ANALYZING AND COMPARING BUSINESS MODEL INNOVATION AMONG THE CATEGORIES OF SME'S IN AALBORG, DENMARK

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Authors:

Kevin Harley Tchio Ngoufack (20160209)

Edmond Tanyi Nuyebga (20160207)

Supervisor:

Shagufta Haneef

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Abstract

Small and medium size enterprises (SMEs) account for a large share of the economy in many countries. Nowadays SMEs operate in a complex business environment characterize with globalization, fast changing technology, competition, activities of multinationals etc. Thus making it harder for them to thrive. Unfortunately most studies on BMI (Business Model Innovation) have showed little attention to SME's. Those who have, did not distinguish between the categories of SME's in their study. The purpose of these research is to investigate BMI in SMEs in Denmark from multiple perspective. In this research we combine multiple BMI themes to analyze BMI in SMEs across the different categories of SMEs. In this thesis we adopted the qualitative research and a case study design. We used purposive sampling to select firms located in Aalborg Denmark (2 small SME's and 3 Micro SME's). The principal method used to collect data was the semi-structured interview. Our findings indicated that SMEs in Aalborg, Denmark innovate their business model. The most innovated component was the key resources. The Antecedents for innovation were both internal and external. Organizational barriers hindered SME's the most when it came to innovating their business model. Furthermore, SME's don't follow a well-defined process when innovating their business model. Regarding the differences and similarities between Micro SME's and Small SME's they both share the same level of radicality and reach in BMI but Micro SME's showed more complexity in their BMI.

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CHAPTER ONE

INTRODUCTION

1.1 **Background**

"*The economy today is changing at a pace and on a scale that any individual company so far has not been able to do without losing control" -*Richard foster

Nowadays most firms operate in a highly burdensome business environment characterized by higher complexity, faster change(s) and increasing competition. (Morris 2013). Because of globalization and hyper-competition, firms find it harder to stay competitive. (Taran et al. 2009).This situation has not only affected companies, it has touched entire industries and even nations. (Morris 2013). To further attest the precarious state in which companies operate today, some recent statistics show that no one, is too big to fail or untouchable, all firms regardless of their size or resources should feel threatened. According to the consultancy firm Innosight, the average lifespan of a S&P (Standards and Poor's) 500 company has dropped from 33 years in 1963 to 24 years in 2016. Besides, this average is further expected to drop to 12 years by the 2021. Just 64 companies have managed to stay on the S&P 500 list for over 50 years. (Innosight, 2016). Even with great technological products and continuous product and process innovation, in the long term many companies may not survive. (Gassmann et al. 2014).

To face some of the challenges posed by such a dynamic environment a new concept has gained increasing popularity of recent. The term "Business Model" (BM). Since the 90's over 1100 articles addressing the notion of business models have been published in peer-to-peer review journals. Practical-oriented studies a have also been on the rise. (Zott &Amit, 2011). Factors which characterize today's markets such as "*technological change, deregulation, emergence of the internet, sustainability, globalization , e-commerce and more knowledge based economy as well as business practices such as offshoring and outsourcing*" are some of the forces directly /indirectly behind the spike of interest in Business models. (Teece 2010 ; Casadesus-masanell & Ricart 2001). At the moment there is no unique definition of business model since top researchers in this area are still to agree on a unique definition. For instance while Zott and Amit (2012) define a company's business model as *"a system of interconnected and interdependent activities that determines the way the company* *"does business" with its customers, partners and vendors"*. On the hand, Osterwalder & Pigneur (2002) define a business model as *"a conceptual tool that contains a set of element and their relationships and allows to express the business logic of a specific firm"*. According to Georg (2014), for firms to grow and survive in the current business environment they need to design new and viable business model(s). Other key researchers in the field of management innovation have also highlighted the importance of BM for firms this days. For instance Chesbrough (2007) argues that the life cycle of most products are shorter regardless of the considerable advancements in technology. Thus firms need to ally business models and technology to befit more from their products. Moreover, some aspects of complexity, prevalent in current markets can be alleviated by the business model since it helps identify important issues and the key relationship between them (Osterwalder 2004). In addition to this, business models have prompted the redistribution of billions of dollars in value. Some industries have been completely transformed. (Johnson et al 2008). Some popular examples of firms with a great business models include Airbnb, whose business model centered around peer-peer exchange services for hospitality, transformed the hospitality industry or Uber which recently transformed the Taxi industry. Today many companies may have great ideas on how to improve the products or services they offer to their customers, however, the degree to which they profit from any innovation they undertake will largely depend on the business model been used by the firm. (Chesbrough 2009). In more ordinary words, let's assume that a business is a farmer who has just received the good seeds which if planted correctly could yield abundant fruits. The business model is like the soil in which the farmer plants his seeds. A good soil or even better; the right soil will yield a lot more than a bad or inappropriate soil. It's like planting water demanding crops such as tomatoes in a desert or dry area. That just how important a business model can be to firms who take their product to the market with the aim of maximizing profits.

In spite of its applauded utility, benefits and relevance the concept of BM on its own, it is futile. How it is been used means everything. Many managers and investors have encountered huge disappointment for their misplaced assumption that knowing this concept alone was sufficient. (Margetta 2002). Thus knowing it is not enough, companies also need to know how to use it. Furthermore knowing how to apply it is not enough, firms should be able to know when to change it and how to change it.

This brings us to another popular research area for scholars and practitioners; Business Model Innovation (BMI). As Doz & Kosonen (2009) opined "*Today some companies fail not because of their poor choices or mediocre performance but because they keep doing what used to be the right thing for too long and fall into the rigidity of their business models.*" companies have to learn to modify their BM more quickly, more often and to a far greater extent than they did in the past. Doz & Kosonen (2009).

A survey conducted by the Boston consulting group and *Businessweekly* evinced that BMI provides higher returns and more sustainable returns than product and process innovations. Additionally firms which innovated their business model were four times more profitable. Furthermore, business model innovators remained more performant than product and process innovators after a decade. (Lindgardt et al 2009). Similarly, another survey conducted by IBM in 2006, concluded that companies which focus more on optimizing their business models grow faster and have a higher operating margin than their competitors. A great example of a Business model innovator firm is Apple Inc. Undoubtedly among the top 10 most successful companies in the world today. They achieved their phenomenal success not only through product innovation but also by innovating their business model. Apple was able to acquire a market approximately 30 times larger than its original market by developing a successful business model for downloading music. (Lindgardt et al 2009). Another example of BMI involves IBM. After experiencing a series of losses in the 90's they shifted from providing just hardware products to their customers to offering key services such as business design, cloud services, network services etc. Fifteen years later, over 50% of their 90 Billion dollars revenue came from IBM global services, an arm of their business, which did not exist before. (Chesbrough 2007). Nowadays CEO's focus almost 30 percent of their innovation efforts on their business models. (IBM 2006). Additionally, process and product innovation unlike business model innovation are usually expensive and time consuming (Zott and Amit 2009).

1.2 **Problem Statement**

Nowadays small and medium firms (SME's) account for a large share in the economy of most countries. (Cull et al, 2006). The European Union commission defines an SME as *"An enterprise which employs fewer than 250 persons and which either have an annual turnover not exceeding 50 million euro or an annual balance sheet not exceeding 43 million euro"*. The European commission further identifies two categories of SME's; Small SME's and Micro SME's. Small SME's are those with a maximum of 49 employees with an annual turnover or balance sheet not exceeding 10 million euro. While Micro SME's are those with 1-9 persons and have an annual turnover or actual balance sheet below two million euro. In 2013 SMEs employed over 88.8 Million people in the EU28 and generated over 3666 trillion Euros. (Gagliardi et al. 2014) The critical role of SMEs in a country can also be observed in the Danish economy. As of 2016 there were 221,079 SMEs in Denmark accounting for 99.7% of the total number of enterprises in the country. SME's employed 1,090,745 individuals (63.6%) and generated value added of 79.6 Billion Euros (59% of the total value added of the country) (European Commission 2017)

However, despite the importance of SME's the economy, most of the research done on BM and Business Model Innovation has been limited to large firms. (Bouwman et al 2016;Heikkilä et al. 2017). SMEs have received less attention. Additionally due to their different characteristics, it's hard to easily associate findings on larger firms with SMEs. (Buliga ,2013). Furthermore, in researches conducted using with both large firms and SMEs as case studies, researchers made no attempt to distinguish the two classes of firms in their analysis. For instance (Saebi & Singh 2017).

Nevertheless, recently there has been some research both qualitative and quantitative on BM and BMI in SMEs. One of these studies was carried out by Bouwman et al (2016) who did a survey on Business Model Innovation in over 350 SMEs in the EU. They found out that 35% of SMEs in the EU innovate their business model. This percentage is quite low considering the importance of BMI. However, a more interesting finding was that this percentage varied from country to country. For instance the percentage in Italy was 61% while that of the Netherlands was 21%. Thus a research on the BMI in a specific country such as Denmark in our case could generate new insights on the cause(s) of such differences. Moreover, despite doing well in comparison to other SMEs in the OECD, Danish SMEs still lack access to scientific knowledge necessary to create innovative solutions. It's equally harder for them to invest in new technologies as large firms do. (Jedynak 2016). Thus, additional knowledge on understanding their business model can help them improve and become more innovative even with far lower resources as compared to large firms. In the same way Marolt et al (2016) analyzed BMI drivers, approaches and typologies in SME's in Slovenia but failed to distinguish between the three categories of SME's in their research. We believe that a study which can addresses BMI for categories of SME's will generate more insights on the operationalization of BMI in SME's since micro SME's could learn from small SME's.

Additionally after going through some of the recent studies combining aspects of BM, BMI and SMEs such as Adelakum (2014) who focused on how BMI contributed to the commercialization of products in SMEs, Hartkamp (2017) who's aim was to find out how BMI tools such as those provided by the businessmakeover.eu platform could support SMEs in innovating their business model. Heikkila et al (2017) who conducted a study with the purpose of analyzing how different strategic goals of SMEs relates to BMI paths. Buliga (2013) who researched business model innovation in SMEs in Germany, to find out if German SMEs employ BMI techniques presented in theory. Madian (2015) who focused their research on understanding the patterns and implications of BMI in SMEs. And Saebi & Singh (2017) who study over 280 Norwegian firms to find those who had innovated and changed their BM. We realized that none of this researchers made a comprehensive analysis of BMI is SME's.

1.3 **Research Questions & Objectives**

Based on the problems observed above and the literature gap identified, the goal of this master's thesis is to uncover insights into the BMI drivers, BMI innovativeness, BMI process, BMI types and BMI Barriers in SMEs and to compare BMI among two sub classes of SME's i.e. Micro SME's and Small SME's. In one sentence our research goal is "To analyze and compare BMI amongst the categories of SME's in Aalborg, Denmark". We divided our research question into two main questions with sub questions.

a) How is BMI in SME's? we shall answer this question by answering the following Sub-questions;

- ➢ How does the current business model of the firm look like?
- ➢ What type of business model innovation has the firm undertaken?
- ➢ To what extent have the firm innovated their BM?
- ➢ For what reasons do they innovate their BM?
- ➢ What BMI process do they use?
- ➢ What are some of the barriers they face when innovation their BM?

b) How does BMI in "Micro" SME's differ from BMI in "Small" SME's? we shall seek answers to the following sub questions;

- ➢ What are the similarities between BMI in micro SME's and BMI in Small SME's?
- ➢ What are the differences between BMI in micro SME's and BMI in Small SME's?

1.4 **Importance and significance of study**

Today BMI is no longer an area of interest exclusive to researchers and practitioners. Policy makers and organizations such as the EU and the OECD are paying more attention to business models when setting up economic policy and the role it plays in overall economic performance. Furthermore SMEs play a major role in all economies big or small all over the world. In addition to their massive contribution to the economy, they usually employ the most (Bouwman et al, 2016). So understanding BMI in SMEs will not only contribute more to existing knowledge on BMI but it can help decision makers when setting policies to promote the growth of SME's. Our findings may also be necessary to help the Micro and Small firms in Denmark improve their performance in the long run.

1.5 **Contribution of the study**

We differentiate our research from previous ones in two ways, first we aim at analyzing BMI in SMEs from multiple perspectives. We seek to determine the BMI processes, typologies, drivers and barriers. And also to measure the degree of innovativeness in SME's BMI. Secondly, we shall compare BMI processes, types, innovativeness, drivers and barriers across two different SMEs classes. We believe this research will contribute to the existing knowledge on both BMI and SMEs. It could be useful to business practitioners and researchers for a deeper and better understanding on how SMEs perform BMI and what initiative can be undertaken to support them within their different classes.

1.6 Thesis Structure

Chapter 1: Introduction

This chapter introduces the reader to the research field, the research begins with a description of the background of the study area, how the researcher's interest in the field is arose, the problem statement and then states objective of the study, its important and significance.

Chapter 2: Literature review

In this chapter of our thesis we shall discuss all theories relevant for understanding our research area and context. The literature review is divided into four main parts. The first part covers SME's and the country where the research was done. The aim of this chapter is to introduce the reader to SME's and BMI and also to set the theoretical bases, which we use for our analysis.

Chapter 3: Methodology

This chapter encompasses the methodological choices and tools used for the purpose of presenting this research work. We discuss the approach chosen for the purpose of this research as well as the, research design, forms of data collection, data analysis techniques. Additionally, we discuss the steps taken to ensure high validity and reliability of the findings. Furthermore, in this chapter we also explain the research paradigm, which leads us to how and why the methodology was followed to accomplish this research work.

Chapter 4: Data Presentation & Analysis

In this chapter we shall present and analyze the data we collected with the aim of providing answers to the research questions we pose in chapter one. This chapter is divided into two sub parts. In the first part we shall present the data we collected from the different interviews. And in the second part we shall analyze the data using the theory presented in chapter two.

Chapter 5: Conclusion

In this chapter we shall first provide answers to the research questions we identified in chapter one. We shall also explain how this study contributes to existing theory on BMI. Then we shall express some of the limitations of this study. Finally, we shall suggest areas of future research.

1.7 Definition of key acronyms

APS: Danish for private limited company

BM: Business model

BMI: Business model innovation

DKK: Danish Kroner

EU: European Union

OECD: Organization for Economic Cooperation and Development

UN: United nation

SME: Small and Medium size enterprise

NATO: North Atlantic Treaty Organization

IVS: Entrepreneurial limited company

WTO: World trade organization

NASDAQ: National Association of Securities Dealers Automated Quotations

CHAPTER TWO

LITERATURE REVIEW

In this chapter of our thesis we shall discuss all theories relevant for understanding our research area and context. The literature review is divided into four main parts. The first part covers SME's and the country where the research was done. The second part provides literature on the Business model (s), the third part covers Innovation. And the last part presents theory on Business Model Innovation. At the end of our literature we developed an analytical framework which we shall use to analyses BMI in SME's. The main aim of this chapter is to introduce the reader to SME's and BMI and also to set the theoretical base which we shall later use for our analysis.

2.1: Small and Medium Firms

In this part, we intend to provide our reader with sufficient knowledge on SME's and the context of SME's used within this thesis. It is divided into four subparts, the background, the definition and demarcation of SMEs, characteristics of SME's and the state of SME's in Denmark.

2.1.1 Background

2.1.1.1 Denmark

Figure 1: Map of Denmark

Source: The world of Maps, 2018.

The kingdom of Denmark is a Scandinavian country located in the northern part of Europe. It includes the self-governing areas of Greenland and the Faroe Islands. The country covers a land area of 42,434 km^2 and shares a border with Germany to the south. As of 1 January 2018, Denmark had a population of 5,781,190 Inhabitants. Denmark is a constitutional monarchy thus the head of the state is Queen Margrethe II. Meanwhile the prime minister is the head of government. Lars Løkke Rasmussen has served as the prime minister of Denmark since 2015. In 2017 the GDP of Denmark was 1996 Billion DKK and the capita per head was 372 000 DKK. The country equally experienced a real GDP growth of 1.5%. The unemployment figures of 2017 were 5.7% for men and 6.0 percent for women. Denmark is not a member of the Eurozone, thus the Danish Kroner (DKK) is the main currency. 1 Euro = 7.43 Danish Kroner. Denmark is divided in to five regions (Hovedstaden, Sjælland, Syddanmark, Midtjylland and Nordjylland) and has 98 communes. In terms of inhabitants, the largest region is Hovedstaden while the smallest region is Nordjylland. Denmark has been a member of the EU (previously European Economic Community (EEC)) since 1973. Furthermore, Denmark is a member of many international organizations such as the UN, OECD, NATO, Schengen, the Nordic Union, OSCE and WTO. (Statistic Denmark 2018)

In the 2018 *Doing Business* Report published by the World Bank group. (World Bank Group 2017). Denmark was ranked 3rd among the 190 countries surveyed. The aim of the *Doing Business* report is to examine the business regulations and their enforcement in different countries, especially for domestic SME's. Indicators such as conditions for starting a new business, access to credit, contract enforcement, labour market regulations, corporate taxes, etc. are measured to estimate the ease of doing business in a country. Notably, Denmark was ahead of the other Scandinavian countries since Norway is ranked 8th, Sweden 10th, and Finland 13th.

2.1.1.2 Aalborg

Aalborg is city located in the Nordjylland region. It is the largest city in this region. In 2017, the Aalborg commune had a population of 211 937 Inhabitants, equivalent to 3.69 % of the population of Denmark. The majority of the population lives in Aalborg, 113 417 inhabitants. Making Aalborg the 4th most populated city in Denmark. Aalborg covers a land area of 1,137.33 Km^2. The current mayor is Thomas

Kastrup-Larsen of the Social Democratic party. As of November 2015, the commune (Municipality) had an employment rate of 68.5% (99 615 people employed) and an economic activity rate of 72.5%. Additionally, there were 107 944 workplaces and full time unemployed personnel accounted for just 5.4% of the labour force. (Aalborg Kommune, 2017).

There are currently over 10 000 companies established in Aalborg and 1 000 new ones, move-in yearly. The fastest growing industries in Aalborg are ICT energy, transport and logistics, manufacturing and construction. Furthermore, 22 % of the city's population are aged between 24 & 34 and hold a master's degree. There are also many international companies, since 26 % of those employed in the private sector work in international owned firms. Some examples of world-class products made in Aalborg include Siemens wind turbines, Samsung Bluetooth solutions, and BLIP tracking systems. (Investinaalborg, 2018).

