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Can Business Model Stress Testing Help Small Organizations Cope with an Uncertain Environment?

A Multiple Case Study

by

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Abstract

Many small and medium-sized enterprises (SMEs) are being affected by exogenous shocks which create an environment where the current Business Model (BM) structures are heavily pressured and even paralyzed. To prevent a destruction of a firm's BM, the management must act accordingly as advised in the research fields of Strategic Management and Innovation. Therefore, it becomes increasingly important to create organizations that are well prepared to take advantages of changes in their surroundings. As a response to the underdeveloped research targeting SMEs and their possible measures of surviving through external shocks, this study focuses on enhancing the research of necessary strategic tools that SMEs, with their lack of resources and knowledge, may use to become more resilient in the future.

The purpose of the study is to critically assess one of these possible tools, the Business Model Stress Test, which is an emerging framework for systematically testing the long-term robustness of any structured BM in an uncertain environment. Thus, to achieve this goal, the thesis draws on qualitative empirical data obtained from two small organizations, which allows for more comprehensive findings regarding the conduction of the Business Model Stress Test and its ability to help organizations achieve long-term soundness of their respective BMs.

The findings revealed that there is a need for a strategic tool which could help increase the robustness of BM components in an uncertain environment. While the Business Model Stress Test seeks to address this notion, the framework requires an improvement of its execution to simplify the processes, as the theoretical fundamentals were deemed lacking by the researchers and interviewees. Therefore, this thesis also offers a comprehensive review of the necessary literature that a practitioner would need for the accurate conduction of the framework.

Keywords: Small and Medium-Sized Enterprises, Business Models, Business Model Stress Test, Strategic Tools, Uncertain Environment

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1 Introduction

1.1 Background

While the actuality of major external shocks, like the COVID-19 pandemic, is known and accepted, these shocks remain inevitable yet unpredictable in both scope and economic impact (Morgan et al., 2020). Furthermore, exogenous shocks tend to paralyze widespread, traditional Business Model (BM) structures, namely those found in small and medium-sized enterprises (SMEs), as highlighted by the literature review from Morgan et al. (2020). Within the European Union, SMEs dominate 99% of the total market share of all enterprises (European Commission, 2003). However, SMEs typically have smaller resource pools, overwhelmingly represent sectors that are more vulnerable to crises, have more fragile supply chains, and lag behind in technological advancements; all of which contributes to SMEs being less resilient and unable to adapt to major economic shocks compared to large-scale firms (Boschmans et al., 2021). As the pandemic and its effects still remain, this scenario creates a critical question of the agility of SMEs to survive through this ongoing crisis but also the longevity of how to weather future uncertainties. This creates a relevant need for dynamic strategic tools to help SMEs build resilience and plan within a complex context.

In a broader context beyond SMEs, there is an acceptance that firms should be able to respond to an uncertain environment, yet the actual discussion on how to achieve this agility is under-researched (Bouwman et al., 2018). In order for firms to become more agile, the BM of the firm must undergo tests in different scenarios to understand its strengths and weaknesses when faced with a range of uncertainties (Bouwman et al., 2018). These ideas were the foundation that led to the creation of the BM Stress Test (BMST), a framework to assess the components of a BM and its robustness as a system in order to formulate recommendations to increase a firm's agility against uncertainties (Bouwman et al., 2018). The model has roots in the areas of BM ontology (Bouwman et al., 2008), Scenario Planning (Amer et al., 2013; Burt et al., 2006; Haaker et al., 2017), and agile and robust strategic management (Bouwman et al., 2018, Haaker

et al., 2017), which is an extensive combination of many research fields. The actual BMST is a process consisting of six steps: 1) a description of the chosen BM, 2) identification and selection of BM stressors, 3) mapping of the BM against its stressors, 4) creation of a heat map based on the previous step, 5) an analysis of the results, and 6) a final formulation of recommendations for strategic improvements of the BM (Bouwman et al., 2018). Could this test help SMEs cope with the challenges brought on by uncertainty?

1.2 Problematization

The review from Morgan et al. (2020) shows that there is sparse literature devoted to the study of how SMEs survive crises and how they recoup in the aftermath. Additionally, the literature about great economic shocks mainly targets the macroeconomic scenarios, leaving recommendations for SMEs as an underrepresented group (Morgan et al., 2020). Furthermore, Doern et al. (2019) also note this gap in their literature review and argue that SMEs need research regarding both management during crises but also tools to become resilient for future uncertainties. However, even if there were more literature on the subject, SMEs still struggle to cope with shocks due to a lack of managerial and innovation capabilities and resources (Boschmans et al., 2021). The inability to innovate is a critical issue, as it can help secure the survival of an enterprise when faced with uncertainty (Morgan et al., 2020). Furthermore, this argumentation is also supported by Bouwman et al. (2018) and is one of the reasons for the creation and use of the BMST. Therefore, the researchers of this thesis have identified the need to partner with SMEs on research to fortify these capabilities with strategic tools meant for an uncertain context. This sentiment is also fortified by Saridakis (2012), who believes that providing small businesses with increased knowledge will not only help with crisis survival but also foster entrepreneurial spirit and opportunities.

This idea of collaboration between researchers and organizations is a key factor noted by the creators of the BMST (Bouwman et al., 2018). The first literature about the BMST was written in 2012 (Bouwman et al.); therefore, there is a relevant need to expand upon this emerging framework and add further research and empirical data. Furthermore, the framework was designed by a group of researchers in the Netherlands, and the majority of the literature

concerning the framework and its use is also written by them (Bouwman et al., 2012; Bouwman et al., 2018; Bouwman et al., 2020; Haaker et al., 2017), which justifies the necessity of an outsider viewpoint and a critical examination of the BMST. While the creators of the test have documented some of their beta case studies (Bouwman et al., 2018), it is still unclear what the implications and overall effectiveness of the tests were in these organizations. A combination of the emerging BMST with small organizations that tend to lack key resources and capabilities could provide in-depth insight into the framework's limitations and the needs of SMEs regarding new types of strategic tools.

With this background as the foundation, the researchers have identified a dual set of problems to be addressed by this research study: 1) the practical need for strategic tools for SMEs that are meant for an uncertain environment and 2) the relevance of theoretical expansion for the BMST.

1.3 Purpose & Research Question

With the foundation of the background and the problematization, the purpose of this research study is to critically assess the use of the BMST in two small organizations to identify their BM challenges and subsequently formulate recommendations for improvements. The research question is as follows:

How useful is the conduction of a Business Model Stress Test in two small organizations as a strategic tool to cope with uncertainty?

To accomplish this research, a multiple case study of two organizations will be conducted, along with additional empirical data collected through customers of the case organizations and experts in the respective domains of each of the cases. The methodology chapter of this thesis will discuss in detail the chosen case study approach and the partnering organizations. Furthermore, a literature review regarding BMs will be thoroughly discussed in the following chapter to understand the origins of the BMST and communicate this foundation in a holistic presentation. This provides the researchers with the knowledge required to produce accurate

and quality BMST results, and this theoretical lens outlines the structure for the subsequent discussion.

1.4 Thesis Outline

Following this first chapter, the second chapter of this thesis will be a comprehensive literature review of the relevant factors pertaining to the research question. The review will begin with a section about the concept of the BM and then progress with a discussion about innovation in BMs. Later the chapter will elaborate on the role of the external environment and the role of uncertainty in an increasingly complex world. All of this will lead to the discussion of the BMST. The final section will summarize the chapter and display in a figure created by the researchers of this thesis for use in the subsequent empirical data discussion.

The third chapter of this thesis will be a thorough explanation of the methodology used in the research study, with sections about the research approach, design, data collection method, and analysis. A table is included to show the list of interviewees and their role of significance in the case study. Finally, the chapter will end with sections concerning the validity, reliability, and ethical considerations associated with the study.

The fourth chapter deals with all matters related to the empirical results of the case study. A description of both cases will lay the groundwork for the presentation of the findings from the research. The final section of the chapter will describe the recommendations formulated based on the results of each organization's BMST, along with the managerial critical assessment of the framework.

The fifth chapter is a discussion about the results structured from the perspective of the topics outlined in the literature review. The final chapter of this thesis will conclude with the theoretical and practical implications brought on by this multiple case study. Lastly, the limitations of this study will be presented, along with recommendations for possible future research related to this thesis.

2 Literature Review

Creswell and Creswell (2018) state that the literature review provides essential information regarding the necessity and value of the proposed research. Furthermore, Webster and Watson (2002) believe that analysis of past literature is a vital step of any study. Hence, the following section focuses on highlighting and summarizing the critical aspects of the fundamental theories utilized in this thesis as advised by Knopf (2006). Both Knopf (2006) and Webster and Watson (2002) argue that by drawing on more literature sources from various fields, the depth and holism of the study will be improved which was fulfilled by employing sources from fields, such as Strategic Management, Entrepreneurship, and Information Systems.

2.1 The Fragmented Business Model Concept

Even though the importance of BM research has significantly increased recently (Wirtz et al., 2016; Zott, Amit & Massa, 2011; Saebi, Lien & Foss, 2017) including the number of academic contributions, the essential questions, regarding the definition of BM, possible meta-concept of BM, essential BM components and frameworks, remain unanswered (Wirtz et al., 2016).

2.1.1 Origins of the Business Model

The term - Business Model - was first used in 1957 in an academic article by Bellman et al. (1957) (Osterwalder, Pigneur & Tucci, 2005), although the concept itself was created much later in 1975 by Konczal (1975) who proposed the possibility of using BM tools in management. However, the rise of its significance occurred after a decade later in the 1990s. Various authors (e.g., Osterwalder, Pigneur and Tucci, 2005; Wirtz et al., 2016; Zott, Amit & Massa, 2011) believe that the surge was strongly connected to technological advancement, such as Information and communications technology (ICT), which allowed companies to decrease the transaction costs. To be more specific, Zott and Amit (2011) found out that between 1995

and 2000 there were ten times more academic publications compared to a period between 1975 and 1994, which is even less dramatic than the increase of searches on Google that increased from 600 in 2000 to over 102 million in 2010 (Bouwman et al., 2012). Hence, it comes as a surprise that even though this area has recently gained so much influence, there is still no universal definition of BM (Wirtz et al., 2016; Zott, Amit & Massa, 2011).

As far as the understanding is concerned, BM was originally regarded as a tool for business process modeling (Osterwalder, Pigneur & Tucci, 2005). It was only with the technological advancement that the BM started to be associated with strategy (Wirtz et al., 2016), which invited criticism from economists like Porter who argued that the concept of BM is unclear and does not provide any visible value when establishing a company (Porter, 2001). Surprisingly, the disagreement has remained significant even to this day as some proposals argue that BM theory opposes the established strategical perspectives, such as the Resource-Based View or Positioning Theory, by offering a more realistic view on the business in the face of the changing environment (Massa, Tucci & Afuah, 2017).

As a result of the critique, researchers tried to converge all the main perspectives – technology, strategy, and organization - into an overarching stream (Wirtz et al., 2016). It should be noted that Zott and Amit (2011) believe that a complete synthetization has yet to happen, and that the scientific focus remains in so called “research silos” which has slowed down the cumulative learning effects. Nevertheless, Wirtz et al. (2016) argue that the boundaries among these sectors have started to blur as the more recent authors begin to cite works from all three areas interchangeably. Therefore, the development of this research area could be regarded as rapid since after only a few years the trend of convergence has become more visible.

Furthermore, Wirtz et al. (2016), Osterwalder, Pigneur and Tucci (2005), Zott, Amit and Massa (2011), and Massa, Tucci and Afuah (2017) propose that there are three main areas of similarities in the literature. Firstly, they discuss that a BM analysis should include the focal firm and its external boundaries (Zott, Amit & Massa, 2011; Osterwalder, Pigneur & Tucci, 2003; Massa, Tucci & Afuah, 2017). Zott and Amit (2010) as cited in Massa et al. (2017, p.10) interpret it as a “...set of activities, as well as the resources and capabilities to perform them – either within the firm, or beyond it through cooperation with partners, suppliers or customers”. It also seeks to decrease the complexity that is caused by the interdependencies within the BM

by highlighting the most essential segments; however, there are still some inconsistencies among researchers' mutual understanding (Massa, Tucci & Afuah, 2017) which will be explored in detail further below. Secondly, they highlight the shift in the research from focusing purely on value creation to concentrating both on value creation and value capture which can be seen in, for example, Osterwalder and Pigneur's (2003) article in which they add the dimension 'how much' to Markides' (1999) three pillars explaining what a firm provides, who it selects, and how it can be achieved (Osterwalder & Pigneur, 2003). Lastly, they perceive a BM as a tool which can be used during decision-making processes to convey management's ideas within and outside of the firm (Massa, Tucci & Afuah, 2017; Osterwalder & Pigneur, 2002; Osterwalder & Pigneur, 2003). Magretta (2002, p. 4) defines BMs as, "...stories that explain how enterprises work", which can also decrease the level of complexity that is caused by the interdependencies within the BM by highlighting the most essential segments; however, there are still some inconsistencies among researchers' mutual understanding (Massa, Tucci & Afuah, 2017) which will be explored later.

2.1.2 Definition of the Business Model & Perspectives

Despite the rising significance of this field of research, the unified definition has not been developed yet (Wirtz et al., 2016; Zott, Amit & Massa, 2011; Massa, Tucci & Afuah, 2017) as many authors are heavily influenced by the origins of the BM. Zott and Amir (2011) found an unexpected result during their literature review as they realized that 37% of the reviewed articles did not provide any definition at all, and only 44% of them explained the concept, while the remaining 19% relied on previous studies as a point of reference. Therefore, the inability to coherently define a BM created confusion and disagreements not only among researchers (Zott, Amit & Massa, 2011; Massa, Tucci & Afuah, 2017, Foss & Saebi, 2016) but also among managers (Schwarz & Legner, 2020).

There are two perspectives that could be used to further understand the BM concept. The static one was mostly presented in the old literature, while the dynamic view started to grow in popularity in the recent articles (Wirtz et al., 2016; Saebi, Lien & Foss, 2017). The static point of view introduces the BM at a given time (Wirtz et al., 2016; Saebi, Lien & Foss, 2017; Demil & Lecocq, 2010). Osterwalder, Pigneur and Tucci (2005, p.17) define BM as "...a conceptual tool that contains a set of elements and their relationships and allows expressing the business

logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.” In other words, the literature predominantly focuses on the value-creation and value-capture processes of a firm, on the architecture that combines components and activities to support profit realization, and on the potential and existing customers and markets (Wirtz et al., 2016; Saebi, Lien & Foss, 2017; Osterwalder, Pigneur & Tucci, 2005).

The dynamic perspective assumes that a BM changes throughout time as it reacts to internal and external changes (Wirtz et al., 2016). Demil and Lecoq (2010, p.242) claim that a “...dynamic view [...] tries to grasp the ways in which a BM evolves over time.” They further believe that as the BM is comprised of interdependent elements influencing a firm’s performance, any change to the system caused by internal or external inputs or shocks will subsequently create a butterfly effect. Therefore, there are two types of business model dynamics: one that explains continuous changes in an existing BM over a period of time to align itself with various changes (Saebi, Lien & Foss, 2017; Demil & Lecoq, 2010), whereas the other approach explores the implementation of an innovative BM as a way to disrupt the market (Saebi, Lien & Foss, 2017). Voelpel et al. (2004) believe that only a disruptive innovation of a BM can create a sustainable competitive advantage rather than a continuous development. However, Demil and Lecoq (2010) state that a firm may remain powerful even through consistent, small improvements. Nevertheless, it can be argued that a dynamic BM is needed to enable suitable reinvention of the possibilities based on the changes created by a complex and uncertain environment (Osterwalder & Pigneur, 2003).

Synthesizing the various arguments, this paper utilizes Wirtz et al. (2016, p.6) definition as a point of reference:

A business model is a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products and/or services are generated by means of a company’s value-added component. In addition to the architecture of value creation, strategic as well as customer and market components are taken into consideration, in order to achieve [...] the competitive advantage. To fulfill

this latter purpose, a current business model should always be critically regarded from a dynamic perspective [...], due to internal or external changes over time.

2.1.3 Elements of the Business Model

Due to the complicated and complex evolution, the level of heterogeneity is rather high (Wirtz et al., 2016), hence this part focuses on the individual components of the BM that frequently appear in the academic literature to further enhance the understanding of this research field.

Firstly, strategy has been strongly associated with BMs to such a degree that some authors use these terms interchangeably (Magretta, 2002; Yip, 2004). Magretta (2002) believes that a BM is a summary of all pieces and their relationships within the company, whereas a strategy is driven by the competition. Osterwalder, Pigneur and Tucci (2005) describes the BM as a tool that is based on strategic issues and links them to the appropriate business functions. Casadesus-Masanell and Ricart (2010, p. 204) also claim that a BM is a basically a “...reflection of the realized strategy.” Therefore, it could be argued that a strategy is a central part of a BM; however, it does not mean the same, hence it should be included in the BM to create a more holistic and comprehensive picture of the company.

