in the market situation described above.

Changes in market company operates can make existing business model obsolete or less profitable (Sosna et al. 2010). This research study is focusing on the activities in changing an existing business model to adapt to market environment change and the capabilities companies need in order to make the change. The chosen focus area is supported by the view, that the business model company operates with is expected to be reassessed again and again (Baden-Fuller & Morgan 2010).

McGrath (2010) suggests, that decision makers in companies have a challenge to recognize threats towards company's existing business model early enough, and to mobilize their resources to address those threats. We can see, that during the beginning

COVID-19 –pandemic, when the virus started to affect severely within several markets, some companies started to make moves almost immediately, and some chose to wait. How did decision makers know that existing business model needs to be modified, or a completely new one created? This is a common factor within case companies of this research study.

COVID-19 –pandemic has potentially affected to companies' ability to operate more than any other crisis after second world war. Nykänen & Luoma (2020) noted, that when the COVID-19 hit the Finnish business environment 2020, several companies took active and independent role and acted quickly forming notable resource in the battle against economic crisis, along with the public crisis aid provided by the government. Thus, companies should not be treated as passive objects but capable and active operators having central role in defending the effects of the crisis in the market.

According to recent research, a perceived critical threat has a positive impact towards intentions to explore a business model change (Osievskyy & Dewald (2018). Research focusing on business model innovation during COVID-19 pandemic and its changes to economy indicate, that companies outside of 'traditional' industries have more likelihood of conducting a business model innovation activities during pandemic (e.g. Turoń & Kubik (2021). Intentions to change the business model will not always lead to actual change, but a change is unlikely to occur without any intentions (Osievskyy & Dewald (2018). It is already recognized, that the COVID-19 pandemic will not only leave many companies to struggle, but to lead many companies to search for alternative strategic paths for survival, or even success. Seetharaman (2020) argues, that COVID-19 pandemic and its effects to companies' business environments has also necessitated innovations and brought organizations with opportunities to identify and implement new business models that will lead to survival.

Nykänen & Luoma (2020) found three different survival strategies in a survey made for their research study regarding COVID-19 -pandemic and companies in Finland. The three survival strategies, companies had during the pandemic were survival by 1) innovating, 2) cutting the budget and 3) hanging on. For this research, most interesting strategy is survival by innovating, where Nykänen & Luoma (2020) include companies who responded to the COVID-19 –pandemic by transforming their core business in

one way or another. Companies who sensed the severity of the economic impact to their businesses, started to search for different options to survive from the changes in their business environments. For example, production of disinfectants and face masks started in companies, who already had production lines that more or less supported the production of these kinds of products. (Nykänen & Luoma, (2020).

According to Seetharaman (2020), businesses with strong dynamic capabilities may identify completely new, viable business model or digitize a business (a.k.a. change their existing business model). Nykänen & Luoma (2020) argue in their survey research report, that during COVID-19 pandemic, companies in Finland benefitted from quick changes and could minimize losses and prevent problems with liquidity. However, they state that making changes to strategy and focusing into e.g. production of new products could lead to reshaping organizational capabilities into different direction considering supporting original business model.

This research is studying companies who have changed their business model due to market environment change from two different perspectives. *First perspective* being business model from action perspective, which underlines that instead of business model being very formal, written and strategy oriented, but actually a set of actions. This perspective was chosen, because entrepreneurs and company leaders do not necessarily theorize their business model – but they can tell about the actions they did to seize the opportunity they have seen.

As a researcher, I was interested to study smaller, in some terms more vulnerable companies, that were facing big difficulties in the front of COVID-19 –lockdowns and restrictions set by different authorities. Those companies do not necessarily theorize their strategic planning or business model design and transformation, but may indeed hold great capabilities to manage the changes in their business environment, from which we all could learn.

According to McGrath (2010), business models can't be completely anticipated in advance. There is an idea, but the model in action really shows, how it is really going to unfold. Understanding the business model change from company's actions is a fruitful way to theorize the way opportunity is developed into fully operating business model.

Thus, this research study approaches activities case companies had and forms an action perspective on case companies' business model change.

Second perspective chosen for this research are dynamic capabilities, and the assumption that those are enablers for business model innovation and business model changes. As a concept, dynamic capability looks company from a resource-based view. Company capabilities have existed in the literature for over 40 years (Argyres, Felin, Foss & Zenger 2012: 1213) but in the more recent research literature, the focus on dynamism has emerged. A company capability is a resource, and dynamism in company capability is referring to resource renewal – meaning that the company can reconfigure its capabilities into new order to utilize them better (Pavlou & El Sawy 2011). This research study explores the microfoundations of dynamic capabilities introduced by Teece, (e.g. 2007, 2018): *sensing*, *seizing* and *transforming*. This research study aims to connect the concept of dynamic capability to the business model innovation and change by finding the activities, that brings dynamic capabilities 'live' in the process of changing business models.

For companies, the market environment has been changing fast for already some time now. We know, that some companies change and adapt to the environment change better than others. Some companies are succeeding, some are failing over time. It is, however, very interesting topic to study why this is. Why some are better than others in adapting to the change?

The COVID-19 -pandemic hit almost all companies in the same industry on a same time (e.g. Travel industry, event industry, restaurant business, retail stores with high concentration practicing business on walk-in premises such as clothing stores) but only part of them survived or even succeeded during the pandemic. What are the capabilities that made some of them survive in a way, that from outside seems almost too easy?

As said, we already know, that the environment for companies today is changing fast. However, the COVID-19 pandemic and its effect to companies have been partly very dramatic. It has not been a change over time, but a change almost over a night. Companies have been forced to change their existing business models to fit the market, in order to avoid dramatic loss of income, or total bankruptcy. Companies which changed

their business models due to COVID-19 –pandemic and the changes it caused to their business environment is good ground to study what are the factors and the process behind successful adaptation to rapidly changing environment for companies.

1.2 Purpose of the research and research questions

Conventional strategic planning approach suggests that the success is measured how well the plan is functioning in action. However, in highly uncertain market environment it is not possible to predict accurately in advance what will happen, and what will be the best strategy (McGrath, 2010). That is something that COVID-19 pandemic at latest have shown.

Ahokangas & Myllykoski (2014) argue, that changing an existing business model is complex, as it brings liabilities that constrains the change process, compared to creating completely new model. The aim of this research study is to find out if there are dynamic capabilities as business model change enablers by understanding the activities in the design and transforming new, successful business model and to explain, how it was possible for these case companies to change the existing business model. The underlying assumption is, that companies which have changed their existing business model to a new one due to COVID-19 pandemic and its effect to their market environment, have had certain dynamic capabilities and a process in a form of actions in place, in order to succeed.

Learnings gained from this research are valuable and interesting for strategists and leaders in companies when trying to improve their readiness for future environment changes. In addition, organizations, who are helping companies either to 1) grow their business or 2) survive from difficulties caused by rapid market environment change, can adopt learnings from this research study.

Some research has been conducted regarding business models from action perspective. In addition, dynamic capabilities in the research literature have existed for over some

time now. In the business model research, there are still only few studies around business model in the business context. Ahokangas and Myllykoski (2014) find that there are only few studies that have examined business model change in the business context.

Today, we can see first results of companies changing their business model due to COVID-19 pandemic successfully (success in this context is meaning ability to reach growing or steady income and avoid bankruptcy or significant loss of income leading to difficulties operating business, pay wages to employees etc.).

Existing business model studies has focused mostly to the connection of strategy and business model, instead of providing detailed information about how companies create opportunities, or how these opportunities are transformed into business model (Ojala, 2016). This research aims to deliver more information about business model creation in business context, which is COVID-19 pandemic and common changes in the market businesses are operating in. Similar challenges to different companies in same industry provides a ground, that helps understand why some companies made it through the pandemic by changing their business model, and some did not.

This research study aims to collect empirical findings to support theories of dynamic capabilities as enablers for business model change. One of the concrete goals of this research is to provide insights and learnings about what do the capabilities of successful companies look like, and how do they act, when they sense the change in their company's business environment, mobilize their resources to act on those findings and finally execute and implement the change?

The research questions of this study are following:

- What are the activities behind successful change of an existing business model in the context of rapid market environment change like COVID-19?
- Are there dynamic capabilities within the case companies and how these dynamic capabilities occur in responding to COVID-19?

The methods of this research study are qualitative. In this research study, case study method was used and the data was collected by in-depth semi-structured interviews, complemented with questions and answers via email and by collecting articles and other media content in public sources written about the case companies in relation to their business models and operations during COVID-19 pandemic. Interviewees were company CEOs, COOs, or other relevant persons in the management, who could tell how they have changed their business model and what did the company do to come to the result, eg. Describe the process behind business model change (the plan) and the dynamic capabilities the company had, which resulted the changed business model to come to live (the plan in action). In addition, I will utilize public written text in the analysis (company webpages, blogs, newspaper articles which may tell about the topic – the process that led to changed business model or the dynamic capabilities in the company. Data is analyzed using content analysis and dividing data into themes. Pre-assumption is extracted from earlier studies, that suggests that instead of strict strategic planning and business model theorizing, companies change their business model by sensing, seizing and transforming activities and continuous loop of conceptualizing and contextualizing (Atkova, 2018).

This research study report continues as follows: in the following chapter, the theoretical framework of the study is discussed. The discussion will include go-through of business model definition and origins, an introduction to business models and business model innovation, and the concept of dynamic capabilities. In the end of the chapter, a discussion about changes in the business models and in entrepreneurial management in business research is presented. The third chapter will introduce readers of this study report to the research approach and methods by presenting case study as a research method and going through the research design and process in more detail, and continuing to data collection, data analysis and finishing with the research limitations and assessment of outcomes. In the fourth chapter, the empirical results of the research study are presented. Fifth, and last chapter, will conclude the report with the discussion and contributions, and comparing the results against earlier studies.

2 THEORETICAL CONTEXT OF THE RESEARCH

In this chapter, business model definition, its origins and how business models are used in different contexts in business and entrepreneurship research are described and discussed. While the term ‘business model’ has been used widely amongst scholars and researchers, it’s usage is fragmented and full of inconsistent definitions and unclear construct boundaries (George & Bock, 2011), it is often used to describe how company is organized to achieve its goals and objectives.

Key terminology and concepts in this research are business model and business model innovation, dynamic capabilities and business models from action perspective.

2.1 Business model definition and origins

Some researchers (e.g. Chesbrough and Rosenbloom, 2002) suggests that business model can be tracked throughout the business research literature for over 50 years. They conclude, that for example Ansoff’s (1965) ideas on corporate strategy can be seen as a basis for the business model definitions later on. As business model describes who are customers and what they value, how money is made and what is the economic logic behind revenues and costs, business models have existed as long as businesses have (Beltagui, 2018).

As a term, business model has been misused for years and mixed with other popular terms in business and entrepreneurship research, such as strategy, business concept or revenue model (DaSilva & Trkman, 2014). The word business model was mentioned for the first time once by Bellman et. Al. (1957) in their article, where it was connected to a representation of reality, a simulation from a true world through a model (DaSilva & Trkman, 2014).