2.1.2 Definition and Demarcation of SME's

Nowadays we regularly hear politicians, academics and lay people use the term Small and Medium enterprise (SME's).SME's account for a large share of the economy of most countries; they constituted more than 90% of most countries economy (Cull et al. 2006). Both scholars and politicians alike have lauded their role and importance in the economy of a country. Patel & Conklin (2012) argue the SMEs are relevant worldwide. According to the 2005 European Commission report for enterprise and industry, SMEs have played a key role in the growth and development of European economies. They have created over 75 million jobs in the EU and represent over 99 % of the enterprises operating in the Union. But what are SMEs? We decided to use the definition and description of SMEs proposed by the European Commission. Considering the fact that the EU is a single market without internal boundaries, the European commission taught it was important to adopt a unique definition so that SMEs can compete fairly and benefit equally from initiatives carried out by the commission. Our choice was motivated by the fact that their description is more likely used by all or most member states, of which Demark a member. It also favours the generalizability of our results. In addition to this, their description of SME's is both comprehensive and simple to understand.

The very first definition of SME's by the European Commission was adopted in 1996. However, in order to adjust to economic development and the challenges SMEs were facing post 90's, the European Commission decided to redefine the characteristics and criteria's of SMEs in the union. Thus, on the 6th May 2003 a new definition was adopted, and enforced from the 1st January, 2005. Although all policies, programs, decisions undertaken by the European commission with regards to SMEs are based on the latest definition of SMEs, member states are free to decide if they want to use it in their respective countries or not. Nevertheless, the commission argue that this new definition will help promote innovation and partnership as well as facilitate the identification of those enterprises that are in need of public support. Therefore encourage member countries to use it. According to the European commission an SME is

"An enterprise which employs fewer than 250 persons and which either have an annual turnover not exceeding 50 million euro or an annual balance sheet not exceeding 43 million euro"

The first key term here is enterprise. They define an enterprise as "*any entity engaged in an economic activity irrespective of its legal form"* therefore SMEs could include self-employed, family firms, partnerships etc. Because the economic "activity role" precede over the "legal form". Secondly, from the definition above, we can identify three main elements; the number of employees, the annual turnover and the balance sheet. The first and most important of all three is the number of employees or headcount unit. Staff headcount unit should include any person(s) who worked full time or within the enterprise or on its behalf during the entire year. Individual(s) who did seasonal works or part-time workers are considered as a fraction of one unit; Thus headcount will include owner-managers, employees and even partners depending on the activity they perform in the enterprise and the financial benefits they obtain from it. The next important threshold is the annual turnover. The annual turnover should be based on the sales of the referenced year, excluding rebates, value-added tax (VAT) and other indirect taxes. Finally we have the balance sheet for which no specific requirements were made, thus calculated normally. Nonetheless it is important to know that a firm must not always satisfy all three criteria before it's been considered an SME. Only the headcount threshold is mandatory, thus a firm may exceed the turnover or the balance sheet requirements but never both criteria's, and still be considered an SME. It was designed this way so that SMEs that operate in sectors characterized by very high turnover figure such as retail and distribution could feel fairly treated. Additionally, the rules are also flexible such that a firm will only lose its SME status if it fails to meet the established criteria's over two conservative accounting periods.

Regarding the categorization (demarcation) of SME's, two subcategories of SMEs are identified. Small firms and Micro firms. While small enterprises should have a maximum of 49 employees with an annual turnover or balance sheet not exceeding 10 million euro, the micro enterprise must employ between 1-9 persons and have an annual turnover or actual balance sheet below two million euro. Table 1 below shows the different classes of SME's and their characteristics.

Categories of SME's	Headcount/ Number of Employees	Annual Turnover	OR	Annual Balance sheet
Medium	<250	≤ DKK 371 500 000 (€ 50 000 000)	OR	≤ DKK 371 500 000 (€ 50 000 000)
Small	<50	≤ DKK 74 300 000 (€10 000 000)	OR	≤ DKK 74 300 000 (€10 000 000)
Micro	<10	≤ DKK 14 860 000 (€ 2 000 000)	OR	≤ DKK 14 860 000 (€ 2 000 000)

Table 1: Categories of Small and Medium Firms.

Source: European Commission (2005).

The European commission equally identified three main legal forms of SME based on the constitution of their operating capital.

Forms of SME	Characteristics/ Conditions
Autonomous enterprise	You are totally independent, i.e. you have no participation in other enterprises and no enterprise has a participation in yours. – You have a holding of less than 25% of the capital or voting rights (whichever is the higher) in one or more other enterprises and/or outsiders do not have a stake of 25% or more of the capital or voting rights (whichever is the higher) in your enterprise. Exceptions (Art. 3.2 (a-d)) You may still be ranked as autonomous, and thus as not having any partner enterprises, even if this 25% threshold is reached or exceeded by any of the following investors: – Public investment corporations, venture capital companies and business angels. – Universities and non-profit research centres. – Institutional investors, including regional development funds. – Autonomous local authorities with an annual budget of less than 10 million euro and fewer than 5,000 inhabitants.
Partner enterprise	You have a holding equal to or greater than 25%, of the capital or voting rights in another enterprise and/or another enterprise has a holding equal to or greater than 25% in yours. – You are not linked to another enterprise (see 2.3.3 page 23). This means, among other things, that your voting rights in the other enterprise (or vice versa) do not exceed 50%.
Linked enterprise	Two or more enterprises are linked when they have any of the following relationships: – One enterprise holds a majority of the shareholders' or members' voting rights in another. – One enterprise is entitled to appoint or remove a majority of the administrative, management or supervisory body of another. – A contract between the enterprises, or a provision in the memorandum or articles of association of one of the enterprises, enables one to exercise a dominant influence over the other. – One enterprise is able, by agreement, to exercise sole control over a majority of shareholders' or members' voting rights in another. A typical example of a linked enterprise is the wholly-owned subsidiary.

Table 2: The legal forms of SME's

Source: European Comission (2005).

2.1.3 Characteristics of SME's

Usually smaller organizations (SME's), possess a range of advantages such as agility, rapid decision making, shared clear vision, informal culture, flexibility ,etc. (Arbussa et al. 2017). All these could help them become more innovative. Innovation is important to all firms because it affects their size, capacity ,and performance.(Stoilkovska et al. 2015) . According to Salavou et al. (2004) learning oriented SMEs facing strong competition have the tendency to be more innovative and resilient in the market. Gunasekaran et al. (2011) present a conceptual framework to illustrate resilience and competitiveness of SMEs. See Figure 1.

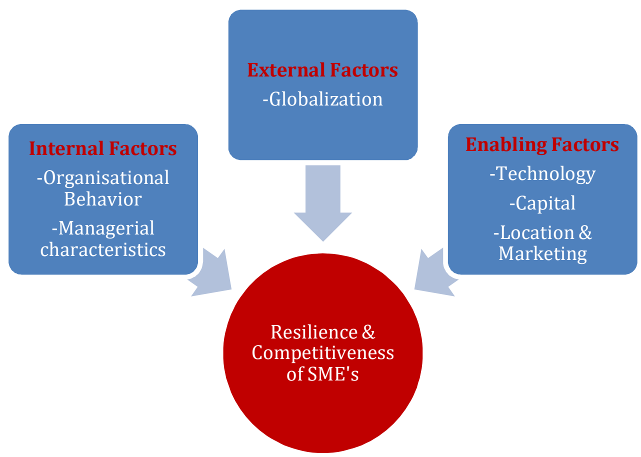

Figure 2: Resilience and competitiveness of SMEs

Source: Adapted from Gunasekaran et al. (2011)

According to the framework in figure 1 above, the key factors that influence the resilience, growth as well as competitiveness of SMEs are both internal as well as external factors. For example internal factor such as Organizational behaviour play an important role in determining the success of SMEs. Researchers have proposed different ways of classifying the organizational behavior of SMEs, for example (Deeks 1973) propose 3 categories of organizational behavior in SMEs namely (a) monocratic (b)oligarchic (c)patrician, according to him these 3 categories determine the way the organization is govern and how decisions are taken in the SMEs. Another key factor determining the success of SMEs is the managerial characteristic(s) of SMEs, unlike large firms, decision making in SMEs are fast. According to Marcati et al. (2008) Entrepreneurs/ managerial' innovativeness and personality play a key role in the adoption of innovations SMEs. On the other hand we also have external factors such as globalization. In today's global economy markets, SMEs will not only compete with traditional rivals but they will also face competition from global rivals. As stated by Gunasekaran et al. (2011) to remain competitive, the SMEs need to rethink their operation strategies, be ready to accept and adopt changes and use it to their advantage against their competitors.

SMEs are expose or liable to great challenges especially when compared to large firms. For example some of these challenges are related to finance (Gompers & Lerner 2001); European Central Bank 2009), competition especially with large firms (Gunasekaran et al. 2011) , inferior human resources in relation to skills (Chuang et al. 2013), globalization especially related to the activities of multinationals and the global value chain (Ocloo et al. 2014). Furthermore, as cited by Egbu et al. (2005), one major problem in SMEs is succession disputes especially in family businesses. Because of such barriers SME's are less likely to innovate compared to large firms. (Hadjimanolis 1999). To Conclude SMEs have peculiar characteristics compared to large firms; they have fewer employees, lower finance and inadequate or less skilled human resources. However as noted by (Marcati et al. 2008) depending on the sectors, SMEs tend to be innovative. Furthermore different scholars have attempted to determine the enabling factors that can influence growth of SMEs, (Gunasekaran et al. 2011) pinpointed some factors, this included capital generation, use of technology, location and marketing, managerial characteristics etc. We add business model innovation as an important factor for the growth of SME.

2.1.4 The State of SMEs in Denmark.

In the year 2015, the number of new enterprise created in Denmark was 29, 911, bringing the total number of enterprises that year to 297,235. An analysis of the survival rates of companies in Denmark revealed that 68 % were still operational after the first year and 46% still existed after 5 years. There has also been a decrease in the number of declared bankruptcies in Denmark from 58% in 2009 to 35% in 2016. (Statistic Denmark 2018).

To get a better picture of the state of SMEs in Denmark we reviewed the European commission SBA (Small Business Act) fact sheet for Denmark in 2017.The Small business Act (SBA) for Europe is a EU policy initiative elaborating a set of measures which can help improve the performance of SMEs in Europe. Annually, they publish the trends and national policies affecting SMEs in the different EU countries. According to the European Commission fact sheet (2017), Danish SMEs have experienced growth between the years 2012-2016 (the period used for the research). They support their conclusion by indicating that the value added of SMEs in Denmark increased by 6.6 % and their rate of employment by 5.1 %. Furthermore they forecast, that the value added by Danish SMEs to the country's economy will increase by 9.4% between the years 2016-2018, while their contribution to employment could also increase by 3.6%. Nevertheless, overall large firms within the country are performing even better and are also expected to maintain their good form.

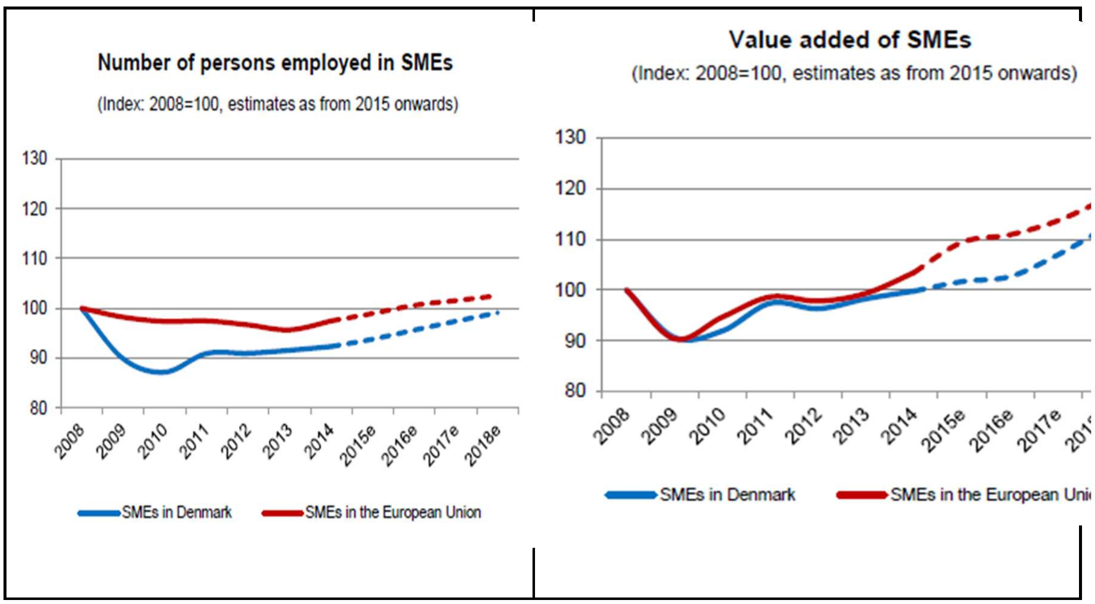

Figure 3: Trend of Employment and Value Added of SME's in Denmark

Source: (The European Commission 2017)

As we can see from the left side of figure 3 above, after a drop in the number of persons employed between 2009 and 2010 probably due to the financial crisis of 2008, the Danish SME's have been employing more and more people since 2011. However the number of persons employed by Danish SME's is still below the EU average although the gap is getting smaller.

Similarly the right side of figure 3 above illustrates the trend of value added by Danish SMEs between 2008 and 2014, including projections from 2015 onwards. Here we can observe that after a significant drop in value added in 2008 also likely caused by the financial crisis, it jumps back up in 2011 and is almost on par with that of the EU. But we begin to see a gap between both from 2014. It's equally forecasted that this gap will keep increasing. This is probably due to the fact that large firms are adding more value to the economy. Thus, although the value added of Danish SMEs has been on the rise, it still falls short of the level in the EU and is expected to remain so in the upcoming years.

Class Size	Number of Enterprises			Number of persons employed			Value Added		
	Denmark		EU-28	Denmark		EU-28	Denmark		EU-28
	Number	Share	Share	Number	Share	Share	Billion €	Share	Share
Micro	196 717	88,70%	93%	336 478	19,60%	29,80%	28,1	20,80%	20,90%
Small	20 510	9,20%	5,80%	391 522	22,80%	20%	26,3	19,50%	17,80%
Medium	3 852	1,70%	0,90%	362 749	21,20%	16,70%	25,2	18,70%	18,20%
SME's	221 079	99,70%	99,80%	1 0907 49	63,60%	66,60%	79,6	59%	56,80%
Large	727	0,30%	0,20%	622 940	36,40%	33,40%	55,4	41%	43,20%
Total	221 806	100%	100%	1 713 689	100%	100%	135	100%	100%

Table 3: An analytical overview of firms in Denmark.

Source: European Commission (2017)

Table 3 above portrays a comprehensive picture of firms in Denmark and their contribution to the Danish economy. All the three categories of SMEs (micro, small and medium) are differentiated and Danish SME's figures for the number of enterprise, employment and value added are been compared to that of the EU. In the same way, large Danish firms can be compared to SMEs.

To Conclude as explained earlier, the aim of this part is to provide the reader with some key demographic and economic figures concerning the country and the city where this research was been carried out. We observed that Denmark as a country and Aalborg as a city, both provide a suitable environment for the establishment and growth of firms. This can be proven by simply looking at the rank of Denmark on the *doing business report* of 2018 and the relatively high number of enterprise (over 10000) located in Aalborg. Our next objective was to define SMEs, and categorize them. We used the EU definition since it's more comprehensive, simple and easier to generalize. We saw that the key terms used to identify SME's were enterprise, headcount, turnover and balance sheet. The headcount is the most important threshold for any SMEs since it's the least affected threshold by the business sector of the SME. Additionally we also found 3 main categories of SMEs (micro, small and medium) which mainly vary on the bases of their turnover, balance sheet and headcount. We also realized that they were three main legal forms of SME's; autonomous, partner and linked.

We then went forward to identify some of the characteristics of SME's in general, these included their advantages over large firms such as agility, and flexibility. We also discussed those factors which contribute to the resilience and growth of SME's for instance organizational behaviour, globalization etc. and some of the challenges that SME's face for example inadequate capital and less resources. We concluded that business model innovation could help SME's grow and perform better. Finally we looked at the state of SMEs in Denmark, to see the impact SMEs had on the economy in terms of employment and value added. We also compared SME's to the large firms in Denmark and to SMEs in the EU. And we found out that the number of SMEs in Denmark has been increasing, thus they contribute more to the economy in terms of value added and employment. Additionally, while the percentage of SMEs in Denmark is close to that of the EU, we could observe that Danish SMEs employ slightly less and add less value when compared to the EU average. All of these provides the reader with sufficient knowledge on SME's and context of the SME's we shall use for our study within this thesis.

2.2 Business Model(s)

In this sub-section we shall discuss business models, precisely the origin of the concept, the definition(s) and importance, the place of the business model in the firm, the business models frameworks and the classification of business models. The goal is to help the reader better understand BM, which in our opinion is a prerequisite to understanding BMI. And to elaborate on the rational and the choice of Business model framework we shall use for this thesis.

2.2 Business Model

"*An effective business model is the core enabler of any company's performance*" (Taran, Boer, et al. 2015), The term business model became popular with the arrival of the internet "dot com" era (Taran, Nielsen, et al. 2015b; Zott et al. 2011). It gained popularity due to the rise of the e-commerce in the 1990s which created new forms of transactions. Ever since then, the term business model term has been used by many including academicians, consultants, managers, business commentators and even journalist for most things related to business. (Baden-Fuller & Mangematin 2015; Goyal et al. 2017) Searching for the term business model on ABI/INFORM database on peered review scholarly journals between 1990 – date indicate a search result of

449,423. The database reveals a steady increase in the adoption of the term (Osterwalder et al. 2005). According to Osterwalder et al. (2005) the term became more frequently used not only with regards to the internet, as in the early 1990's but also in business research onward. Furthermore, they stated that the number of time it appeared in both peered reviewed and non-peer reviewed journals follow a pattern that resemble that of NASDAQ.