Secondly, Hedman and Kalling (2003) and Osterwalder, Pigneur and Tucci (2003) highlight the importance of resources. They argue that since a firm requires resources to create value, this element needs to be included in the BM. According to Barney (1991, p.101) company’s resources can be characterized as, “...assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies.” In addition to internally managed assets, Demil and Lecocq (2010) also include external resources as they may influence the capabilities being developed in the firm. Therefore, under resources can be found all the essential internal and external tangible and intangible elements that are needed for a value-creation process.

Thirdly, Zott and Amir (2011), Wirtz et al. (2016), and Osterwalder, Pigneur and Tucci (2005) argue about the importance of networks as a component of a BM. Osterwalder and Pigneur (2002, p. 5) believe that a network, “...outlines which elements of the activity configuration are distributed among the partners of the firm”. Since a BM is linked with technological

development, mainly ICT, which has allowed companies to create bigger partnership networks as the transaction costs decreased, thereby encouraging firms to focus on their core competencies while outsourcing the rest (Osterwalder & Pigneur, 2003). Voelpel et al. (2004) further assume that a company should establish a network in which every actor would contribute to the process of value creation, since firms are not placed in a vacuum. Hence, partnerships (Osterwalder & Pigneur, 2003), exchange partners (Massa, Tucci & Afuah, 2017) or networks (Wirtz et al., 2016) are an essential element of a BM.

Fourthly, Zott and Amir (2011), Wirtz et al. (2016), Osterwalder, Pigneur and Tucci (2005), and Massa et al. (2017) highlight the significance of a customer component. The importance can be clearly visible using Osterwalder, Pigneur and Tucci (2005) as an example since they established 'Customer Interface' as one of their four main pillars. The understanding of this element varies. On the one hand, the literature explores and focuses on the role of the customer, whereas some consider distribution or customer interface as the most important aspect (Wirtz et al., 2016). In this paper, Osterwalder, Pigneur and Tucci, (2005) view on customers is utilized as it encompasses both views. This component has been thoroughly discussed in the past literature due to its significant impact on customer-perceived quality (Hedman & Kalling, 2003). Furthermore, there is also a general agreement that a BM has a customer-oriented approach towards value creation (Zott, Amit & Massa, 2011; Chesbrough & Rosenbloom, 2002).

Value proposition is another rather extensively investigated component (Wirtz et al., 2016). Wirtz et al. (2016) argue that together with Resources, it is the main research objective. Despite the attention, there are several synonyms referring to it. For instance, Gorijn and Akkermans (2003) describe it as a 'value offering', Mahadevan (2000) talks about a 'value stream', Amit and Zott (2001) uses a term 'transaction content' or Wirtz et al. (2016) refer to it as 'market offering'. Osterwalder, Pigneur and Tucci (2005, p. 18) define it as the "...overall view of a company's bundle of products and services". However, as previously discussed, companies do not operate in a vacuum, therefore this element also compares competition and their value proposition (Hedman & Kalling, 2003; Osterwalder & Pigneur, 2003). This element is incredibly significant as it reasons whether the customer segment finds the firm's value proposition valuable enough (Osterwalder & Pigneur, 2003), which can be argued to be the first step in the decision-making process of a new product or service creation.

Even though the Revenue Model is not as frequently discussed as Value Proposition or Resources, it is still an important research objective (Wirtz et al., 2016; Osterwalder, Pigneur & Tucci, 2005; Massa, Tucci & Afuah, 2017). Osterwalder, Pigneur & Tucci (2005, p. 18) define it as, "...a way a company makes money through a variety of revenue flows." In other words, the Revenue Model explains how a value proposition can be translated into various revenue streams from all targeted segments by using a range of price models (Osterwalder & Pigneur, 2003). Furthermore, due to the rapid technology development, the variety of possible revenue generation has increased (Wirtz et al., 2016; Osterwalder & Pigneur, 2002). Currently, companies have options to establish both direct and indirect, as well as transaction dependent and independent revenue streams (Wirtz et al., 2016; Osterwalder & Pigneur, 2002).

As far as services or activities required to create the value are concerned, the use of different terms relating to the same topic can be identified. Wirtz et al. (2016) use the term 'service provision' which means all internal activities required to turn raw materials into products of value. Hedman and Kalling (2003) call it 'activities and organization'. They compare it to a value chain since a correct value chain configuration must be established for resources to be transformed into goods of higher value. Osterwalder and Pigneur (2003) refer to value creation as 'value configuration', which stands for organizing resources and activities to add value. Moreover, they conclude that both external and internal activities and processes should be included as some of them might be outsourced but still vital for value creation. Therefore, to establish a holistic BM, activities must be arranged appropriately to allow resources to be transformed to realize the value proposition.

The financial model (Wirtz et al., 2016) also referred to as Cost Structure (Osterwalder, Pigneur & Tucci, 2005) is the last element of a BM concept that appears in the literature rather frequently. Osterwalder and Pigneur (2003) identify Cost Structures as a summary of all incurred costs during the creation, selling, and delivering the Value Proposition. In other words, it consists of the cost of core assets and processes and networks necessary to produce an offering. Wirtz et al. (2016) further propose that it also serves as a financial control and planning method which contains the flow of capital, as well as cost structure analysis. As Osterwalder and Pigneur (2003) argue the Cost Structure combined with the Revenue Model completes the BM, as the business is only functional long-term when it is profitable.

In conclusion, still only 30% of the authors created more comprehensive and holistic models (Wirtz et al., 2016) including most of the elements introduced above which displays just how difficult developing a meta-concept will be. Furthermore, this part also highlights the importance of seeing all the elements of the complex concept as interdependent and highly adaptive to both internal and external changes. Moreover, the understanding of the elements strongly influences several factors of this thesis.

2.1.4 Business Model Canvas

After clarifying the most frequently researched BM components, this part will elaborate on the most well-known BM Framework (BMF). Schwarz and Legner (2020, p.2) identify a framework as a conceptual tool that, "...identifies and defines the key constructs and object of interest [...] to build a common ground for discussion, visualization, shared language or simulations." Widmer (2016) further argues that the BMF is a tool based on a qualitative research utilized for the arrangement of ideas regarding the processes through which a firm conducts business in order to share and even improve the level of understanding among network's various actors. Frameworks, such as E-3 Value Framework (Bouwman et al., 2012; Gordijn, Osterwalder & Pigneur, 2005; Widmer, 2016), STOF (Bouwman et al., 2012; Wirtz et al., 2016; Schwarz & Legner, 2020; Lenart et al., 2019), BM Canvas by Osterwalder and Pigneur (Massa, Tucci & Afuah, 2017; Bouwman et al., 2012; Schwarz & Legner, 2020), appeared frequently in the literature; however, only BM Canvas will be elaborated on as it will be utilized in the BMST. The BM Canvas is based on four pillars – Product, Customer Interface, Infrastructure Management, and Financial Aspects, created by Osterwalder and Pigneur (2002), by elaborating on Markides' (1999) work, as previously discussed. Wirtz et al. (2016) argue that following their research, this framework is one of the most comprehensive models based on the wide literature review they conducted. Furthermore, the four pillars are further divided into nine building blocks: Value Proposition, Target Customer, Distribution Channel, Relationship, Value Configuration, Core Competency, Partner Network, Cost Structure, and Revenue Model (Osterwalder, Pigneur & Tucci, 2005; Osterwalder & Pigneur, 2004). However, there is a crucial element that is not included in the model: Strategy (Wirtz et al., 2016). Osterwalder and Pigneur (2004) perceive the BM concept as a connection between strategy, technology, and business. Therefore, they do not include strategy as an individual

element. In other words, they utilize Canvas as a blueprint which allows them to plan and build necessary structures in order to realize the strategy (Osterwalder, Pigneur & Tucci, 2005).

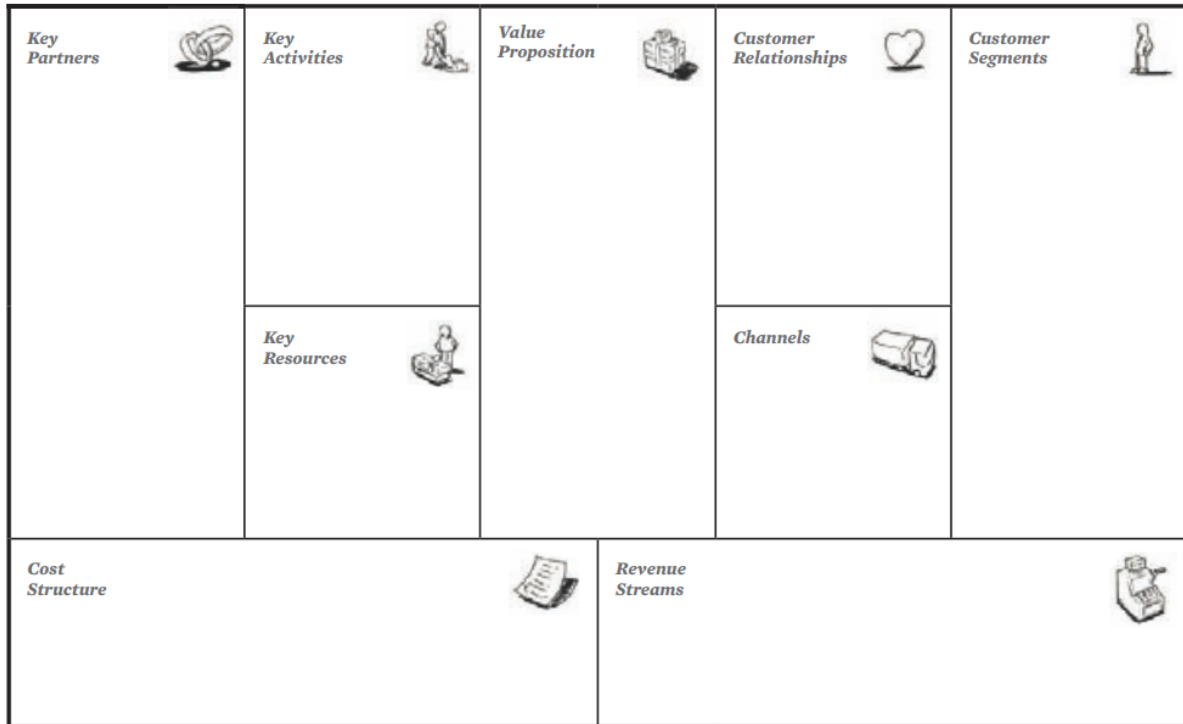


Figure 1 – BM Canvas (from Osterwalder & Pigneur (2010))

2.1.4.1. Strengths & Weaknesses of Canvas

As far as the strengths of this framework are concerned, the model is designed to provide a prominent level of firm-specificity (Bouwman et al., 2012). Furthermore, Canvas also focuses on a broader view which explores even the company’s networks (Osterwalder & Pigneur, 2004) creating a holistic picture of the analyzed organization. Moreover, due to its broad but rather detailed firm description, it is one of the most comprehensive frameworks ever created (Wirtz et al., 2016; Widmer, 2016). Furthermore, even though this framework was designed to provide better understanding of e-business (Osterwalder & Pigneur, 2004), the general applicability across sectors could be considered successfully proven by using it appropriately in various value-driven businesses, e.g., oil and drilling industry (Frick & Ali, 2013) or health industry (Verrue, 2014). Moreover, the general usability across various sectors offers

possibility to analyze, evaluate and compare different companies (Massa, Tucci & Afuah, 2017; Gordijn, Osterwalder & Pigneur, 2005).

As previously mentioned, the fact that competitive strategy is omitted from the conceptual framework is regarded as a weakness by some authors (Wirtz et al., 2016; Widmer, 2016; Coes, 2014). Coes (2014) argues that by omitting the strategy from the concept, the design loses its sustainability in the face of external changes. He proposes to include an additional component that introduces the story behind the BM and puts it into context. Another missing aspect that is frequently discussed is competition (Widmer, 2016; Coes, 2014). Even though Osterwalder and Pigneur (2004) focus on competition in Value Proposition by comparing Value Level and Price Level with the competition, it does not provide a sufficiently detailed information. Bouwman et al. (2012) also highlight the vagueness of the concept which results in a high freedom of interpretation that can reduce the consistency. This argument also appears in Verrue's article (2014) where the author argues how difficult it is to precisely link corresponding company processes to the appropriate predetermined building blocks. As claimed by Widmer (2016), Canvas is a static model which offers only a set number of building blocks, which may create a sense of a fill-in exercise resulting in reduction of creativity (Verrue, 2014). Additionally, there are scholars who claim that the level of practical understanding of the concept among managers is low which can result in repetition and overlaps in segments, such as Customer Relationships and Channels or Key Activities and Resources (Coes, 2014; Verrue, 2014). The next weakness is that despite Canvas being a value-oriented framework, it does not provide any clarification of how the value flows within the network and where the margins are created (Verrue, 2014; Gordijn, Osterwalder & Pigneur, 2005; Coes, 2014). Moreover, due to its specialization on value, non-profit organizations might have difficulties to use it appropriately (Coes, 2014). Lastly, since the framework is only a static picture of the organization, it is argued to be unsuitable for developing future strategies (Frick & Ali, 2013; Coes, 2014).

In conclusion, since the framework incorporates most of the core components, its strengths outweigh the mentioned weaknesses. Furthermore, this reasoning combined with the prominent level of familiarity with Canvas, resulted in the researchers of this thesis choosing this framework for the purpose of the research study.

2.1.5 Practical Reasons for Business Models

Osterwalder, Pigneur and Tucci (2005, p.22) propose that the most visible advantages for managers are in terms of, "...capturing, understanding, communicating, designing, analyzing, and changing the business logic of their firms." Furthermore, Gordijn and Akkermans (2003) argue that BMs provide necessary soundness and clarity to any business proposal, thereby reducing the risk of losses or even bankruptcy in the future.

As far as understanding and sharing is concerned, due to the elevated level of complexity in the business processes, many managers are unable to transform their ideas into words and actions (Massa, Tucci & Afuah, 2017; Osterwalder, Pigneur & Tucci, 2005; Linder & Cantrell, 2000; Gordijn & Akkermans, 2003). Moreover, Massa et al. (2017), following Kahneman's logic (2011), argue that the ideas are usually subjected to various biases which makes company-wide understanding difficult. Therefore, the BMF, such as Canvas, introduces terminology to enhance the shared understanding about the business itself (Osterwalder, Pigneur & Tucci, 2005; Gordijn, Osterwalder & Pigneur, 2005). Additionally, the visual design further enhances the clarity achieved by the lightweight framework (Gordijn, Osterwalder & Pigneur, 2005), thereby also encouraging comprehension, and sharing (Osterwalder, Pigneur & Tucci, 2005). Despite the elevated level of heterogeneity developed throughout the past, the BM tries to enable simplification through clustering of various areas and providing an easy-to-use approach, so that even people from diverse backgrounds can understand the proposition and act on it (Osterwalder, Pigneur & Tucci, 2005).

Another potential benefit is the ability to use a BM as a unit of analysis to compare companies from different sectors as well as competitors (Osterwalder, Pigneur & Tucci, 2005; Massa, Tucci & Afuah, 2017; Saebi, Lien & Foss, 2017). The insights obtained from such a comparison can be then turned into opportunities and strategies about how to react to emerging trends by learning from others.

Furthermore, after understanding company's processes and establishing suitable strategies, a BM provides the necessary steps to sustainably manage the organization (Osterwalder, Pigneur & Tucci, 2005). Since the BM consists of individual but interconnected segments, modular changes can be design swiftly with the focus on the impacts within the processes, which could prove difficult when approaching the whole business problem at once (Osterwalder, Pigneur &

Tucci, 2005). Thus, the strength of a BM is the step-by-step approach for design, change and implementation that is aligned with the overall strategy (Osterwalder, Pigneur & Tucci, 2005; Linder & Cantrell, 2000).

The last beneficial area described in the literature is the freedom to test different possible BMs as safe-to-fail experiments, which means that they cannot harm the company or its core business (Osterwalder, Pigneur & Tucci, 2005), but still can provide valuable lessons to the management when they fail (Berger & Johnston, 2015). Furthermore, such an environment enhances BMI-oriented culture (Osterwalder, Pigneur & Tucci, 2005). Bürgi, Victor and Lentz (2004) go so far as to compare the freedom to try and play with all the different BM components to Lego pieces, since the practitioner is only bound by the number of pieces and their imagination (Osterwalder, Pigneur & Tucci, 2005).

2.2 Business Model Innovation

2.2.1 Overview

Since the 2000s, BMI has gained enough attention in the academic literature that it has become an individual research field (Foss & Saebi, 2016; Wirtz et al., 2016). Haaker et al. (2017, p.16) define BMI as, "...changes in business logic that are new to the focal firm, yet not necessarily to the world." However, as Foss and Saebi (2016), Marolet et al. (2018), and Lenart et al. (2019) propose, BMI literature can be also divided in two main sections based on novelty and scope. This novelty corresponds with the definition of Haaker et al. (2017), since it assesses the degree to which BMI is new to either the industry or the focal firm (Foss & Saebi, 2016). Whereas the scope explores the number of core BM components influenced by BMI (Foss & Saebi, 2016). Therefore, BMI can be defined as a modification to core BM components in a way that is new to either the industry, the focal organization or both.