Today great majority of business management students, employers and business professionals are familiar with the term ‘business model’, but that has not always been the case. Until the late 1990s, the usage of term business model remained low, but with the development of internet and technology companies, term quickly spread amongst

business researchers and scholars (DaSilva & Trkman, 2014). Business model discussion is still often dominated by technology, but in more recent research it has been used to describe broader variety of industries (Atkova, 2018).

Although some scientists state that business model is just an alternative term for business strategy, others suggest that a business model is something, that connects strategy to company's organizational design. According to Teece (2018), strategic analysis is more detailed and analytically separate exercise from a business model, and it maps out with broad terms, with what the company will compete. Business model as a term survived the dot-com bubble burst, and business model started to be used to describe companies in all industries beyond the ICT-sector.

A business model will generally disclose various aspects of organizational structure and shows how value is being captured, created, delivered and monitored (Leih et al. 2014). In business model research, business model relates different elements, such as customer relations and internal operations, to the value creation definition, revenue capture and profit generation (Zott & Amit, 2007). Teece (2018) defines business model as something that 'describes an architecture for how a firm creates and delivers value to customers and the mechanisms employed to capture a share of that value' and something that is 'a matched set of elements encompassing the flows of costs, revenues, and profit'. What is important to understand, that an architecture is not a list of processes or activities "for creating, delivering, and capturing value, but a mapping of the functional relations among those mechanisms and the underlying activities" (Foss & Saebi, 2018). Architecture refers to relations between different elements in the business model, and the direction, content, complexity and strength of those relations. This system, defined as business model, determines the way company is doing business with its partners, vendors and customers, including the activities, links between them and how they are connected to different parties, to illustrate how market's needs are met (Foss & Saebi, 2018). The purpose of a business model is both, to show how the value is delivered to the customer and profits generated for the company (Leih et al. 2014).

According to Zott & Amit (2007), business model represents holistic configurations of design elements and thus business model can be seen greater than the sum of its parts. Business research literature is approaching better consensus around terminology

definitions, and according to Foss & Saebi, 2018, the field is moving towards definition and dimensionalization rooting business models as architectures. DaSilva and Trkman (2014) suggests that a business model describes what company really is when strategy reflects what company aims to become. Without the right balance between value creation, capture and delivery, a business model will fail to function on long-term in a for-profit organization (Teece, 2018).

Today's turbulent and quickly changing market environment unfolds why a business model can be understood separately from a firm's strategy. According to Casadesus-Masanell and Ricart (2010), a business model is a reflection of realized strategy and actually a choice that supports it. Previous definition is describing well what separates strategy from a business model, and helps to understand why company needs a business model. Strategy and business models are interdependent and a change in business model has a prerequisite as a change in the company strategy.

In their study, Dasilva & Trkman (2014) explain connection between strategy, dynamic capabilities and business model. According to the authors, strategy can be seen as long-term perspective, that shapes dynamic capabilities (the medium-term perspective) which eventually run and drive the change of business models (present or short-term) in the company. Authors argue, that strategy is about building dynamic capabilities to respond effectively to existing and future uncertainties and changes. Dynamic capabilities are discussed later in this theoretical concept overview.

2.2 Business models and business model innovation

Since terms business model and business model innovation as a term are both rather new, it is good to clarify definitions and how terms are understood in this research study (based on literature). In this research study, a business model is used to refer to the architecture, while business model innovation and to refer the changes in it. E.g. Teece (2018) mentions term business model innovation equally when discussing about designing the original model and reconfiguring or replacing elements in the model over time.

In the business research literature term business model transformation is also used, but

in this research study term transformation is used to refer third ‘cluster’ in the *micro-foundation* of dynamic capabilities, which will ultimately lead to business model innovation, and business model innovation is used when referring to changes in it.

To continue, business model innovation can be divided to two by using Foss’ & Saebi’s (2018) definitions of *focused* BMI (where the company innovates within one are of the business model, eg. Targeting new market segment that has been ignored by its competitors) and *complex BMI* (where BMI affects the construct of the business model and has potential to disrupt whole industry) to understand better what kinds of BMIs were needed in the case companies during COVID-19 pandemic. Complex BMIs are often led by market newcomers, but also existing companies might introduce complex changes in their business model (Foss & Saebi, 2018).

Business model innovation literature suggests that a business model needs to be designed rather than chosen. The business model innovation term is known from the concept of design thinking which builds to the notion that problems are not always solved by implementing some of pre-determined solutions. In BMI literature also suggests that the capabilities of a company will act as a starting point for business model development. (Beltaoui, 2018). Studies that focuses on research from business model innovation, implementation and change perspective, often provide information about dynamic capabilities (Teece, 2018).

As can be understood from previous chapters in this concept overview, a business model is a reflection of strategy ‘in real life’ and should provide information how a certain piece in the business model is produced within the company (business process). However, business model innovation should include more than just a business process redesign (DaSilva & Trkman, 2014). Business model and business model innovation literature links company’s strategic actions concerning e.g. innovation and boundaries of the company to a systemic view (Foss & Saebi, 2018).

Leih et al. (2014) argues, that while dynamic capabilities are the foundation of a business model innovation, organizational design is also in the center of the company’s ability to sense new considerations that may lead into a change in the business model. When a company has a high degree of delegation and culture with open vertical communication, employees can interact more with customers, suppliers and contractors

and the relevant information will flow to the top management (Leih et al., 2014), which can then initiate a business model change. Initial step in the business model innovation for companies is sensing the (unmet) needs of certain customers.

In the business research literature, there is an emerging trend to discuss business models from action perspective (e.g. Ahokangas & Myllykoski, 2014). Traditionally, business model research has treated business model elements quite static strategic choices (Ahokangas & Myllykoski, 2014). However, there is a call towards other perspective, where business model creation and transformation are seen continuously developed through specification, refinement, adaptation, revision, and reformulation (e.g. Morris et al, 2015, Ahokagas & Myllykoski, 2014). Tikkanen et. al. (2005) argue, that new business models arise from the existing source of business model components of a company as a consequence of co-evolutionary relationship between the business model of the firm and the context in which it operates. Key argument to support this view is that the business model stays as a theoretical concept until it becomes fully comprehensible through action in the business context it was created (Ahokangas & Myllykoski, 2014). Ahokangas et al (2019) underpin that approach in action research, where experimenting, reflecting and learning is a necessity. Thus, the focus in this perspective is more on the “how” instead of “what” (Zott et. al. 2011) and this can bring more information for further use in managerial implications.

In their study, Ahokangas & Myllykoski (2014) presents a framework, that unfolds activities of business model creation to exploitation and exploration, which include the visioning, strategizing, performing, and assessing practices presented in earlier studies, where e.g. Meyer (2003) offered a systematic way to approach business model creation through practices. Usually, the focus in research studies is on start-ups and/or newly established companies, or industries, that are fairly new, thus, there is a call for more research on business model innovation and transformation in companies operating in traditional industries, or companies with a longer history with same business model. Some scholars in the more recent business model literature propose that business models are calibrated in context (e.g. Teece, 2010) and designed in close interaction with their social context, which includes the society, competitors and customers of the company (Tikkanen et al., 2005).

2.3 Dynamic capabilities approach

Business research literature includes a large amount of discussion around organizational capabilities. Authors use the term ‘capability’ quite generally, in this research study term ‘capability’ is used to refer specifically to organizational capability, that implies a capacity enabling organization or its part to perform particular activity in reliable and minimally satisfactory manner (Helfat & Winter, 2011). Thus, a certain business model cannot function in real life without capabilities that enable that business model. Capabilities of a company have existed in the business literature and research for decades, but only recently the capability discussion have experienced a shift towards focus on the development of company-specific capabilities, and the manner in which competences are renewed to have responsiveness towards changes in the business environment.

Traditionally the split between operational and dynamic capability has been that an operational capability enables an organization to perform in an ongoing basis using and enable it to make a living in the present, and a dynamic capability to alter how an organization makes it’s living by enabling extension and modification of current business model. Helfat & Winter (2011) argue, that drawing a line between operational and dynamic capability is difficult, because some capabilities are used to both operational and dynamic purposes and a change is always occurring, at least to some extent. Take as an example communication and coordination. That capability can be used for both operational and dynamic purposes. Change happens, as well, even if it is slow or it happens on a very granular level. They also argue, that split by radical versus non-radical change or new versus existing business is problematic, as radicality of change is a matter of perspective, expertise and degree. Thus, the existence of dynamic capabilities is not restricted just to new-to-the-world businesses or fast-paced business environments, or what could be perceived as radical change. (Helfat & Winter, 2011). Easterby-Smith et. al. (2009) note that despite the attempts to define terminology, dynamic capabilities are hard to identify.

Dynamic capabilities enhance company’s responsiveness towards changes in the market environment by enabling development of business model. It is important to notice, that the design and operation of (new) business models are dependent on company’s (dynamic) capabilities (Teece, 2018). Dynamic capabilities emerge from assembling

and employing human and physical aspects, which will lead to collective learning (Leih et al., 2014). Leih et al. (2014) argue, that capabilities are the less likely to be dependent on individuals the longer company have existed and the larger it is. Examples of a dynamic capability could be a product development routine, where different skills and backgrounds are combined to create revenue producing products, or a strategic decision making, where managers put together their personal, business and functional expertise to produce decisions that shape the future of the company (Eisenhardt & Martin, 2000).

Dynamic capabilities emphasize two aspects: changing nature of the environment and the key role of strategic management in reconfiguring, adapting and implementing internal and external organizational skills and resources, as well as functional competences towards a changing environment. Teece (2003) suggests, that the competitive advantage of a company is actually coming from dynamic capabilities, that are rooted in high performance routines and processes, and conditioned by its history. A dynamic capability is not an 'ad-hoc' innovation. However, Eisenhardt & Martin (2000) argue, that in the moderately dynamic markets, they are more detailed, analytical processes leading to more predictable outcomes whilst in the high velocity markets, they are highly experiential, fragile processes leading to unpredictable outcomes.

Dynamic capabilities include the "*sensing, seizing and transforming*" all things needed in the company in order to design and implement new business model (Teece, e.g. 2007, 2018). Sensing, seizing and transforming are included in the microfoundations of dynamic capabilities and will be discussed next.

In the discussion about dynamic capabilities, Teece (2007) divides firm's capabilities into layers: in a company, the first layer of capabilities consists of ordinary, operational capabilities; governance, routine activities and administration. Above these are the second-order, dynamic capabilities: a microfoundation that involve the adjustments and reconfigurations of a company's existing capabilities as well as development of new ones. Teece (2007) divided dynamic capabilities to three different "clusters" of which each includes processes and managerial activities: 1) sensing, which means identifying and assessing opportunities, 2) seizing, which is defined as the internal and external resource mobilization to address sensed opportunities and to capture the pro-

posed value and to 3) transforming, which means in Teece's definition continuous renewal of the organization. Guiding these, company's higher-order capabilities, "*by which supported by organizational processes, senses likely avenues for the future, devises business models to seize new or changed opportunities, and determines the best configuration for the organization based on its existing form and the new plans for the future*". (Teece, 2018).