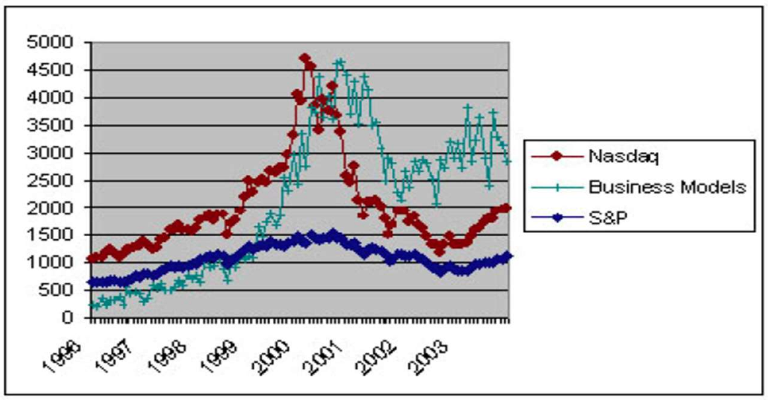

Figure 4: The "Business model" term pattern compared to NASDAQ fluctuation.

Source: Osterwalder et al. (2005)

2.2.1 Definition

Ever since the introduction of the business model concept many scholars have attempted to define the concept of business model. In the past many models from management where used especially in organization theory,(Taran, Boer, et al. (2015). Goyal et al. (2017) suggested that, the upturn of dotcom failures in the late 90s let to the downturn of conceptualization of the business model concept. (Zott et al. 2011) identify key terms used by many scholars in an attempt to define the concept of Business model, their survey paper identifies different constructs in literatures, these are Statement, Description, Representation, Architecture, Conceptual tool, Structural templates, Method, Framework and Pattern. These scholars include Timmers (1998) who used a combination of product, service and information flow, Amit & Zott (2001) who define the business model as *"a transaction content, structure and governances so as to create value through exploitation of business opportunity"*, Chesbrough & Rosenbloom (2002) who define the business model as a *"blueprint of how a network of organization cooperates in creating and capturing the value from* *technological innovation"*. Zott et al. (2011) propose a business model as a unit of analysis, and how firms do business, activities and value creation. Osterwalder & Pigneur (2010) used the term conceptual tool, blueprint of business strategy, to describe the business model as how an organization creates, delivers and capture value. The lack of a common definition implies the definition of business model concept still lack clarity (Goyal et al. 2017; Zott et al. 2011). The lack of clarity represents a potential source for confusion among researcher hence promoting dispersion, one thing all most scholars in these field of study agree is that business model simply refer to the way the company does business (Taran, Boer, et al. 2015; Osterwalder et al. 2005).

Article	*Definition*
Timmers (1998)	An architecture for the product, service and information flows including a description of the various business actors and their roles; and a description of the potential profits of the various business actors; and a description of the sources of revenues.
Ami and Zott (2001)	Depicts the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities.
Weill and Vitale (2001)	Description of the roles and relationships among a firm's consumers, customers, allies and suppliers that identifies the major flows of product, information, and money, and the major benefits to participants.
Chesbrough and Rosenbloom (2002)	Blueprint of how a network of organisations cooperates in creating and capturing value from technological innovation.
Magretta (2002)	Stories that explain how enterprises work.
Afuah and Tucci (2003)	Method by which a firm builds and uses its resources to offer its customers better value than its competitors and to make money while doing so. It details how a firm makes money now and how it plans to do so in the long term.
Mitchell and Coles (2004a)	Combination of who', what', where', 'when', 'why', 'how and how much' an organisation uses to provide its goods and service and develop resources to continue its efforts.
Morris et al. (2005)	Concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets.
Shafer et al. (2005)	Representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network.
Morris (2009)	Description of a whole system, a combination of products and services delivered to the market in a particular way, or ways, supported by an organisation, positioned according to a particular branding that, most importantly, provides experiences to customers that yield a particular set of strong relationships with them.

Table 4: Some definitions of business Models

Source: Goyal et al. (2017)

Ever since the introduction of the business models theme, it has gain attention and prominence both amongst the research community and practitioners. Osterwalder et al. (2005) account for five phase in the evolution of the business model concept, this faces where definition and classification of business models, list of business models components, business model elements description, model business model elements and application of business models concepts. Furthermore as stated by Goyal et al. (2017) the key research areas on business model includes definition, components, typologies, theoretical dimensions, business models vs strategy, business model innovation etc. However, Goyal et al. (2017) suggest that business model theme still lacks theoretical standings and recognition in the fields of strategy. As detailed by (Taran, Boer, et al. 2015) some influential publications in the business model literature include "*Linder & Cantrell (2000), Amit & Zott (2001), Magretta (2002), Osterwalder & Pigneur (2004), Osterwalder et al. (2005), and Chesbrough (2006)*".

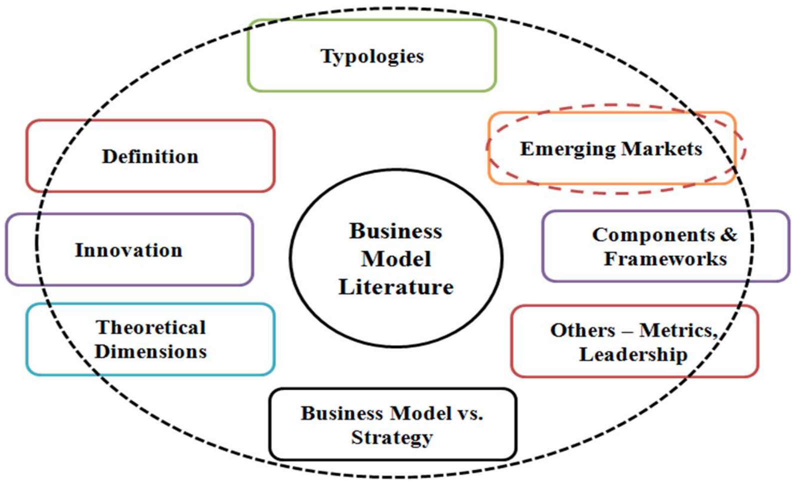

Figure 5: Key research areas in business Models literature

Source: Goyal et al (2017)

2.2.2 Importance of Business Models

As cited by Goyal et al. (2017) corporate executives have become increasingly focus on business model as a source of competitive advantage. Taran, Nielsen, et al. (2015a) Points out that an *"effective business model is the core enabler of any company's performance"*. Baden-Fuller & Morgan (2010) opine that just like in biology and economics were models are used to address and help solve problems, business models can be used to gain more insight knowledge about the real worlds. Chesbrough & Rosenbloom (2002) detail the role of business model in capturing the value of innovation. According to Magretta (2002) a good business model answers Peter Ducker's age-old questions: "*Who is the customer? And what does the customer* *value? Furthermore, it also answers the fundamental questions of: How do we make money? And explains how we can deliver value to customers at an appropriate cost?"* (Zott & Amit 2007) review the role of business "model design and the performance of entrepreneurial firms". They suggest that there is a positive association between the business model design and the performance of the firm. Baden-Fuller & Morgan (2010) used the notion of business model as a model "organism" and as a "recipe" to make analysis and give clarity of the role of business model. As an "organism" a firm's business model is studied not just for its own sake but also as an exemplary *"against which other firms following the same generic business model can be measured"*. As a recipe, a quintessential business model that has already been tried and tested, for example a franchise model provides a recipe ideal for other firms to imitate which they can make some variations without changing the basic recipe, which account for success of the business model.

2.2.3 The Place of the Business Model in the firm

According to Osterwalder et al. (2005) scholars continue to debate the role of and place of business model in the firm, some of the issues debated are related to the distinction between the business model and strategy, business model and business process etc. For instance with regards to strategy, they differ widely in their opinions of the two concepts, some scholars use both terms interchangeably (Magretta 2002). A review of different literature on the two concepts indicates that business models and strategy are linked but distinct is more common Osterwalder et al. (2005). Casadesus-Masanell & Ricart (2010) define the two concepts separately as follows

- *Business model refers to the logic of the firms, the way it operates and how it creates values for its stakeholders*
- *Strategy refers to the choice of business model through which the firms will compete in the marketplace*

However, some scholars understand the business model as an abstract of the firm's strategy. As suggested by Zott et al. (2011) the business model broaden fundamental ideas in the business strategy. Casadesus-Masanell & Ricart (2010) in the conclusion of their paper suggest that even though business model and strategy seems related, they are indeed different concepts, business models are a direct result of strategy but are not themselves strategy. Despite the conceptual differences, scholars have emphasized that business model can be influential in a firm's strategy. It helps in bridging "*strategy formulation and implementation"* Zott et al. (2011). Even with all the debates going on business model and strategy, Zott et al. (2011) in their summary appraised that scholars have clarify what a business model is not. For example it is not a linear mechanism for value creation from suppliers to firm to customers, it not the same as product market strategy, It cannot be reduce to issues which are concerned with the internal organization of the firm e.g. control mechanism. They conclude that is it however a sources of competitive advantage of the firm.

Figure 6: The place of the Business Model in the Firm

Source: Osterwalder et al. (2005)

2.2.4 Business Model Framework and Components

The term Ontology with capital ("O") has its origin in philosophy; Ontology is the study of the nature of being or reality. In the thesis of (Osterwalder 2004) the author uses the term ontology with small letter ("o") to refer to specification of conceptualization. Ontologies are *"agreed shared conceptualization"*, they include conceptual frameworks for example conceptual business model framework. A framework can consist of one or multiple components. Scholars have attempted to identify the different components that should make up the business model framework. "As argued by (Goyal et al, 2017*) "the clarity of the components and their configurations helps to build the core logic of the business of the firm thus understanding components and interrelations is necessary to understand the business model"*. The number of components mention by scholars varies from 4 to 9 as seen on the table 5 below. Morris et al. (2005) present a table of *"present synopsis of available perspectives regarding business model components"*. According to Morris et al. (2005) the most frequently mention components by scholars include; (1) Economic mode (2) Customers interface/relationship (3) Partners network/ roles (4) Internal infrastructure / connected activities (5) Target markets .

Research Paper	***Components and configurations***
Amit and Zott (2001)	Transaction content, transaction structure, and transaction governance.
Weill and Vitale (2001)	Strategic objectives, value proposition, revenue sources, success factors, channels, core competencies, customer segments, and IT infrastructure.
Chesbrough and Rosenbloom (2002)	Value proposition, target market, internal value chain structure, cost structure and profit model, value network, and competitive strategy.
Shafer et al. (2005)	Strategic choices, value network, create value, capture value.
Johnson et al. (2008)	Customer value proposition, profit formula, key resources, key processes.
Doganova and Eyquem-Renault (2009)	Value proposition, creation and delivery of value, revenue mechanism.
Demil and Lecocq (2010)	Resources and competencies, organisational structure, propositions for value delivery (RCOV).
Giesen et al. (2010)	proposition, need addressed, offering), how the value is delivered (critical internal resources and processes as well as external partnerships), how revenue is generated (pricing model, forms of monetisation), how the company positions itself (company's role and relationships across the value chain).

Table 5: Business model components.

Source: Goyal et al. (2017)

Scholars have clashed on the number of business model components/ building blocks and their configuration for example while Morris et al. (2005) propose a six component framework for characterizing a business model, and identified 3 different levels of decision making where these business model components are applicable that is *"Foundation", "proprietary" and "rules"*. On the other hand Johnson et al. (2008) define a business model as consisting of four interlocking elements that taken together, create and deliver value. The four elements (components) of a successful business model identified by the authors are (1) Customers value proposition (CVP) (2) Profit formula (3) Key resources (4) Key processes. Unlike the first two, Casadesus-Masanell & Ricart (2010) proposed that "business models are made of two different sets of elements that's is "choice" and "consequences" they further distinguish 3 types of choices that is "policies, assets and governances structures and they present their conceptualization of the business model ontology in a causal loop diagram. Whereas Chesbrough & Rosenbloom (2002) envisage a business model as a conceptual tool that *"mediates technology development and economic value creation"*, they define six functions of a business model, this 6 functions work similar to the aforementioned business model elements or building blocks. Moreover, Osterwalder & Pigneur (2010) propose a 9 building block framework base on the earlier studies of Osterwalder (2004). The business model framework of Osterwalder & Pigneur (2010) is the most commonly used among researchers. This is because it is a synthesis result of the comparative studies of the most commonly mention frameworks. However the lack of consensus hinder progress on some related issues in business models this include

- What makes a particular business model framework more appropriate?
- How the business model interact with organizational variables?
- The inclusion of organization structure and leadership as a business model component

While some items can overlap such as customers' relationship and firms' partner network, the business model concept builds upon central ideas or is linked to central ideas of the business strategy (Goyal et al. 2017; Morris et al. 2005). By simply stating that there have been enormous research in the subject matter of business model does not appraise the significant effort of different authors in this field. However because we cannot discuss the framework propose by all different authors, we therefore decided to elaborate on the business model construct/framework of Osterwalder & Pigneur (2010) and the scope of conceptualization and application.

2.2.4.1 Osterwalder business model framework

In the well-known publication of (Osterwalder & Pigneur 2010) " Business model generation" Osterwalder & Pigneur identifed 9 components/building blocks of a business framework which they went ahead to present, in an easy to use business model canvas as a tool for business development. (Osterwalder & Pigneur 2010) focus on structure of the business model. The 9 components of the canvas are theoretical grounded in Osterwalder (2004) doctorate thesis. (Osterwalder & Pigneur 2010) define business model as *"the rational of how and organization creates, delivers and capture values"*._According to the authors, the nine building blocks can best describe the business model; these components/building blocks cover the four main areas in business that is *"Product, customer's offers, infrastructure and financial viability"*.

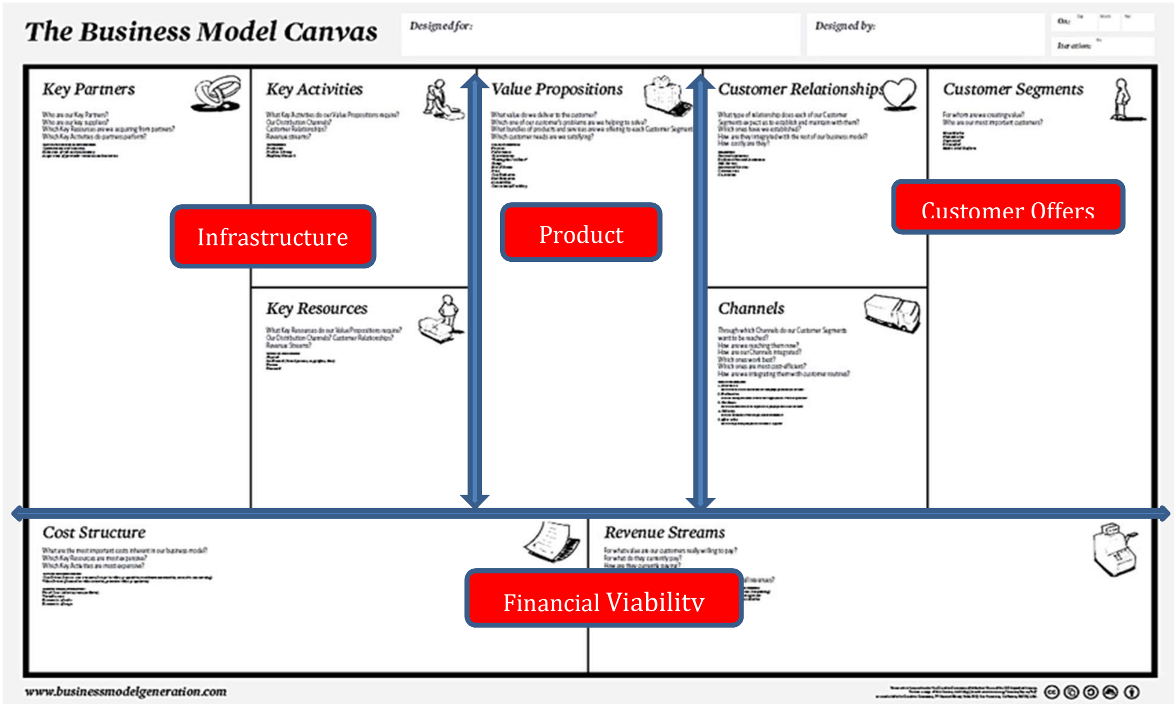

Figure 7: Osterwalder & Pigneur (2010) Business model framework.
Source: Osterwalder & Pigneur (2010).
The nine components describe by Osterwalder and Pigneur (2010) are;

Customers segment: (Osterwalder & Pigneur 2010) assert that the customers segments are central to the business model; the customers segment defines the different peoples or group of people the organization desires to reach and serve. They claim a business model can be design through the careful understanding of the customers' needs. Examples included, mass market, niche market, segmented market etc.

Value proposition: (Osterwalder & Pigneur 2010) claim that the value proposition is the reason why people choose one product/company over another. "*The value proposition building block decipher the bundles of products or services that creates value for a particular customers segments"*, it answers the questions; what customer's problems/needs are we satisfying? What value do we deliver to each customers segments? Etc.

Channels: It describes how the organization communicates and reaches its customers segment, this includes all the ways the business communicates and interacts with its customer. It's comprised of communication channels, distributions and sales channels.

Customers' relationship: This describes the kind of relationship the organization wishes to established or build with a specific customers segments. Relationship might be driven by motivations such as customer's acquisition and customer's retention.

Revenue stream: It describes the cash flow of the organization from the different customers segment after cost deduction. It answers the question of how much the customers are willing to pay and how would they pay?

Key resources: These comprise of all the most important resources required for the organization to create deliver and capture value. As cited by (Osterwalder & Pigneur 2010) different key resources are required depending on the business model of the organization. It ranges from financial, human resources, machine etc.

Key activities: These are those activities/actions the organization must undertake in other to achieve its goal. For example manufacturing organization are required to produce goods/service, reach different customers segments, maintain customer's relationship etc.

Key partners: These building block describe the network of partners that is, suppliers and partners, value chain networks that makes the business model work. (Osterwalder & Pigneur 2010) distinguish four types of partnership strategic alliances, coopetition, joint ventures and business-suppliers relationship.