Furthermore, scholars (e.g., Foss & Saebi, 2016; Voelpel, Leibold & Tekie, 2004) also regard BMI as a suitable response to ensure firm's survival due to the ever-increasing number of unpredictable and unforeseeable changes in the company's environment. Lenart et al. (2019) also believe that the static BM is unable to survive anymore. Therefore, the significance of the

dynamic approach towards BM has begun to increase tremendously as discussed above. Moreover, Zott and Amit (2011) highlight the importance of BMI on the company's performance by relating to a previous study which found that successful companies continuously innovate their BM to remain competitive. Researchers further claim that BMI is a key factor related to modernization or even reinvention, and rebuilding of firm's processes (Zott, Amit & Massa, 2011; Demil and Lecocq, 2010). Furthermore, BMI can be also regarded as a sustainable competitive advantage (Haaker et al., 2017), since both the BM and BMI can be characterized as imperfect imitation due to the Social Complexity, Causally Ambiguity, or Specific Historical Conditions (Barney, 1991).

Haaker et al. (2017) and Chesbrough (2010) claim that BMI can be regarded as an activity during which experimentation is more valuable than logical and analytical techniques since the experimentation phase is able to provide insights regarding BM renewal and obstacles connected with it. Garvey and Johnston (2015) also highlight the importance of a period of safe-to-fail experiments when dealing with complexity which is further supported by a research conducted by Sosna, Trevinyo-Rodríguez and Velamuri (2010), and by Ibarra et al. (2020) in which they found out that prior to BMI, there is an extended period of conceptualization and experimentation of new ways to build and seize value. Therefore, it is understandable why Haaker et al. (2017) believe that a systematic approach to BMI with the ability to test viability, feasibility, and robustness of BM could provide valuable insight for a company. Using a structure when BMI is concerned is necessary since such a process is crucial for the company's survival and should not be done at random or taken lightly (Christensen, Bartman & Van Bever, 2016). As described by de Vos and Haaker (2008, p.18), "Robustness [...] has to do with the ability to cope with changes in the business environment" while keeping the level of viability for an extended period of time. As for viability of a BM, it can be understood as a state when all involved actors obtain value from the processes (de Vos & Haaker, 2008), hence it could be connected to the financial implications and benefits of a BM (Haaker et al., 2017). On the other hand, feasibility evaluates whether the BM design can be implemented in practice based on firm's existing resources, present state of the market, and legal and social aspects (Haaker et al., 2017). In other words, the three aspects of a BM serve to evaluate the probable long-term success, attractiveness, and the profitability of the value proposition when considering both internal and external factors related to the process of value creation and capture (Haaker et al., 2017).

2.2.2 Drivers of BMI

Academic literature has tried to answer the question of what is driving the BMI. There are various approaches to this research field. Saebi et al. (2017) explains how a firm approaches BMI when under a threat or when exploiting an opportunity. Lenart et al. (2019) and Marolet et al. (2018) describe the drivers by dividing them into internal and external types. Lastly, Morgan et al. (2020) characterize the drivers based on the necessity and opportunity which elaborates on how Saebi et al. (2017) view the differentiation issue, but also tries to answer when it is suitable for an SME to pivot its BM. Saebi et al. (2017) argue that when management faces a threat, it acts more proactively; however, when an opportunity is perceived, it strives to keep the status quo because people are inherently biased towards loss aversion (Kahneman, Lovallo & Sibony, 2011). However, Morgan et al. (2020) believe that necessity does not allow sufficient examination of hypotheses to find the most promising chance. Therefore, if a company strives for a drastic change to its BM, opportunities are more suitable to focus on compared to threats. Additionally, Lenart et al. (2019) believe that the size of the company further impacts the perceived influence of BMI on the company. They claim that medium-sized companies are likely to be impacted more compared to smaller firms which are more reliant on their value networks, which causes them to almost omit BMI completely from their plans.

2.2.2.1. *Internal Drivers of BMI*

Based on the literature review conducted by Foss and Saebi (2016), the internal drivers of BMI are still lacking a coherent understanding. However, there is a widespread agreement on the impact of dynamic capabilities on BMI. Teece (2007) believes that even though dynamic capabilities are difficult to establish, they are essential for a long-term business performance. They consist of, "...skills, processes, procedures, organizational structures, decision rules, and disciplines" (Teece, 2007, p.1) that are needed for recognizing emerging threats and opportunities, responding to them, and acting on them, in order to ensure long-term profitability (Foss & Saebi, 2016; Teece, 2007). Additionally, Lenart et al. (2019) and Marolet et al. (2018) describe the internal drivers as a firm's capabilities which are needed to design and establish a new value proposition or innovative processes. They further argue that the level of innovation within the organization enhances the level of firm's BMI experimentation. Ibarra et al. (2020, p. 13) follow the statements and describe BMI capabilities (BMIC) as, "Sensing customer needs, sensing technological options, collaborating and developing a BMI strategy, and

conceptualizing and experimenting.” They believe that these five BMIC increase the success rate of BMI in an SME by 23% following their analysis. They also provided evidence that the ability to conceptualize and experiment with new BM concepts played the leading role in the overall process. Furthermore, the ability to sense customer needs is the core ability when obtaining necessary knowledge for BMI (Ibarra et al., 2020), as it provides vital insights when designing or remodeling a value proposition. Furthermore, Christensen (1992) claims that companies tend to fail to appropriately innovate in the market rather than in the laboratory, which promotes the significance of being able to sense the customer needs as well as the technological changes. Additionally, being encouraged to conduct safe-to-fail experiments to improve learning, leads to a higher success rate when implementing the innovation while broadening firm’s innovative culture (Berger & Johnston, 2015).

2.2.2.2. *External Drivers of BMI*

As far as the external drivers are concerned, the environment and technology has been frequently mentioned in the academic literature (Lenart et al., 2019; Marolt et al., 2018; Morgan et al., 2020). Based on the research conducted by Jaworski and Kohli (1993), the environment comprises of the intensity of competition and market fluctuations. The competition focuses on the ability to imitate the focal company’s products, as well as their reaction to the introduction of a new value proposition (Jaworski & Kohli, 1993).

As for the market changes, they can be caused by a wide variety of reasons. De Vos and Haaker (2008) propose key areas, such as the shifts in customer requirements and segments, or legal changes, that drives the BMI. Nevertheless, major exogenous shocks, such as the financial crisis in 2008 or the recent pandemic, distort the markets and create challenging environment for many businesses (Morgan et al., 2020).

Bouwman et al. (2018) highlight the remarkable impact that technology has on BMI. They claim that the technological advancement (e.g., social media and big data) heavily contribute to the level of BMI, therefore, they warn about the possible mistakes of not developing suitable steps to implement innovative technologies to the overall business, as such a shift may fundamentally change the business itself. On the other hand, the findings of Marolet et al. (2018) contradict this notion. They argue that technology per se is not related to BMI. However, they believe that technological personnel play a much more vital role in the process. Such an argument is reasonable since technology without a proper use will not yield needed results,

therefore, it also depends on the knowledge required to efficiently implement emergent technology in a BM. For examples, Bouwman et al. (2018) finds different results between social media and big data believing that big data demands in-depth expertise and computational skills compared to social media.

2.2.2.3. *BMI in SMEs*

Even though the research field has received an increasing amount of attention during the last decade, the focal point of the majority of studies has been directed at BMI in large companies (Lenart et al., 2019). Only recently has the focus slightly shifted in favor of SMEs (Lenart et al., 2019; Haaker et al., 2017; Frick & Ali, 2013). Scholars (e.g., Lenart et al., 2019; Frick and Ali, 2013; Taiminen and Karjaluoto, 2015) claim that since SMEs concern themselves with mostly sales and survivability of their businesses, they tend to be less versed in strategy and structured approaches related to BMI processes. Kesting and Günzel-Jensen (2015) further propose that having such a narrow focus on the core business may lead to increased risks and neglect of emerging opportunities.

As far as the challenges are concerned, Henderson and Clark (1990) believe that the reason as to why all companies struggle with innovation is due to the path dependency caused by previously established processes and structures created to increase the firm's efficiency when working with the dominant design. Furthermore, the company's inertia can be caused by change resistance (Diefenbach & Deelmann, 2016; Saebi, Lien & Foss, 2017). In other words, both employees and managers can be frightened by the prospect of the rapidly changing environment, for example, management holding onto its power and status or employees being afraid of losing their familiar set of structures, leadership, and predictable assignments (Diefenbach & Deelmann, 2016). These challenges can appear regardless of the firm's size. When it comes to issues especially related to SMEs, Marolet et al. (2018) claim that based on their study, which focuses on SMEs perspectives, the companies struggle with lack of resources, be it personnel, knowledge, or skills. Kesting and Günzel-Jensen (2015) believe that since SMEs are constrained by the lack of resources, they are dependent on the knowledge, experience, and intuition of the management. Nevertheless, Ibarra et al. (2020) argue that since the power concentration in SMEs is intense, the firm is highly dependent on the powerful individuals to lead the change, thereby enabling activities to be subjected to biases, such as loss aversion, overconfidence traps or anchoring (Hammond, Keeney & Raiffa, 2006; Saebi, Lien

& Foss, 2017; Kahneman, Lovallo & Sibony, 2011). Furthermore, since the management is argued to be even less familiar with the long-term strategic planning compared to large firms, the frequency of short-termism is high (Hammond, Keeney & Raiffa, 2006; Didonet, Fearné & Simmons, 2019) which may decrease the survivability chances of SMEs. Another problem connected to management is the lack of understanding about the firm's BM (Marolt et al., 2018). In other words, the clarity of the core components is low, meaning that the management does not comprehend how exactly the value is produced, delivered, and marketed to a customer (Marolt et al., 2018). Without a structured overview of the BM, the company is unable to innovate efficiently and successfully (Marolt et al., 2018). The last challenge is related to the organizational culture. To encourage the necessary level of BMI, the company needs to create an innovative culture that promotes creativity, sustainable risk-taking, and capabilities to see potential of new opportunities which is linked to the lack of resources (Marolt et al., 2018; Ibarra et al., 2020; Aksoy, 2017).

2.3 An Uncertain Environment

Another aspect that has gained attention in the recent academic literature, regarding Strategic Management and Entrepreneurship, is the ever-increasing dynamics and interconnectivity of factors in the environment (Diefenbach & Deelmann, 2016; Berger & Johnston, 2015). Many companies have fallen victim to VUCA, which is an acronym for volatility, uncertainty, complexity, and ambiguity (Chauhan et al., 2020). Berger and Johnston (2015) describe it as an environment that changes rapidly, where the number of options skyrockets, and the stable cause-and-effect relationship is not always present, making the future less foreseeable. Unfortunately, even though the recognition has increased, the knowledge is not fully utilized by neither executives nor researchers (Bennett & Lemoine, 2014), which is similar to what has happened to BM research. Another major challenge created by such an environment is that the typical strategic models do not provide consistent information anymore as they are designed with linear relationships in mind (Burt et al., 2006). Therefore, the gap between theoretical and practical approaches has widened (Burt et al., 2006) which has caused executives to be even more prone to giving up when faced with a VUCA environment, or to creating only a general plan, such as 'be more creative' or 'be more innovative' (Bennett & Lemoine, 2014). However,

to develop an appropriate strategy, all aspects of the acronym must be fully understood as each of them requires a different approach to fully capitalize on the environmental shifts (Bennett & Lemoine, 2014; Diefenbach & Deelmann, 2016; Berger & Johnston, 2015).

Volatility requires an elevated level of agility, as well as utilization of resources to prepare a substantial slack to endure the frequent and unpredictable changes of various magnitude, such as changes in commodities' prices (Bennett & Lemoine, 2014). In such a situation, a company has enough information to outline the cause of the shift, as well as the threats and opportunities resulting from it (Bennett & Lemoine, 2014). On the other hand, in the face of uncertainty, the pursuit of information is vital (Bennett & Lemoine, 2014); therefore, gathering various perspectives and alternatives is important to broaden the understanding of the situation as the information, regarding the most suitable response, is lacking (Bennett & Lemoine, 2014). As for a complex environment, it requires a company to redesign its internal processes to efficiently adapt to the external shocks as the interconnectedness among several factors increases (Bennett & Lemoine, 2014). Lastly, a strategy for ambiguity focuses on rapid learning supported by safe-to-fail experiments (Berger & Johnston, 2015) as it seeks to limit the vagueness by discovering which methods work since the Rules of the Game (Hornborg, 2018) and the cause-and-effect relationship are yet to be discovered (Bennett & Lemoine, 2014). For instance, a completely new product, about which there is little to no historical information makes predicting the outcome nearly impossible (Bennett & Lemoine, 2014).

Naturally, a VUCA environment comprises of all the above-mentioned aspects. Therefore, Sloan (2020) believes that for companies to become strategically competitive, they must become creative, gather, and critically assess information even outside of their core businesses, as well as be able to continuously redesign their strategy and BM to match the changing environment (Sloan, 2020). The academic literature has tried to provide some answers about the way companies should improve their survivability in this environment. Makridakis (1996) states that dependence on past experience and data causes companies to lose competitive advantages as it cannot provide accurate forecasts. He uses forecasting, which he divides into analogy-based and long-term trend-based, to enhance the ability to predict changes and to evaluate their implications and repercussions, to allow companies to adapt to them. Another frequently highlighted approach is Scenario Planning (Gnatzy & Moser, 2012; Burt et al., 2006; Amer, Daim & Jetter, 2013; Quiceno et al., 2019). It enhances company's flexibility and robustness by revitalizing the strategic thinking and decreasing the vagueness when thinking

about the future (Amer, Daim & Jetter, 2013). Scenario Planning differs from forecasting, as the former works with multiple alternative futures, whereas the latter seeks to identify the main path (Amer, Daim & Jetter, 2013). Nevertheless, neither of them provides a step-by-step approach for companies to improve their robustness of BMs (Haaker et al., 2017). The researchers of this thesis found only one method as such, the BMST.

2.4 Business Model Stress Test

2.4.1 Origins of Stress Testing

The technique was developed and has been frequently used in engineering to evaluate how well-constructed something is when faced with extreme types of environments (Borio, Drehmann & Tsatsaronis, 2014). In other words, it serves to assess the breaking point of an object. The widespread use of micro stress-testing in the financial sector started in 1990s (Borio, Drehmann & Tsatsaronis, 2014; Sorge & Virolainen, 2006). It measures the stability of an investment portfolio of an individual or a company to enhance its performance and survivability under external shocks (Borio, Drehmann & Tsatsaronis, 2014). On the contrary, the macro stress-test is a more recent approach that can be defined as, “A measure of the risk exposure of a group of financial institutions to an ‘exceptional but plausible’ stress scenario” (Sorge & Virolainen, 2006, p.114). This system-wide method is utilized by governmental agencies to target inconsistencies and vulnerabilities of a financial system and a whole economy when under adverse conditions (Borio, Drehmann & Tsatsaronis, 2014; Sorge & Virolainen, 2006). The original use of stress testing as an early warning tool is severely limited by the human attitude to avoid identifying weaknesses when the system is booming, as well as the necessity to amplify risks to be measurable resulted in a significant level of skepticism (Borio, Drehmann & Tsatsaronis, 2014). On the other hand, its popularity as a crisis management tool has risen, since, in challenging times, the key risks are more visible which makes Scenario Planning easier, and the management is more active when facing a loss (Borio, Drehmann & Tsatsaronis, 2014; Sorge & Virolainen, 2006).

2.4.2 Application to Business Models

Stress testing was first applied to BMs in 2012 by a group of researchers, professors, and innovators (Bouwman et al., 2012; Haaker et al., 2017). Due to its recent development, the approach has yet to be widely adopted outside of the initial group which created an interest to contribute to the emerging literature and critically assess it from an outsider perspective. The technique's objective is to evaluate the long-term robustness of a BM when challenged by environmental changes (Bouwman et al., 2012) to improve the ability to implement BM changes, as well as to enhance the importance of such a process from being regarded as a hobby to a core aspect of strategic thinking (Bouwman et al., 2018). Furthermore, by incorporating scenario analysis based on political, technological, and behavioral changes of stakeholders, the BMST highlights the influence that the various scenarios might have on different BM components (Bouwman et al., 2018; Haaker et al., 2017; Bouwman et al., 2012), thereby providing information to the company regarding the long-term soundness of its BM. As Bouwman et al. argue (2012, p.10), "Misalignment between an organization and its environment has been recognized as the main cause of corporate mortality." Furthermore, Haaker et al. (2017) state that even though there have been studies that included scenarios to explore strategic issues, the BMST is so far the only structured method that uses Scenario Planning to assess how robust, viable and feasible BM components are. Therefore, the BMST builds on the strengths of Scenario Planning to ensure the alignment of the BM components with trends and environmental changes, while also including boundary-spanning information and providing a step-by-step testing structure for practitioners to follow. Another benefit is that it can be used on any structured BMF, such as STOF or Canvas (Haaker et al., 2017). A detailed explanation of each of the steps and their application will be provided in the following methodology chapter.