Common to many companies today is the shift from product-centricity to services and innovations in service delivery. Kindström et al. (2013) discuss about dynamic capabilities and deep-dived into *sensing*, *seizing* and *reconfiguring* from service and service innovation perspective. Kindström et al. (2013) argue, that service innovation and developing supportive dynamic capabilities is increasingly important for companies, when they are shifting from product-centricity to services in order to compete in the market. It can also be seen, that many companies struggling in the middle of COVID-19 pandemic made changes in their business model specifically by developing and/or changing existing services.

According to Juntunen (2007), sensing, seizing, and transforming he calls the dynamic capability clusters are an important mechanism that differentiates companies from competitors. These features achieve advantages and plays an important role and increases the probability of having competitive advantage. Teece (2018) suggest, that the highest order capabilities are something on which top management should be most focused. One important reason is that dynamic capabilities are hard to replicate. This argument comes from the fact that they are built on the individual characteristics on the entrepreneurial managers, the routines that have been shaped over time, and the culture of the organization (Teece, 2014).

2.4 Changes in the business model and (entrepreneurial) management

Almost any change in the business model is a strategic issue (Leih et.al. 2014) and very complex for already established companies (Ahokangas & Myllykoski, 2014). As mentioned above, a business model is an architecture that shows how value is being created to the customer and profit to the company. Thus, it relates to organizational design; how company is owning and controlling productive assets, i.e. which activities

are managed by the company and which are managed by e.g. a cooperation partner. Leih et al. (2014), argue, that the organizational design of a company should be responsive to the changes in the business model.

The extent the company is controlling their assets will affect the extent the company can take benefit from a business model innovation, especially if its appropriability regime is weak. Consequently, a change in business model might require change in company's organizational structure and control, and even in the culture (Leih et.al. 2014). How radical these changes are, is dependent by the nature of the business model innovation (Foss & Stieglitz, 2014). Understanding the complexity of changing the business model of an already established company is critical to understand. This may at least partly explain, why it has not been easy for all of the companies to survive from the COVID-19 pandemic caused changes. In practice, an existing business model contains liabilities, that provides a context which may be too constrained, for those involved (Ahokangas & Myllykoski, 2014).

Foss & Saebi (2018) discuss about effect of the top management to the business model design and transformation. They argue, that different business model innovations require different types of leadership interventions, as the challenges differs as well, and that the top management has a crucial role in the success of a business model innovation, as long as the involvement type matches the type of BMI chosen. Tikkanen et. al. (2005) argue, that the components of a business model embodies the strategy of a company. Thus, the change in the business model requires a change in the managerial level, and a change in the strategic direction.

It is important to take into consideration, that for existing companies, introducing a new business model may require transformations in its present structure and management of tensions between constituencies in the different parts of the company (Leih et al., 2014). When elaborating whether a capability is dynamic or not, Helfat & Winter (2011) argue, that although dual-purpose or multi-variant capabilities do exist, capability that serves primarily operational purposes should be considered as such. Considering the fact that things in organizational setting always change to some extent, discussing about whether a capability is dynamic or not, the assessment of speed of change, nature and the extent of change is important. They also note, that capabilities that promote economically significant change, should be considered as dynamic.

(Helfat & Winter, 2011).

Leih et al. (2014) underlines, that exercising dynamic capabilities in a company often requires critical, high-quality decisions by top management. Easterby-Smith et. al. (2009) argue, that it is company's top management that provides a vision for the processes targeted for shaping the dynamic capabilities, dynamic capabilities can be created. Performing creative managerial and entrepreneurial acts are non-routine and strategic, thus there might be principles that guides those actions and decisions. In established firms with strong dynamic capabilities, managers have time and needed information to sense changes in the business environment and explore opportunities, and they are not blocked by company's ordinary capabilities and its legacy. Considering the fact that dynamic capabilities are patterned and managed processes and not an accident, or ad-hoc activities, role of top management is critical and cannot be excluded.

Development of a business model demands evolution of organizational capabilities and strategy. Organizational design and business model are interdependent (Leih et al., 2014).

3 RESEARCH APPROACH AND DESIGN

The purpose of this chapter is to describe what are the basic philosophical assumptions behind this research study. The chapter consists of five sections. In the first section, In the second section, we start by briefly going through the methods used in this research: basic differences between quantitative and qualitative research method, continuing to describe the research methods used in this research study. In the third section, the process of this research is described, along with the case company description, case study content and the outlook of the data collection. In the fourth and final section, reliability and validity of this research study is discussed.

This research study is a qualitative case study, and the origins and definitions of the chosen method are introduced later in this chapter.

3.1 Research approach

Knowledge can be divided into two: posteriori and priori knowledge. The fundamentals behind these two knowledge types are, that empirical, ‘posteriori’ knowledge is the generally as truth accepted, sensory evidence while ‘priori’ knowledge is bringing explanation or justification independent from the sensory experience. These principles of knowledge are the theoretical underpinnings for qualitative and quantitative research, which is the postpositivist attempt to challenge the traditional belief of absolute truth. (Williams, 2007)

The word research is sometimes understood for mere information gathering or “summarizing” facts. According to Leedy & Ormrod (2007), research is a systematic process, where the goal is to increasing understanding about a phenomenon by collecting, analyzing and interpreting information (data). They continue by defining eight (8) characteristics on an (scientific) research, where they state that research is 1) originating from a question or problem, 2) having clear articulation of a goal, 3) having a specific plan for proceeding, 4) having its research question (problem) usually divided

to more manageable subquestions (problems), 5) guided by its research problem, question or hypothesis, 6) accepting some critical assumptions, 7) requiring collection and interpretation of data and 8) being cyclical by its nature.

Quantitative research is seen independent from its researcher, and is dominating several research fields in the Western culture as a meaning and new knowledge creator. It is often building to existing theories, and the purpose is to objectively measure existing reality. Data in quantitative research is often numerical. (Williams, 2007). Quantitative research has three types: descriptive, experimental and causal comparative (Leedy & Ormrod, 2001).

Qualitative research is being argued to be the best method when studying one phenomenon in-depth (Myers, 2019). Qualitative research, as an opposite from quantitative research, has strong correlation between observer and the data (Williams, 2007). In qualitative research, observer is traditionally kept objective from the studied phenomenon. However, true objectivity can still be difficult to reach. Qualitative research builds heavily on describing, interpreting and explaining collected data, and focuses studying data on micro level, while quantitative research focuses studying data on macro level (Williams, 2007). Leedy & Ormrod (2001) argues, that since qualitative research is building and testing new theories, it is less structured in description.

Both qualitative and quantitative research in under all scientific research disciplines are expected to proof that the studies are credible (Golafshani, 2003). This research study has been conducted with qualitative research methods and approach.

A research can be described as an inquiry, where data is collected, analyzed and interpreted in some way in order to understand, predict or describe an educational or psychological phenomenon in a context (Mackenzie & Knipe, 2006). Researcher conducts the study, so it is also important to understand what kind of choices have been made in the research paradigm, as it has an influence on how knowledge is studied and interpreted. Without the choice of a paradigm, it might be difficult to understand (both for the reader, but for the researcher as well) what are the subsequent choices regarding methodology, methods, literature or research design (Mackenzie & Knipe, 2006). For example, Mertens (2007) suggests, that the nature and the context of the research is influenced by the theoretical framework adopted by the researcher.

According to Myers, 1997, qualitative research can be categorized as positivist, critical or interpretative. Positivist researcher assumes that reality is something that is objectively given and they attempt to test a theory in such a way that it can be better understood. Critical researcher relies on historically constituted reality which is socially produced and reproduced by people, whileas interpretative researcher sees reality as socially constructed, and a phenomenon can be understood through meanings people have given to them (Juntunen et. al. 2018). Alternatively, Mackenzie & Knipe (2006), state that a number of theoretical paradigms are discussed in the literature as: positivist (and postpositivist), constructivist, interpretivist, transformative, emancipatory, critical, pragmatism and deconstructivist paradigms. In their paper, Mackenzie & Knipe (2006) propose an alternative view by Mac Naughton, Rolfe and Siraj-Blatchford (2001) which a defines a paradigm with three different elements: a belief about the nature of knowledge, a methodology and criteria for validity.

Traditionally in the positivist paradigm, classical evaluation of reliability and validity are considered when conducting quantitative research (e.g. Golafshani, 2003). Originally, reliability referred to how the research could be replicated, but within the qualitative paradigm, reliability is interpreted as consistency with regards to ontological, epistemological, and methodological logics (Leung 2015). Validity, in the other hand, refers to the accuracy and adequacy of the measurement means while as validity in the qualitative research is the evaluation of appropriability of the data, processes and tools (Leung, 2015). According to Miles & Hubermann (1994), qualitative research should consider research credibility, transferability, dependability, and confirmability when they evaluate the trustworthiness of their research study. Shenton (2004) lists the use of well-refined research methods, peer evaluation, triangulation, ensuring the honesty of informants, iterative questioning, the researcher's own reflections, and the careful exploration of previous research findings as key strategies to promote research credibility. Transferability, in the other hand, can be secured by detailed description about the phenomenon and theory under the study, so that the results could be applied to other situations. Dependability can be confirmed by carefully and with details reporting about the research process. Confirmability can be secured by honestly reporting about experiences and ideas of the study participants, and not researcher's own thinking.

In this research study, a pragmatic research paradigm is adopted. According to Mackenzie & Knipe (2006), pragmatic research paradigm sees research problem as central, and applies all approaches that is needed to understand the problem. It leaves data collection and data analysis methods to be chosen according to what is most likely to provide insights to the research question itself without absolute philosophical loyalty to any alternative paradigm (Mackenzie & Knipe (2006)).

Mackenzie & Knipe (2006) describe pragmatic paradigm as something that can adopt following behavior: it can be defined as pluralistic, problem-centric, real-world practice oriented and something that considers consequences of actions.

3.2 Methods in qualitative research

There are several methods that can be used in qualitative research studies. Williams, (2007), separates five different types of qualitative research: case study, ethnography study, phenomenological study, grounded theory study, and content analysis. These five types are built on inductive reasoning. Some scholars (Yin; 1984, Swanborn, 2010) argue however, that case study research method should not be confused to be purely qualitative research method, as some case studies involve strong quantified measurement and analysis, however, many research scholars count case study method in qualitative research (e.g. Myers, 2019). Aira (2005) divides qualitative data collection methods to three main categories: interviews (individual interviews and focus group interviews), observation (eg. Observing action or collecting data to video) and document analysis (newspaper articles, diaries etc). Method should be chosen to fit the theoretical concept the research problem is being approached from (Alasuutari, 2011). For example, if it is essential to find out how certain phenomenon is being perceived or understood or what kind of meanings respondents are giving to it, it is difficult, if not impossible, to find that out analyzing answers to form questionnaire with predetermined answer options.

Typical characteristics of a qualitative data are complexity, multi-dimensional and the expressive richness of it. However, it is important to notice that the data that is analyzed in the research process, are not truthful descriptions about what has happened, but a documentation about something. The way a question is given to respondents are

equally as important than the answers to it. (Alasuutari, 2011).