Cost structures: These include the most important cost incurred by the organization. Cost structure is comprised of cost associated with creating and delivering value, maintaining key resources, maintaining customers' relationship etc.

To conclude, based on our review of the different business model(s) literature, we assume that the different framework presented by the different authors mainly reflects similar ideas of business model components but with different categorizations. We tried to identify the most common building blocks/components amongst business model literature research by comparing the components mention more often by different scholars. However, scholars differ in the way they address business model framework thus different business model framework exist which might be suitable for different purposes, situations, companies or product etc. therefore no specific business model fits all organization even though the characteristics overlap for different models. We believe the (Osterwalder & Pigneur 2010) business model framework is not only more elaborate but also base on their previous research (see: Osterwalder, 2004) in which they compare different building blocks by different scholars to come out with a "state of the art" synthesis of 9 building block. Thus it is reasonable not to study previous frameworks further as the ideas reflected by Osterwalder and Pigneur (2010) reflect a synthesis of similar ideas by previous authors in a comprehensive manner, the elements a clearly define in an accurate manner with a valid theoretical underpinning.

2.2.5 Business Model Classification

According to Baden-Fuller & Morgan (2010) classifying or "labelling" business models provides valuable ways to expand our understanding of business behaviour, phenomena and the development of ideal types, Like Business model ontology several scholars and practitioners alike have attempted to "classify" the different business model they observe. (Baden-Fuller & Morgan 2010) discuss the notion of taxonomy and typology in the classification of business model. Classifying business models is very important because in reality firms possess different generic behaviours and they tend to behave individualistically. Distinguishing between specific classification of business model such as business model typologies and or taxonomies is quit ambiguous although researchers have highlighted the need for a generally acceptable classification framework (Taran, Boer, et al. 2015).Typology is defined as a "*complex theoretical statements that should be subjected to quantitative modelling and rigorous testing*". (Doty & Glick 1994 p231 as cited by Taran, Boer et al., 2015), while taxonomies are referred to as "classifications Schemes". Typologies are created deductively by classifying groups base on concepts or existing theory while taxonomies are derived from empirical data (Taran, Boer, et al. 2015). According to Baden-Fuller & Morgan (2010) the general concept of "business model" is intimately connected with the concept of taxonomies and kinds. Osterwalder & Pigneur (2010) present the business model taxonomy in their famous book **"Business model generation"**. They describe business model with similar characteristics, similar arrangement of building blocks and/or similar behaviour as patterns. They identified five-business model patterns and translated them into the business model canvas to make it understandable and easy to compare. These patterns are (1) Unbundling (2). The long tail (3) Multi sided platforms (4) Freemium (4) Open business models**.** Goyal et al., (2017) reviewing the field of business model research, examine different typologies, their research focus on emerging typologies of different scholars who have attempted to classify the business model concept. These authors include Timmers (1998) Linder and Cantrell (200), Wirtz et al (2010).

Research paper	Typologies
Timmers (1998)	E-shops, e-procurement, e-malls, e-auctions, virtual communities, collaboration platforms, third-party marketplaces, value chain integrators, value-chain service providers, information brokerage and trust and other third-party services. The basis includes degree of innovation and functional integration.
Linder and Cantrell (2000)	Price models, convenience models, commodity-plus models, experience models, channel models, intermediary models, trust models, and innovation models. The basis include identifying core profit making activity, and its relative position on the price/value continuum.
Weill and Vitale (2001)	Content provider, direct to customer, full-service provider, intermediary, shared infrastructure, value net integrator, virtual community, whole-of-enterprise government. The basis includes the role in e-business chain.
McGrath (2010)	Advertising, cross-subsidisation, promotion, freemium, barter, gratis. The basis include mode of charging (who pays, who gets free, unit of business).
Wirtz et al. (2010)	Content, commerce, context, connection. On the basis of definition, value proposition, revenue logic.

Table 6: Business model typologies from selected authors
Source: Goyal et al., (2017)

Summarily, with changes in global dynamics, from value chain changes to new technology, new markets, new competitors etc. there is a constant need for companies to rethink their business models, this has led to generic and distinct behaviours in other to create and capture value in profitable manner, according to Baden-Fuller & Morgan (2010) this behaviours forms different kinds of business models that scholars study and are able to classify them into groups. Classifying business models taxonomies and typologies provide valuable understanding of different behaviour and ideal “kinds and classes” of business models. The importance of classification is not necessary on the approaches (typologies and taxonomies) but in recognizing that there exist differences between business models which academician in different literatures have attempted to classify and structure this divergences. Furthermore, several attempts are being made by researchers as well as practitioners to identify why some business model are very successful across industries. For example, as suggested by Baden-Fuller & Morgan (2010) business model could be used as “recipe” by others. Classification is therefore very important for business model configuration. , As propose by (Taran, Boer, et al. 2015) a *"comprehensive and well structure list business model configuration process grounded in best practices"* will not only facilitate but serve as a mapping tool for business model innovation. Hence business model classification provides the foundational road map to business model innovation.

2.3 Innovation

Earlier we discussed what are business models, their components and their importance to organizations. The term BMI is a combination of the term "Business Model" and the term "Innovation" hence to get a better understanding of BMI (Business Model Innovation), we also need to understand the term innovation, and what links exist between business models and innovation. The ability to innovate has become a top priority for most organizations today, intense competition in global markets as well as technological development have made innovation a source of competitive advantage for many firms. Many scholars as well as practitioners have attempted to define to the term innovation, one of the earliest and most prevalent definition was offered by (Schumpeter 1934). He define innovation as *"the introduction or modification of a new product , process market ,new source of supply or changes in the organization"*. Another commonly used definition of innovation is that of the OECD (Organization for Economic Cooperation and Development) .The OECD defines innovation "*as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations*" (p.46, Paragraph 146; (OECD & Eurostat 2005). Other researchers like Tidd & Bessant (2009) who shared a common view with (Freeman & Soete 1997); (Drucker 1985) addressed innovation as a process of turning opportunities into new ideas and putting these ideas into practice. Regardless of the definition or type of innovation, many researches have agreed it's necessary for the survival and prosperity of firms (Schumpeter 1934). One of the main problems associated with the definition of innovation is the confusion of "Innovation" with "Invention". An invention is an idea, a sketch or a model for a new or improved device, product, and process, which might be patented but is still not an innovation. Innovation occurs at the point of bringing an invention to the market.

Innovations vary widely, in scale (level of innovation), nature (disruptive), degree of novelty (incremental or radical), timing (innovation life cycle) and trigger. Across literature we can equally identify a large number of innovation types ranging from disruptive innovation, strategic innovation, service innovation, open innovation, structure innovation etc. Some of this definitions are confusing and others partly overlapping. The Oslo Manual (OECD & Eurostat 2005) describes four types of Innovation, namely Product innovation, Process Innovation, Marketing innovation and Organizational Innovation. Empirica (2014) perceive BMI as a form of composite innovation found which covers the intersections of these four types of innovations. Thus they see BMI as a combination of other types of Innovation. See Figure: 7

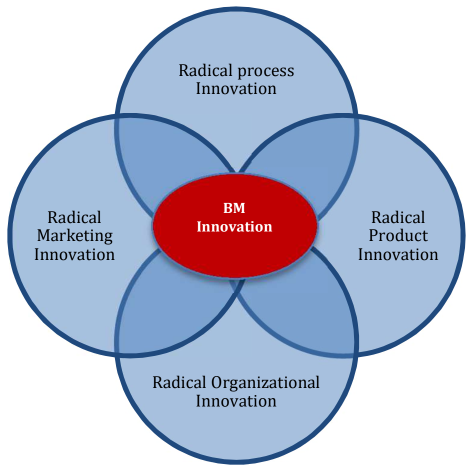

Figure 7: BMI as a composite type of Innovation

Source: Adapted from; FHNW, Empirica (2014)

Likewise, Tidd & Bessant (2009) also suggest four different innovation. Which are product innovation, process innovation, position innovation and paradigm innovation. One example of paradigm innovation identified by them is "business model innovation", they define paradigm innovation as a "*change in the underlying mental model which frames what the organization does*". Because of such differences, it is clear that researchers have not yet agreed on where to situate BMI in innovation literature.

2.3.1 Innovation and Business model innovation

It is essential to explain the relationship between other forms of innovation and BMI. Because business model innovation is different from other types of innovation such as product or process innovation.(Florén & Agostini 2015;Trapp 2014). It also has different requirements for success. (Lindgardt et al. 2009). Additionally in practice, BMI has been differentiated from other types of innovation. For instance an IBM survey conducted in 2006 measured three types of innovation product/market/ service innovation and operational innovation and BMI. (IBM 2006a). Geissdoerfer et al. (2018) compared BMI to product and service innovation and concluded that BMI had a higher degree of strategic importance since it's usually undertaken by top management; BMI was also more risky; more uncertain; more complex; involved more stakeholders and required a broader set of skills and capabilities when compared to product or service innovation. Stoilkovska et al. (2015) corroborate these claims, stating that *BMI "goes beyond the realm of ordinary product or technology innovation"*. Furthermore some academicians believe BMI can increase value capture for other types of innovation. Teece (2010) for instance argues that the benefits a firm gains from technological innovation will significantly depend on the business model used to deliver their new technology to the market. Thus technological innovation should be matched with BMI. The business model is not only a subject of innovation but can also serve as a vehicle of innovation, since they can be interlinked but can also occur independently (Zott et al. 2011; Mitchell & Coles 2003). Product or process innovations can lead to business model innovations, likewise business model innovations can be attributed to changes of other core elements of the business model, which occur independently from product and process innovations. (Bucherer et al. 2012). The table 6 below outlines some differences and similarities of business model innovation and product innovation. Business model innovations are also different from product, process and technological innovation because unlike the later it is less known by managers, creates different markets and presents different challenges. (Geissdoerfer et al. 2018; Markides 2006).

	Similarities	**Differences**
Origins of innovations	- Distinction between internal and external triggers	- Distinction between opportunities and threats for business model innovations.
Innovation process	- Logical sequence of process steps - Rather chaotic process at least in early phases - Normative process models can be used for guidance.	- Detailed process steps
Organizational implementation	- Difficulties for existing organizations to serve the old and the new concurrently - Independent organizational units can resolve this conflict	- New business models are affecting organizations usually in a broader manner and enforce organizational restructuring more often.

Organizational anchoring	- Dedicated organizational units and responsibilities are required - Often internal and external resistance - Concept of sponsors or power promoters' and champions or 'specialist promoters' can be helpful	- Top management involvement more essential for business model innovations
Degree of innovativeness	- Distinction between incremental and radical innovations - Market breakthrough	- Technology (product innovations) vs. Industry (business model innovation) breakthrough

Table 7: Similarities and Differences between product Innovation and BMI.
Source; Bucherer et al. (2012)

Some researchers have suggested BMI is as important, if not more important than other forms of innovation. For instance Gassmann et al. (2014) assert that continuous product innovation is insufficient to keep a firms in business, and firms must consider innovating their business models as much as they do with their products and technologies. (Amit & Zott (2012) corroborate by articulating that BMI is an underutilized source, difficult to imitate or replicate and unlike other forms of innovation can help the firm acquire a competitive advantage. (Amit & Zott 2012) go further to explain that innovating products and processes are often expensive, time-consuming and could abridge a firm's liquidity. Therefore firms could use BMI as an alternative or complement to their product and process innovation. Other researcher take a much stronger position for instance Frankenberger et al. (2013) state that "*BMI exceeds mere innovation*" . To summarize BMI is a type of Innovation which has a unique relationship with other forms of innovation. It can be composed of other forms of innovation, it can be used to capture value from other forms of innovation, and it can provoke other forms of innovation. For all these reasons it is a distinct type of innovation and deserves to be studied more deeply.

2.4 Business Model Innovation

2.4.1 Background and evolution of BMI

Lately, a good number of researchers and business practitioners have manifesting interest in BMI. (Groskovs 2016; IBM 2006b; Santos et al. 2009). The first major research clearly introducing the idea of managers innovating their business model was opined by Mitchell and Coles in 2003. (Foss & Saebi 2016). Mitchell and Coles articulated that, in the early 1990's, companies which had designed a successful business model, re-used it in different markets (Mitchell & Coles 2003,2004a as cited by Fallahi (2017). Although there is a clear link between BM and BMI, BMI literature turns to focus on important research questions which were not addressed or answered in BM literature.(Foss & Saebi 2016). Early literature on BMI focused on establishing a connection between business models and innovation. Then researchers gradually shifted their attention towards the need for business model innovation in firms. Recently, researchers aspire to develop guidelines which could help business practitioners make more use of this concept. (Wirtz et al 2016). Unfortunately, much like literature on business models, BMI literature has grown in a very diversified manner leading to little conceptual clarity. (Trapp 2014). Thus making the application of the concept harder. (Foss & Saebi 2016; Wirtz et al 2016). Based on an analysis of 178 scientific publications on BMI, written between the years 2000 and 2015, the researchers Wirtz et al (2016) identified six prime research arrears on BMI. They argue that while the first three (Definition & types, Design & Processes, Drivers & Barriers) have addressed theoretical and conceptual issues, the last three (frameworks, implementation & operation, performance & controlling) have focus on the implementation and operationalization of BMI. (See Table 8). One major goal of this study is to generate knowledge needed to promote successful BMI in SME's in Denmark. Since our study is relate to business model operationalization and implementation, we shall use a framework to analyse BMI across two different categories of SME's; micro and small. Our framework shall consist of 5 elements; drivers, processes, types, innovativeness and barriers. In the subsequent part of this chapter, we shall first define BMI and outline some of its importance. Then we shall briefly review BMI literature for each of the elements listed above.

	Key content	**Conceptual**	**Empirical (Qualitative)**	**Empirical (Quantitative)**	**Total**
Definition and types	- Basic definition of BMI concept and differentiation from existing concepts - Differentiation of certain BMI types	10 (43.5%)	10(43.5%)	3(13.0%)	23(15.4%)
Design and process	- Ex-ante BMI development - Steps and phases of BMI	12(32.4%)	19(51.4%)	6(16.2%)	37(24.8%)
Drivers and Barriers	- Drivers of BMI - Barriers of BMI	7(35.0%)	13(65.0%)	0(0.0%)	20(13.4%)
Frameworks	- Unbundling of BMI concept	12(40.0%)	13(43.3%)	5(16.7%)	30(20.1%)

	- Categorization of concrete parameters				
Implementation and Operation	- Arrangements for BMI implementation - Running BMI business operations	3(12.0%)	16(64.0%)	6(24.0%)	25(16.8%)
Performance and Controlling	- Ex-post measurement of BMI feasibility, profitability and sustainability	1(7.1%)	3(21.4%)	10(71.4%)	14(9.4%)
Total		45(30.2%)	74(49.7%)	30(20.1%)	149(100.0%)

Table 8: Business Model Innovation Literature

Source; (Wirtz et al, 2016 Pg. 8).

2.4.2 Importance of BMI

Before defining and explaining the concept of BMI we shall first explain why this concept is important. As we explained in previous chapters, many scholars have articulated that designing and operating a good business model is an absolute necessity for most firms today, since it can help them perform better than their rivals. (Osterwalder et al, 2005). However, in today's reality companies need more than just a good business model to be successful. Entrepreneurs and decision makers who thought owning a business model was enough to achieve optimal results have been disappointed. (Magretta 2002). The first reason for this is that, nowadays disruptive technologies have significantly affected today business environment. Every day, new technologies continue to exert pressure on the business models of firms. Depending on their level of radicality, they can erase or weaken the competitive advantage held by a dominant firm(s).(Vorbach et al. 2017). Consequently, in this day and age, it's hard to come across firms with a sustainable competitive advantage. (Stampfl 2016). Thus many decision makers see BMI as solution to these problems. Another reason is that, the life cycle of business models is getting shorter and firms which are reluctant or hesitant to innovate their business model could lose their competitive advantage to a superior business model freshly introduced by a competitor.(Morris 2013). Moreover, if we consider the fact that business models are originally designed to fit the business environment of the firm (Stampfl 2016) and that many firms operate in a continuously changing and uncertain environment (Morris 2013), characterized by discontinuities and disruptions (Doz & Kosonen 2010) then, for firms to do well, they have to keep changing their business models to adapt to changes in their environment and to prepare for uncertainties. Doz & Kosonen (2010) affirm that firms now need to modify their business model(s) quicker, more often and on a wider scope than ever before. A frequently used example to advocate for the importance of BMI is the case of Eastman Kodak, the fallen graphic and imaging industry giant. The fact that Kodak held over 70% of the America's film and camera market in the 1970's means they were good at product innovation and definitely had a good business model, suitable at that time. But because they failed to innovate their business model in due time, they were overtaken by the disruptive technology of digital photography and smartphone cameras. The consequences were a series of continuous loses, massive downsizing and more than a 85% drop in their share price (Economist 2012).

A survey conducted by the Boston consulting group and *businessweekly* magazine among innovative companies revealed that shareholders in firms categorized as business model innovators received premium four times higher than what firms categorize as product and process innovators offered their shareholders. Although no explicitly stated, this could very likely imply that firms which innovate their business model are more profitable. Moreover even after a ten years period business model innovators could still delivered a higher premium. Thus, firms which innovate their business models are not only more profitable but remain so, for longer periods compared to those that don't innovate their BM. (See figure 9).Similarly an IBM survey from 2006 revealed that 30 % of CEO's focused their innovation efforts on innovating their business models. The same survey also showed that companies which had emphasized more on business models grew faster and were more profitable than their competitors. (IBM 2006a). Furthermore BMI has completely reshaped some industries and redistributed billions of dollars in value. Forty percent of the companies created after the mid 70's, which became fortune 500 companies, did so, through business model innovation. (Johnson et al. 2008). Unfortunately few companies have bothered to dedicate time and resources to innovate their business model. (Gassmann et al. 2014). Even global firms invest very little in BMI. (Johnson et al. 2008)

To conclude, we believe that BMI is equally important to both large and small firms, because treats such as disruptive innovations have an equal effect on all firms regardless of their size. Moreover small firms can also benefit from innovating their BM. Therefore we suggest that BMI is important to SMEs in Denmark if they want to keep growing. And to perform better than SMEs located in other countries or within Denmark who fail to innovate their BM.