2.4.3 Scenario Planning

As the gap between the theoretical and practical views on the environment has widened, Burt et al. (2006) argue that the standard strategic models and frameworks are slowly becoming outdated as they cannot provide sufficiently detailed and relevant enough information. They explain it by conducting a research of the thirteen most popular textbooks on Strategic

Management from which only one of them allocated more than 5% to the matter of the environmental analysis, and none of them perceived it as a firm-specific factor. Furthermore, the prominent textbooks perceived the environment as an aspect that cannot be actively influenced, and firms are to passively react to the changes (Burt et al., 2006). Thirdly, the environment was understood as static and simple rather than dynamic and with many interconnected variables (Burt et al., 2006). Therefore, researchers started to turn towards more comprehensive tools, such as Scenario Planning.

Even though the origins of Scenario Planning can be linked to WWII and military planning (Amer, Daim & Jetter, 2013), it was not until Shell included it into their strategic decision-making in the 1970s identifying potential changes in the oil industry, that it started to be recognized as a valuable tool in the business world (Amer, Daim & Jetter, 2013; Quiceno et al., 2019). Nevertheless, only since the early 2000s has it become one of the most frequently utilized management tools (Rigby & Bilodeau, 2007), as the importance of recognizing future trends, due to the raising level of uncertainty and unpredictability (Malaska, 1985), developed into an important matter for any company (Amer, Daim & Jetter, 2013).

Scenario Planning can be defined as a method which utilizes multiple perspectives about future uncertainties, trends, and concerns to gain better awareness about their potential future consequences and the development of the environment (Burt et al., 2006). Therefore, as Burt et al. (2006, p.60) state, “Scenarios are not predictions, extrapolations, good or bad futures, or science fiction.” In other words, they cannot foresee the future; however, their purpose is to simply analyze the information and different perspectives to underline the major uncertainties (Quiceno et al., 2019) which is essential for stakeholders to proactively prepare and develop suitable plans on how to approach them (Gnatzy & Moser, 2012). Additionally, Schoemaker (1995, p.38) calls Scenario Planning a “study of collective ignorance”. He argues that through collective learning and by focusing on three aspects when developing future scenarios, ‘Things we know we know’, ‘Things we know we don’t know’ and ‘Things we don’t know we don’t know,’ the practitioners will lower the level of subjectivity when searching for weak signals. Therefore, the capability of reassessing one’s mindset and reality is one of the fundamentals of a successful scenario formulation (Amer, Daim & Jetter, 2013; Wack, 1985, no.5; Wack, 1985, no.6).

As for the approach towards Scenario Planning, there appear to be three main streams of literature (Amer, Daim & Jetter, 2013); however, this thesis tries to synthesize the commonalities. Scenarios can be constructed under both qualitative and quantitative methodologies (Amer, Daim & Jetter, 2013). Nevertheless, the applicability differs as the former type is more suitable for long-term and larger projects, whereas the latter is more appropriate for short-term and more narrow plans as they can be quantified (Amer, Daim & Jetter, 2013). There have been continuous debates regarding the number of scenarios needed to be designed (Amer, Daim & Jetter, 2013; Pillkahn, 2008). They most frequently range from two to five, based on the suitable cost-value ratio (Pillkahn, 2008). The more variabilities are used, the more complex and detailed the obtained description can be. Moreover, to ensure the validity of scenarios, researchers propose a vast number of factors that should be achieved (Amer, Daim & Jetter, 2013); however, the most frequently mentioned ones are internal consistency and plausibility (Amer, Daim & Jetter, 2013; Schoemaker, 1995; Pillkahn, 2008).

The technique has already been modified significantly. For instance, Burt et al. (2006) utilize PEST (Political, Economic, Social, and Technological) for idea generation when designing scenarios, Quiceno et al. (2019) incorporate PEST and SWOT (Strengths, Weaknesses, Opportunities, and Threats) to design robust strategies in the electricity industry, and Tesch (2016) links Scenario Planning with the BMI process to design an assessment method of BMs to ensure viability of the scenario. However, none of them provides a structured and systematic testing method of long-term robustness of a specific BM (Haaker et al., 2017).

2.5 Theoretical Lens

The above literature review detailed the fundamental topics, including the thorough understanding of BMs, the drivers of BMI and the approach of SMEs towards it, and the lack of suitable strategic tools in an uncertain environment, that influenced the creation of the BMST. These areas were deemed necessary to thoroughly examine as the critical first step in order to be adequately educated about the BMST and its basis. This education facilitates a better understanding of the relevant background literature, in order to perform a more accurate conduction of the BMST method in the case organizations of this thesis. Furthermore, the researchers of this thesis summarized this literature review into a visual theoretical lens shown in Figure 2, with a focus on the reiterative relationship between the BMST and the examined areas. These categories of this figure will be used as the structure for the later chapter to discuss the empirical results.

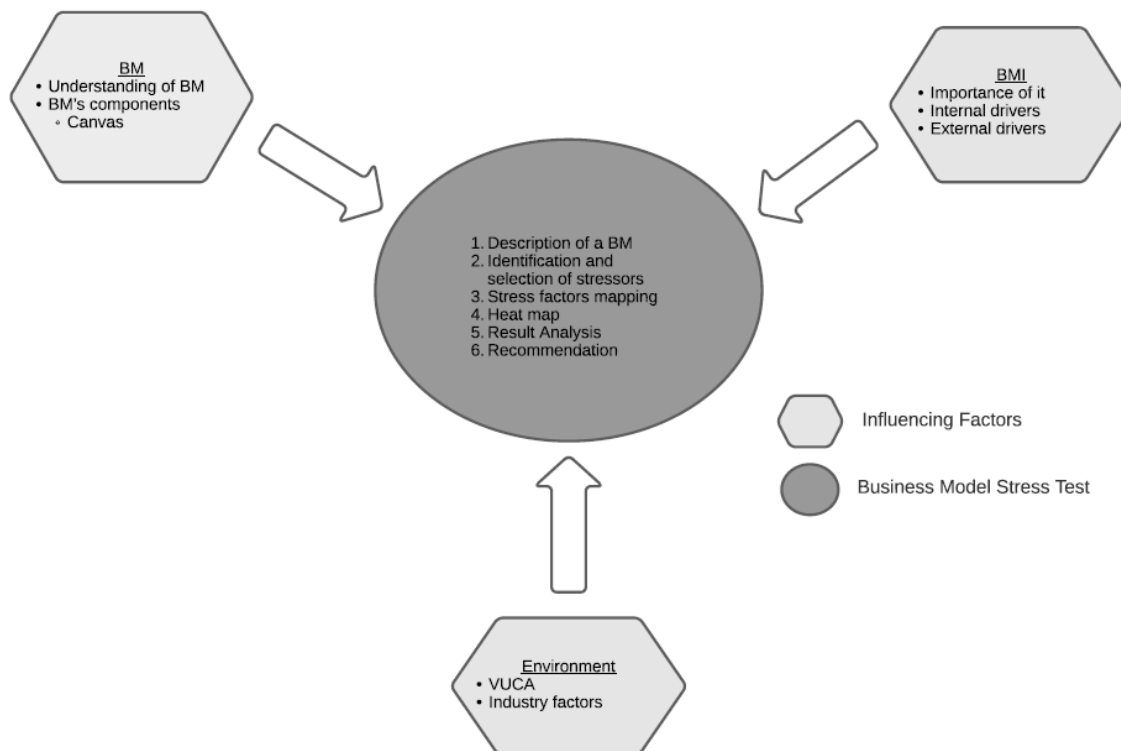


Figure 2 - Theoretical Lens (created by the researchers of this thesis with the six BMST steps from Bouwman et al. (2018))

3 Methodology

3.1 Research Approach & Design

3.1.1 Qualitative Approach

As presented in the first chapter, the purpose of this research study is to apply the BMST within two small organizations, in order to determine the BM challenges within the organizations and subsequently formulate recommendations. Before proceeding, it is key to reiterate this purpose and the research question to highlight that the researchers of this thesis will not actually be implementing any changes to the organizations' BMs or studying the effects if the organizations' managers do decide to actualize the recommendations into BM changes. Furthermore, the research question is as follows:

How useful is the conduction of a Business Model Stress Test in small organizations as a strategic tool to cope with uncertainty?

When formulating the question, the researchers of this thesis realized that the results would be specific to each organization used, which implied the need to explore the questions on a case-by-case basis. Furthermore, the purpose of identifying challenges and recommendations would require organizational specificity and more, in-depth questions. Creswell and Creswell (2018) describe the first distinction in a qualitative research study as the use of words, or more specifically, open-ended questions. The authors also write that this research approach is formed through the initial assumptions brought by the researchers and the strategic use of case studies. Additionally, Bouwman et al. (2018) define the BMST as a framework that is inherently qualitative and requires collaborative discussions between different groups of stakeholders. Therefore, through the basic expectations of the researchers of this thesis, the support of methodological literature, and the definition provided by the creators of the BMST framework, the chosen research approach to address the research question and fulfill the purpose of this thesis is qualitative.

On the other hand, Haaker et al. (2017) mention that a quantitative approach could be taken with the BMST. However, this addition would be a future development and meant specifically to quantify robustness in the BM. Bouwman et al. (2018) also discuss that their future research intends to use quantitative methods to generalize about BMI and agility, but this can only happen after they have built up a greater dataset of qualitative cases. Since this is the first time that the researchers of this thesis are applying the BMST and possess no previous data, the logical research approach is a qualitative one. As seen in the research question, the researchers of this thesis intend to explore and understand the significance, or lack thereof, of this framework when applied to small organizations. This exploratory nature is best implemented through a qualitative approach, as explained by Creswell and Creswell (2018).

3.1.2 Multiple Case Study

With the foundation of the qualitative approach, the research question and purpose are also focused on through the design of a multiple case study. The researchers of this thesis concluded that while testing the framework on one organization would be sufficient, the opportunity to analyze multiple organizations would yield a wider breadth of richer insights into the overall implications of the model in different contexts. This conclusion is supported by Yin (2003), who advises that, if possible, a multiple case study is preferable over a single case study, as it provides a more robust analysis and increases validity. The author also notes that multiple cases allow the researcher to analyze and draw conclusions both within a case and across cases. However, the use of a multiple case study design does require more time and resources (Baxter & Jack, 2008). Due to this limitation, the allotted timeline and scope of this thesis were assessed and ultimately, two case studies were deemed to be a sufficient and doable amount. A pair of cases allows for a significant depth to each case, but also to draw comparisons and contrasts between the two cases.

3.1.3 Action Design Research

Lastly, with the foundation of a qualitative and multiple case study approach, this study is rooted in the Action Design Research (ADR) method (Sein et al., 2011). This method is unique

in the way that it combines an evaluation of an organizational context and the use of technological tools, with the intention to develop prescriptive knowledge to aid the organization (Sein et al., 2011). In other words, the method possesses qualities of both inductive and deductive reasoning; the necessity of interaction with respondents and observations in an organization combined with the subsequent reflection of these through the use of a theoretical framework rooted in technology. The BMST is labeled as ADR, because it employs the framework, using the technology of spreadsheet tooling, to help actual organizations address challenges. The researchers of this thesis were fortunate enough to obtain the original spreadsheet tooling (Appendix E) from the creators of the BMST, Bouwman et al. (2018). Furthermore, this method requires a foundation from theory and the research purpose as defined by the researchers, with integral input from the users and iterative use in the organizational setting (Sein et al., 2011).

3.2 Case Selection

3.2.1 Background

The two small organizations selected for this research study are Case A, a fitness center, and Case B, a cultural organization. The names of the organizations have been kept anonymous, including slightly amending the job titles of the interviewees, as both organizations have relatively few employees and including these names could inadvertently and unethically breach the participants' privacy.

An important delimitation to note, is that both organizations are located in Sweden. The main reasoning behind this choice of location was to maintain comparability between the case organizations in terms of the external environment, which in turn increases the validity and reliability of the study. Since both organizations are established in the same country and adhere to the same regulations, factors such as labor laws, will not affect the results of this study. This is particularly essential in the current time period, since the Swedish government has handled the COVID-19 pandemic through an emphasis on social responsibility rather than legal

regulation, which is a drastic differentiation compared to most other nations (Bricco et al., 2020).

3.2.2 Criteria

With those considerations in mind, the criteria used to select cases for this research study were threefold: 1) the organization should have less than 50 employees (i.e., a small organization), 2) the organization should be in a sector that is currently facing challenges, and 3) the organization should be a legal entity other than a for-profit company.

First, as the research question and purpose of this thesis are focused on small organizations, the cases therefore needed to meet this requirement. This was both intrinsically motivated by the researchers' interest in this type of organization and also the theoretical and practical relevance as detailed in the introductory chapter. It is also important to specify the type of organization in this way to create further continuity between the cases for the purpose of increased comparison between them.

Secondly, as uncertainties and challenges are a critical component of the BMST, the case organizations should be in a sector that is currently undergoing hardships. The implications of this criterion will be further elaborated in the case description of the next chapter. Although it is understood that every sector and industry have challenges to some extent, which is why the research timeline was another important factor that influenced the choice of this criterion. As this research study only spans two months, in order to collect quality data, the interview respondents needed to be currently experiencing several types of uncertainties and challenges within their organization and its broader environment. Haaker et al. (2017) discuss that the BMST will only be as valid as the quality of its empirical input, so this is a key element for the overall research.

Finally, Bouwman et al. (2018), facilitated a research study using the BMST as a beta-test on three case organizations. One of these cases was a start-up organization with non-profit legal status and, at the time of the case, did not have any revenue as it was still in the early stages of its development (Bouwman et al., 2018). This thesis will also create a case study of two, small

organizations with legal statuses other than for-profit, however, both of these organizations have been in business since 1983. Therefore, this thesis will juxtapose the example from Bouwman et al. (2018) and utilize the BMST in small, incumbent organizations. It is key to note the legal status of the case organizations, as one of them is an NGO and therefore not considered an SME by the definition of the European Commission (2003). However, as the organization has less than fifty employees, it is still treated as small. This thesis utilizes the term “SME”, as that is the most common acronym used in academic literature. However, the phrase "small organization(s)" will also be written in this thesis when directly referring to the cases, as it is more inclusive of the actual status of these organizations. Additionally, applying this framework in organizations that are outside a typical for-profit BM could provide a richer insight into the overall effectiveness of the framework, including its potential limitations.

Two potential organizations were identified based on their match to the criteria, along with the locational considerations. Then, the researchers initially contacted each organization through e-mail with a message that explained the purpose of the study and how the study could potentially benefit the organization. Furthermore, the ethical considerations and timeline of the study were detailed, along with sample questions that would be asked in the interviews. This information was provided in order to ensure that the organizations were able to make an informed decision about a possible participation in the study. Following this, both organizations did agree to be case studies for the research.

3.3 Data Collection Method

3.3.1 Primary Data

The data collection methods were mainly based on those recommended by the creators of the BMST (Haaker et al., 2017). The first-hand data, which constitutes the majority of the data, was collected through semi-structured interviews. This interview method was chosen due to its qualitative nature that allows respondents to share their viewpoints from broad, open-ended questions (Creswell & Creswell, 2018). Furthermore, Haaker et al. (2017) explain that

interviews for the BMST are a discussion session that should be guided by the researchers, but the main input comes from the knowledgeable participants from the organization.

On the whole, eight interviews were conducted, with seven of them as initial interviews before the data analysis, and then one final interview with the manager of Case B as a follow-up to critically discuss the analysis results and the overall BMST. During the initial interviews with the key manager in each organization, the researchers alerted the managers of this follow-up interview and that it would be held one month after the initial interview. However, when the manager from Case A was contacted for this secondary interview, they were unable to schedule it within the time constraints of this thesis, due to unforeseen circumstances. This limitation will be discussed in the subsequent chapters. Moreover, the same amount of people, three, were interviewed in each organization, then the researchers intended to interview a fourth person from the respective domain of each organization (i.e., fitness industry and cultural sector). This fourth person was successfully interviewed from the fitness industry; however, an actual interview was not able to be scheduled with the interviewee from the cultural sector. This person was contacted and did respond to the researchers through e-mail communication by providing research documents that were deemed relevant and related to the questions from the planned interview guide. Therefore, these sources will be used in the analysis in lieu of interview quotes. Due to the ongoing pandemic, the conducted interviews were all performed digitally, with the actual method of communication marked in the tables below. The duration of the interviews varied depending on the amount of information required from the different respondents. The manager interviews lasted the longest, approximately seventy-five minutes, while the interviews with the independent experts and the customers were the shortest, with an average of fifteen minutes. The interviews were transcribed either through a digital transcription software based on the interviewees' consented recordings or through the researchers' extensive notes.