Notable in the qualitative research is that the method of research and its every phase needs to be described precisely (Aira, 2005). Description of the research method can include description of the data, who were interviewed, what is their age and background? How the researcher came to the decision who to interview or what companies to choose in the case studies? Also, the length of conducted interviews and how the information was collected (e.g. notes) should be explained. Detailed description helps audience to understand, what and how it has been studied.

The idea of respondents having the truth and only problem being the questions in the interview to catch that truth can be problematic. Rather than truth, the answers given by respondents can be analyzed as perceptions about the phenomenon. In the research discipline, observations or perceptions as such cannot be considered as results on a research. Moreover, those are the 'leads' that can guide to the source of results. (Alasuutari, 2011). Conclusions, that are made based on the observations, can be considered results, however, Alasuutari (2011) argues that interesting data and observations made based on it can still lead to poor research.

Alasuutari (2011) underlines, that for a researcher, it is important to make clear analytical difference between the observations made from the collected data and the results of a research study. Data should be analyzed in the specific theoretical context – theoretical concept determines from which angle the data is being approached by the researcher to make conclusions.

Gathering and analyzing data for qualitative research is a time-consuming process. Analysis and gathering can happen partly parallel and examining the data collected can be guided by a theory that has been chosen for the research and the researcher can follow the exposing of that particular theory from data (Aira, 2005).

The results of a qualitative study cannot be described by numbers only, like in a quantitative study. Usually, results of a qualitative study are expressed in different themes or charts, with direct quotes and citations from the data (Aira, 2005). Case study, which was chosen for the method of this research study, is not as noted, always necessarily qualitative.

According to Myers (2009), qualitative research study method becomes very useful for business and management research. In qualitative research, real-life situations, people and organizations are studied and it allows the scholarship and practice become together.

3.3 Case study research

The need for a case study research arises out of the desire to understand social phenomena, which is complex and requires retaining the holistic and meaningful characteristics of real-life events (Yin, 2009). Case study research method provides opportunity to explore and understand complex issues and comes useful when there is a need for in-depth investigation (Zainal, 2007) and it is popular method within the area of research that relates to organizations (Swanborn, 2010). With case study method, the researches receives an opportunity to closely examine a case within specific context. In most case studies, only a limited amount of research subjects is selected for the purpose (Zainal, 2007). Yin (1984:23) defines the case study research method “as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.” In other words, case study aims to reveal a phenomenon situated in the context of a specific case (Swanborn, 2010). Swanborn (2010) argues, that case study should not be treated as intensive study of a case or small number of cases that aims to generalize larger set of cases, but a research, that is a study of a phenomenon or a process as it develops within one case (or small number of cases).

In case study research, researchers can adopt either single-case study or multi-case study, depending on if there are cases available for replication (Tellis, 1997). If there are no cases available for replication, researcher is limited to a single-case study design. A case study should be linked to theoretical framework (Tellis, 1997). In case study, it is impossible to do hardly any generalization based on the number of research subjects (Zainal, 2007), however, generalization is based on theory (Yin, 1994). Linking several pieces of information from the same case to theoretical proposition, is

called pattern-matching technique, and it can be enforced by multi-case design to support the results (Zainal, 2007).

At the start of a case study research, the researcher should know which phenomenon to study (Swanborn, 2010). According to Yin (1994), a case study can include, or even be limited to, quantitative evidence. Case study research is not a sampling research (eg. Yin, 2003 and Tellis, 1997) but selecting the cases should maximize the learning outcomes, respecting the time available for the study (Tellis, 1997). In multiple-case study, each case is still a “whole” study, where the data used in analysis can be gathered from various sources to draw conclusions (Tellis, 1997). Uprichard (2013) divides sampling strategies into two general ontological groups: probability sampling, which is linked to quantitative research and nonprobability sampling, which is linked to – qualitative research. The purpose of qualitative research is not to create a representative sample and results that can be widely generalized, but to create a sample that illustrates information about a phenomenon. Literature recognizes tens of different nonprobability sampling strategies (e.g. Patton, 1990, Curtis et. al. 2000). This research has followed guideline proposed by Curtis et. al. (2000) which is built upon the work of Miles and Huberman (1994) where 1) the sampling strategy should match the logic of the conceptual framework, 2) the sample should be able to generate database about the phenomenon under the study, 3) the sample should enable researcher to draw inferences from data collected, 4) sampling strategy should be ethical and 5) the sampling strategy should be feasible.

As the purpose of this research study is to explore business model change in a set of actions and the capabilities of a company enabling the change of the business model, a method of case study research was chosen as one of the most suitable way to deep dive into concrete activities of designing and implementing the change.

Swanborn (2010) defines a case study as study of a social phenomenon, with following features:

- boundaries of one or few social system(s) (the case or the cases),
- executed in the context of the case or the cases
- during a certain period

- that focuses on detailed descriptions, interpretations and explanations that several categories of participants in the system attach to the social process
- in which the researcher starts with a broad research question on an ongoing social process and uses available theories, but abstains from pre-fixed procedures of data collection and data analysis, and always keeps an eye open to the newly gathered data in order to flexibly adjust subsequent research steps
- that exploits several sources of data (informants, documents, observatory notes)
- in which sometimes the participants in the studied case are engaged in a process of confrontation with the explanations, views and behaviors of other participants and with the resulting preliminary results of the researcher.

Swanborn (2010) notes, that since case study analysis and reporting is often done in words, not numbers, thus it is usually identified as qualitative research method. He also argues, that case study aims to explain causal relations (in the explanatory approach).

3.4 The research design and process

A research design is supposed to be the entire plan of a qualitative research project (Myers, 2009). The research design of a case study should offer a blueprint for the research process; a logical sequence of steps connecting the data to the research questions and ultimately to the conclusions (Yin, 1994). Research design is not just a work plan, but a guiding light to find the relevant data to address the initial research question (Yin, 1994). Research design contains the philosophical assumptions,

According to Yin (2003) a case study research design constitutes from five different elements:

- research questions
- its proposition (if any)
- unit(s) of analysis
- the logic that links the data to the propositions

- the criteria for interpreting the findings.

That being said, the research design for a case study is not only stating what data is being collected, but it is also telling what is to be done after data collection.

According to Yin (2003), a case study can be suitable for a research strategy, because the target of interest is a contemporary phenomenon within specific context. In a specific context, a case study works as an enabler for a researcher to closely examine the data. Before the start of the research process, the researcher should know, which phenomenon is the one in the focus of the study (Svanborn, 2010).

A research study can be inductive, “bottom-up” and theory-building, or deductive, “top-down” and theory-testing on its reasoning (Myers, 2009). This research study is deductive by its nature, testing existing theoretical concepts in a new context, the COVID-19 pandemic and unexpected, rapid changes in companies’ business environment.

This study is a qualitative multi-case study of two companies, that have made business model innovation during COVID-19 pandemic hitting market environment. The research process of this study is described in Figure 1 and it follows Yin’s (1994) three step process: 1) define and design, 2) prepare, collect and analyze and 3) analyze and conclude.

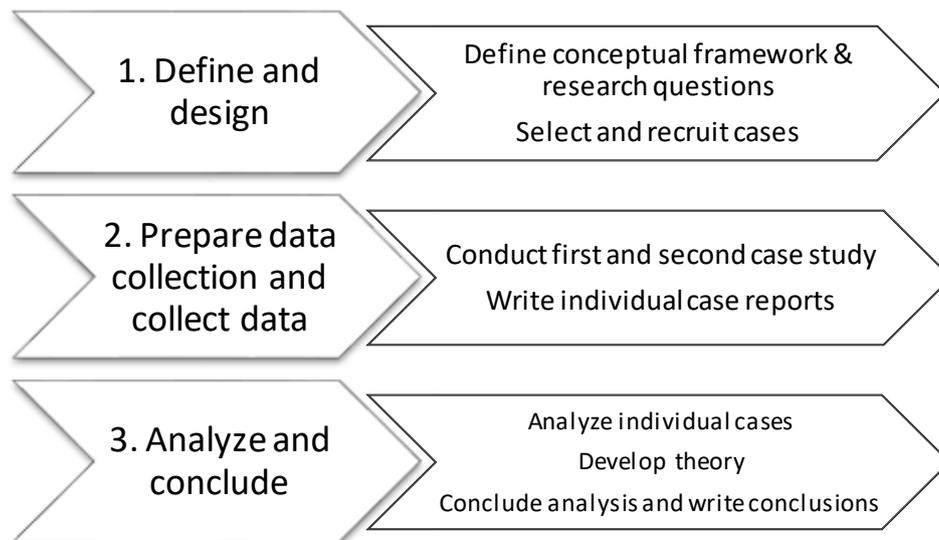


Fig. 1: Research process (Adopted from Yins three step research process)

In define and design step: The research problems were defined in chapter 1, and the cases were selected and recruited. First case being Luxmet Oy (later referred as Luxmet), start-up company developing and selling optical sensors system designed for steel and metal industries solutions, second case being Muru Dining Oy (later referred as Muru Dining), fine dining, catering and restaurant company in capital Helsinki area. In the step or preparing data collection and collecting data: interviews were conducted, and additional media content collected. Data from all sources for each company was combined into two individual case reports. In analyze and conclude step: Individual cases were analyzed. Pre-assumption prior the analysis was, that companies surviving or even succeeding through severe impact of COVID-19 pandemic to their business environment, hold certain competences: dynamic capabilities of sensing, seizing and transforming. During analysis phase, this pre-assumption was confirmed. Lastly, the analysis was concluded into this research study chapter x, and conclusions written.

This research was done by targeting companies that had changed their business model due to a rapid change of market environment. This study aims to explore how companies change their business models to capture opportunities, rather than leaving the business model unchanged, and obeying to whatever might come. It implies to capture actions taken by entrepreneurs and key persons in the company by which the underlying opportunity to survive or even succeed despite of the ongoing storm in the business

environment, and the business model are connected. Due to the type of the research questions, it is important to have rich descriptions of the actions taken in the case companies. That is the reason, data collection was decided to happen in interviews, complemented by written articles and publications about the case companies and their business model related changes made during and/or because of the COVID-19 pandemic and its effects on their operating field.

In this study, *purposeful sampling* was applied. Seven steps of purposeful sampling by Tongco (2007) was followed: 1) *Decide on the research problem*: The scope of this research is to understand how companies adapted successfully to COVID-19 pandemic and what is the process behind successful change of an existing business model in the context of rapid market environment change, and what dynamic capabilities these companies have. 2) *Determine the type of information needed*: this study aims to provide insights and information for all companies that want to develop their dynamic capabilities for making a shift or change in their business model due to a rapid change in the market environment. 3) *Define the qualities the informant(s) should or should not have*: In this study, the informant(s) are the people involved and/or responsible of the activities in the process of business model change. 4) *Find your informants based on defined qualities*: All the case companies in this study were selected by first seeking suitable candidates from University contacts, through questionnaire sent to member companies of Suomen Yrittäjät and searching from newspaper articles and other relevant sources for companies that had developed new or changed their business model due to COVID-19 pandemic and change in their market environment. The informant(s) were representatives of businesses that had changed their existing business models and considered themselves that they had survived due to the business model change. 5) *Keep in mind the importance of reliability and competency in assessing potential informants*. The case studies were conducted with interviews, complemented by newspaper articles and other relevant public media content. The purpose of the interviews was to study the conditions that companies faced, the activities they had in designing the new or changed business model and how they themselves considered managing the business environment change with business model change. 6) *Use appropriate data gathering techniques*: Data was gathered mainly during the interviews where the business model change activities and outcomes were discussed. Material was gathered with a recorder complemented with additional notes made during and after the interviews.