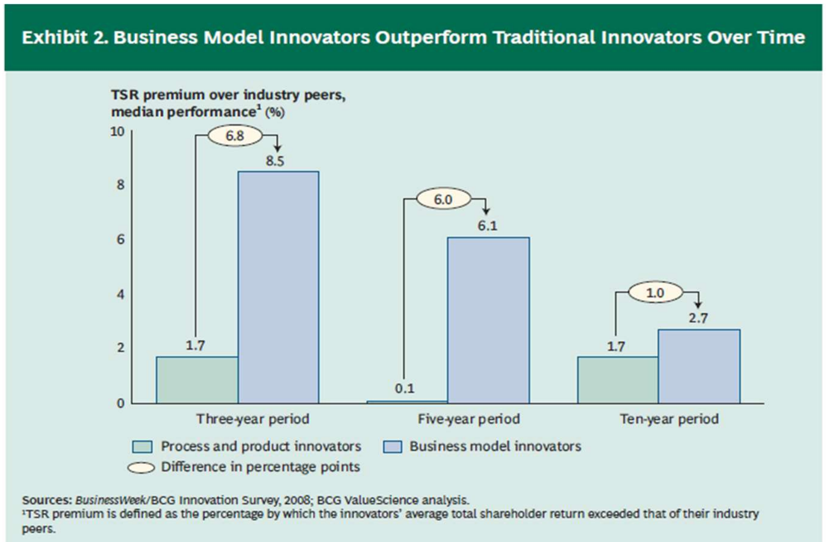

Figure: 9: Comparing BMI to other forms of Innovation

Source; (Lindgardt et al. 2009)

2.4.3 Defining BMI

The confusion surrounding business model innovation begins, appropriately enough, with confusion about the term "business model"" – Clayton Christensen (2016).

There is no clear cut definition for BMI. (Giesen et al. 2007). Trapp (2014), identified over 30 different definitions and explanations for BMI. This is probably due to the fact that many researchers have only defined BMI partially or for the purpose of a particular study. (Bernd W. Wirtz 2016; Trapp 2014). Thus, the definitions of BMI in lack specificity, uniformity and heterogeneity. (Trapp 2014; Stampfl 2016). The first major reason for these disagreements originates from the divergent perspectives, scholars hold regarding the concept. While some scholars understand BMI as a process others rather see it as an outcome (Taran, Boer, et al. 2015; Foss & Saebi 2016). This later has a significant effect on their subsequent research. Since those who focus on BMI as a process want to find what facilitates and hinders the process of BMI in an organization, likewise those who consider BMI an outcome aim to describe and identify the components of BMI ex post. (Foss & Saebi 2016). One reason for such differences in the definition of BMI is that, some definitions have focused on the components of the BM when defining the concept (e.g. Lindgardt et al 2009; Johnson et al., 2008; Bucherer et al., 2012), others have focused on the architecture BM (e.g. Santos et al 2009; Zott & Amit 2012) (That is, no component is changed but the relationship between activities across the BM components changes) (Foss & Saebi

2016). Another major division concerns the scope or the number of components of the BM that should be affected from BMI. While some will consider a change in one component enough (e.g. Zott & Amit 2012; Santos et al 2009) others require a change in two or more components (e.g. Lindgardt et al. 2009) and some have a more extreme stance, suggesting a change in all BM blocks. Furthermore, scholars fail to agree on the dimension, while some argue that BMI should be new to the firm (e.g. Johnson et al (2008); Osterwalder et.al (2005), (Markides 2006). Others suggest it must be new to the industry (e.g. Santos et al. 2009) to be considered BMI. Because, there is no widely accepted definition of BMI, it’s difficult for researchers to measure BMI in firms. (Foss & Saebi 2016). Therefore, it’s hard for us to select a definition to use in our research. However Trapp (2014) suggest three ways, through which a researcher can operationalize BMI in a case study. Which are;

- Describing the BMI by detailing the new state compared to the old one.
- Describing the BMI with the help of a framework consisting of predetermined components.
- Describing the BMI based upon analysing if activities are new or changed.

Within this research, we shall use a framework consisting of predetermined components to define BMI in our case studies. The components used will be the nine components of the Business model proposed by (Osterwalder & Pigneur 2010). See figure 7. We will use them to measure BMI by identifying changes made in each building block within a specified period. Our choice is motivated by the fact that it is recognized as one of the most popular BM frameworks thus we assume it could be popular among SMEs.

Authors	**BMI Definition**	**Novelty**	**Outcome**	**Scope**
Mitchell and Coles (2003)	“When a company makes business model replacement that provide product or service offerings to customers and end users that were not previously available, we refer to those replacements as business model innovations.” (p.17)	New to firm	Replacing	At least four out of six components
Markides -2006	“Business model innovation in the discovery of a fundamentally different business model in an existing business.” (p.20)	New to the firm	Parallel or replacing	n.a
Santos et al. -2009	“Business model innovation is a reconfiguration of activities in the existing business model of a firm that is new to the product service market in which the firm competes.” (p.14)	New to market	replacing	Individual components

Foss and Saebi (2017)	"We define BMI as designed, novel, non trivial changes to the key elements of a firm's business model and/or the architecture linking these elements." (p. 201)	New to market	replacing	Key elements and/or their linkages
Spector & Heyden (2009).	" a reconfiguration of activities in the existing BM of a firm that is new to the product/service market in which the firms operate"	New to the market	replacing	Key elements and/or their linkages
Wirtz (2016, p. 189):	"Business model innovation describes the design process for giving birth to a fairly new business model on the market, which is accompanied by an adjustment of the value proposition and/or the value constellation and aims at generating or securing a sustainable competitive advantage."	New to the market	replacing	Key elements and/or their linkages
Lindgardt et al 2009	When two or more elements of a BM are reinvented to deliver value in a new way	New to the firm		At least two components

Table 9: Some definitions of BMI

Source: Fallahi (2017), Authors

2.4.4 Innovativeness in BMI

Besides identifying changes made in the various elements of the business model, it is important to measure the overall level of innovativeness in BMI. Because researchers have failed to agree on a common definition of BMI, it is difficult to measure the level of innovativeness in a new business model. Nevertheless, (Taran, Boer, et al. 2015) developed a framework which in our opinion provides a reasonable "scale" for measuring and comparing BMI. They suggest measuring BMI innovativeness from three main dimensions; radicality, reach and complexity (scope). The radicality of the BMI will usually range between incremental (low) to radical (high) innovation. The second dimension concerns the "reach of the innovation". Which basically addresses the newness of the innovation. The BMI can either be new to the world, new to the industry, new to the market or new to the firm. The third dimension measures the scope of the innovation. In other words the "complexity". It is based on the notion that any change in BM blocks is a form of BMI and the degree of complexity will depend on the number of building blocks changed simultaneously. , (Taran, Boer, et al. 2015) combined these 3 approaches to form a three dimensional scale for measuring innovativeness in BMI.

However, it is important to note that this method of measurement was designed by (Taran, Boer, et al. 2015) in other to measure the innovativeness of BMI in large firms and not SMEs or start-ups. Therefore it may not be the most suitable in terms of measuring BMI innovativeness for the later. Nevertheless, it can provide a good picture of the degree of innovativeness in BMI for any organization.

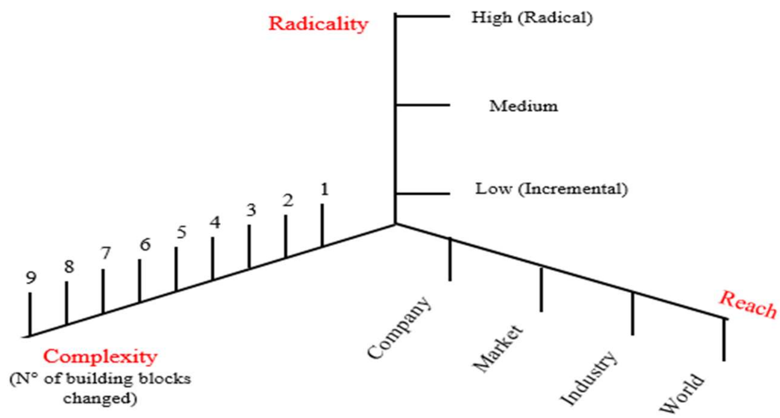

Figure 10 : Three Dimensional Business model Innovativeness Scale
Source; Adapted from (Taran, Boer, et al. 2015)

2.4.5 Types of BMI

Typologies are important because it can facilitate and speed up decision making regarding BMI within the firm (Taran, Boer, et al. 2015) Because of the lack of unity and heterogeneity in the description of BMI, researchers have not still agreed on the different types of BMI organizations can undertake. (Florén & Agostini 2015). We found out that the first major cause of differences in BMI typology was the disagreements in the definition of the term BMI since all the authors of typologies define BMI is different ways. Consequently some authors suggest three types of BMI, others four. Furthermore some researchers use specific elements of the BM such as “Value proposition” in defining typologies while some use terms which imply the combination of one or more BM elements such as “revenue model”. Moreover some typologies were derived from conceptual studies e.g. Santos et al (2009) ,while others originated from practical research (analysing BMI cases) e.g. (Taran, Boer, et al. 2015; Giesen et al. 2007) Finally much like the definition of BMI, in some cases, a typology was developed for the purpose of performing a particular research e.g. (Saebi & Singh, 2017). We also have some researchers who have used “models” to distinguish between different types of BMI. For instance Linder & Cantrell (2000) opined that to make changes in their BM companies need to use a change models. They propose four types of change models realization model, journey model, extension model and renewal models. Realization models focus on maximizing profits on the current business model. Renewal models are used by the company to react to competitive forces which reduce the profitability of the firm. The company could react by creating a new product, cutting cost or making use of technology. Extension models are developed to help the company expand by adding new products or services or entering new markets. Finally, journey models involve creating a new business model for a company. While, Florén & Agostini (2015) focused their BMI types based on the novelty. That is, how the changes made affected the existing competencies of the firm. If it made them more obsolete or reinforced them. And also how the changes will affect the structure of the firm.

A typology which has been used to study BMI in SMEs is that of (Schaltegger et al. 2012) which was used by (Marolt et al. 2016) to analyse how Slovenian SMEs approach BMI. Schaltegger et al., (2012) suggest four main types of BMI. Business model adjustment, Business model adoption, Business model improvement and Business model redesign.

Business model Adjustment; The authors consider all changes made to one or a minor number of BM components excluding the value proposition as BM adjustment.

BM adoption: This involves changes made on the Business model with the intention to catch up with competitors and current market standards. It mostly includes adopting new products and services and also changing other BM components such as the customer relationship.

Business model Improvement; Means simultaneously changing a large number of BM elements without changing the value proposition.

Business model redesign: This type of BMI requires, business model improvement plus a change in the value proposition. Thus new products and services are been offered.

One critic here will be the lack of specification on some terms for instance what is a minor change? However it is very suitable for small firms since most of them rarely perform BMI as frequently and broadly as large firms do.

Authors	Definition	Origin
Amit & Zott (2010)	Content, Structure, Governance	Conceptual
Santos et al (2009)	Relinking, Repartitioning, Relocating, Reactivating	Conceptual
Giesen et al (2007)	Revenue Model, Enterprise Model, Industry Model	Empirical
Lingardt et al (2009)	Value proposition, Operating model, Business system Architecture	Empirical
Saebi and Singh (2017)	Value proposition, Target market, Value capture Value delivery	Empirical
Taran, Boer, et al. (2015)	Open/ Proactive, Closed/Proactive, Open/Reactive ,Closed/Reactive	Empirical
Cavalcante et al. (2011)	Creation, Extension, Revision, Termination	Conceptual
Schaltegger et al. (2012)	Adjustment, Adoption, Improvement, Redesign	Conceptual
Florén & Agostini (2015)	Revision, Transformation, Extension and Revision.	Conceptual
Linder & Cantrell (2000)	Realization model, Journey model, Extension model and Renewal model.	Conceptual

Table 9; Summary of some BMI typologies and taxonomies

Source: Authors

2.4.6 Drivers of business model

As research advances in the field of business model innovation, the examination of drivers of business model innovation has also been broadly studied. Notably, researchers have attempted to answer question related to what drives or pushes business model innovation (Amit & Zott 2001; Chesbrough 2010; Waldner et al. 2015; Ries 2011).

Research in the field has mostly focus on firm's level drivers (Waldner et al. 2015; Wirtz et al, 2016) for example Chesbrough (2010) identified 3 main points which act as opportunities for BMI in a firm, these where Experimentation, Effectuation and organizational leadership. While Sosna et al. (2010) examine how "trial and error learning" can be an antecedent to innovate business models within an uncertain environmental, according to them experimenting and learning from failed experiments and the resilience to continue experimenting constitute a very important driver for business model innovation. Unlike the first two Ries, (2011) argues that the decreasing cost of product development have spawned the outburst of new business model. Whereas Amit and Zott (2001) identify four potential sources/drivers of value creation in e-business, these drivers are efficiency, novelty, lock-in and complementarities.

On the other hand some researchers have focused on industry specific drivers. Waldner et al., (2015) investigate the role of industries life cycle and a driver of business model innovation, they argue that the degree of business model innovation depends on the phase of the industries life cycle. According to them BMI innovation is higher and more intense at the early stage of the industries life cycle and less intense or lower at the later stage of the industries lifecycle Anderson & Kupp (2008) suggest competition as the key driver of BMI in the mobile industry in less developed country, they also identify other drivers which included value chain reconfiguration, building local capacity and collaboration with non-traditional partners

In contrast other researchers have attempted to investigate external sources or drives of business model innovation, few of them have combined their research to contain both internal and external for example (Bucherer et al. 2012) suggest two distinct dimension where BMI originate, that is opportunity and threat. Furthermore they identify four different sources of business model innovation, this sources are internal opportunity (e.g. efficiency), external opportunity (e.g. new technologies, new market), internal threat (e.g. outsourcing) and external threats (e.g. technological changes).

We argue that while all this different sources/drivers could in one way or the other influence BMI in a firm. Bucherer et al (2012) is more explicit and relevant to our research, its combine both internal and external factors which he distinguish in to opportunities and threat. Their framework combine most of the drivers discuss by different authors such as Amit and Zott (2001) and (Chesbrough, 2010). Additionally it has been used by other researchers such as (Marolt et al. 2016) to analyse drivers for BMI in SMEs. It therefore make sense for us to use the framework Bucherer et al (2012) in our analysis.

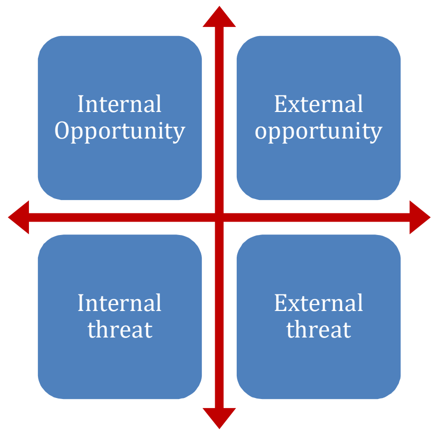

Figure 11: Drivers of BMI

Source: Bucherer et al (2012)

2.4.7 Barriers to BMI

Based on earlier discussions it's evident that companies have much to gain from innovating their BM. However thought BMI is good for the firm and will provide substantial benefits, it's not an easy task. It has its own hurdles and challenges. (Fallahi 2017; Johnson et al. 2008; Lindgardt et al. 2009). (Groskovs 2016) defines a barrier as something *"prohibiting, breaking, impeding or standing in the way of a successful outcome"*. Another way of looking at barriers will be to investigate what prevents firms from changing their BM and what makes firms unsuccessful once they decide to change their BM. We have identified two broad classes of barriers to BMI. Organizational Barriers and Cognitive barriers.

Organizational Barriers

Some organizational barriers to BMI are limited resources and capabilities, uncertainty and structural barriers, implementation problems, path dependency etc. Many organizations, particularly small ones have smaller budgets, less knowledge, fewer staffs etc. thus they can't undertake BMI if the resources needed are beyond their capabilities. Moreover decision makers in firms always prioritize what more profitable. Thus, they will dedicate more resources to the current BM of the firm especially if sharing resources between two models could jeopardize, the returns of their current BM. This is a problem because usually at the outset, the gross margins of envisaged BM are habitually smaller than those of the existing ones. (Chesbrough

2010). Also organizations with limited resources may be unable to service two or more business models simultaneously. (Vorbach et al. 2017; Santos et al. 2009). Another reason for business model inertia from an organizational perspective is “uncertainty”. Firms are not certain BMI will be successful. (Fallahi 2017) this uncertainty is further accentuated by the degree of innovativeness the firm may need to undertake**.** (Vorbach et al. 2017). Regarding structural barriers, Johnson et al. (2008) argue that every firm has some underlying rules, norms and matrix fully embedded within them to help them protect their acquired status quo. They call this the “habits of the firm” and asset that these are the first barrier to BMI within an organization since they are extremely hard to change. (Sivertsson & Tell 2015) substantiate by stating that shifting from one BM to another may also harm the core competencies of the company. Moreover some firms may find it hard to return to their old BM once they have made the shift. Additionally sometimes it's possible for the new BM to emerge from the company but the complementary assets of the company for example how they bundle their products can unintentionally direct upcoming business model in a specific direction. New BM will always somehow depend on the complementary assets. Additionally the very fact that business models result from the cognitive patterns of an organizational could be a problem since they create a dominant logic around the extant BM. Moreover because the firm assumes that they are currently doing the right thing, they focus on finding more efficient ways, to do what they already do, rather than new approaches this therefore reduces their ability to identify new opportunities (Vorbach et al. 2017). Finally, (Markides 2013) raises the point that any attempt to simultaneously operate two BM could be challenging for firms since the activities required for both Business models may be different and incompatible, usually they will have to do some sort of trade-offs. There is also the risk of the firm cannibalizing on its own market. Santos et al., (2009) for instance suggest that BMI in a subsidiary firm can be hampered by the long term strategy of the parent company or clash with the strategic operations of another subsidiary under the same parent company.