The criteria for each of the respondents was largely based on the recommendations given by Haaker et al. (2017) regarding which organizational stakeholders should be chosen for data inputs for the BMST. They explain that the first stakeholder(s) interviewed should be the manager or team that is directly responsible for the BM, as they can provide the best description of the business. Next, the creators recommend receiving direct input from an independent expert in the relevant domain, as they can provide a systemic view that is not biased by the

internal organization. Finally, the researchers of this thesis noted the importance of also conducting interviews with customers, as membership is a key component of both of the case organizations' BMs. The selection criteria employed to choose the customers were the following: 1) the customer must have held their membership for longer than one year, as this allowed for a higher quality input regarding the customer perspective on changes, and 2) the customer must be a full-paying member (i.e., not from a discounted membership), as this changes the value proposition as perceived by the customer. The questions in the interview guides were based on the necessary information needed to complete a BMST, but also broader questions that helped the researchers understand how the organizations currently manage and strategize. The interview guides for managers/board members, customers/members, and domain experts can be found in Appendix A, B, and C, respectively. The follow-up interview guide for Case B's key manager is attached in Appendix D. Table 1 (Case A) and Table 2 (Case B), shown below, categorize each of the respondents and describe their contribution to the relevance of this study.

Table 1 - Case A Interview Respondents (created by the researchers of this thesis)

	Position/Title	Relevance for Case Study	Communication Channel
Case A	Business Manager	Key involvement with business model implementation and strategy formulation	Zoom video call
	Other Manager	Key involvement of communication with members	Zoom video call
	Customer/Member	An active member who has held their membership for more than one year, and is therefore able to comment on the organization from a long-term customer perspective	Zoom video call
	Researcher/Expert	Independent expert, who is also a researcher and author focusing on the fitness industry, who can comment on the challenges/uncertainties of the	Phone/audio call

		industry from a perspective outside of the organization	
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Table 2 - Case B Interview Respondents (created by the researchers of this thesis)

	Position/Title	Relevance for Case Study	Communication Channel
Case B	Manager	Key involvement with business model development, strategy formulation, and communications	Zoom video call (x 2 interviews: one initial interview and one follow-up interview)
	Board Member	Key involvement regarding strategic decisions	Zoom video call
	Customer/Member	An active member who has held their membership for more than one year, and is therefore able to comment on the organization from a long-term customer perspective	Zoom video call
	Cultural Consultant	Independent senior consultant with many years of practice in the cultural sector who can comment on the challenges/uncertainties of the sector from a perspective outside of the organization	E-mail documents

3.3.2 Secondary Data

Creswell and Creswell (2018) explain that qualitative research can include data sources outside of interviews, such as public and private documents and other digital materials. The authors write that to conduct a well-rounded qualitative study, multiple sources of data should be drawn from in order to make conclusions. Therefore, secondary data has been collected about the organizations' domains and the organizations themselves, through publicly available

documents found online and additional documents provided by interviewees. This data allowed the conduction of a more holistic analysis of both organizations' sectors, while also cross-checking the information provided by the interviewees to ensure there were no obvious gaps or discrepancies.

3.4 Data Analysis

The empirical data of this research study was analyzed through the BMST, with its six steps detailed in the following paragraphs. The data for the first two steps was collected through the semi-structured interviews, as described above. Then, to integrate, structure, and display all of the empirical data for the other four steps, the BMST spreadsheet tooling (Appendix E) was utilized, which was obtained through the generosity of the creators of the BMST, Bouwman et al. (2018).

The first step is to describe the case organization's BM, using the chosen BM ontology, since the BMST allows for the use of any BMF (Bouwman et al., 2018). As detailed in the previous chapter, BM Canvas has been chosen for the purposes of this research study, with the additional component of strategy. Furthermore, the spreadsheet tooling was provided in the Canvas format, so this is another reason for the chosen framework. For the second step of selecting uncertainties, Bouwman et al. (2018) suggest that the total amount should be limited to no more than three, and each of the uncertainties should be divided into its two, opposite outcomes. These uncertainties were chosen from all of the interviewees' most frequent responses to questions about the greatest challenges in the organizations and trends of the domains. The third step is an intermediary process that requires a reflection on all of the empirical data collected by the interviewees to describe the interactions and impact between the BM and the uncertainties (Bouwman et al., 2018).

Once the data from the first three steps has been inputted into the spreadsheet tooling, the heat map is automatically constructed in an additional spreadsheet based on the interactions noted in the third step. The heat map uses a color-coding mechanism to illustrate the implications of the relationship between the BM components and the uncertainties. The explanations of the

specific colors are the following: red demonstrates that a specific outcome will render the BM component inviable, yellow indicates that an outcome will negatively affect the BM component but without complete immobilization, green shows that the BM component is not negatively affected by the outcome, and gray shows that the uncertainty has no relevant implications on the BM component (Bouwman et al., 2018). The heat map creates both a visual code and a qualitative explanation of challenges and the BM (Bouwman et al., 2018). This lays the foundation for the fifth step, a two-part analysis of the results of the heat map. The first part is a pattern analysis of the heat map's colors to identify preferred outcomes of the uncertainties, BM inconsistencies, and potential BM components that are paralyzed in both outcome scenarios (Bouwman et al., 2018). The second part is a sub-view analysis that focuses on the BM components to identify which areas are the weakest versus the most robust, based on the component's interactions with the uncertainties (Bouwman et al., 2018). The final step entails creating recommendations for improvement based on the analysis documentation written by the researchers throughout each of the steps (Bouwman et al., 2018), and Haaker et al. (2017) stress that facilitating a discussion about these results is a key source of information from which to ultimately draw conclusions. Therefore, after the completion of all steps, the relevant managers of each organization were contacted for a follow-up interview to discuss the results and the overall assessment of the BMST. However, as previously mentioned, only the manager from Case B was available for this secondary interview.

3.5 Validity & Reliability

According to Creswell and Creswell (2018), validity in a qualitative study refers to the checks and procedures that were used to monitor for accuracy in the research process, while the reliability of a qualitative study demonstrates the consistency of the research approach.

Several avenues were used to strengthen the validity of this research study, based on the list of validation strategies presented by Creswell and Creswell (2018) and the suggestions put forth by Haaker et al. (2017). First, a triangulation of data was collected by multiple sources, both internally and externally from both case organizations. The first-hand data was collected from multiple parties at varying levels in the organizations to cross-check the information.

Furthermore, an independent expert from both sectors were contacted to offer outside perspectives that was free from the internal bias of the organizations, as recommended by Haaker et al. (2017). Finally, web pages and other documents created by the organizations were referenced, along with external documentation regarding the respective sectors as a whole. Additionally, another strategy employed to validate this research study was through peer debriefing (Creswell & Creswell, 2018) of fellow master students in the same program and also a thesis supervisor. Both parties gave feedback throughout the different stages of the study, which added validity by creating a resonance with people outside of the direct research process and minimized bias.

The validity of this study cannot be discussed without acknowledging the presence of bias from the researchers' perspectives. One of the researchers of this thesis was previously employed at one of the case organizations. Creswell and Creswell (2018) explain that it is important to explicitly state this kind of past experience, as it helps the audience to understand the researcher's connection to the study. While the author's employment contract ended eight months before the start of this research study, it is important to note that the author's former contacts played a role in helping to secure the organization for the case study. To mitigate this bias and maintain the validity of the research, both researchers were present for all interviews conducted with the organization. This ensured that the interviews and questions were held in the same manner as the other case study organization for continuity and validity.

Furthermore, both case organizations have a governance structure with a board of directors, which combined with the previously mentioned case criteria, may have led the cases to result in a certain way. This potential uniqueness of the case organizations leads into a discussion about the idea of qualitative generalizability of the case studies. Gibbs (2007) cautions qualitative researchers to not generalize outside the context in which they conducted their specific study. The author continues by explaining that the respondents in a qualitative study are usually chosen for their specific knowledge, which cannot be generalized to a greater population. However, Yin (2013) argues that some degree of generalization can in some cases be tied into the broader theoretical background, especially if additional case studies are performed. The author continues that any additional cases require in-depth documentation of the qualitative procedures, which was implemented by the researchers of this thesis and ties into the overall reliability of this research.

Several tactics were employed throughout the case studies to facilitate a reliable outcome. First, the transcriptions from all interviews were thoroughly checked by both researchers for obvious mistakes, as recommended by both Creswell and Creswell (2018) and Gibbs (2007). Yin (2014) emphasizes the importance of a case study protocol in a multiple case study, which was initiated in this research process to create continuity between the procedures used in both case organizations. In the parallel view of both case organizations, the same amount of people was interviewed in each organization, and both sets of respondents had relatively the same hierarchical level with similar organizational roles. Furthermore, each set of interviewees were asked the same initial interview questions based off of the interview guide to create a replication of the same case in both organizations. Second, Yin (2014) also recommends the use of a case database to thoroughly document and organize all of the collected data. This recommendation has been implemented through the creation of an extensive digital database for all documentation corresponding to each of the cases, which includes the interview questions, records and correspondence regarding the interviews, and interview transcriptions.

3.5.1 Ethical Considerations

Ethical issues can arise at all stages of the research process, as described by Creswell and Creswell (2018). To minimize these potential issues, the ethical considerations relevant to the methods of this research study were based on the recommendations from Creswell and Creswell (2018). First, upon the initial contact to possible partnering case organizations and subsequent interviewees, the contacted individuals were informed of the overview and purpose of the study and that their contribution would be anonymous. Second, before data was collected in the interview, more information was given about the study and the intended use of the collected data. Furthermore, before answering any questions, interviewees were notified that they would be kept anonymous in the written report, that they had the right to decline to answer any questions, and that they would be able to review the transcription of their interview for accuracy and approval. The interviewees were also given the choice between consenting to a digitally recorded interview or having the researchers take extensive notes if they were uncomfortable with a recording. For the recorded interviews, the interviews were transcribed using digital programs, with the exception of the single phone interview, where only extensive

notes were taken. Gibbs (2007) argues that respondent validation and approval of their interview transcription is not only an important ethical consideration, but it also increases the validity of the research study. Therefore, following each interview, the researchers promptly sent each respondent a copy of the transcription or the notes of their interview.

4 Empirical Results

4.1 Case Descriptions

The following descriptions will provide background information about each of the case organizations and their domains, in order to create a common context of the environments from which to present the empirical results and set the stage for the subsequent discussion.

4.1.1 Case A – The Fitness Center

The fitness industry as a whole, encompasses a wide range of clubs dedicated to overall health and well-being, high-end boutique outfits, personal trainers, commercialized gym franchises, and smaller, local fitness centers (Andreasson & Johansson, 2014). Along with these businesses, fitness has become a lifestyle to many, with ties to overarching societal norms about health and beauty (Andreasson & Johansson, 2014). Due to this widespread integration, as of 2019 the European fitness market was the second largest in the world, worth EUR 28.2 billion and had a total of 64.8 million people with memberships to fitness clubs (Rutgers et al., 2020). From 2014-2019, the fitness industry within Europe had experienced steady growth with a five percent increase in membership and over a three percent increase in revenue, with both percentages expressed in a compound annual growth rate (Hollasch, 2020). However, the industry is now expected to have a significant decline in both aspects within the medium to long-term timeline, due to the negative impact and gym closures brought on by the COVID-19 pandemic (Hollasch, 2020). The industry's traditional, brick-and-mortar style of BM creates entrance opportunities for SMEs, which can be seen in the fact that smaller operators make up nearly three-fourths of the fitness market share in Europe (Rutgers et al., 2020). Yet, SMEs holding the majority share of the market also means that a major shock, like the current situation, has a greater effect on the industry due to a lack of coping mechanisms and resources in these enterprises (Boschmans et al., 2021; Morgan et al., 2020).

Likewise, Case A is a small operator in the industry with a single fitness center, where under normal circumstances, the majority of its customers physically go and train at the facility in person. As mentioned, center has a legal status as a foundation, which means it has differences compared to a for-profit enterprise. The management emphasized that this status only affects the people appointed to the board of directors, but otherwise the center has no impactful responsibilities to the parent organization. In its three-decade history, 2020 was set to be the center's greatest ever year, and the organization heavily invested in both an extensive expansion and renovations to the facility, in order to increase membership. However, the year unfolded in an unexpected way due to the COVID-19 pandemic, and the center lost approximately one-third of its customer base rather than the ten percent gain that was originally planned. Additionally, governmental regulations due to the pandemic, meant that the center had to drastically reduce the number of members allowed in the facilities, which led to an extension of digital offerings to accommodate as many members as possible through different channels. The center also temporarily froze the membership cards of its most elderly members, to further ensure customer safety during the crisis. As for employees, the center's 23 full-time staff members are still working on a reduced percentage of hours to save on expenses, as the center receives only limited government aid.

4.1.2 Case B – The Cultural Organization

The European Commission (2021, n.p.) defines the cultural and creative sectors as, "...all sectors whose activities are based on cultural values, or other artistic, individual or collective creative expressions...". Furthermore, the commission elaborates that these sectors are critical to Europe, as they develop societies, foster cultural identity and values, and stimulate the economy. From 2014-2018, there was an eight percent increase in the number of people employed in the cultural sector within Europe, bringing the total employment up to 7.4 million people. Despite this importance, the sector has been considered fragile for quite some time, due to a myriad of factors, such as project-based business models, the inability to predict success, and unstable revenue structures (IDEA Consult et al., 2021). Furthermore, the sector is characterized by diverse organizations and individuals, but this diversity also creates fragmentation through siloed subsectors that lack a unified front (IDEA Consult et al., 2021). The COVID-19 pandemic exasperated these already present challenges, and the cultural sector

was one of the worst impacted domains in Europe with significant decreases in both the number of hours worked and gross value added (IDEA Consult et al., 2021). The impact on the sector will be seen for many years to come, due to many cultural organizations shutting down and lack of government funding as it is now allocated to other sectors (IDEA Consult et al., 2021).

Case B is at the center of the European cultural sector, as it is a network based on the membership of hundreds of diverse cultural centers. It was founded over thirty years ago as a cultural organization with an NGO legal status. The organization has never been based on monetary incentives, but rather a grassroots effort to create and foster cultural centers in an effort to learn and collaborate with people around Europe. The organization is structured as a cultural network, with its coordination office headquartered in Sweden and around 180 member centers spread out across Europe. With this growth, the organization has also moved into a role to help advocate for its members in areas such as governmental funding and policy changes for the cultural sector. Under normal circumstances, the organization facilitates yearly, international events to network and bring together all of its members in one place. While the organization is based on membership, most of its funding is obtained through conducting cultural projects established by local, regional, and European-level governments. Due to project turnover, the number of staff at the coordination office frequently fluctuates, but there are currently twelve employees and two interns. Additionally, the current managing director is leaving the organization, so there is an ongoing recruitment process that has spanned several months.

4.2 Business Model Approach

The first step of the BMST was to describe the BM of each organization, using the chosen BM framework (Bouwman et al., 2018). The description of each BM as seen in the spreadsheet tooling was created using the empirical data from the semi-structured interviews. Furthermore, each manager was asked about the organization's strategy since this component has a critical relationship on the BM but is omitted from the Canvas framework, as noted in the literature review chapter.

4.2.1 Case A

BUSINESS MODEL CANVAS	
Business model variables	Description
Customer Segments	Students, full-paying members, B2B customers
Customer Relationships	Informal, generalized, but frequent communication to create trust and security
Channels	B2C: Social media, student ambassadors, a virtual newsletter, e-mails, website, & newspapers; B2B: Calls, LinkedIn, & personal meetings
Value Proposition	Provide training facilities for local & university stakeholders
Key Activities	Offering overall gym facilities & fitness classes; Cooperating with schools, sports clubs, etc.; consultants for medical studies; providing team events for companies
Key Resources	Gym facilities; trainers; equipment; personnel; legal status as a foundation
Key Partnerships	The university, equipment companies, B2B customers, the local municipality, sports clubs
Costs	Personnel, renovations/ equipment renewal, cleaning, & energy
Revenues	80% membership fees, B2B customers

Figure 3 - BM Canvas of Case A (created by the researchers of this thesis using the BMST spreadsheet tooling)

Although Case A's BM is described in Figure 3, there are some important factors that need to be further elaborated on to provide a better understanding. As a foundation of a university, the organization perceives students as the leading segment, followed by full-paying members, with business-to-business (B2B) customers being the least important. Even so, the full-paying members and B2B customers create the possibility of long-term relationships compared to the student segment, as students usually leave the municipality after finishing their education, as described by the business manager. The same interviewee also stated that almost 80% of its total income is related to membership fees, which illustrates the importance of the individual members. Furthermore, based on the statements from both managers, the company does not have a specific target group within the full-paying member segment, which causes marketing and communication to be difficult and chaotic as described by the interviewed member. When asked about the value proposition the business manager summarized it as, "...the purpose of a foundation is to support students and employees at the university," which illustrates the important relationship between the university and the organization. Beyond the gym facilities, the business manager also divided the company's activities into three main parts based on their significance: training and cooperating with young people, sports clubs, and schools, assisting medical faculty of the university by being consultants to students, and organizing team and

company events. Additionally, both managers highlighted the fact that the company offers up to 200 classes per week including outdoor, indoor, and online sessions. After the large investments into the facilities, both the business manager and the interviewed customer mentioned that it has become the largest high-quality fitness center in the municipality. Furthermore, the member also added that the high level of professionalism and friendliness of the trainers is another reason why the interviewee remains an active member and is not considering leaving. Another important factor, which differentiates this gym from many of its competitors, is that the organization owns all its facilities, hence it needs a substantial renovation and renewal budget, as noted by the business manager.