In addition, newspaper articles and other media publications written about the companies during COVID-19 pandemic, were analyzed, when the content was matching with the topic of this research study. 7) *In analyzing data and interpreting results, remember that purposive sampling is an inherently biased method.* This research was done only in co-operation with Finnish companies that had changed their existing business model due to rapid, unpredictable change in their business environment due to COVID-19 pandemic.

When preparing for the interviews and designing the interview structure, a guideline to qualitative interviews from Myers (2009) was followed. According to Myers, a few broad, open ended questions, where researcher can be open to new lines and ideas emerging during the interview, are better than a long-series of closed questions. Myers emphasizes, that too short and obvious questions lead to detailed answers, whereas a question that requires interviewee to recall a specific event or experience in detail, lead to a fuller narrative.

According to Myers, recording interviews is a good practice, because that allows researchers access to exact words used, which might help in the analysis, but also enables the use of quotes in the final thesis – which is much more credible than paraphrases of what someone has said. Interviews were recorded, and focus during recording was more on the interview, rather than to the notes. Notes were made after the interview and also during listening recording.

The business model change themed semi-structured interviews contained 6 sets of questions. One set of questions asked interviewees to provide general background information about the market company operates, main products/services it provides and their business model before COVID-19 pandemic. Second set of questions was designed to answer what kind of change in the business environment company faced due to the COVID-19 pandemic and how it affected to their daily operations. Third set of questions was prepared to cover the business model change, how, what and when. The questions were formulated to cover three elements of dynamic capabilities related to business model change: sensing, seizing and transforming. Based on these elements respondents were asked what impact COVID-19 pandemic brought to their company's business environment, what did they change in the business model and how they

changed it. Respondents were also asked to evaluate the impact change had to their business.

To ensure data richness, data for this case study research was collected also from newspaper articles and other relevant, public media sources where company owners or representatives were interviewed related to changes made in business operations due to COVID-19 pandemic impacts to their business environment.

3.5 Data collection

The data for this research study was collected by qualitative interviews and using newspaper articles and other openly published media content about case companies. Myers & Newman (2007) argue that the qualitative interview is one of the most important data gathering tool in qualitative research, and it is widely being used within all kinds of research: positivist, critical or interpretive and it is suitable for case study research.

Myers & Newman (2007) divide research interviews to either structured, unstructured/semi-structured or to group interview. In this research study, interviews were conducted as semi-structured. The script of the interviews were incomplete, with some beforehand defined questions, but left with some room for improvisation, letting also the interviewees to speak about what came in their mind in the middle of the interview.

3.6 Data analysis

First, data collected by interviews was transcribed into text format. Second, all data, which was now in text format, was pre-read and initial analysis was made. In the initial analysis phase, interesting sentences or individual words and expressions were underlined. In the third phase, individual case reports were written. In the theory development phase, three dynamic capabilities, that were recognized and theory around them were formulated in previous research, were taken into pre-assumptions in theoretical framework of this research study. Collected data and information in case reports were compared to the theoretical assumptions by categorizing collected data. After that,

conclusions about the findings and evaluation how the findings support and differ from previous research, could be made. In the empirical analysis section, the themes are presented as the key dynamic capability elements of the change of a business model, to reveal the change process.

Based on the data analysis, empirical model of the dynamic capabilities supporting business model change in rapid business environment change situation was formulated.

3.7 Limitations and assessment of outcomes

Despite case study method has many advantages, it has some disadvantages too. Zainal (2007) argues that case study method does not provide extensive basis for scientific generalization, because it is using a small amount of research objects. Another concern Zainal raises, is that the nature of case study method is to provide massive amount of data, which can be difficult to manage and organize systematically. These arguments are supported by other scholars within the case study research literature (e.g. Yin, 2003). These arguments are valid, but the purpose of this research study is more to broaden the understanding of the activities which helped one company to change their business model in a challenging market environment, rather than trying to generalize information to concern all companies and/or the whole phenomenon.

What comes to data collection, Myers and Newman (2007) argue that using qualitative interviews is not completely unproblematic. For example, the interview is an artificial situation, which is often constrained with time pressure and possibilities to “go wrong” in one way or another.

In this chapter the most typical risks, problems and limitations in research interviews are gone through, along with the mechanisms used to control them. The following risks, problems and limitations are adopted from Myers & Newman (2007). 1) *Lack of time: lack of time means running out of time during the interview.* This risk was controlled by reserving more time with the interviewee that actually were planned to be used. 2) *Lack of trust: Interviewer is often a complete stranger, and interviewee might be sensitive about the level of information that can be shared in the interview.* Risk is

then that not all relevant information is given during the interview, or otherwise will remain hidden. This problem was managed with telling interviewees information who is the researcher and to what shared information will be used. No sensitive information was required to share. 3) *Artificiality of the interview: a qualitative interview requires interrogating a complete stranger and asking them questions with a time pressure.* This problem was managed by chatting with the participants before the actual interview to get them familiarized about the topic, and providing them information about the purpose on the interview, and questions. In addition, risk was controlled by asking interviewees to propose best suitable time for themselves for the interview, and reserving more time that actually was planned to be used. 4) *Level of entry: Myers & Newman (2007) argue, that it is crucial to choose the right level of entering the company or organization.* This problem might become more obvious if researcher should interview e.g. both senior management and union members. In this research, this type of risk was not recognized, and thereby no special mitigating actions was taken to prevent it. 5) *Elite bias: Researcher might interview only the “stars” of the company, people with high status who are well-informed, well-spoken, and in good position within their organization.* Thereby a risk, where all angles of a phenomenon are not considered. In this research, this risk exists, but is not considered to be very high. Data collected was concerning company activities and events happened. As such, it is enough for this research study, that the interviewee knows about those. 6) *Knowledge construction: Interviewer might think, that they are able to collect data from interviewees objectively and “as it is”.* However, it must be considered that knowledge is constructed during the interview – interviewees might want to appeal knowledgeable and rational, and are telling a story that is as rational and consistent as possible. This risk exists. Data collected from the cases, however, was analysed in a way to avoid treating the data as “full, consistent story” but rather as a data set. 7) *Ambiguity of language: The meaning of words used can be understood in various ways. It is not always clear, that interviewees understand the questions how interviewer meant them, and vice versa. Spoken and written language always suffers a residue of ambiguity, no matter how careful we try to be in capturing the information.* This risk is always there, and can only be mitigated with best effort by making sure the message goes through as it was meant during the interview, asking double questions and using clarifications when a smallest sign was there, that it could be needed. 8) *Generally “going wrong”: as the interview is a dynamic, social event, there are lots of possibilities how the interview could go wrong.*

Interviewer could for example unintentionally insult the person they are interviewing, and change the situation drastically. However, this type of events was not detected during interviews conducted for this research study.

4 EMPIRICAL ANALYSIS OF THE BUSINESS MODEL CHANGE

This chapter tells the interesting story of a business model change due to a rapid change in the external environment of a company. The purpose of the following discussion is to unveil how some companies are still able to function, and even succeed, in a very challenging situation caused by external major change in their business environment, they have not been able to prepare, other than developing their dynamic capabilities (even unconsciously). What are the qualities that separate surviving company from another, that had to put an end to their operations?

Even inside same industry, we have seen sad stories about bankruptcies and laid offs. As a researcher, that made me wonder, why some will perform better than other, even if the initial business model is roughly the same? Are there competencies inside the company, that makes them more adaptive to the change, than others?

4.1 Description of case companies

Case company 1, Muru Dining Oy, is a company which consists of a group of traditional, Helsinki based fine dining restaurants and wine bars. The company has a long history in the restaurant business in the area of capital Finland. While COVID-19 – crisis was hitting the market and during the restrictions towards restaurants set by authorities, company designed, tested and implemented several different business models. Typical pattern company had on the business model innovation was first a quick ideation, mobilizing resources and setting up a minimum viable product, and have it delivered to customers within few days from the idea. Well-functioning ideas were fine-tuned further, and ideas, that did not “fly” amongst their customers, were quickly abandoned and new ideas were out for a next try-out.

Case company 2, Luxmet, is a university-spinnoff specialized in advanced high temperature process monitoring and control systems for steel and metal industries. Luxmet gained 800k€ on funding round led by Innovestor in 2019. Opposite to Muru Dining,

Luxmet did not have a long history working with their pre-COVID-19 business model. Yes, metal and steel industries are very traditional in their ways of making business with their suppliers and partners, but Luxmet had thought about different alternatives to enhance their scalability worldwide without having to invest heavily in their supply chain. When COVID-19 –crisis started to affect Luxmet's operations, they only had just recently finished a funding round, that did secure lifting their sales and implementation capacity. Luxmet's customers operated in very traditional ways (e.g. f2f sales meetings, implementation planning happening on site) but Luxmet had considered alternative methods already in their business model design activities.

Case companies represents two very different businesses. Luxmet is a University spinoff, and has commercialized its products just before and during COVID-19 pandemic. It had small turnover, but significant amount of resources invested to development and testing. It is operating in an international setting, and by default focused on scalability. Its customers are purely companies.

Muru Dining, has a longer history in very traditional, Helsinki and capital Finland area restaurant, wine and dining business. Its customers are mainly consumers, but some B2B business is also included to the business model. It is operating purely in the Finnish market only.

These two companies represent different industries and different situations. They faced different challenges, and resolved them differently. For example, Luxmet suffered about the travel restrictions significantly. Before the pandemic, the sales and the planning process had contained visits to the sites. During the pandemic, site visits were restricted, and traveling was almost impossible. Muru Dining, in the other hand, could have benefitted of the travel restrictions, as people could not travel, they might have had more money to spend on dining and spending time in a winebar. However, the restrictions within the restaurant business and safe distance recommendations hit their industry badly. At worst, restaurants were completely closed or available for take away only. The tightest restrictions in Finland, were in the Capital area, in which Muru Dining operates. Restrictions for restaurants set by Finnish authorities were also one of the tightest in the whole world.

Below is a comparison table describing main features of the companies and their turnover and personnel status before and during COVID-19 pandemic.