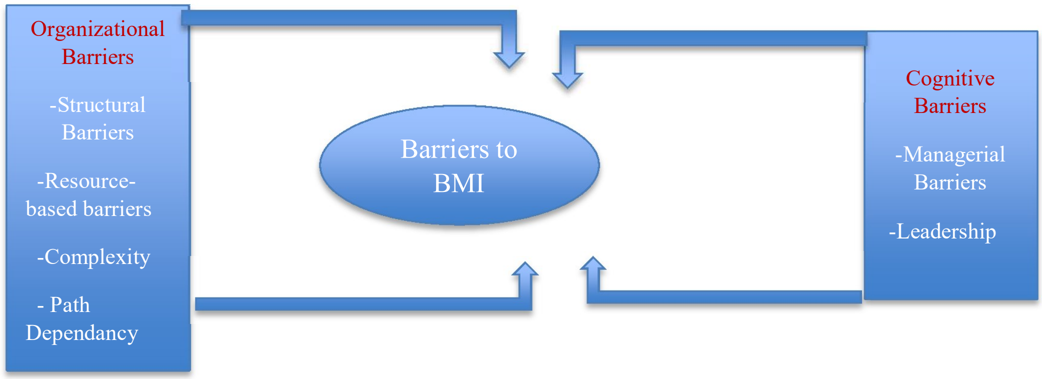

Figure 12: Barriers to BMI

Source; Authors

Cognitive barriers are usually centered around the management and leadership of the organization. As opined by Groskovs (2016) the human mind set, skills and behaviours can be the greatest obstacles to changing the BM. Managerial obstruction-is a cognitive barrier especially when the new model does not fit with the old one. Managers fear to take risk especially if they don't understand their current BM. (Sivertsson & Tell 2015). Few managers have knowledge on BM development and even less understand their BM (Johnson et al (2008). (Lindgardt et al. 2009) suggest that portfolio bloat, failure to scale up, keeping pet ideas, isolated efforts, fixation on ideation, internal focus and historical bias are some common managers' mistake which prevent successful BMI. Usually managers will be reluctant to abandon or alter the BM which gave them success. This dominant logic trap limits their ability to see other opportunities which they can obtain by innovating their BM. (Chesbrough 2010).

Regarding leadership, (Doz & Kosonen 2010) argue that strong management is required to set the structure, capabilities and processes necessary to operate a new BM. Unfortunately most organizations have a tendency to rotate their top manager every 2 to 3 years, this allows them with no insufficient time to initiate and manage the BMI process. (Chesbrough 2010). Groskovs (2016) further opines that the commitment of senior management and the involvement of middle managers and employees is critical to the enable successful BMI within the firm. SMEs even face greater challenges when it comes to leading BMI. (Lindgren 2012). To conclude, as suggested by Sivertsson & Tell (2015) barriers to BMI will usually depend on the object of the study. But they will either be situational (related to the environment, economy and social situation of the firm) or dispositional (the way managers and employees perceive them) which is why we believe our discussions with practitioners will help us understand more about barriers to BMI for SMEs in Denmark.

2.4.8 The BMI Process

As stated by Hartley (2006, p.38) *"the articulation of processes helps to identify particular barriers and facilitators at particular stages, and this may be of practical help to policy-makers and managers."* .Understanding BMI processes in firms is crucial since it can significantly influence the results of BMI. Different researchers have developed conceptual frameworks for the processes/steps, firms need to follow in other to innovate their BM. Steps for BMI found in literature vary in the number of steps necessary. Groskovs (2016) argues for a two-step process (search and change), (Osterwalder & Pigneur 2010)suggest five steps (Mobilize, understand, design, implement, manage), (Chesbrough 2010) suggest three steps (experimentation, effectuation and organizational leadership), Lindgardt & Reeves (2011) also suggest five steps (uncovering opportunities, converting into models, prepare and test, scale and iterate, and managing the BMI portfolio) and (Geissdoerfer et al. 2017) articulate the Cambridge business model innovation process which consist of 8 steps (ideation, concept design, virtual prototyping, experimenting, detail design, piloting, launch and finally adjustment and diversification). Furthermore while some approaches consist of sequential steps e.g. (Osterwalder & Pigneur 2010)other researchers include both sequential and interactive steps e.g. (Groskovs 2016) ,(Geissdoerfer et al. 2017). And some don't outline sequential steps for approaching BMI but rather suggest activities which must be part of an effective BMI process. e.g. (Chesbrough 2010) Moreover some approaches were designed to suit the development of new business model as well as the innovation of existing business models e.g. (Osterwalder & Pigneur 2010; Geissdoerfer et al. 2017). While others focused solely on the transition from the current business model to the new business model. E.g. (Groskovs 2016). By combining the five approaches above we developed a six step approach to BMI. Consisting of both sequential and interactive steps. See Figure 11.

Authors and publication year	N° of steps	Finding	Mobilizing	Designing	Testing	Implementing	Managing
Sergejs (2016)	Two steps	Search				Change	
Chesbrough (2010)	Three steps	Effectuation	Organizational Leadership		Experimenting	Organizational Leadership	Organizational Leadership
Osterwalder & Pignuer (2010)	Five steps	Understand	Mobilize	Design		Implement	Manage
Lindgrart & Reeves (2010)	Five Steps	Uncover opportunities		Convert into models	Prepare and test	Scale and Iterate	Manage BMI portfolio
Geissdoersfer et al., (2017)	Eight Steps	Ideatation		Concept design Virtual Prototyping Detail Design	Experimenting Piloting	launch	Adjustment

Table 11: Classification steps in various BMI processes

Source: Authors

Search- The first step to BMI is to find a purpose for BMI (Geissdoerfer et al. 2017). The firm could either be facing a certain threat or contemplating a new opportunity. This stage is primarily important because subsequent stages will significantly depend on the size of the opportunity uncovered or how big the threat is to the firm. At this stage firms have to search for information regarding their market competitors, customers, and the industry in which they operate. (Groskovs 2016)**,** Osterwalder & Pigneur 2010). They also need to critically assess (understand) their current business model to find pros and cons. (Lindgart & reeves 2011). Additionally the firm should also look beyond standard practices and existing customer base in other to uncover new opportunities (Osterwalder & Pigneur 2010)

Mobilizing- As articulated by Groskovs ,(2016) the process of BMI will require both human and financial resources. We opted to put mobilizing at the second stage because the degree of mobilization will depend on the opportunity or the threat identified by the firm. Mobilization involves planning and getting the right team together (committed people with adequate knowledge and experience). (Osterwalder & Pigneur 2010). Firms could also make use of their "slack resources "at this stage. . (Groskovs 2016).Finally management plays a key role at this stage of the process since they are usually in charge of setting up the task force and providing the resources needed.

Design- The design requires means converting ideas and information gathered at stage "one" by using the resources mobilized at stage "two" to create business models. (Osterwalder & Pigneur 2010)(Lindgart & reeves 2011). It requires generating a range of model by doing an in-depth analysis of all the elements of the business model and interactions between these elements. (Geissdoerfer et al. 2017).

Testing: After designing multiple business models the firm needs to test their business model(s) in other to validate key assumptions. The different business model must evaluated and adjusted at this stage. (Fallahi 2017). Experimentation is of crucial importance for successful BMI because of the uncertainty surrounding new business model's viability in a marketplace. (Eivind & Haug, 2011). Additionally, it is easier for firms to see what models are not working than to pick out which model will work. Furthermore this will help the firms evaluate their possibilities before committing resources (Chesbrough 2010). Experimentation can be done by using maps such as the Business model Canvas or mapping techniques such as "*component business modelling concept*" proposed by IBM. Good experiments should have high fidelity (the fidelity of the experiment means *"the extent to which the experimental conditions are a representative of the large market")* and low cost (Chesbrough 2010). Experiments should also be carefully planned to avoid failure.

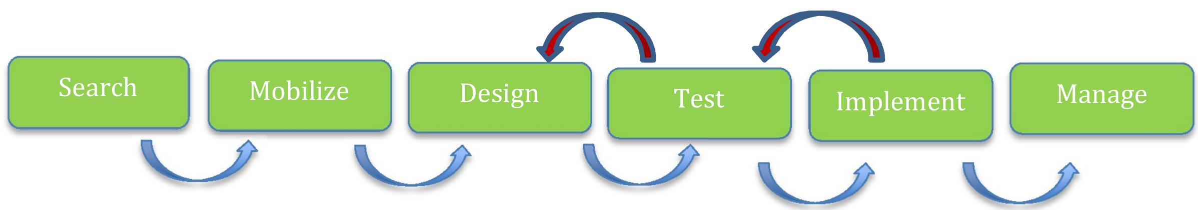

Figure 13: BMI process

Source: Authors

Implement; After testing and experimenting, once the firm has found a suitable BM they need to implement it. Implementation of a new business model could require some degree of organizational change (Groskovs 2016), The firm also needs to manage uncertainties, adjust design when necessary and decided whether to implement the new business model separately or as an integral part of the old BM. (Osterwalder & Pigneur 2010). The new business model should also be communicated to all units of the organizations.

Manage: The last step requires managing the new business model. It's possible for some unforeseen factors to perturb the new BM on the long term (Osterwalder & Pigneur 2010) .Managers have to make sure the new business model fits into the strategy of the company (Lindgardt and Reeves (2011). Therefore it must be continuously revised, evaluated and adjusted to suit initial plans and expectations. (Geissdoerfer et al. 2017). Finally, conflicts and synergies need to be managed.

2.4.9 Framework of Analysis

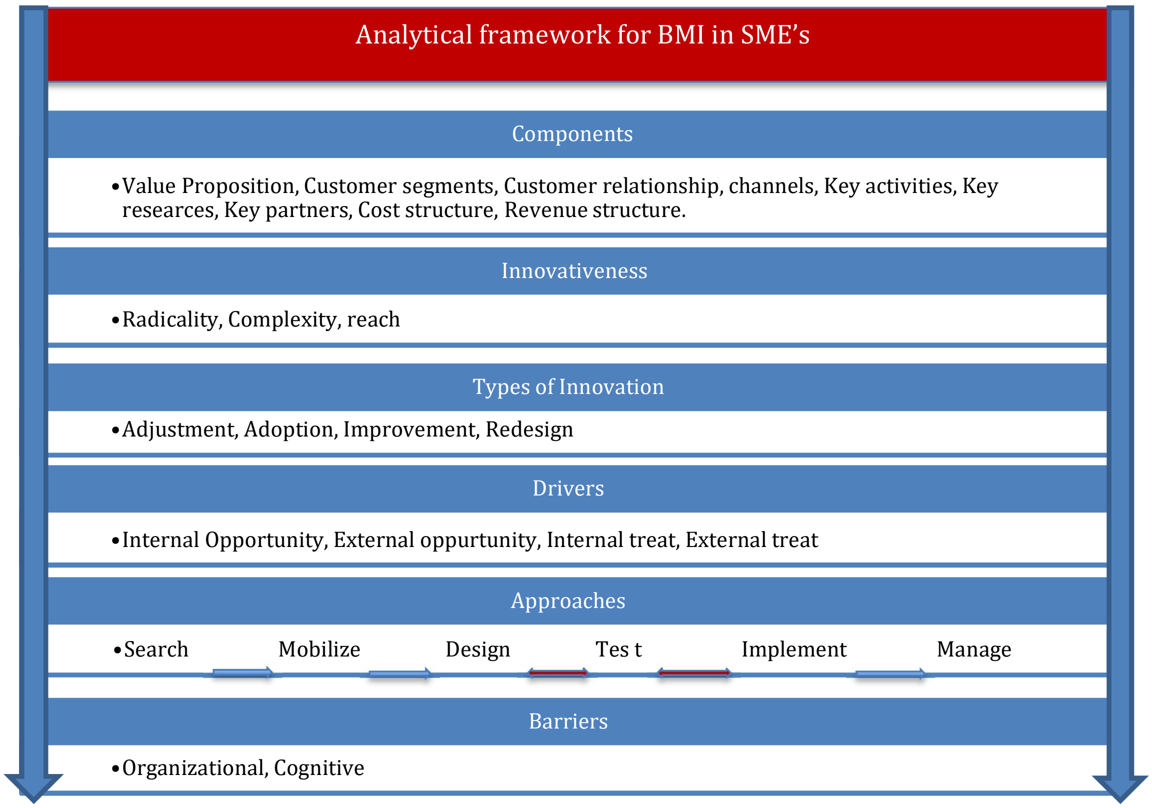

Figure 12: Framework of Analysis

Source: Authors.

The framework in figure 12 above will be used to analyse BMI in SME's. The first step will be to map the BM of the firms using the nine components framework suggested by (Osterwalder & Pigneur 2010). Then we shall measure the innovativeness of BM changes made by the firm in terms of radicality, reach and complexity. The next step will be to identify the type of innovation which is more relatable to each firm. Followed by the identifications of the antecedents for BMI. We shall also try to map the BMI process for the individual firms and compare it to BMI process suggested in theory. Finally we shall identify those factors which prevent the firms from innovation their BM or could render BMI unsuccessful. We believe that by analysing the firms on all this aspect we shall get enough knowledge to efficiently compare BMI across the different classes of SME's.

Building block	Description	Innovation	
		Incremental	Radical
Value Proposition	A company's offering of products and services.	Offering "more of the same."	Offering something different (new to industry).
Customer Segment	Customer segments a company aims to serve.	Existing Market	New Market
Channels	How the company reaches and communicates with its customers.	Using an already existing channel in a different way. (new to the firm or new to the market).	Using a channel which is new to the industry.
Customer Relationship	Actual interactions established with these customers segments.	Continuous improvement of existing channels	New relationship channels (e.g. physical/virtual/ personnel/peers,
Key Resources	All important resources required to create, deliver and capture value.	Acquiring new resources to upgrade or improve the existing resources within the firm.	Acquiring a resource completely new to the firm.
Key Activities	Activities performed by company to develop, produce and deliver its offerings	Doing "more of the same"	Doing something different (New to the Industry),
Key Partners	Partners who engage in different kinds of cooperation with a company,	Familiar (fixed) network	New (dynamic) networks (e.g alliance joint-venture)
Revenue	The cash flow of the organizational. How they make money	Slightly modifying existing revenue streams	New processes to generate revenues
Cost	Cost associated with creating and delivering value.	Incremental cost cutting in existing processes.	Disruptive cost cutting in existing processes.

Table 12: Definitions and examples for radicality in each building block.

Source: Authors

2.5 Literature Review on BMI in SME's

(Marolt et al. 2016)investigated the drivers (origin) of BMI, approaches and typology of BMI in four SMEs operating in Slovenia. Their focus was on the changes in core elements and, the similarities and differences of the origins and types of BMI across these four SMEs. They used a combination of frameworks from Mahadevan (2004), Bucheher et al (2012), Schaltegger et al (2012) for their analysis. The first for their components, the second for drivers and the third for typologies respectively. The authors found that all the firms had made core changes to their BM and they did so, often. Additionally, the types of BMI varied across the four firms examined. Furthermore, most of the firm had successful BMI, just one out of the four SMEs the analysed experienced unsuccessful BMI. One of the firms attributed a growth of between 300 to 400 percent of profits in a few years to BMI. Finally they uncovered that managers of SMEs develop their experience and competencies through BMI. The main critic here is that compared to (Bouwman et al. 2017) and empirica (2014) they sampled fewer firms, secondly they used just one country, finally, they did not differentiate between the category of SMEs (micro, small, and medium) and the barrier to BMI were not addressed.

Heikkilä et al. (2017) conducted a research to find if there was a relationship between the strategic goals of SME's and the ways they innovated their BM. The three strategic goals used in their study were to "starting a new business", growth and profitability. The research was done on 11 SME's categorized into Small, Micro and Medium. They found that strategic goals of SME's influence the changes they make on their business models. SME's which wanted to increase their profits, became more efficient by making better use of their resources and cutting cost. While SME's which wanted to grow, sought to improve their relationship with their customers and enlarge their customer market, so they improved their value proposition. Finally SME's with "starting a new business" as their main goal made changes in most or all of their business model components. They tested the changes made and repeated the process until they got customers. One shortcoming of their research was that the differentiation was focused on strategic goals rather than the categories of SME's. Thus the results turn to generalize SME's.

(Bouwman et al 2016) designed their research to identify how BMI differed across 13 countries located in the EU. And compare their results to BMI data collected through a CIS (Community Innovation Survey) from another study precisely Empirica (2014). Their research is still in progress since not all data has been collected yet. They used four elements to measure BMI; value proposition, ecosystem, financial arrangements information technology. They concluded that overall 37% of SMEs in the EU innovate their business model, but this rate varies from country to country. For instance while the BMI incidence rate in Italy was 61%, the same rate in the

Netherland was 21%.Thus it could be important to study business model innovation in a particular country since some country specific conditions may have an effect on BMI of SMEs and that particular country. Unfortunately their research is purely quantitative so less attention was paid to the factors which could have caused such differences.

Bouwman et al (2017) directed their research towards the drives and implications of BMI in SMEs but contrary to Marolt et al (2016) they used a wider sample, which included 28 SMEs located in the EU rather than a single country. Furthermore they also differentiated between micro, small and medium enterprises and also categorized their sample into start-ups, expanding and mature enterprises. Bouwman et al (2017) used 10 elements for their analysis of BMI; products and services, business networks, target market, technology, revenue model, internal resources or practices, channels, change in branding / promotional activities, pricing and cost structure. The authors reported that SMEs changed several elements of their BM simultaneously. They found out that an average of 4.8 elements out of the 10 elements were been changed simultaneously. Additionally, they observed that products and services (96 %), business networks (75%), target market (61%), technology (54%) were the most innovated BM elements by SMEs. Bouwman et al (2017) therefore concluded that for SMEs to be successful they need to innovate multiple elements of their BM rather than focusing only one. Moreover SMEs need to cherish their networks, identify good customer segments, use suitable IT and always improve their product or services. The researches also recognized market dynamics, innovative attitude and low business performance as the main drivers for BMI in SMEs. Other important findings were that SME's used BM by themselves or with the help of consultancy firms; BMI and service improvement are closely related; some SMEs have the ability and resources to set up a separate structure and run two business models simultaneously. Finally, decision makers in SMEs are usually confused when it comes to deciding which element or elements of the BM to change.