To put the BM into context, the business manager said that the strategic business plan is valid until 2027; however, it has been greatly delayed by the ongoing pandemic. Therefore, the organization has chosen to reduce any unnecessary costs while continuing to invest in the development of its facilities, as the management plans to be prepared for when the pandemic ends. The business manager further elaborated on the vision by saying that it is to become, "...the most price-worthy gym," and by doing so it will differentiate itself from the competitors. Furthermore, the same respondent described the overall business approach as "healthy," meaning that they do not perceive profits as the most significant goal; instead, they try to give back to the community or reinvest the profits to improve the gym's offering without having anyone seek personal gains. Lastly, the business manager was troubled by the fact that "[they're] looking a little bit too much into [their] organization instead of out." They continued by saying that the management's approach has improved since the business manager started; however, they still believe that they need to broaden their scope even more.

4.2.2 Case B

BUSINESS MODEL CANVAS	
	Description
Business model variables	
Customer Segments	Cultural centers based in a repurposed building
Customer Relationships	Long-term, personal, family-like relationships
Channels	International physical events/conferences, digital communications, general assemblies
Value Proposition	Create value for member centers by connecting them, advocating for them, and providing them with training and exchanges of experiences. This also creates value for the Swedish public funders, because the organization is a prominent international organization in the cultural sector.
Key Activities	Administration & financial management, marketing & communications, advocacy, project management, & production of events
Key Resources	Human resources & knowledge, financial resources from public funding, a small amount of equipment; the key intangible resource of the network/relationships with stakeholders
Key Partnerships	Local, regional, national, & EU-level governments; the members centers that create the network
Costs	Personnel, event production, & travel/accomodation
Revenues	Mostly project-based, public funding, membership fees, and sale of services (e.g. speaking engagements)

Figure 4 - BM Canvas of Case B (created by the researchers of this thesis using the BMST spreadsheet tooling)

The entire BM of the Case B organization is displayed in Figure 4, however, there are some important points to note. As a network-based organization, the relationships of and with the member centers play a key role in the organization's BM. All of the organization's interviewees likened the network to being a part of a "family". This familial relationship of the network affects other BM components too, and all of the interviewees also explained that the value of the network, on an individual level and as a whole, increases when members are more engaged with each other. The manager then elaborated on the value proposition with the quote, "We create value for our members by connecting them, by advocating for them, by providing training and exchanges of experiences." The interviewee from one of the member centers also cited all of these mediums of the value proposition, gave personal examples of each, and enthusiastically spoke of the impact of the network. Another focal point of the organization's BM is that its primary revenue stream is based on projects, which was discussed in-depth with both the manager and board member. The manager explained that about 80% of the organization's funding comes from participating in projects at the European level, which creates a triangular model with the public funder at the top and the organization and its

members along the bottom. One of the sources sent by the cultural consultant showed that this project-based model is common and widespread across organizations in the sector (IDEA Consult et al., 2021). These projects provide the basis for the organization's key activities and key resources of project managers, and as the manager emphasized, "...the central [resource] is the people."

When asked about strategy, the manager answered that the organization's strategic plan is a necessary informant when applying for new projects, however, the board of directors has halted all strategic planning until a new managing director is hired. The board member elaborated on this strategic freeze with the explanation, "We are waiting for the new director to see what kind of person that is and what kind of connections that person has, which is the person's ambitions in general." The board member also explained that before the COVID-19 pandemic, the board of directors had a typical, supervisory role that focused on strategic planning and remained removed from the organization's daily operations. However, with the current crisis and the challenges that it has brought, combined with the shift in managing directors, the board has now taken on a more involved role that involves operational tasks. The board member also noted that the board has always been comprised of internal persons from the organization's member centers, but the network has grown significantly since its inception and certain statutes should be updated to reflect this, including the possibility of allowing board members from outside of the organization.

4.3 Uncertainties

The second step of the BMST was to select the uncertainties (no more than three is recommended) that the organizations face, and subsequently divide each uncertainty into its best and worst-case scenarios. (Bouwman et al., 2020). The uncertainties for each organization were chosen because they were cited by the greatest number of interviewees and subsequently described the most in-depth.

4.3.1 Case A

DESCRIPTION AND SELECTION OF UNCERTAINTIES		
Type uncertainty description here	Type description of uncertainty outcome here	
↓	↓	↓
Uncertainties	Regression	Progression
1 Membership Levels	The organization is unable to regain the members it lost, and it may even continue to lose more members.	The organization is able to regain all of the members that it lost, and it is even able to recruit new members.
2 Competition from Fitness Chains	More chains will enter the market, further pressuring the organization and possibly taking away members.	No other chains will enter the market, and the case organization is able to improve its value proposition to attract more customers away from the competition.
3 Members choose alternative channels for fitness activities	Members increasingly work out from home or digitally instead of going to the gym, even post-pandemic.	Post-pandemic, people will return to the physical gym at the same level or even at increased levels, due to factors such as the social environment or the necessity of professional knowledge provided by the trainers.

Figure 5 - Uncertainties of Case A (created by the researchers of this thesis using the BMST spreadsheet tooling)

Firstly, the uncertainty regarding membership levels was highlighted as the most impactful one by both the managers and the industry expert, since the pandemic has caused a dramatic drop in the number of active members on which the gym is reliant as the main source of income. The business manager stated that even though the organization gravely requires more members to prevent the continuous loss of financial resources, there is simply no space available under current regulations. Given these circumstances, two extremes have been elaborated. In the first scenario, the gym would continue to lose members, and in the second scenario there would be a steady increase of membership levels to or even above the pre-pandemic state.

The second uncertainty was described by the business manager as being, "... [one of] the biggest challenges that we are facing right now." The industry expert had a similar opinion regarding the trend where single gyms are being gradually acquired by the fitness chains. Therefore, it is critical to focus on this issue to be prepared for the increasing pressure that the fitness chains will create on small businesses. Another important aspect is connected to the possibility in which a new fitness chain emerges which would intensify the competition even

further, as argued by the business manager. The respondent also explained that this notion of a new emerging fitness chain in Sweden has already started. Such an occurrence could then create an environment in which new students will already own global membership cards, and thus refuse to change the service provider, since it is more convenient for them to simply go to the fitness chain's gym in the municipality, as revealed by the business manager.

The last uncertainty in Figure 5, the alternative channels for fitness activities, is connected to a situation in which the customers' behavior changes as the result of the pandemic. Nevertheless, the trend of digitalization and gadgets was perceived as negligible by the business manager claiming that "... [it is] something that we have to take into consideration, but it is not really a challenge." Furthermore, the business manager strongly believed that the customers, who had been exercising online at home or outside during the pandemic, would wish to return to the gym even though they have already changed their training regimes completely. On the contrary, the other manager and the industry expert saw a possibility where the alternative approaches to training could stay even in the post-COVID world, since it is something new, trendy, and convenient, which would create an environment that could endanger the current BM's long-term robustness.

4.3.2 Case B

DESCRIPTION AND SELECTION OF UNCERTAINTIES		
Type uncertainty description here	Type description of uncertainty outcome here	
↓	↓	↓
Uncertainties	Regression	Progression
1 The Project-Based Model	Due to increased competition, the organization is not able to win all of its applications for future projects. Since most of its large projects are soon ending, this will destabilize the key revenue stream.	The organization is able to win the applications for all of the projects that it wants, thus stabilizing the main revenue stream for the next project(s) timeline. However, this basis on projects is still a cyclical problem that will continue to resurface.
2 Strategic Planning	There will continue to be a freeze on the creation of a strategic plan, which means the organization is unable to choose and subsequently apply for new projects in an effective manner. Also this affects the development of all organizational processes, such as the effectiveness of the general assembly, business model innovation, etc.	A new managing director is hired soon and is immediately able to formulate a strategic plan to begin the application process for new projects and development of the next strategic cycle.
3 The Trend of Digitalization	Due to lack of resources and knowledge, both the organization and its member centers are unable to shift their production and distribution of cultural content into a digital format.	The organization and its members are able to successfully digitally innovate their processes and content production, which may also provide opportunities for diversified revenue streams.

Figure 6 - Uncertainties of Case B (created by the researchers of this thesis using the BMST spreadsheet tooling)

The first uncertainty, the organization’s project-driven model, was cited by both the manager and the board member as the foremost challenge of the organization and something that organizations throughout the sector face. The research study sent by the cultural consultant (IDEA Consult et al., 2021) also emphasized that project-based BMs were a contributing factor to instability in the cultural sector before the COVID-19 pandemic and caused further vulnerability during the crisis. The board member explained that the project process starts with writing applications yet producing a quality application requires a lot of time and manpower. Currently, the organization’s largest projects will soon end, so it must apply for new projects to sustain itself. Both the manager and board member reasoned that this constant turnover of projects creates internal issues with personnel and processes, but the problem is now heightened with the transition of the managing director and increased competition for funding from other struggling cultural organizations during the pandemic. Additionally, the board member noted, “So, we have to find the resources to write good applications for those things, in general, this is something that is going to stay like this. We don't have a way of

finding a stable source of funding beyond the projects.” As seen in the progression cell of the above table, both interviewees noted the cyclical nature of this project-based model, meaning that even when the organization does successfully secure projects it still has to continually plan for when those projects eventually end.

Secondly, as explained in the previous subchapter, the organization’s board of directors enacted a freeze on any further strategic planning until a new managing director is hired, an uncertainty brought forth by the manager and elaborated on by the board member. The board member justified this halt, as it is important to allow the incoming managing director to give their input about the next strategic phase; however, the manager reasoned that the strategic plans are what set a precedent for choosing which projects to apply for and the content written in the applications. This is especially critical at the moment, since the organization’s largest projects are ending, and new ones are needed to replace them and sustain the organization’s funding. Furthermore, the manager expressed the opinion that in the past, the organization has lacked strong, internal strategic plans and instead focused on the value proposition for members and activities to execute that.

Lastly, the trend of digitalization is an uncertainty across the entire cultural sector, and was mentioned by the manager, the board member, the member center, and the source (IDEA Consult et al., 2021) provided by the cultural consultant. They all expressed that this trend had been present earlier, but the pandemic and its closures have forced the cultural sector into a digital environment. The board member explained the lack of support for the sector from external populations and said, “So, one thing that the COVID situation really raised up is that if you don't have events, you don't have a theater, you don't have any kind of creative content, the people are not supportive.” Furthermore, the board member explained that many smaller, cultural organizations might not have the resources or knowledge to invest and shift into digitalization, yet these technologies are something that may contribute to more stable sources of funding and public support. This comment is supported by the data from the IDEA Consult et al. (2021) who found that some cultural organizations that were able to build an online strategy and digitally transition their offerings during the pandemic lockdown, were able to significantly decrease losses. Lastly, the manager emphasized that these digital shifts should be embraced and continued past the crisis of the pandemic.

4.4 Business Models vs Uncertainties Analysis

The third step of the BMST was to assess both scenarios of each uncertainty and describe the impact that each outcome has on each component of the organizations' BMs (Bouwman et al., 2018). This description then allowed the researchers to color-code each of the interactions between individual BM components and the different uncertainty outcomes which ultimately created the heat map in the fourth step (Bouwman et al., 2018). Finally, the fifth step was to analyze the heat map both from the perspective of the impact of each uncertainty's outcomes and the robustness of each BM component against the stress from the uncertainties (Bouwman et al., 2018).

4.4.1 Case A

4.4.1.1. *Mapping Uncertainties to the BM*

The first uncertainty, the membership levels, directly influences the revenue component. Since the membership fees account for 80% of the firm's revenue, the worst-case scenario where the long-term negative impact on the customer base is present could be greatly impactful. Furthermore, if the revenues were to decrease, the key activities and key resources would also be affected as they are closely related. For example, without sufficient funding the number of classes offered, trainers, and clean facilities would need to be lowered as a result of the necessary divestments in those areas, which might create a domino effect. This is important, since the interviewed member of the gym stated that they would change to a different gym if not for the professionalism of their trainer and the superior facilities.

The worst-case scenario of the second challenge, the competition from fitness chains, would create an increasingly competitive environment in which the full-paying members, that both managers introduced as significant for the gym's survival, could be affected and attracted away from the focal gym. Furthermore, the chains may try to attract the trainers away from the case organization since these trainers are not considered full employees, which could put increased pressure on key resources and key activities. Moreover, the business manager mentioned that they believe that the customers are not very price-conscious as the organization has steadily increased prices over the years without any significant changes to the customer base. On the

other hand, the recent large investments in the gym’s facilities have created a possible offering that have attracted customers from other gyms and fitness chains, as well as established an entry barrier which further stabilized the organization’s market position in the municipality.

The last uncertainty, the alternative channels for fitness activities, directly influences the entire BM of the focal gym, since as of now, its greatest strength lies in its facilities and the variety of offered on-site classes. This challenge would pressure the management to rethink its current business model to follow the push to digitalization. On the other hand, the business manager noted that among their current customers the digitalization trend has yet to be established, at least for the technological advancements on-site, as only 7% of members actively use these offerings.

4.4.1.2. Heat Map & Result Analysis



Figure 7 - Heat Map of Case A (created by the researchers of this thesis using the BMST spreadsheet tooling)

As shown in Figure 7, the regressions of all three uncertainties could create situations where the current BM requires close attention to the development of the challenges and their impact on the overall soundness of the BM. As visible from Figure 7, the most harmful circumstance is the decreasing number of customers as it would result in a further cost-cutting approach from

the management, which would also immediately impact the key activities and key resources affecting the long-term robustness of the BM. On the other hand, the more positive state of the uncertainties would have almost no effect on the current BM, except for customer relationships in light of the first challenge, due to maintaining the quality of service as the number of customers would increase.

As for the overall analysis of the BM components in Figure 8, it can be noted that none of them are completely nonfunctional or even detrimental to the BM. However, the long-term robustness is not present as the majority of the components should be paid close attention to in accordance with the development of the uncertainties. Additionally, there is a pattern related to the negative impact that the uncertainties have on the customers which influences the revenues, which then results in divestment in the key activities and key resources. Therefore, it can be argued that any uncertainty that creates downward pressure on the customer base might evolve into unfavorable outcomes, which can also be seen in Figure 7 where the progressive alternatives of the uncertainties do not cause almost any disturbances to the current BM.

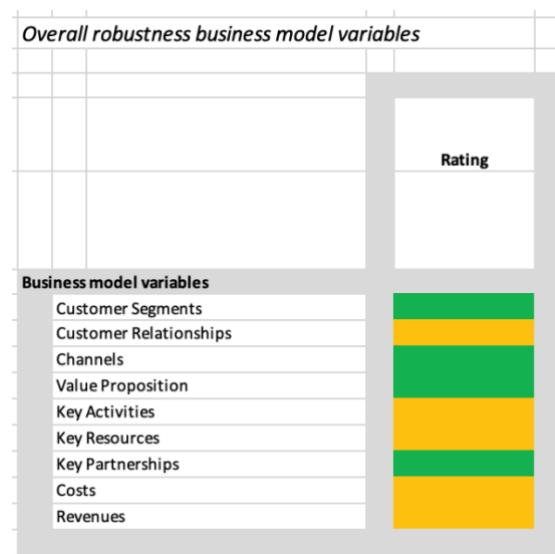


Figure 8 - Robustness Analysis of Case A (created by the researchers of this thesis using the BMST spreadsheet tooling)

4.4.2 Case B

4.4.2.1. *Mapping Uncertainties to the BM*

The first and second uncertainties are closely linked and could have the most detrimental impact on the organization's BM, if both of these uncertainties continue towards the worst-case scenario. The basis of projects directly impacts the key revenue stream of the organization, which then affects many of the other BM components, especially the activities, as this is the area where the projects are mainly executed. It is important to note that even if the uncertainty were to move into the more positive outcome, with the organization winning its desired project applications, the project-based dependency creates a cyclical effect. The organization's BM stability is only a short-term side effect before a new project phase starts again. In both the positive and negative outcomes of the project-based uncertainty, the organization's main resources of personnel are pressured as many of the employment contracts are tied to specific projects as opposed to permanent positions. On the other hand, while the negative outcome tied to the strategic planning uncertainty is closely linked to the project-based model, the positive outcome of strategic planning would be beneficial for all aspects of the BM. Strong strategic planning could facilitate more positive outcomes in all uncertainty scenarios, including a successful digital transition.