Company	Luxmet	Muru Dining
Industry	Steel and metal industry	Restaurant, fine dining
Operating area	Worldwide	Finland
Business model	B2B	B2C, small part B2B
Year of establishment	2014	2008
Turnover in 2019	3k (company in development phase)	450k
Turnover in 2020	23k	373k
Turnover in 2021	33k	454k
Number of own personnel in 2019	6	6
Number of own personnel in 2021	5	6

Fig 2: Comparison of case companies

4.2 Sensing: the capacity of sensing and shaping opportunities and threats in the business context

As discussed previously, sensing is a company's capability to identify and assess opportunities and threats in the business environment. This subchapter serves two purposes. First, the description and examples of empirical data, and the activities that relate to dynamic capability of sensing, are presented. The second purpose is to identify and describe the overall sensing capability of case companies.

“In February we 2020 realized, that this will be minimum 1-1,5 years situation, where exceptional conditions to operate will exist, and we need to develop alternative methods.”

“We saw already in beginning of the COVID-19 –crisis that this will last longer than just few months.”

Both case companies report considerable short time from first sensing activities to actually starting to make first actions on them. Still, the sensing activities were reported to happen parallel to seizing and transforming, as iterative, continuous cycle or process.

Interesting finding also was, that rather than something that happened only due to rapid and significant change due to COVID-19 –crisis and its impacts to business environments, both companies report about sensing activities when things were “normal”. Both companies saw the sensing of business environment and conceptualizing new ways to do business as important ‘daily activity’, thus e.g. Luxmet had already considered remote business model in regards to enhance scalability, so initial plans existed, which they could take into basis for planning the new business model. Similar example from Muru Dining, was a webshop, which they had launched for try out much earlier, and abandoned then after a try out.

“We do not have any 5-year plans. But we evaluate the problem, do a quick scan, review solution alternatives and quickly move to trying them out, and with a feedback loop, come up with a new idea.”

“We are a startup, and startup-minded company is used to change and always reflect the need for a change, knows that you need to be able to react to the change. If you fail in adapting to changes, you’ll go down. Covid or no Covid.”

“How did we do it? Owners of this company are crazy!”

Luxmet, the steel industry company, faced COVID-19 –crisis in their business environment by potential customers and customers refusing to meet on site, and by the travel restrictions. The industry is very traditional by its culture, so moving into remote communication was not immediately an option. Luxmet had considered alternative methods already in their business model design activities, but they had not proceeded extensively yet with those business models, as they had sensed the market they are operating at, was not yet ready to adopt those changes in their activities.

Both companies report extensive usage of trusted media sources parallel to thinking about the threat and what kinds of opportunities they would have to cope and survive within the situation. Companies reported, that every morning started with reading and listening the news and what professionals and authorities had said about current situation.

“We immediately noticed, even before the official lock downs and restaurant restrictions, that there is already a change in customer behavior. And that something needs to be done. We had approximately one to two weeks for total closing, to figure out what we will do.”

They assessed situation and fore coming scenarios. Instead of just waiting, they started to make predictions and analysis what kinds of alternatives they would have if their operations would be restricted.

Data about Luxmet explains, that company had elaborated alternative sales and delivery methods prior to the COVID-19 pandemic, but the unexpected situation and rapid change of business environment forced to speed up the change.

“We know what we wanted, but we knew we did not have the skills in the company nor time to do the concrete activities.”

In both cases, the sensing towards the business model change had taken place even before corona. In Luxmet’s case, the company had innovated new business model design, as a goal to obtain scalability. They had realized, that the product innovation has potential for a worldwide sales and implementation, but they have no means nor aims to try to reach it by traditional methods, a.k.a. business model that usually is used within metal and steel industry companies. COVID-19 pandemic in Luxmet’s business environment made the company to move from sensing this opportunity (and perhaps partly a threat once lockdowns and restrictions started to take place) to seizing it.

4.3 Seizing: the capacity of seizing opportunities and threats (mobilizing your resources to capture value from those opportunities)

Seizing refers to activities and reactions in an organization to market needs, in its attempts to increase firm value and benefit on the perceptions captured during the process of sensing. This includes the design of innovative business models and securing access to capital and resources. It can for example mean encompassing the company's shift in focus from one product/service to another in large extent.

In the empirical analysis, it became clear that both of the case companies had a belief about themselves, that they hold the capability to overcome obstacles and always find a way to renewing their ways of making business in the market. Not in any discourse, either of the companies would mention a fear of bankrupt or stopping the business. COVID-19 –crisis and the changes in the business environment were “just” a major change, and the leaders of the companies were just to find a way to do business.

“We are a bunch of smart, problem solving people”

Both case companies ran ideation workshops and meetings with the top management almost immediately when COVID-19 –crisis started to escalate. It became clear, that no waiting or standing still was done during the first week of the escalated COVID-19 –crisis.

“It was not easy, not at all. Customers first refused from remote meetings, but we kept asking. Six months later, requests started to go through.”

The data reveals, that both of the case companies hold ability to react on changes in business environment and make changes in the company critical capabilities. It seems, that they keep changes inevitable, and themselves ready to react. In both cases, COVID-19 stopped all operations almost completely. Both companies emphasize the speed when starting to react. In the interviews it became clear, they see that acting fast is an important factor for surviving.

“I would say, it’s in our company culture, that something needs to be tried out rather than just sit and wait.”

Findings from the data show, that the capability to *seize* opportunity is woven in the company culture. For concrete example, Luxmet had chosen their contractors and partners before COVID-19, but already then choosing them with high focus onto also their adaptability to changes, e.g. readiness to operate remotely.

“No one of us is doing what we do best, and sometimes it was very difficult, but employees were willing to throw themselves towards new things without second thought.”

In the case company Muru Dining, the testing and executing new business model demanded employees to take completely new roles e.g. from a waiter/waitress to a transport coordinator or a florist. It is likely, that company would not have been able to do the business model shifts without the ability to mobilize resources from something to another.

In the case company Luxmet, new model regarding social media sales was developed. Instead of making cold calls straight to potential customers, they transformed their sales strategy and process almost completely. When the company had new design for the sales part of the business model, company quickly decided to hire new competences for sales, marketing and process development, to fulfil the gap between the idea and actions.

This is interesting detail. Instead of laid-offs or “recruitment freeze”, company recognized that in order to do sales in new and different ways, on which the company did not have skills and competences by default, they need to hire new employee to excel in the attempt to start new sales processes.

In the dynamic capability theory, seizing can mean mobilizing company resources to capture the value from new opportunity. One example of this is from Muru Dining, where they utilized existing, old web shop base they haven’t used for a while, quickly to test if the restaurant food in the webshop with home delivery or sale out from the restaurant, would be viable way to execute supply chain process.

In the value capturing process, Muru Dining partnered up e.g. with hotels, to innovate new ways to provide value for customers in the challenging business environment. This way, for example private dinners served straight to hotel rooms enabled both companies, the restaurant and the hotel, to provide their services, safely and not restricted by authority regulatory actions.

4.4 Transforming: the capacity to maintain the competitiveness through enhancing, protecting, combining and when needed, transforming and reconfiguring company's different assets.

Transforming in the dynamic capability and business model context refers to renewing processes and assets to maintain company's relevance to their customers.

For example, Luxmet started to utilize LinkedIn in cold sales contacting. This was a new way to do sales compared to the traditional way, which includes contacting potential customers by phone or by email. To LinkedIn sales, Luxmet could easily connect their content marketing, which provided information and built their brand towards the way it was defined in the strategy. In the business model design phase, Luxmet did completely new strategy for marketing, communications and sales. In addition to LinkedIn, company started to invest in building their brand online with professional communication from bringing new material to website often and with structured manner to complete renewal of their external website. With the new strategy, the changes implemented to practice started, and all the effort started to bear fruit.

“It was not easy, not at all. Customers first refused from remote meetings, but we kept asking. Six months later, requests started to go through.”

In Luxmet's case, the company designed and implemented new business model, but at first customers refused to collaborate with the company in ways, it had designed the different elements of the supply chain to work. The company still had a firm belief of how the conditions in the current and upcoming business environment due to COVID-19 pandemic. By analyzing the situation and the information received from authorities,

this analysis could be performed to back up their strategy. That kept the company to persistently push towards adoption of the business model by its customers. This is different from Muru Dining, where the company tested the designed business models actively with the customers, quickly developing well-working MVP towards '2.0 version' and abandoning business models, that didn't fly amongst their customers, and continuing to develop the ways of working, that were adopted.

Transforming the business model required courage and belief for their designed business model prior to the actual change. In case company Muru Dining, their previous business environment practically stopped existing, when the restaurant restrictions came in to force due to COVID-19 pandemic. They could know for sure just few days or maximum some weeks ahead, what kind of restrictions set by authorities there is, and what potentially the ways of operating could look like. Prior to transforming, sensing and seizing activities took place, and while one version of a business model was running, parallel the new or a set of new ones were in the making.

For metal and steel industry, example from Luxmet shows that the ways for making business has changed permanently by COVID-19 pandemic and its changes in business environment and activities – if permanent is a word that can be used in today's world. From complete lockdown and refusal, less than one year later almost all operations can be executed remotely. Company reports, that also the way of making sales has changed, from "traditional" contacting of potential customers, shaping the presence in social media, website content, and relevant research and representation in different conferences, and letting potential customers to find the company.

"Customers have realized, that this is easier for them as well."

In Luxmet case, their customers were very "traditional" in the sense that almost zero alternative business models are used. For the steel and metal industry, customers were not very keen to change their way of purchasing and implementation processes and activities, but after the situation and restrictions have eased, customers actually have not gone back to the "old normal" but Luxmet have been able to permanently to change their business model compared to the previous one. They see that the COVID-19 –

crisis speeded up the transformation process, and provided better business opportunities for them as their business model now has more scalability.

Analysis from Luxmet case report shows that supply chain process had changed completely. Prior COVID-19 –crisis, e.g. installation planning visits and other after sales visits was done on site. Today, Luxmet provides survey lists remotely and sends requirements for detailed documentations, so that the planning can be done without any f2f meetings or on-site visits. Luxmet had several examples, where projects were executed without any visits on-site were done, before final installation. This is complete turnaround to the original business model, which was also pretty much the industry standard. Today, completion of the planning process requires 2-3 remote meetings, where planning can happen with iterative manner and be completed prior to the installation.

“We started delivering lunches to remote workers, and dinners to peoples’ home for the weekend. We utilized Wolt and Foodora, not typical for fine dining, I’d say. We sold remote sommelier service, where customer purchased the wine themselves, but the tasting happened via Teams, and many others. One idea might have worked for one week, and then we would try something else”

Muru Dining reported multiple, over ten different business models. Some were up for a short time only for a test, and some for longer, or seasonal periods. It is interesting, how completely different and innovative compared to traditional fine dining restaurant business model these alternative models are. For example, the remote sommelier, when in the initial business model wine tasting is happening in the wine bar, and wines are in the core of the business model, supported by the professional sommelier service. In the alternative, transformed model, no wine was purchased from the restaurant, nor its premises used by customers. Customers purchased the wines themselves, and only the sommelier service was delivered, and that was done remotely.

Interesting result of the empirical analysis in Muru Dining’s case is, that the company became like a business model innovation, design and implementation factory. It was in a continuous loop of exploring alternative business model designs,

“We had to learn completely new skills, like transport coordination. Prior we purchased software for that work, I did it by hand.”