Empirica (2014) focused on identifying factors that influence BMI and their success. They equally intended to compare BMI of SMEs in Europe to those in the US and Japan. Another aim of their research was to search for the barriers and bottlenecks to BMI and what can help overcome them. They used 3 main components for their studies; value creation, business system and value creation. The researchers used secondary data from the European Community Survey (CIS), the Swiss ETH-Kohn and the US business R&D Innovation survey. They analysed BMI based on the four types of innovations proposed by the OECD that is product, process, market and organizational. Arguing that BMI as a composite type of innovation which can be found at the intersection of these four types of innovation. They concluded that BM innovators are underrepresented in Europe compared to the US. Moreover only 6 % of European SMEs according to the 2008 CIS were business model innovators, the number reduced to 5.5 % in 2010. Furthermore, BMI in SMEs also varied across countries. For instance Portugal had the highest share of business model innovators 10% of SMEs. In 2008 the percentage for Denmark was 5.7 %.

Saebi & Singh (2017) did a qualitative research on over 280 Norwegian companies to find out those who had innovated or changed their over the past 3 years prior to the study. The companies surveyed were categorized into 17 industries. They suggested four different ways through which firms could innovate their BM; new value propositions, capture value in a new way, change the way their products are been delivered and target new customer segments. Furthermore they were keen to differentiate between what they called BM adaptation, which they define as a company simply adapting their business model to recent changes perceived in the industry. And BM Innovation which they considered as introducing a BM not only new to the firm but to the industry. The found out that innovation was more present in the value proposition with about 25% of firms innovating meanwhile innovation was least present in value capture with just 3.5% of the firms innovating there. Additionally roughly 20% of the firms innovated their target market. But the highest overall change for both adaptation and innovation was observed in value delivery. Likewise, what change the least, with over 84% of firms remaining unchanged was value capture. Less than 20% of the firms actually changed their schemes or sources of revenue. It equally important to note that most of the value adaptation was done on the value delivery. Overall ⅔ of firms did not innovate their products and almost half of those who did, simply adapted their products to that of their competitors. Finally, over 55% of the firms surveyed experienced no change in organizational structure and management practices. And over 90% of the firms reported industrial partners were their source of innovation. However one of their shortcoming was that they failed to distinguish between SME's and large firms in their results.

2.5.1 Literature Gap

Firstly, all the researchers above limited their framework of analysis for BMI to drivers, typologies, innovativeness and barriers. None has researched "approaches" to BMI in SMEs. Secondly, although the conclusions of (Bouwman et al 2016) and Empirica (2014) highlight the fact that BMI in SMEs varies from country to country, only Marolt et al (2016) conducted a research on BMI of SMEs in a specific country and none of scholars we identified has done a research on BMI of SMEs in Denmark. This Literature gap therefore needs to be filled. Lastly, just two researchers Bouwman (2017) and Heikkilä et al. (2017) categorized SMEs into micro, small and medium in their research. But neither of them had designed their research to analyse the differences and similarities in each of these categories. Or drew conclusions related to the categories of SME's. Thus creating a void which could be further explored. We shall address these three gaps in this thesis, thereby differentiating our work from previous scholars but with the aim of contributing additional knowledge to the foundations already established in current literature. We shall analysed the drives, types, approaches, barriers of two categories of SME (micro and small) in Denmark.

CHAPTER THREE

METHODOLOGY

This chapter encompasses the methodological choices and tools used for the purpose of presenting this research work. We discuss the approach chosen for the purpose of this research as well as the, research design, forms of data collection and data analysis techniques. Additionally, we discuss the steps taken to ensure high validity and reliability of the findings. Furthermore, in this chapter we also explain the research paradigm which leads us to how and why the methodology was followed to accomplish this research work.

3.1 Research philosophy

According to Kuada (2011) the term paradigm can be attributed to Kuhn (1970.) Kuhn presented theoretical structures of scientific revolutions to describe streams of research in scientific fields. A research paradigm *is "the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed"* (Kuhn 1976). Paradigm represent a "worldview" that defines for researchers, the nature of the world and the researcher(s) place in it and the range of possible relationship(s) to that world. (Guba & Lincoln 1994). This research follows the constructivist paradigm or philosophical assumption. *Constructivism* view that "reality" is subjective and is socially constructed. This stems from the view that 'reality' is not objective and exterior, but is socially constructed and is given meaning by people in their daily interactions with others.

3.2 Research Approach and Types

3.2.1 Research approach

According to (Dudovskiy 2018) research can be approached in three ways; the inductive approach, the deductive approach and the abductive approach. Deductive approach focuses on testing the validity of theories, assumptions or hypothesis. Meanwhile an inductive approach aims at generating new theories for generalization. Whereas the abductive approach falls in-between the first two. It involves continuous interaction between ideas and observation and seeks to explain "puzzles" or surprising facts. This research takes an inductive stand because contrary to the deductive or abductive approach, conclusions reached are not scientifically tested. Furthermore the researchers focus more on theory generation and building than on theory verification or falsification.

3.2.2 Type of Research

Research can be classified in different ways. We shall review some of this classifications to be more elaborate on the type of research we are conducting. Dudovskiy (2018) argues that research can be differentiated based on the nature of the research. Research can either be descriptive or analytical. Descriptive research also known as *Ex post Facto* research takes place what the researcher has no control over the variables thus can only uncover and report what is happening or what happened. Whereas analytical research uses information already available to provide a critical evaluation. (Kothaki 1990). Because we did not have any information available or control over the variables for this research we can conclude that it's a descriptive type of research. Furthermore research can also be classified according to the purpose of the study. It can either be an applied research or fundamental research. (Dudovskiy 2018). Applied research usually aims at finding a solution to a particular problem while fundamental research is directed towards theory generation. (Kothaki 1990).This research is not an applied research since we don't try to resolve a particular problem but rather a fundamental research since our goal is to contribute new knowledge to already existing scientific knowledge on BMI. However research is generally classified into two main categories, Qualitative and Quantitative research. Qualitative research involves collecting, analyzing and interpreting non-numerical data in other to understand behaviors from the perspective of the studied units and explain their views. (Crossman 2018; Hennink et al 2011). Likewise quantitative research makes use of numerical data to understand large scale trends and usually involves statistical operations (Crossman 2018).In this thesis we used the qualitative method because it's more suitable to understand and analyze BMI in SME's.

3.3 Research design and Strategy

Yin (1994)defines a research design as *"the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions"*. In other words, the research design encompasses all actions taken by the researcher from the research questions to the conclusion. It includes the research questions, the criteria's for choosing relevant data, the way the data will be collected and how it will be analyzed. It's a plan for getting from initial research questions to the conclusions. (Yin 1994). Qualitative research could be designed in many ways but the most popular are ethnography, narrative, phenomenology, ethnography, grounded theory and case study. (Creswell 2013). We adopted the case study research design for this thesis. According to Yin (1994) a case study design is good for answering *"'how'' or "why" questions about a contemporary set of events over which the investigator has little or no control".* One of our research questions is to understand "how" BMI varies across the different classes of SME's. Which is why we believe using a case study design is appropriate. Furthermore, in a case study design variables from different situations can be combined to produce a single result. It is also easier to utilize theory when collecting and analyzing data. (Yin 1994). This also motivated us to use the case study design since we could easily integrate the framework of analysis we developed from theory.

Yin (1994) outlines 5 main components of a good research design. Which are the study question, the proposition, the units of analysis, the logic linking data to propositions and the criteria for interpreting findings. Our main research questions are to find out how SME's innovate their BM and also how BMI differs across the categories of SME's. We selected 5 SME's located in Aalborg, Denmark as our unit of analysis. All SME's used in this study fall within the definition of SME's according to the European Commission (2005) and are located in Aalborg. Yin (1994) distinguishes four different types of case study research design (see figure 14). He opines that a case study design can either be single- or multiple-case and will take either a holistic or an embedded approach. A holistic approach makes use of a single unit of analysis while an embedded approach uses multiple unit of analysis.

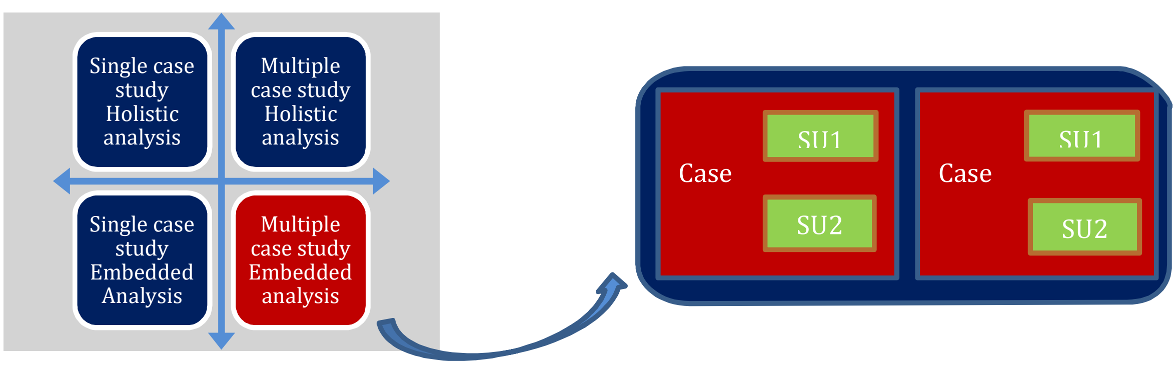

Figure 14: Case study design.

Source; Yin 1994.

For the purpose of our research we used the multiple case study since we studied two cases; micro SME's and small SME's. Furthermore, we used an embedded approach since there was more than one unit of analysis in each case. Specifically three firms for the case of micro SME's and two firms for small SME's. Therefore the specific case study research design used was the multiple case embedded analysis. The single case study design was not used since it's more appropriate for rare events or revelatory purpose. (Yin 1994) Which was not our case. On the other hand evidence from multiple case studies is usually more convincing and provides a better ground for comparison of our cases. We used more than one unit first to generate more insights and also because it favors the generalizability of our findings. The two major problems of multiple case studies are that they require much more resources and time. And provides a little base for scientific generalization. (Yin 1994).

3.4 Research methods (Qualitative)

There exist many different methods to collect data in a qualitative research. Some of them are ethnography, participant observation, in-depth interviewing, and conversational interviewing, audio visual etc. (Bryman & Bell 2011; Creswell 2013). Qualitative interviews are broadly used to collect data in a qualitative research. (Kuada 2011). According to Kuada (2011), qualitative interviews *"allow the researcher to gain insights into the "lived lives" of the interviewee(s) in his or her own words"* Interviews can be done in many ways. They could be done face-to-face, by telephone, by email or with focus group(s). (Creswell 2013). All the interviews in this research were done face-to-face. Kuada (2011) describes two broad classes of interviews, standardized and non-standardized. While standardized interviews are used to gather data which will be analyzed quantitatively, non-standardized interviews are used to gather data to be analyzed qualitatively. Kuada (2011). Therefore they help the researcher understand the what, the how and also the why. Thus the semi-structured interview which is a form of non-standardized qualitative interview has been used in this research. An advantage of semi-structured interviews is that they are easily adaptable. Prior to the interviews, a guide was developed. The objective was to learn about the live experiences of the interviewees in their own word. As stated by Magnusson & Marecek (2015) the preparation of an interview guide is *"an interactive process that requires several drafts before the final draft is made"*. After the first interview some modifications were done to arrive at the final interview (see appendix 1 and 2) for the first and second interview guides) which was used in subsequent interviews. Our final interview guide had 7 main themes with 3-4 questions for each theme. (See table 13 below).

Themes	N° Questions
Questions for general knowledge on the firm	4
Questions on the nine building blocks of the BM	9
Questions regarding business model change	2
Questions about drivers	2
Questions about innovativeness	3
Questions regarding processes	2
Questions regarding barriers	2

Table 13: Interview guide and themes

Source; Authors

Kauda (2011) states that qualitative interviews alone can be used to collect data in a qualitative research. An advantage of interviews is that the researchers are in control; we could therefore pose follow up questions to make sure every relevant area was covered. Unfortunately, information from interviews is not always sequential because interviewees have the habit of going back and forth when recounting their experiences. (Kaunda 2011). This can be problem since it could confuse the researcher. Although the nature and order of the questions sometimes varied depending on the interviewee, we made sure all the themes had been touched in each interview. And contacted the respondents again when necessary. Another main problem with using interviews is the lack of experience of the interviewer. In our case, both researchers had adequate experience in interviewing since it was not their first time. A third problem could be the inability of respondents to properly express their selves or their point of view. Creswell (2013). This was a real problem while conducting this research. Since some of the respondents spoke Danish as a first language or used it as the working language in the firm. However a majority of the respondents were good English speakers, so in our opinion it has not affected to any significant degree the quality of our data.

In qualitative research, the researcher can purposefully select the participants more suitable for his or her research. (Creswell 2013). Purposive sampling also known as deliberate or convenience sampling was the sampling technique used to select interviewees. This technique maybe biased if the population are not homogenous. However in our case all units of analysis were homogenous and the same selection criteria's were used. We therefore used purposive sampling to select our sample based on our main criteria which was the categories of the SME.

3.5 Data collection and Analysis

3.5.1 Data collection

There exist two main types of data, primary data and secondary. Primary data can be described as data collected for the first time with a particular purpose in mind. Primary data is usually collected using surveys, interviews and direct observation. Whereas secondary data is data which was collected for other purpose and is used by the researcher. Some sources of secondary data are websites, journals, articles etc. An advantage of using primary data is that we could get exactly the amount and quality of data we needed for our research. Thus the data is more accurate and reliable. On the other hand secondary data help us save time since it was easier to access. Additionally, it was the only way to get some of the information we needed for this study. We used both primary and secondary data in this research. By using both sources of data we were able to get more information and also to get data faster.

3.5.2 Data Analysis

Data analysis concerns the transformation of collected data into something meaningful. According to Dudovskiy (2018) qualitative data such as interview transcripts, notes, documents etc. can be analyzed in five different ways. Which are; content analysis, narrative analysis, discourse analysis, framework analysis and grounded theory. In this thesis, we used the framework analysis to analyze BMI in each unit (firm) and we used the content and discourse analysis to compare BMI across the categories of SME's in Denmark.

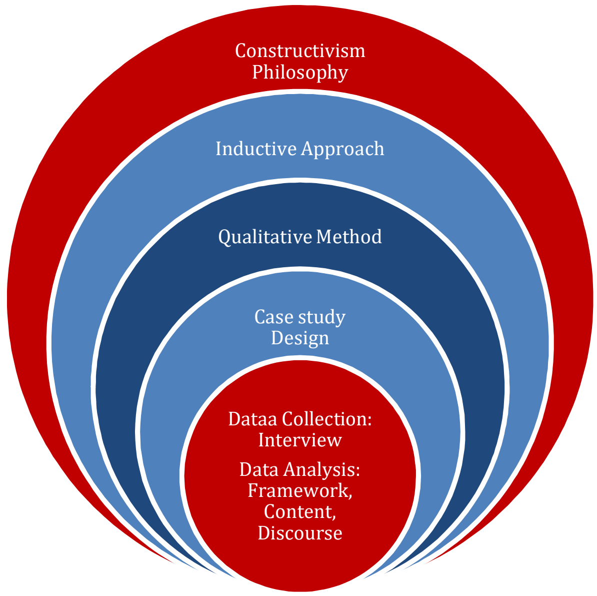

Figure 15: The research onion

Source: Adapted from Saunders et al (2012)

3.6 Validity & Reliability

The validity of the data collected is very important when qualitative interviews are used since the researchers' needs to prove that information collected was neither misunderstood nor misinterpreted or altered, thus accurately represent the interviewee's words. Validity can be evaluated on the basis of the trustworthiness and authenticity. (Bryman and Bell, 2011). Trustworthiness, will include credibility, transferability, dependability and confirmability (Kaunda 2011). This research is credible because all respondent were sent a transcript of the interview to validate before it was analyzed. The research is also transferable in the sense that the contacts of all respondents involved are well documented and can be reused by other researchers if necessary. Dependability was ensured since all the interviews were transcribed and are available. Regarding confirmability, the interview was conducted in good faith by both researchers with no intention of twisting the findings. This research is also authentic since all people relevant to this research were involved and their viewpoints dully considered.

As stated above we used multiple case studies. A total of 5 companies were interviewed on how they innovate their BM. The data was collected through interviews with at least one top representative of the company. One interview was done with two persons and the other four were held with a single person. So in total six people were been interviewed. Among the six interviewees, 3 were the owners of the firm, one was the director, one was the manager and one was an administrative assistant.

No interview guide was sent to the interviewees prior to the interview but the purpose of the interview was briefly discussed with respondents with careful attention not to influence their responses in the interview. The interviews lasted between 30 mins to 1 hour. Both researchers asked questions during interviews and both recorded the interviews to avoid technical failure. After each interview we discussed with each other to ensure internal reliability. The synthesized transcripts were then sent to our interviewees to validate. Some things were added, removed or modified.

As explained earlier all interviews were face-to-face, thus the researchers were able to capture both verbal and non-verbal ques as well the emotions of the interviewees. Which played a key role in interpreting some of their statements. Moreover interviewees are more likely to reveal sensitive information in a face-to-face interview because the physical presence of the researcher(s) engenders confidence (Kaunda 2011). Furthermore a follow-up interview email was sent to one of the interviewees for some clarifications. Among the five firms we investigated, three are legally registered as IVS (Iværksætterselskab) and two as APS (Anpartsselskab). One of the firms is a tech company, which develops and sells software for recording videos in Sport activities. The second one repairs and sells used-bikes. The third, is a trading company which buys and sells food and medicine. The fourth is a cleaning company and the last one is a restaurant/café.