While the uncertainty regarding digitalization does not create any immediate, paralyzing effects, it does require attention to nearly all of the organization's BM components. If the organization and its members cannot successfully transition their offerings into a digital realm, this has widespread impacts on all members of the network. As noted in the previous section, the board member cited this as a concern, since many cultural organizations do not have the knowledge and/or resources to successfully overcome this shift. However, even in the positive outcome there may also be potential downsides. As a network, the relationships with the organization and its members are one of the strongest components of the BM, and this connection could be compromised with a heavily digitalized organization.

4.4.2.2. Heat Map & Result Analysis



Figure 9 - Heat Map of Case B (created by the researchers of this thesis using the BMST spreadsheet tooling)

As shown in Figure 9, the less favorable outcome of each of the uncertainties will create issues for the organization’s BM, and as all three uncertainties are interconnected, addressing the problems in one scenario could have implications in the other scenarios. However, the strategic planning and project-based model uncertainties, are the scenarios that cause the most immediate impacts and should be addressed first; especially from the perspective of Figure 10, where the overall robustness of each BM component is consolidated. The root cause appears to be the project-based revenue model, which then closely dictates the majority of the key activities, thus rendering both components susceptible to unfavorable scenarios and severely impacting the entire BM. In contrast, and as previously mentioned, the niche customer segment and the subsequent relationships with these members are the strong focal point of the organization’s BM and remain robust throughout the different uncertainty scenarios. The board member concisely summed up this strength with the quote, “The creative organizations are super resilient.”

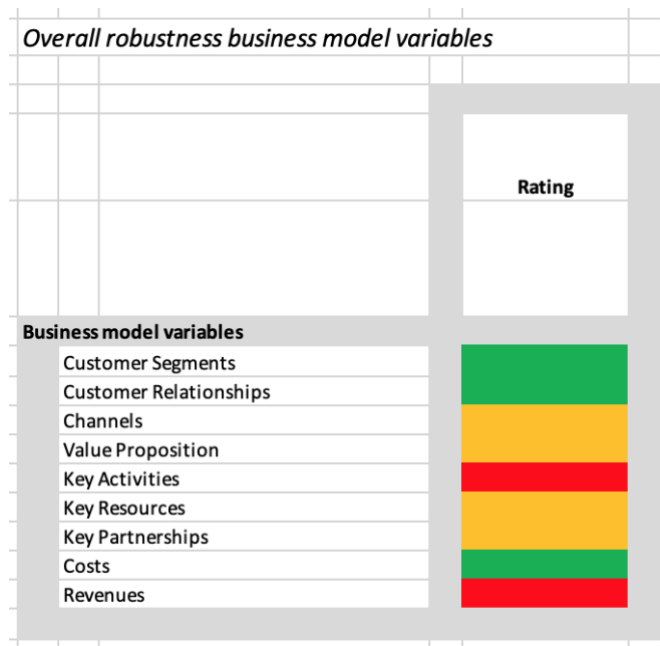


Figure 10 - Robustness Analysis of Case B (created by the researchers of this thesis using the BMST spreadsheet tooling)

4.5 Recommendations

The final step of the BMST is to formulate recommendations based on the spreadsheet figures and all of the intermediary descriptions written along the way (Bouwman et al., 2018). Another critical component of this step is to return to the managers and discuss the preliminary recommendations with them (Bouwman et al., 2018), as well as critically assess the overall BMST for the purposes of this thesis.

4.5.1 Case A

The BMST highlighted the fact that the most significant weakness of the current BM is connected to any negative impact on the customer base and the related revenue stream, which then creates a domino effect throughout the other BM components. As the challenges impacted the customer segment, the initial preliminary recommendation offers several approaches that could address this topic. Firstly, even though the gym is a foundation of a university and

students account for most of its customer base, the student memberships are discounted, and students are typically not long-term customers. Therefore, a possibility is to devote more attention to the full-paying customer segment which could provide a more long-term, stabilized customer pool. Both managers commented that they focus on the whole range of customer segments, which makes it difficult to accurately convey a targeted message to one group of members. Therefore, a market research campaign about this segment could identify factors that are important to this segment and ways to increase and retain them. Additionally, this targeted strategy could also be directed towards the B2B customer segment, as this is already a way the organization currently diversifies its revenue streams. A focus on bolstering this segment, could also provide a more profitable, stable customer base, such as, offering local companies a larger package of memberships to be distributed among that company's employees.

Following the previous issue, especially in regard to the full-paying member segment, the second main recommendation is to strengthen the hybrid BM. This would not only relieve the pressure on the facilities, but also provide an additional revenue stream through digitalization. This development of preferring to work outside or online follows the behavioral shift caused by the prolonged lockdown, as it is believed to stay even after the pandemic. To achieve a long-lasting change, the IT system should be improved, since it was regarded as chaotic and problematic by the interviewed member. If not improved, it might create unnecessary frustration and lower retention rates among the customers who consider this a hassle that overshadows the high-quality facilities. However, the high level of professionalism and enthusiasm among the trainers could play a part if carefully considered and planned, as the interviewed member emphasized that this factor outweighed the negative aspects of the current, erratic digital booking system.

The last recommendation relates to the social aspect of exercising. As the business manager said “[The gym] is a meeting place...,” which also fits the description provided by the industry expert who used words such as, “inclusivity” and “community”. Therefore, it is recommended to ensure that members have plenty of spaces where they feel welcome to socialize before or after their training sessions, particularly post-pandemic. Furthermore, this feeling should not be omitted in the online setting either as it would create a deeper feeling of belonging that would better retain customers and could therefore positively improve the overall BM robustness. An option could be to build a more extensive cafeteria area near the reception, to

encourage socializing outside of the designated fitness activities. This could also possibly create an additional revenue stream.

4.5.1.1. Critical Assessment of the BMST with the Manager

During the initial interview, the researchers created a presentation to explain the BMST to the manager while also using the aid of visual examples of the spreadsheet tooling, which can be seen in Appendix E. Following the presentation, the manager was asked about their overall impression and understanding of the steps of the test. The manager responded that they did not understand the BMST at all. Later, the manager commented that the organization receives almost no outside help for matters regarding BMI and strategy formulation, so they were very interested to hear the researchers' perspective and recommendations, which they deemed helpful and important. However, as noted in the methodology, the manager was unable to have a secondary discussion about the results within the time constraints of this study. Therefore, the manager's critical assessment of the recommendations and the overall usefulness of the BMST is absent, which is a limitation that affects the holistic quality of these results and the subsequent discussion.

4.5.2 Case B

As seen in the robustness analysis and identified by all interviewees, the project-based revenue model causes challenges across all uncertainty outcomes and affects most of the other BM components. The first recommendation would be to diversify and expand the revenue streams, which could have significant impacts to stabilize the other weakest BM component, the key activities. As previously explained, the reliance on projects is widespread throughout the sector; therefore, implementing diversification could prove difficult and may garner resistance. All of the interviewees explained that many stakeholders in the cultural sector have a negative connotation associated with business-related topics such as, revenue, sales, etc. However, one way to overcome this pushback could be to involve a wider audience into the cultural sector such as, the broader public. As previously mentioned, the board member commented that during the pandemic there has been a lack of support from the external public towards the cultural sector, because many traditional outlets of cultural content have been closed (e.g., theaters, museums, etc.). Therefore, there is an opportunity to educate this large, untapped demographic, which could also open up possibilities for new and diversified revenue outlets.

One way to capture this audience, and the second recommendation, is to capitalize on the trend of digitalization. As noted, this trend has been forced on the sector due to the effects of the COVID-19 crisis, however, many cultural organizations have struggled to adequately respond and transition. In some respects, the case organization has been able to digitalize, as the manager mentioned that one of the recent, digital events had around 800 attendees, much more people than would have been possible with a physical event. Since the case organization is the coordinator for the network, the key may be to focus on teaching and helping its member centers successfully shift into the digital world. The member interviewee noted that their center partnered with external firms to create a sort of digital incubator that educated cultural workers on different technologies. This idea of training direct stakeholders could create network effects that multiply throughout the network and sector at large. All of the interviewees emphasized that one receives from the network as much as one gives to the network, and this principle could be applied through digital education as well. However, as noted, the greatest strength of the organization and network is its members and relationships. Therefore, a balance is needed between complete digitalization and face-to-face connections.

Lastly, and perhaps the most important recommendation, is for all levels of the organization to collaborate and formulate strategic plans soon. With a BM that fluctuates continuously, it is pertinent that the organization is able to find strategies to remain agile, but also effectively communicate with its many stakeholders. Additionally, the strategic plans will build a foundation for which to assess uncertainty and manage each of the BM components in a deliberate manner.

4.5.2.1. Critical Assessment of the BMST with the Manager

When presented with the above recommendations, the manager quoted, “I agree completely with what you are proposing. I think these are probably the three most important things...” The manager also answered that the explanations to each of the regression and progression scenarios of each uncertainty were “very good” and “correct.” This feedback was important, because there was a certain level of subjectivity when conducting the BMST, but the manager explained that there will always be subjectivity in activities like this, whether it comes from consultants, managers, or other team members. The manager commented that consultants, or other decision-makers, have an array of tools that can be used when analyzing organizations,

and the BMST could be a valuable addition to this arsenal; however, it may need a combination of tools to make it as impactful as possible.

While the recommendations were accurate, the manager did give their opinion on several limitations. First, the manager noted that the Canvas framework, which they were already familiar with, is already a powerful tool that organizations can use to facilitate a discussion and come to these same conclusions, so the addition of the full BMST may be an “overcomplication.” Furthermore, the researchers of this thesis noted that the heat map might create a strength with its visualization, but the manager answered that the same color-coding could be done in a simpler way with colored paper on a wall by identifying challenges based on the Canvas model. Additionally, the manager explained that there are other simpler tools that garner just as useful results, such as a SWOT analysis or an objectives and key results (OKR) tool. The manager also noted that the criterion of including uncertainties might not be necessary, since the world is always an uncertain place and, “The important thing is that you have a clear vision for the future.” This led the manager to discuss that an organization should focus on its vision in order to create agility. Therefore, when uncertainties inevitably happen, the organization can quickly pivot its offerings while still remaining true to its overall, long-term goals.

5 Discussion

The following chapter will discuss the empirical results in light of the theoretical lens (Figure 2) created from the literature review chapter. Each of the major subsections - BMs, BMI, and Environment – will mirror those of the literature review in order to analyze the theory in combination with the results of the BMST as it pertains to each topic. Finally, the last section will provide the overall strengths and weaknesses of the BMST, as identified by both the researchers of this thesis and the interviewees. This structure allows for a holistic discussion of the empirical results of the BMST and their significance as it relates to the context of the theory that the framework was built from.

5.1 Business Models

The extensive literature review regarding the BM theory revealed several problematic areas, such as the widening gap between the theoretical and practical understanding of the term, Business Model, the practical improvements that BMs are able to introduce in an organization, the weaknesses of the widely popular BMF, Business Model Canvas, as well as the strategy as an important aspect of BMs.

As a result of the long and complicated development of the BM research, the theoretical research has only recently started to merge (Wirtz et al., 2016; Osterwalder, Pigneur & Tucci, 2005; Zott, Amit & Massa, 2011; and Massa, Tucci & Afuah, 2017). Furthermore, most of the research was directed at the large companies as the management in SMEs is mostly concerned with sales and their survival, with limited knowledge related to strategic planning (e.g., Lenart et al., 2019; Frick & Ali, 2013; Taiminen & Karjaluoto, 2015) However, due to such a development, the managers in SMEs are confused and unfamiliar regarding the practical advantages of the BM and how significant they may prove to be when managed well. The conducted observations regarding the depth of management's understanding of BM partly contradicts the findings from the literature, as the interviewees from Case B were rather

familiar with the overall BM concept, its strengths/weaknesses, as well as the correct approach to designing it. However, it must be noted that the interviewed manager participated in projects with a focus on redesigning the BM and BMF to better fit the cultural sector, which influenced the perceived high level of comprehension of the BM concept. In contrast, the management from Case A had only a vague understanding of the individual BM components. The researchers of this thesis had to firstly explain the elements to managers using the information from the conducted literature review, which then allowed the managers to describe the BM, and subsequently led to a more structured way of sharing their ideas and concerns; thereby confirming the importance of the knowledge regarding BMs as it led to a rapid increase in the managers' ability to converse about their BM, as well as to describe and share their opinions. This occurrence follows the observations by Massa, Tucci and Afuah (2017), Osterwalder, Pigneur and Tucci (2005), Linder and Cantrell (2000), and Gordijn and Akkermans (2003) through which they found out that the managers are frequently unable to translate their ideas into words and actions.

As discussed in the literature review, the researchers of this thesis utilized one of the most comprehensive and well-known BMFs called BM Canvas (Wirtz et al., 2016). A BMF is vital for any company, as it provides a common ground for discussion, sharing, and visualization as argued by Schwarz and Legner (2020) and Widmer (2016). Therefore, the researchers of this thesis believe that in Case A, the BM was not as ingrained in the organization's daily activities compared to Case B, since the managers of Case A were only able to describe the activities that they were responsible for without providing much information about the rest. When compared to Case B, the interviewees had a much more unified view on the BM across the different management levels, which led to more comprehensive discussions among the different layers of the organization, as stated by Osterwalder, Pigneur and Tucci (2005) and Schwarz and Legner (2020). This situation might have been the result of the Case B manager's experience as a consultant and the need for successful and accurate project planning which greatly affects the funding the organization receives. Furthermore, the interviewees from Case B warned about the same disadvantages regarding BM Canvas as the ones found in the literature, which shows the high level of familiarity with it. Their arguments followed the statements by Coes (2014) who proposed that since Canvas is specialized in value, non-profit organizations might find such a model unfitting. The managers confirmed the statements arguing that BM Canvas does not resonate with people in the cultural sector, since it includes

elements that are not important for them, hence, it does not fit well with their values. Furthermore, Case B's manager highlighted the significant degree of subjectivity depending on who the practitioner is, which follows the argument from Bouwman et al. (2012) who warned about the high level of practitioners' freedom and the potential reduction of consistency. The cooperation with Case A confirmed how difficult it was for the managers to link individual processes to the corresponding building blocks in Canvas, as argued by Verrue (2014), since the management required a substantial amount of help to correctly understand and differentiate all of the Canvas's segments. Additionally, as for the claims that strategy should be incorporated into the BM Canvas (Wirtz et al., 2016; Widmer, 2016; Coes, 2014), the managers from Case B stated that the Canvas does not offer any contextual information regarding opportunities, challenges, or strategies. Therefore, they thought of it as only an auditing tool and not as a tool for strategic planning which follows the statements made by Frick and Ali (2013) and Coes (2014), about the unsuitability of Canvas as a tool for developing future strategies.

Following the synthesis of the past literature regarding the differences between BMs and Strategy (Wirtz et al., 2016; Zott & Amir, 2011; and Massa, Tucci & Afuah, 2017), some scholars argue that the degree of interchangeability remains high (Magretta, 2002; Yip, 2004); however, the interviewees did not show any indication of it. Nevertheless, it can be noted that both the companies had difficulties providing a concise description of their strategy. Case B managed to convey the organization's strategy consistently, even with the current halt on strategic planning, and it was also perceived well by the member of the cultural network. When compared to Case A, the different layers of management were able to agree on the short-term strategy; however, the opinions regarding the long-term strategy varied. The reason for it might be that Case B's level of understanding regarding the business processes was higher, which enabled more suitable strategies to be created and well communicated through the organization as discussed by Osterwalder, Pigneur and Tucci (2005). Nevertheless, it was also highlighted by the experienced manager from Case B, that the strategy provides comprehensive context to the whole BM, which follows the arguments by Wirtz et al. (2016) claiming that strategy is a vital part for any BM.

5.2 Business Model Innovation

Even though the BMI research field has yet to offer a synthesized and generally accepted definition, an increasing number of scholars believe that BMI is an appropriate approach to securing the organization's survival even amid the ever-increasing degree of uncertainty and unforeseeable circumstances in the business environment (Foss & Saebi, 2016; Voelpel, Leibold & Tekie, 2004). Furthermore, the bulk of previous research predominantly focused on large companies and their approach towards BMI (Lenart et al., 2019) and only recently has the attention shifted to also include SMEs as their partnering companies (Lenart et al., 2019; Haaker et al., 2017; Frick & Ali, 2013).

As previously discussed, SMEs lack resources, personnel, knowledge and required skills to create a structured approach towards strategic planning (Marolet et al., 2018; Lenart et al., 2019; Frick & Ali, 2013; Taiminen & Karjaluoto, 2015). The statements were only partially represented in the sample of this thesis. Both organizations voiced concerns about having only limited resources which actively hinder them from undertaking any big innovations outside of the areas of expertise. This notion was especially visible in Case B since both managers described just how difficult it has been to initiate any changes related to sales, revenue, or general business, since the stakeholders in the cultural sector are dubious about the effectivity and importance of those changes, which corresponds with the biases mentioned by Hammond, Keeney and Raiffa (2006), Saebi, Lien and Foss (2017), and Kahneman, Lovallo and Sibony (2011). As far as the knowledge within the management is concerned, the findings obtained from Case A clearly correspond with scholars' assumptions which can lead to a decrease in the efficiency and success rate of innovation as proposed by Marolt et al. (2018). On the contrary, the management of Case B was familiar with BMI. However, neither of the interviewees showed a very structured and systematic approach towards ensuring the firm's survival. As discussed in the literature section, BMI is too important to be addressed at random (Christensen, Bartman & Van Bever, 2016), which creates a situation in which the BMST proves to be useful as it changes the unorganized strategic thinking into a more meticulous one (Haaker et al., 2017); this could be seen during the interviews as the managers from both organizations had a framework that they could follow.