In Muru Dining, some of the ideas were first tested as ‘minimum viable products’, and after proved viable, they were implemented with a more stable, 2.0 version manner. Examples of this were transport coordination, where head of the operations calculated the best driving routes themselves, and cars for transports were borrowed e.g. from neighbor car repair company and company CEO, before investing to transport coordination software and acquiring transportation supplier for partner to take care of the deliveries.

In the case of Muru Dining, employees adopted new roles for the business model transformation. From idea to action, Muru Dining organized their resources again to do all kinds of new tasks that were a part of the new concept of a future business model.

The empirical analysis show, how the case companies had embedded the understanding and predicting the customer needs to the business model design and innovation, a.k.a. by knowing their customer and resources available in and outside of the company, they were able to create successful business model design implement it towards their customers before they even knew they would want it. This represents well the dynamic capability microfoundations in action, and brings COVID-19–crisis as a context to the level of “any other change” in company’s business environment, that the company, by using sensing, seizing and transforming capabilities detects, understands and transforms into a new business model or variation of it.

From the case companies, Muru Dining transformed their business model back to the one they had pre-COVID-19 for few months, when authorities eased some of the restrictions on their industry. However, they kept innovation loop in action during that time, and still developed and tested alternative ways to do business. For the second lockdown, the restaurant launched again completely new products and supply chain processes. In Luxmet’s case, even that their customers were at least partly “forced” towards the change and adapting alternative sales and solution delivery and implementation methods, there was no turning back to the original business model even after restrictions eased up.

5 RESEARCH FINDINGS AND CONCLUSIONS

5.1 Discussion and contributions

The purpose of this research was to provide information how a company can survive in a rapidly changing business environment. This research study aims to participate into closing the gap where most of the existing business model studies have focused to the connection of strategy and business model, instead of providing detailed information about how companies create opportunities, or how these opportunities are transformed into business model (Ojala, 2016). This research study focuses on business model change in the context of companies that were impacted by quickly changing business environment. One of the concrete goals of this study was to provide a view about dynamic capabilities that these companies had, as enablers for the change in their business model, and continue to function in their business.

This interpretive research study has data from two different companies that had changed their business model fundamentally in order to cope with the rapid but long lasting market environment change caused by COVID-19 pandemic. Based on the selected dynamic capability view, the collected data was divided to three different themes: sensing, seizing and transforming. This analysis provides answer to the first research question: *What are the activities behind successful change of an existing business model in the context of rapid market environment change like COVID-19?* Combining analysis results of these three themes and the answer to the first question, results an analysis and answers to the second research question: *Are there dynamic capabilities within the case companies and how these dynamic capabilities occur in practice in responding to COVID-19?*

As mentioned, according to previous research (e.g. Teece), a company that aims to remain competitive, needs dynamic capabilities, sensing opportunities and threats, seizing them and transforming capabilities to implement new or modified business model. Juntunen (2007) argues, that to obtain successful business and competitive advantages over the long term, dynamically capable business model change consists of sensing, seizing, and transforming activities. This was the underlying assumption in the start also for this research study. For example Nokia dropped off from the smartphone revolution, while Apple became its biggest competitor, mainly due that it

was *not* able to *sense* the opportunity in the business environment, and make shift in their business model accordingly. Strategy, dynamic capabilities and business models of a company are interdependent, and strategy and business model needs to be aligned – one of them needs adjustments in the case of misalignment. A goal in this research is to test this approach in the context of rapid business environment change – the COVID-19 pandemic. To some companies this change in the business environment has more been an opportunity rather than a threat, but for most industries the COVID-19 and government restrictions and changed customer behavior have played significant role. The target is to bring more understanding about how firms cope when radical unpredictable business environment changes occur and test business model change and dynamic capability theories from previous research in this context, where companies are forced to either change, or die (or at least cope with more and more difficulties operating).

At the most basic level, a company functions by delivering value to its customer and making some profit in return. In the beginning, a company might operate through paths with least resistance and obeying to most logical boundaries. Over time, successful company becomes excellent with its core business. It improves processes, secures resources, perhaps it conquers new markets and develops new products. It excels in execution, develops metrics to follow efficiency and executes control throughout the organization. (Johnson & Lafley, 2010). If there ever was a time when company could operate and grow indefinitely without any or limited changes in their business models, that time has passed. In today's quickly changing world, it is hard to sustain competitive advantage without observing and assessing the business environment and considering changes in the business model. Some changes in the environment or some opportunities might not require more than a small adjustment in the business process.

But what if the environment changes radically like happened with the COVID-19 – pandemic? COVID-19 pandemic caused changes in the business environments more for some industries more than others, mainly through restrictions set by the government and through changed behavior of customers. The activities and processes of changing a business model exists in highly uncertain context. There are a lot of different variables, as well as different options and alternatives, and the choices needs to be

done quickly. Ojala (2015) argue, that this applies both to business model and the future opportunity. Juntunen (2007) argues, that business model creation is impossible without a recognized opportunity. These theories come to reality in the data of this research study. In both cases, the process of changing the existing business model, started by recognizing opportunity for continuation to operate.

Strategy, dynamic capabilities and business models are interdependent (Teece, 2017). Generally, corporate strategy often dictates business model design, but in a case of e.g. new general-purpose technology (like the internet) it might open up new opportunities to business model development that requires a change in the strategy (Teece, 2018). One could argue, that COVID-19 pandemic had a forcing impact to also strategical changes in companies. It, as such, cannot be referred as new tool, but it might have accelerated adoption of new general-purpose solutions in companies, that might not have accepted those solutions in their use as fast or at all, as now with the COVID-19 pandemic which caused significant changes in their business environment.

Developing dynamic capabilities and the success of business model innovation are responsibility of top management and requires involvement from them. Triggered by COVID-19 –crisis, many companies are speeding their digital transformation and learning in the organization connected to it (Nykänen & Luoma, 2020). They continue and argue, that top management can easily justify efforts towards them, as they are eligible generally in today's fast paced business environment, but they also sustain resilience towards adaptation ability to major changes in the future as well.

One could argue, that a company can choose whichever of the numerous successful business models out there. However, running a business model requires matching dynamic capabilities. Thus, business model transitions, that fit easily to the existing way to make business, are far more easy to carry out (Teece, 2018). Companies with weak dynamic capabilities are far more keen on sticking to a business model that leans of existing processes and past investments, while companies with stronger dynamic capabilities are free to examine business models that require even radical shifts in resources or activities (Teece, 2018).

Although there are multiple attempts to define types of dynamic capabilities (e.g. Winter, 2003, Collis, 1994 and Ambrosini et. al., 2009) in the existing literature, in this

research study I used the most commonly used concept of dynamic capabilities from Teece (2007); 1) the capacity of sensing and shaping opportunities and threats in the business context, 2) the capacity of seizing those and 3) the capacity to maintain the competitiveness through enhancing, protecting, combining and when needed, transforming and reconfiguring company's different assets. Thus, developing strong dynamic capabilities always serves the ability to sustain competitive advantage.

A company's strategy and its business model needs to be aligned (Teece, 2018). Thus, strategy and company's top management are always involved, one way or the another. If strategy and business model faces a conflict, it is the top managements' job to decide, which of the two should change (Teece, 2018).

Start-ups find transformation easier than mature companies, as they have far less processes to reconfigure. Introducing new business model to an existing company is always difficult, and may require a separate team or unit. (Teece, 2018). This view is supported also by research conducted about business model innovations during COVID-19 pandemic. E.g. in the research by Turoń & Kubik (2021), it was found that 100% of companies in the new mobility service reported new business model innovation activities during COVID-19.

According to Teece (2018), a good business model is scalable across different segments, but knowing which segment to target is important. As this is not, as such, a part of a business model, knowing this matter for marketing strategy and activities, that can make the business model successful (Teece, 2018).

Strong dynamic capabilities are followed by transformational leadership and a flexible organization (Leih et al., 2014). Dynamic capabilities can be used to modify company's existing resource configurations to reach long-term competitive advantage (Eisenhardt & Martin, 2000). A business model could be more easily copied, but the dynamic capabilities that enable that business model, are not. Thus, dynamic capabilities can be viewed as a truly sustainable competitive advantage, and as mentioned above, something that the top management should be focused into.

Dynamic capabilities can be viewed as a competitive advantage (Teece, 2003) and a truly unique general-purpose resource, that not even those directly involved can fully understand (Teece, 2018). Dynamic capabilities are also hard to replicate, and the

deeper they are embedded into organization, the less they are dependent only from the top management (Teece, 2018). Small company might be innovative with their business model design, and has the ability to create movement quickly in their organization, but it might have very limited resources to actually implement the design, or continue the usage of new business model after business environment enables the usage of the 'original' or previous business model. However, it can be argued, that dynamic capabilities enable small company to survive during a time of crisis, or other rapid business environment change.

Successful business model design requires good knowledge on the needs of customers and organizational as well as technology resources to meet those needs (Teece, 2018). This view is supported by the findings of this research study. Both of the case companies had embedded the understanding and predicting the customer needs to the business model design and innovation, a.k.a. by knowing their customer and resources available in and outside of the company, they were able to create successful business model design and bring it to testing with customers before their customers even knew they want it. Every good business model requires understanding of current business models in the market, and most of the new ones include hybrids of other business models (Teece, 2018).

As mentioned above, to retain competitiveness a company must do continuous re-assessment of its business model towards the business context it is working in. This can be witnessed when assessing case companies of this research study.

Chosen method of research, a case study method, focuses on the process-tracing: describing and explaining social processes that unfold between humans participating to the process, people with values, opinions, resources, expectations, perceptions, decisions, mutual relations and behavior or the description and explanation between and within social institutions (Swanborn, 2010).

This research study supports results found already by Atkova (2018) in his research study. Results of this study confirms the understanding that the dynamic capability segments of sensing, seizing, and transforming are important mechanisms in behind of differentiating companies from competitors. In the context of this research study, one could argue that these types of dynamic capabilities are crucial for companies for their

survival in a very rapid and challenging change in their business environment. Having these capabilities provides advantages and plays an important role in increasing the likelihood of having competitive advantage or survival possibilities when market environment is highly challenging.

Although the sample size of this research study can be considered limited and these results are preliminary, they indicate that this research has the potential to enrich the current understanding on business model management, especially in the field of business model change with rapidly and unpredictable changing business environment. These results may also offer valuable knowledge and insights for entrepreneurs, business developers, and management teams at multinational enterprises wanting to prepare themselves and their company or team to be more adaptive and responsive towards unpredictable changes in the market environment they are functioning.

COVID-19 –pandemic showed, that even a company with well-functioning business model might bump into a rapid change in its business environment, which makes it impossible to operate with the current business model. As COVID-19 –crisis and its effects to companies' business environments show, some of those companies depending on the industry, are forced to do a change in the business model - otherwise they'll run into deep trouble with functioning with the initial / current model. We have all seen just by following the news or walking in the neighborhood companies that have closed their doors or got into problems with their economy. However, even with very challenging situation, a company might see an opportunity worth exploring.

The findings of this research study show, that strong dynamic capabilities serve the ability to sustain competitive advantage. One might argue, that it is only the small companies, who have the possibility to adapt. The findings from the data of this research study shows, that it is rather the strong dynamic capabilities, that allow the small company to do the business model change even in challenging and unpredictable situation, rather than paralyzing at the mercy of external conditions. The findings also prove, that even in the most difficult situation, an opportunity might lie. For example, Luxmet reported they were able to do their biggest contracts during COVID-19 –pandemic.

Data describes, how the dynamic capabilities are woven to the DNA of the companies.

For example, leaders describe owners and leaders of the company “*crazy*” and “*smart and problem solving people*”. Companies has values, that are rooted in the people in the management. For example, one leader reported, that most important for them in the company management was to be able keep everyone in the company employed through the pandemic. The leader emphasized, that they were afraid of what would happen, as the employees on their industry often do not pay the membership for unemployment fund. Interesting also is, that in the analysis it became clear, that both companies keep business model change and innovation something that just “is” there, by nature. They do not describe it easy, but something that is just there, in the company’s culture, values and woven into their daily actions. It is interesting to see, that it was not just the COVID-19 –pandemic, that forced case companies to change, but that the COVID-19 was just yet another change in the company’s external environment, that the company needed to detect, find the opportunity for continuation of the business, and implement the change as a form of new business model.

The findings also show, that when the external conditions and company’s business environment is unstable and constantly radically changing, also the company needs to sense, seize and transform in a speedy, iterative manner. From the two industries represented in this study, metal and steel production industry is more stable, and also slowly changing. Once the shift from “old normal” to “COVID-19 presence happened, business environment was more stable compared to restaurant and catering industry, where consumer behavior was quickly changing from one end to another, and the restrictions and recommendations made by authorities were quickly changing the environment where restaurants had to operate. Case company, which operated in the restaurant business, described the transformation iterative cycle as speedy, iterative process, where when one idea was out for sale, they already needed to innovate something new. All ideas, where might have a change, was put out to test, and they were kept on sale until the environment changed again and new idea was out for customers to test. Still both of the companies reported constant adaptation to the operating environment, and reflecting towards external conditions and their changes.

5.2 Comparison against earlier research and contributions

In the earlier research regarding business models, business model is often treated as something that is rather stable and given. However, this study aims to examine how business model is changed. If you consider this perspective, one must start to look how business models are created, and in the research studies that exploits business models from action perspective (e.g. Atkova, 2018) this perspective comes valid. Action perspective in business model research proposes, that business model, is actually a logic of transforming potential into business opportunity, and in the same time a test for opportunity feasibility (Atkova, 2018) instead of being something given. This is supported by the findings in this research study, e.g. when Muru Dining, one of the case companies, innovated, designed and tested a business model, they did it within a business week: they got new idea on Monday, on Tuesday the product/service was for sale, and on Friday happened the first deliveries.

In their research, Zott & Amit (2010) argue that the main function of a business model is actually to exploit the opportunity. This is supported by other studies (e.g. Atkova, 2018). Juntunen (2007) argues, that dynamically capable, and long-term feasible business model change consists of sensing, seizing, and transforming activities, which was similar to the findings also in this research study. Similar results are found also in other research studies, e.g. Achtenagen & Naldi (2013) argue, that for value creation in companies three critical capabilities are existing: orientation towards experimenting with and exploiting new business opportunities, a balanced use of resources and proper leadership, culture, and employee commitment and together they will shape key strategizing actions. Ahokangas & Myllykoski (2014) argue based on the findings in their research study, that learning and unlearning make the process of business models continuous as they foster the modification of the existing business model and also create the basis for the exploitation of opportunities and advantages. Sosna et al. (2010) argue, that these abilities provide also the possibility for further exploration related to possible new (or yet to be transformed) business models. Findings of this research study supports these arguments and show, that it is not actually just a business model change forced by the COVID-19 –pandemic for these companies, but a yet another change in the business environment, that triggers company's sensing capabilities, as just one way of opportunity/threat exploration.

Atkova (2018) suggested, that business model creation is a continuous process of conceptualizing and contextualizing. According to the theoretical model developed in his research study, conceptualization is a set of choices and decisions made under high uncertainty, while as contextualizing refers to acting upon these choices and decisions, and testing their feasibility against reality. The processes of opportunity and business model creation, are intertwined and happens without clear beginning or an end. This is similar to the findings in this research study, where especially case company from restaurant industry was constantly in a feedback loop with its business environment, adjusting the business model by reacting, testing and trying out the next alternative to stay relevant within the challenging situation.

When discussing about dynamic capabilities, it seems to make a lot of sense. Why aren't all organizations having them? Why would some choose not to adopt them? Gratton & Ghosnal (2005) are naming them as 'signature processes' and argue, that they are often tied into organizations business models and activities, and thus makes it more difficult to imitate. However, they are the key resource for creation, modification and extension of a business model.

5.3 Limitations of the study

Every research will have its limitations, so does this study. In the theoretical limitations, one could consider the fact that this is a study built on the assumption, that entrepreneurial actions are in the center, and that the change of a business model is a process, not necessarily a choice – a switch from one to another. This is different from some entrepreneurial scholars.

Methodological limitations come with the form of data collection, research context, research method and data analysis. The data was collected from interviews and public media content. Nor the data collection method, or the data collected can be considered objective, but always being an interpretation of events, actions and results of the person telling the story, and the researchers. The research context sets some considerable limitations as well, as the rapid change of the business environment due to COVID-19 – crisis was, and still is, one of a kind. Additionally, this case study was conducted with

small companies, and one could argue, that a small company is more dynamic by nature. However, it is also considerable, that small companies are more vulnerable in front of major, rapid changes in the business environment. Thus, is not set in stone, that all companies can survive with these kind of changes, unless they have (dynamic) capabilities within to react on those.

Furthermore, some limitations are included also into the data analysis method. Interpretation and analysis of the data is subjective and predetermined by the knowledge, as well as experience background researcher holds prior to the research. Together with the research evaluation made in the earlier chapter, understanding these limitations contributes to the quality of this research study.

5.4 Recommendations to further study and managerial activities for companies

Atkova (2018) argues, that business model studies have formed a quickly growing field of research, but research gaps and unanswered questions still remain. This research connected the COVID-19 pandemic in business environment as a context to business model creation and business model change as dynamic capabilities of sensing, seizing and transformation. As this research study contained considerable small sample of data, two companies, further research to validate findings is recommended. However, even with the findings of this research study, a recommendation for companies and entrepreneurs to develop and nurture dynamic capabilities and business model transformation ability can be given. Ahokangas & Myllykoski (2014) conclude, that as a business model and business context are dynamic, company must continuously assess its business model towards its business context, and adjusts accordingly to retain competitiveness. Thus, even considering that the market may have learned to cope with COVID-19 or a company may have been able to transform their business model closer to the original, ability to adapt for further unpredictable and rapid changes remains relevant.

The only constant, is the change. In today's world, we can only expect more change, than stability in companies' market environment. Thus, the conceptual framework from this research can be extended to rapid business environment changes, when and

where-ever these kinds of situation emerges. For future research, it would be interesting to execute more case study research about companies changing their core business model due to a change in the external environment. This research study was conducted in rather small companies, but it would be extremely useful and important to research larger companies who have been able to successfully change their business model and sense/seize the opportunities for their business. Other angle for this research context are the dynamic capabilities, and to deep dive into different dynamic capability clusters and how companies nurture and develop those to stay reactive towards needed change and remain competitiveness.

In the other hand, some alternative theoretical or methodological approaches could be considered, when the attempt is to learn more about companies changing their business model from one to another.

From a managerial point of view, especially small company owners and startup entrepreneurs could benefit of considering the dynamic capabilities and how to nurture them in their organization to stay adaptive towards external change. This research study reveals, that there is a logic for existing business model change. The capabilities of sensing changes in the company's business environment and the business opportunity, seizing the opportunity and transforming the business are valuable capabilities from which firms will benefit in their attempts of remain competitive.

The empirical findings support also the importance of knowing and understanding your customers' behavior and needs, as well as the knowledge of the resource potential in and outside of the company, in order to design viable business models and implement them.

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APPENDIX 1

Interviews

Introduction to the research

The aim of this research is to understand how companies detected the change in their business environment and started to act on that change, how to what kind and what kind of competences company had/they acquired to design and implement the change.

Business model: in this context, business model means the model the company operates, to exploit the business opportunity in the market. It describes what the company is offering to customers, how and where they operate and why there is profit.

Interview questions structure

The industry of the company, and it's core products/services?

Business model before COVID-19 –crisis, how did the company sell/deliver products/services?

COVID-19 –crisis: what kinds of effects COVID-19 had to company's business environment and its operations?

How did the company detected the change?

How did the company react to the change?

How would you describe what actions were first taken and how?

What were the most concrete actions?

How did the company develop the new/alternative business model?

How did the company implement the new/alternative business model?

Who from the company and who/what external partners, companies, consultants etc. from outside the company participated to the design/implementation of the new business model?

How would you describe the design of the new business model?

How did you reflect competitors and their actions?

What activities were involved in the design of new business model?

How would you describe the ideation of the new business model?

What competences you think the company/its employees had to make the change and implementation happen?

How would you describe the results?

How essential do you think the change of the business model was for the continuation of business?

How would you see operating with the old/original business model (the business model company had before COVID-19 –pandemic) would be/would have been possible during 2020?

APPENDIX 2

Description of case companies

Case company 1: Muru Dining Oy

Description of the company/case: Muru Dining Oy is in restaurant and catering industry. Company consists of several, well known fine dining restaurants in capital Finland area. The restaurant industry faced perhaps most severe lockdowns and other restrictions to their normal operations during COVID-19 pandemic on 2020. Company was able to keep approximately same number of employees in 2020 than they had in 2019, before the COVID-19 -crisis. The revenue and bottom line profit of the company was not changed more than approximately -15% from previous years, while some other companies in the same area and industry have even closed from business.

Case company 2: Luxmet Oy

Description of the company/case: Luxmet Oy is developer of optical sensors system designed for steel and metal industries. The company offers sensor technology to monitor the emitted light for detailed information about process conditions and measures, shows and analyzes the melting progression of the EAF hot spots, enabling customers to make real-time continuous measurements. Steel is produced in two alternative ways: the traditional model is to mine ore and refine it into steel in a blast furnace. Another more environmentally friendly method, is to utilize recycled steel: used metal is melted with electricity in a so-called electric arc furnace. This electric arc method generates merely a third of the CO₂ emissions compared with blast furnace technology. Luxmet Oy's technology, ArcSpec, makes electric arc furnaces even more environmentally friendly.

In 2019, just before the COVID-19 –pandemic, Luxmet Oy completed a €800k investment round. Luxmet Oy operates in a very traditional industry, where sale and implementation activities and processes happened f2f without almost any exceptions. COVID-19 pandemic happened in a very critical phase for Luxmet Oy. It was only started to sell its solutions and most sales and implementation had happened f2f and on site.