Besides lacking resources, the other internal drivers of BMI in SMEs that were mentioned in the literature are a suitable attitude for driving a change and an innovative company culture, (Lenart et al., 2019; Marolet et al., 2018) which were also searched for, since without them the BMST could not be even initiated in the first place. It could be argued that both organizations showed some of the necessary BMIC as described by Ibarra et al. (2020). They were able to sense what the customer wanted while actively collaborating on developing potential future outcomes and the appropriate strategies resulting from them. The question remains whether the case organizations will further utilize the information to conduct safe-to-fail experiments with their BMs. However, the researchers of this thesis believe that both management teams showed the passion and drive necessary for creating changes in their respective firms. As for having an innovative culture, Case B struggled with inertia caused by the disinterest regarding financial matters; however, since the organization is currently amid a transition in its managing director, there is no one to guide the development of an innovative culture. Case A, on the contrary, has experienced a shift in the vision and market position, which was led by the current manager, while also striving to establish a more agile culture. These findings confirm the claims from Kesting and Günzel-Jensen (2015), that since SMEs lack many resources, they require a person to induce a long-lasting change.

The external drivers of BMI – the environment and technology – which are frequently mentioned in the literature (e.g., Lenart et al., 2019; Marolt et al., 2018; Morgan et al., 2020) played a significant role in both case organizations as well. The uncertainty analysis showed that both management teams perceived a potential challenge caused by changes in either environment, technology, or in both areas. Jaworski and Kohli (1993) argue that the intensity of competition and market fluctuations are responsible for the major changes in the firm's environment. Their findings were fully supported by this research study, since in both case organizations the management perceived a change in the competition and market as a reason to act. The technological changes also influenced the observed management's concerns which were connected to digitalization and the changes it will bring to their respective sectors. Nevertheless, their worries were more related to the lack of qualified personnel who would be able to utilize the technological progress to the company's advantage, which follows the findings of Marolet et al. (2018) who claim that the technology advancement is not as important as the technical personnel that are capable of exploiting it.

5.3 Environment

As previously mentioned, SMEs tend to be the most vulnerable segment of businesses during major external shocks (Boschmans et al., 2021; Morgan et al., 2020; IDEA Consult et al., 2021). This is certainly true for the current COVID-19 crises and has had implications on the BMs and subsequent challenges for both case organizations. However, as seen in the uncertainty outcomes for both organizations, this shock has also created opportunities for diversification through digitalization, which could ultimately increase BM agility and stability which helps in all uncertainties. This was noted by Case B's manager who commented that the individual uncertainties may not be important per se, as the world is always uncertain; the key focus should be for an organization to have a clear vision on which to ground itself, so that it can remain agile, and pivot based on short-term uncertainties while still achieving its long-term goals. This point shifts the focus away from the environment and instead emphasizes the importance of cultivating a dynamic BM to fulfill an organization's purpose regardless of the inevitable uncertainties.

On the other hand, the contextual environment of an organization can have deeply rooted ramifications, as seen in the cultural sector with its reliance on a project-based revenue model. Thus, the environment may erect systemic difficulties for an organization like Case B to diversify its BM and become more agile, particularly when much of the sector lacks education about BMs and shuns away from talking about these components, as noted by the interviewees. Additionally, Case A's industry also created issues as the fitness domain was heavily impacted by the governmental regulations surrounding the pandemic and the overall market is increasingly overtaken by fitness chains. Furthermore, to capitalize on these diversification opportunities created by uncertainties, an organization and its managers must understand the concept of BMs, which means that adequate education is necessary to facilitate change. This can then lead to a mindset that embraces the necessity of BMI, which subsequently allows for an organization to voluntarily conduct a BMST and willingly apply the output's recommendations. Therefore, the domain environment can greatly help or hinder an organization's possibility of using the BMST as a tool to enhance agility in an uncertain context.

5.4 Critical Assessment of the Business Model Stress Test

In order to provide a comprehensive critical assessment of the BMST, the individual steps will be examined following the same structure as in the previous chapter.

As discussed before, one of the BMST strengths is the possibility to design safe-to-fail experiments that provide management with the opportunity to modify the individual components of a BM (Osterwalder, Pigneur & Tucci, 2005). However, as the initial information directly influence the accuracy and success of the framework, it could be argued that this first step is heavily dependent on interviewees' knowledge about the BM. Furthermore, as argued by its creators (Bouwman et al., 2012; Haaker et al. 2017, Bouwman et al. 2018), the BMST might be better suited to organizations just starting out, that are currently constructing their BMs and are in an already more agile position since they do not have many rigid processes yet. However, even though this thesis followed the recommendations from the creators of the BMST to cooperate with people from different departments and hierarchical levels, and to partner with small organizations, the findings were not regarded as illuminating by the Case B management. Additionally, it must be noted that the creators of the BMST do not provide guidance on the appropriate number of participants from all suggested departments and areas of expertise. Nevertheless, by conducting the brainstorming sessions with people from different departments and hierarchical levels and combining it with the step-by-step approach, it allows for more comprehensive stream of observations and insights.

Since the second step utilizes Scenario Planning to develop suitable uncertainties, it also heavily depends on the quality of the input information which increases the threat of subjectivity. It can be argued that Haaker et al. (2017) noticed the same weakness, as they warn that the quality of input directly influences the quality of output. Another important limitation to consider is connected to the way in which Scenario Planning is incorporated into the BMST. The Scenario Planning literature says that qualitative scenarios are suitable for long-term and more broad observations about the potential future development (Amer, Daim & Jetter, 2013). Hence, based on the type of scenario analysis in the BMST, it is more appropriate for long-term predictions. Furthermore, following the literature review, the number of uncertainties recommended by Bouwman et al. (2012) is regarded as a standard approach offering enough details without being too complex (Amer, Daim & Jetter, 2013). However, the approach of

designing two outcomes for each scenario is regarded as a ‘minimal approach’ which introduces two extreme situations that may prove to be too difficult to assess due to their amplified states (Amer, Daim & Jetter, 2013). Although Case B concluded that the extremes were appropriate, the decision might have been subjective which highlights the severity of the abovementioned problem. The second step’s last weakness relates to the lack of clarity when choosing uncertainties, as managers frequently lack the education about strategic planning in uncertain times, hence they are bound to be incapable of fully comprehending the necessary steps required to the successful completion of each phase of BMST as shown by the initial reaction of both management teams. The interviewees often asked for explanations about BM, BMI, and the use of BMST, which highlighted the need for a comprehensive overview of the problematic, fundamental parts.

The analysis steps showed a very significant advantage as highlighted by the interviewees from Case B; they claimed that the framework’s strength lies in the visualization as it creates a heat map that can be utilized as a foundation for further constructive discussions, as well as reflection about their existing BM. This point also concurs with Osterwalder, Pigneur and Tucci’s statements (2005) about the use of a BM for understanding and sharing purposes. On the other hand, the level of subjectivity in this step may be high as well, as the leading practitioners are offered too much freedom. Therefore, even though the Case B management confirmed that the proposed uncertainties, their extremes, and their influence on the individual components were managed well, the outcome is still dependent on the leading practitioners and their acceptance of the management’s input. Furthermore, it relies on the practitioners’ skills at combining all the information, since there are no guidelines to follow when linking the uncertainties with the BMs and the following overall analysis of results.

The last step encourages developing a learning environment for the management through active participation in the conduction of BMST, which may prove to be beneficial when seeking long-term robustness in the current fast-changing environment (Berger & Johnston, 2015). Furthermore, the framework offers a structured way of thinking about the challenges and pushes management into reasoning about which components are vital for the long-term soundness of the BM, as well as helping to direct the effort to achieve it. Furthermore, by presenting the preliminary recommendations, the final outcome should be more suitable for the focal company. Nevertheless, both the interviewees and the researchers of this thesis concluded that subjectivity might endanger the validity of the proposal, since the leading practitioners

were not as controlled as they should have been, as the only step where the management could assess the work was at the complete end. Furthermore, another limitation is the lack of guidance regarding the implementation of the suggestions. Lastly, the Case B management noted the fact that almost all of the input equaled output information. Hence, the management described the model as overcomplicated as it did not provide much new information from what was already discussed during the initial interviews, and thus it is not a tool that provides enough information for comprehensive strategic planning.

6 Conclusion

The purpose of this research study was to critically evaluate the BMST by applying it in two small organizations to identify challenges and subsequently create recommendations for the management teams. To fulfill this purpose, the following research question was asked:

How useful is the conduction of a Business Model Stress Test in small organizations as a strategic tool to cope with uncertainty?

To address this question and ultimately accomplish the purpose of this research, a multiple case study took place in two, small organizations, with supporting data collected from members of both organizations and experts from each of the case domains (i.e., the fitness industry and the cultural sector). Additionally, a literature review of the numerous research fields that founded the BMST was presented before the analysis, along with a visual summary (Figure 2), which was then later used to structure the discussion of the results. This overall structure allowed for a critical and holistic assessment of the BMST through both a theoretical perspective of relevant literature and its practical usefulness as a strategic tool for small organizations.

6.1 Theoretical and Practical Implications

From the theoretical perspective, the literature written by the creators of the BMST about the framework and its origins are quite superficial and did not provide a comprehensive, in-depth review of the ideas that the test was formulated on. This thesis therefore included a literature review, in order to thoroughly evaluate the basis of the BMST and to ensure that the test was accurately and fully utilized in the research study. Furthermore, this literature review is the only document known to the researchers of this thesis that manages to combine all of the theoretical areas shown in Figure 2 into a single, comprehensive discussion. As noted, the BMST is emerging and therefore requires a greater amount of research studies and conduction by a more diverse set of researchers and organizations, so this thesis aided this problem by

adding two more sets of empirical results to the growing pool of research surrounding the framework. Additionally, literature regarding strategic tools to navigate a complex world underrepresents the demographic of SMEs, which further exasperates these enterprises' vulnerability during shocks. This identified gap between the theoretical and practical understanding and use of BMs in SMEs, relates to one of the key findings of this thesis: the prior knowledge, or lack thereof, that an organization's management possessed about the main topics of the BMST directly affected the quality of the input and the subsequent discussion and overall comprehension of the framework. An identified strength of the framework was that it allowed the organizations to have a concise, visual overview of its BM components and how those interact with its most prominent organizational uncertainties. Additionally, the recommendations output from both BMSTs were relevant to the identified challenges in the case organizations and may improve the respective BMs if proper changes are enacted. Therefore, the BMST can be useful in identifying an organization's BM problems and formulating recommendations, but it does not provide a specific guide for how to implement these changes. Furthermore, an organization needs a mindset that embraces BMI in order to actively use and implement the results of a BMST, and this receptiveness was seen in both case organizations to some extent. However, as shown in the literature and supported by the findings, there are other crucial factors lacking in SMEs especially, that can cause inertia and hinder BMI implementation. Another element that influenced the results was the domain of an organization, since this contextual environment creates systemic issues that can halt the application of the recommendations from a BMST. Moreover, the matter of subjectivity was an ongoing problem cited throughout the process because the researchers, rather than the organizations' managers, were the actual conductors of the BMST and the provided instructions for the framework's execution were quite vague. On a greater, practical scale, the BMST may not be accessible and able to be executed by managers, particularly in SMEs, as these organizations tend to lack key knowledge and resources. Overall, there is a relevant need for a strategic tool that combines the idea of increasing the strength of BM components with planning for an uncertain future, and while the BMST does attempt to address this need there is still much room for improvement in the execution of the framework.

6.2 Limitations

Finally, it is important to discuss the limitations of this thesis and the subsequent areas for possible future research. A preceding limitation is the use of a purely qualitative methodological approach. As mentioned, this method was necessary due to the lack of previous data sets, which rendered a quantitative study impossible. However, as noted, there is a theoretical necessity for a continued expansion of the BMST, so a possibility for future research would be to use a mixed methods approach to facilitate the test in numerous organizations and subsequently analyze the data in a quantitative manner.

Additionally, an uncertain environment also appears to extend into the actual execution of a BMST, as depicted by the inability to facilitate a secondary interview with the manager of Case A due to unforeseen circumstances. While this lack of discussion was not detrimental to the study, it was unfortunate, since it could have provided richer insights such as those provided from the follow-up with Case B.

Another limitation of this study is its lack of generalizability, due to the specificity of the selected organizations of being SMEs with non-traditional legal statuses, both with a board of directors, and located in Sweden. To counteract this and create more studies of diverse organizations, future research should conduct a BMST in larger firms, in regional contexts outside of Sweden, and/or even find other SMEs with a traditional legal status or with other types of governance structures. Not only would this provide more literature regarding the theory of the BMST, but it would create a richer set of empirical data from which to analyze the overall implications of the framework. Lastly, as noted by the researchers of this thesis and in other literature sources, there is a lack of research regarding SMEs and their coping mechanisms in the context of major exogenous shocks. Therefore, there is a greater need for future research to address this overarching gap across many different topics such as BMI, strategic tools, etc.

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Appendix A

Semi-Structured Interview Guide

Managers/Board Members:

- General:
 - What is your role within the organization?
 - How does the governance structure work/how is the management distributed?

- Uncertainty:
 - What are the greatest challenges and uncertainties that the organization faces?
 - What trends have you noticed in the sector/industry?

- Strategy:
 - How does the organization currently approach strategic planning?

- Business Model:
 - How would you describe the business model?
 - Do you think having a business model is important?

- BMST:
 - Is the test understandable?
 - How do you think the results of this test would affect strategy formulation in the organization?

Appendix B

Semi-Structured Interview Guide

Customers/Members:

- When did you become a member?
- How often do you actively utilize your membership?
- Why did you choose this organization instead of another?
- Has this membership added value to you?
- How does the organization communicate with you?
- Have you faced any challenges with being a member?
- What do you think of the changes that have happened in the organization since you became a member?

Appendix C

Semi-Structured Interview Guide

Industry Expert:

- Tell us about yourself and your job/role within the industry?
- What trends do you see happening in the industry overall?
- What are the future uncertainties that the industry is facing?
- Has the COVID-19 pandemic changed the trends and trajectory in the industry?

Appendix D

Semi-Structured Interview Guide

Manager Follow-up Discussion:

- What are your thoughts about the preliminary recommendations?
 - Do you agree or disagree? Was something omitted?
- What do you think of the regression/progression descriptions of the uncertainties?
 - Are they too narrow/too wide?
- What is your overall impression of the BMST?
 - Strengths and/or weaknesses?

Appendix E

Spreadsheet Tooling Examples

Step 1: Describe BM

BUSINESS MODEL CANVAS		
	Description	Remarks
Business model variables		
Customer Segments		
Customer Relationships		
Channels		
Value Proposition		
Key Activities		
Key Resources		
Key Partnerships		
Costs		
Revenues		

Step 2: Select Uncertainties

DESCRIPTION AND SELECTION OF UNCERTAINTIES				
	Type uncertainty description here	Type description of uncertainty outcome here		Motivate reason for selection here
	↓	↓	↓	↓
Uncertainties	Regression	Progression	Select uncertainty for analysis?	Reason for selection
1			Yes	
2			Yes	
3			Yes	
4			Yes	
5			Yes	
			It is not recommended to select more than three uncertainties.	

Step 3: Map BM to the Uncertainties (*partial picture*)

LINK BUSINESS MODEL TO UNCERTAINTIES
Value business model with respect to uncertainty outcomes

Legend:

- G No negative effects
- O Requires attention
- R Showstopper
- GR Not relevant
- Clear cell content

		Link business model to uncertainty			Value model with respect to the uncertainty outcomes		
		↓	↓	↓	↓	↓	↓
Business model variables		Fact / Issue					
Customer Segments							
Customer Relationships							
Channels							
Value Proposition							

Step 4: Create a Heat Signature

CANVAS HEAT SIGNATURE

Business model variables							
Customer Segments							
Customer Relationships							
Channels							
Value Proposition							
Key Activities							
Key Resources							
Key Partnerships							
Costs							
Revenues							

Step 5: Analysis

RESULTING VIEWS									
<i>Canvas heat signature</i>					<i>Overall robustness business model variables</i>				
					Rating				
Business model variables					Business model variables				
Customer Segments					Customer Segments				
Customer Relationships					Customer Relationships				
Channels					Channels				
Value Proposition					Value Proposition				
Key Activities					Key Activities				
Key Resources					Key Resources				
Key Partnerships					Key Partnerships				
Costs					Costs				
Revenues					Revenues				
Overall									