3.7 The Research Flow Chart

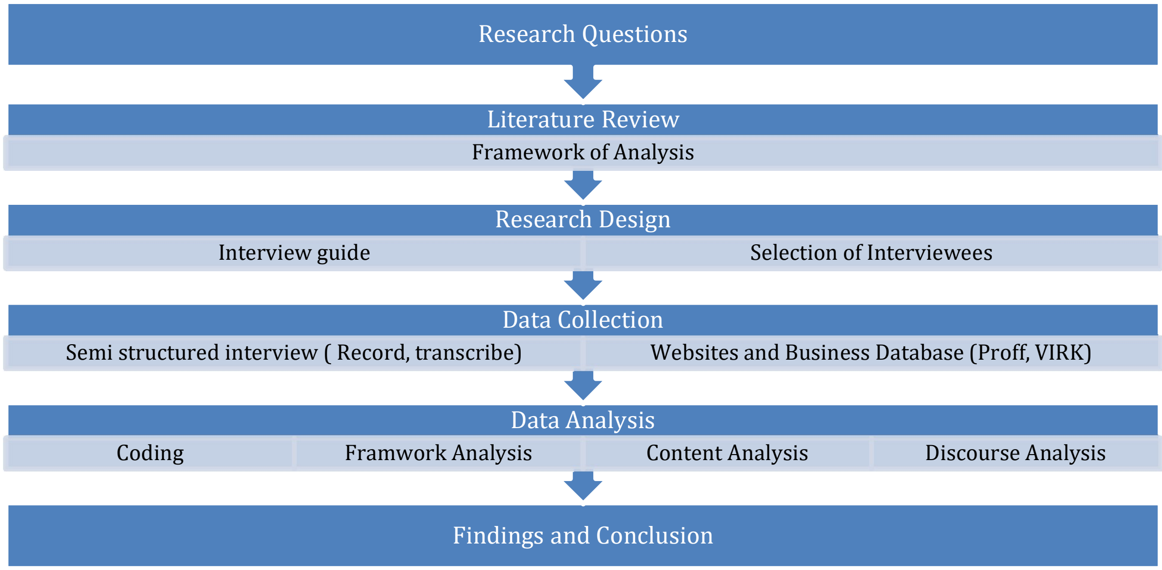

Figure 16: The research flow chart

Source; Authors

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

In this chapter we shall present and analyze the data we collected with the aim of providing answers to the research questions we pose in chapter one. This chapter is divided into two sub parts. In the first part we shall present the data we collected from the different interviews. And in the second part we shall analyze the data using the theory presented in chapter two.

4.1 Interview Findings or Data presentation

In these sub-parts we shall present a summary of the essential information we receive from interviewing individuals in the SMEs we selected. The interview results shall be presented according to the interview themes highlighted in chapter 3. Thus the interview findings shall be classified into the background and description of the company, the business model and components, innovativeness, drivers, approaches, barriers and other findings. The headline “other findings” was added for new information we think is important for our research but can’t be situated in the five themes above. Its information we did not plan on receiving, but did in the course of the interview. Additionally, it's important to note that the components of the business model(s) and the background and description of the company were done combining knowledge from interviews with other secondary data gotten from their websites and the Danish business databases PROFF and VIRK. Finally, all information about the innovativeness, drives, approaches and barriers are solely based on the interviews.

4.1.1 Flexifix

A) Background and description of the company

Flexifix is a bicycle repair shop located at Hjulmagervej 17, 9000 Aalborg. The business is owned and operated by Jiri Krupa with just one employee. They offer bike repair, renovation/maintenance, renting of used bikes and sales of bikes. Jiri Krupa founded Flexifix in 2015 with the help of his friends in his garage. Due to lack of space, he moved to their present location. The business was motivated by the idea to provide a low budget but high-quality repair solution for international students who he found, had many problems with their bikes in Aalborg. However they soon realized that there was a large customer segment, which covers not only internationals but also a small percent of Danish nationals. There was also the demand for used bikes as well and tourist who visited Aalborg during summer periods needed bikes for rentals.

Unfortunately, we were able unable to find secondary data about the annual turnover and balance sheet of Flexifix. Nevertheless because it has just two employees we categorized it as a “Micro SME”. Moreover according to the three legal forms of SME’s proposed by the European commission (2005), Flexifix is an autonomous SME (data.virk.dk). Base on the Danish company registration act Flexifix is an entrepreneurial company (IVS) (www.erhvervsstyrelsen.dk). The interview was conducted with the owner/ manager Jiri Krupa.

B) The Business Model and Components

Jiri krupa was aware of the concept of the business model, most of his knowledge about the concept was based on his educational background, however implicitly or explicitly he could not articulate the business model of the business. In his own words, *“I think the model should be something that connects all the aspect of the company”*. Because we needed to have a comprehensive understanding of the business model of Flexifix, we had to design one for them. The business model is found in Figure 4.1 below.

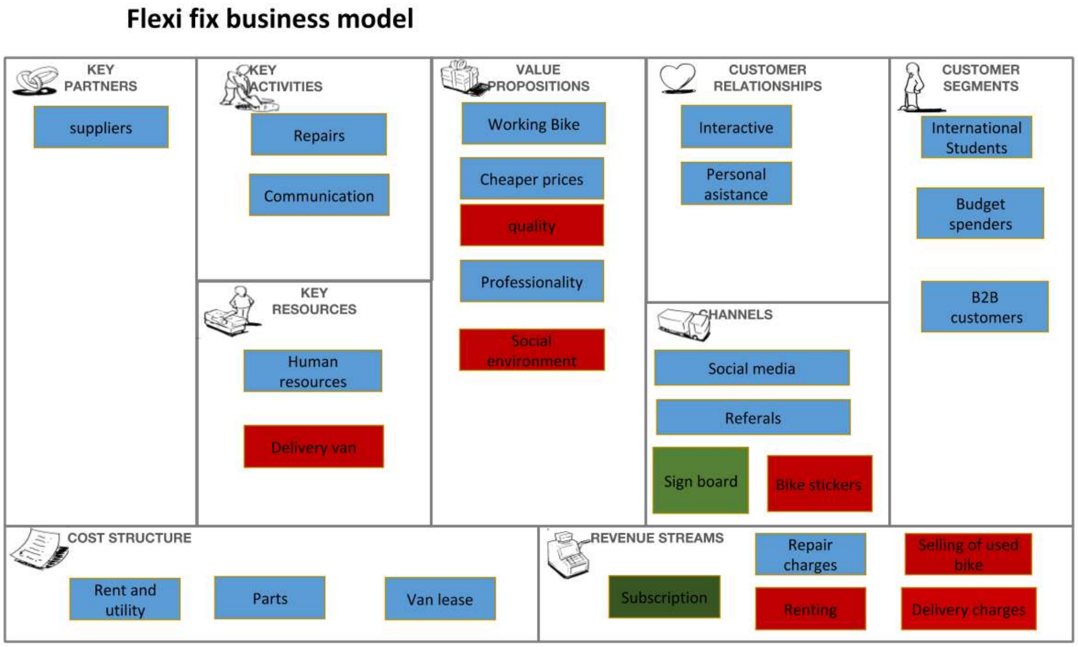

Figure 17: Flexifix business model

Source: Own illustration, based on Osterwalder & Pigneur, 2010, pp.18-19 and the interviews + website.

The stickers in blue describe the business at the early stages; the red stickers describe the changes made on the business model of Flexifix. The stickers in green indicate what they plan to change.

The company has undergone strategic changes, which have shape the way they do business today. Changes in their business model has been a continuous development process through the business life cycle, *"It's like continues development every day, it's not... like on a daily basis but it's definitely on a monthly and quarterly bases".* They made changes in their value proposition key resources, channels and revenue. For instance there was a major change in their value proposition; they added quality as value offer by changing the quality of the parts used for repairs. *"This was quite an important change I made,.....from the beginning, we were just directly focus on the prices so we offer only budget fixing for bikes but 2-3 months ago we started also selling better parts so when the customers come, I offer to fix it with basic parts for this prices or they can get better part for higher prices which of course works well* *because it opens up the range for customers we can target, Now it's like budget and midrange customers".*

C) Innovativeness

The interviewee was unable to clearly articulate the degree of innovativeness of the business model, however base on the response, we detailed that there is a low degree of radicality in their business model changes; mainly small incremental changes were made. According to the interviewee, BMI (changes) is a continuous development process. Furthermore, looking at their business model components changes it is evident that the business has undergone certain changes, the degree of complexity can be visible on the number of components changes. Jirri has made changes in 4 components of the business model canvas; hence we can conclude that there is a low degree of complexity in the innovativeness of Flexifix. Additionally, the interview responses suggest that the innovativeness reach is low. Flexifix is exclusively built on the ideology of providing low budget bike repairs thus most changes made in their business model were only new to the firm and not to the market.

D) Drivers

Examining the drivers of business model innovation in Flexifix, we found out that changes in their business model is based on the desire for improvement. According to the interviewee, changes in the business model is partly due to his desire to improve the business, for example changes in the quality of parts used for the repair was motivated by his desire to provide quality service for his customers. Additionally it was the desire to increase the internal capacity of the business which drove him to make some changes with the shop space to create more space. His inability to handle everything simultaneously from administration to the repairs or sale of used bike, made him hire someone for support. Furthermore, Flexifix business model is also driven by the opportunities from the external environments. For example Jirri explained that while the main focus of the business at the initial stage was based on the repairs of bikes at a budget prices, they soon realized that there is a new market for selling used bike with a large customer base ready to be served. Additionally, he recognized a market opportunity for rental of used bikes. He saw that tourists who came to Aalborg especially during the summer season and students who came in September required bikes to ease their movement around the city. He also made changes due to external threats. To Flexifix, competition posed an important threat because if the customers were not satisfied they could easily switch. Switching cost in a business like that of Flexifix is quite low and customers could easily switch, so he made changes to ensure customers where happy and satisfied with their services.

E: Process

Business model innovation at Flexifix did not have a formal procedure. The business model innovation process was mainly initiated due to the customer's demand. Upon which they went further by experimenting if they could do that particular changes. Finally they tried the new changes on a couple of customers and if it went well, they adopted the changes and later made adjustments where necessary. The BMI process also originated from searching the activities of competitors and making changes in their BM.

F: Barriers

Flexifix like most businesses face some challenges innovating their business model. We examine that they face organizational barriers rather than cognitive barrier. Finance and human resource was a major barrier to the BMI process. Jirri, required skilled workers to handle operations while he handles other aspects of the business which was also costly for Flexifix as a young business which is just two years old, *"When I hire someone I need to be able to pay him which wasn't possible because we were doing a lot of things at once",* To overcome these barriers, he had external help from his friends who help out voluntary for no pay. He also noted that one important barrier to change is space (capacity). So even though his friends could help him on the shop floor, mobility was a problem and the lack of space meant some changes within the business were going to be difficult to make at that particular time. So to him the most important organizational barriers have been space and people. Time was and is still an important problem to him, managing his time properly between receiving orders and repairing, communicating with the customers and also making changes within the business has been a huge barrier because it required time management to make changes in their business model and assess the impact of these changes on the business. "*Time, people, space, I mean I have money but they cannot solve all the issues at hand like now… those are the main obstacles at some point . …."*

4.1.2 Level Up

A) Background and description

Levelup IVS is a software development company in Aalborg located at Brettevillesgade 14, 9000, Aalborg. It was established in July 2014 by 3 co – founders. Miklos Emody is the CEO, Rafal Markiewicz is the software developer and Rabin Rimniceanu is the web developer. The company provides a football video analytical software application for football clubs at all levels. The application helps football coaches to capture, breakdown and analyze the important moments of the game.

Levelup is an SME. The company presently employs five people, 3 permanent employees mainly the partners and two interns and had an annual turnover of 120.517 DKK (data.virk.dk) in 2017. Furthermore Levelup is categorizing as a micro enterprise. According to the legal forms define by the EU commission of 2005 Levelup is a partnership enterprise made of 2 equal partnership (data.virk.dk). Based on the Danish company registration act Levelup is an entrepreneurial company (IVS) (www.erhvervsstyrelsen.dk). The interview was conducted with the CEO Miklos Emody.

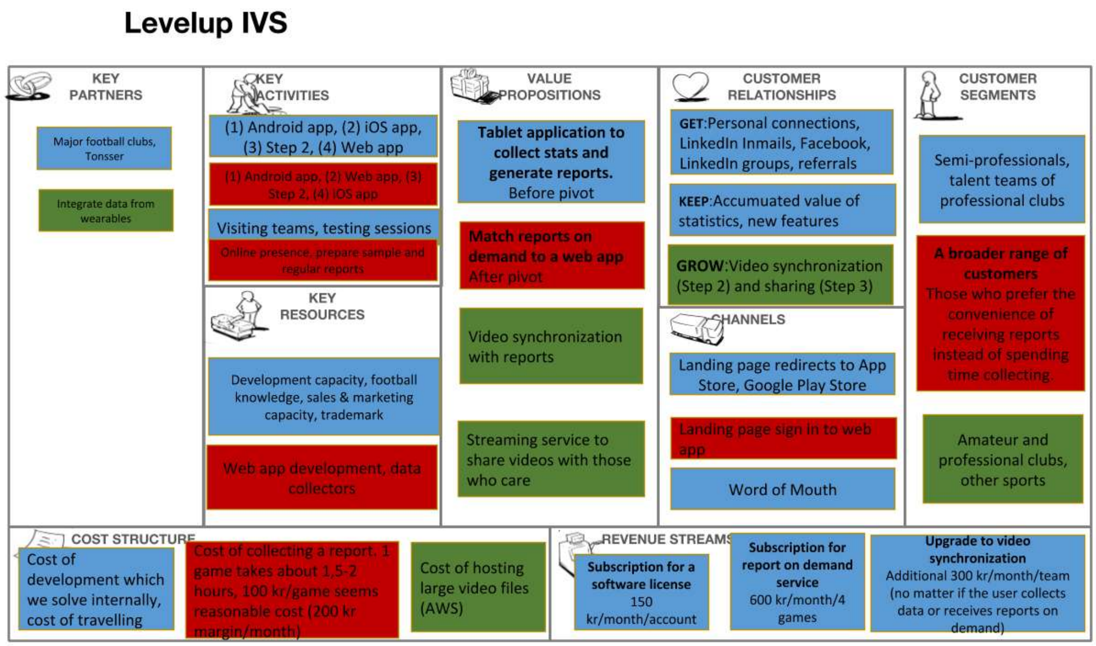

Figure 18: The business model of Levelup (Received)

Source: Levelup IVS

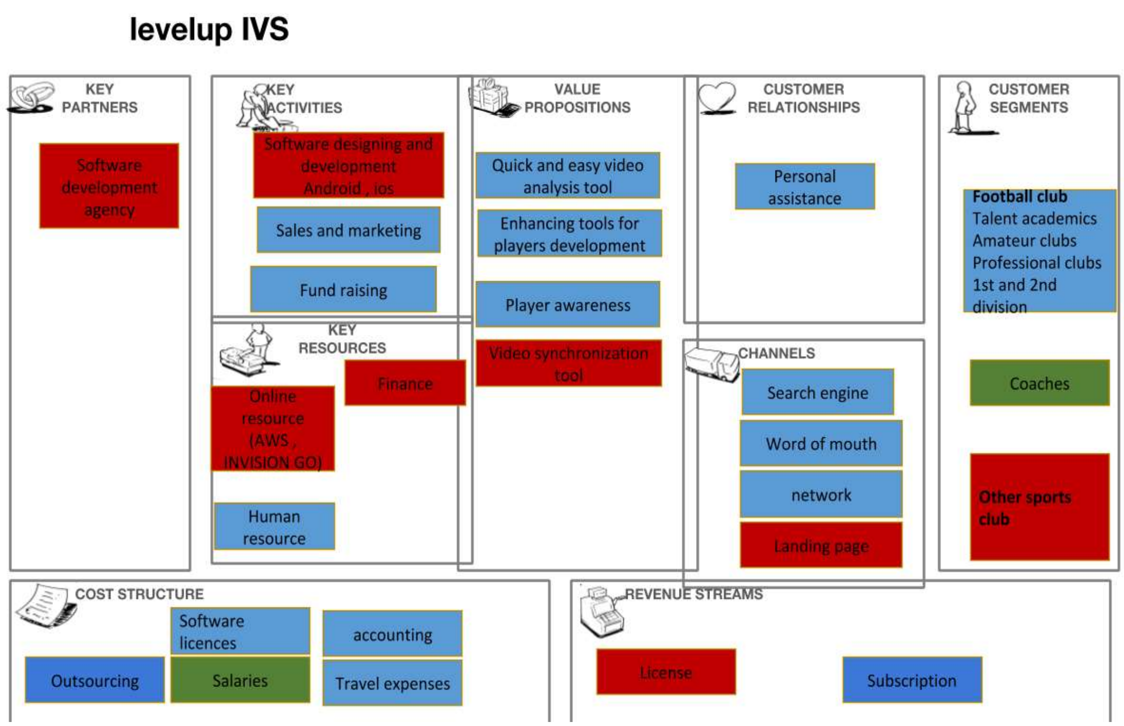

Figure 19: The business model of Levelup (Mapped)

Source: Own illustration, based on Osterwalder & Pigneur, 2010, pp.18-19 and the interviews + website + Business model of Levelup

The business model canvas in figure 4.2a is the initial business model of the firm presented to us by the CEO. However because most of the plan changes in green had already been made, we found it necessary to map out another business model (figure 4.2b) base on the interview. The stickers in blue describe the business at the early stages; the red stickers describe the changes made on the business model of Levelup. The stickers in green indicate what they plan to change.

B) Business model and components

Unlike Flexifix, the company had a clear and well-articulated business model. According to the CEO the business model was prepared from the initial start of the business using a business model canvas from Osterwalder and Pigneur (2010) alongside the business plan and adjustments are made on their business model as the company develops. *"I had to write a business plan and do a business model connected with canvas….So I did these things early on".* However, just to validate the assertion that Levelup already had a business model and could articulate their business model, some of our interview questions were focused on mapping out their business model based on his response and comparing with the already existing business model.

Similar to most firms in their early stages, Levelup have made vital changes in their business model. They have made changes in their value proposition as well as other components of their business model, for example according to Emody, when the business started their application was mainly designed for android devices but they soon realized that fewer people used android devices and so they needed to build the software on IOS (Formerly: iPhone operating system) to fit with the requirement of their customers. Furthermore the purpose of the software was altered to provide more videos rather than statistics. *"Business model change all the time….. Like first... we focus more on statistics and then we changed to videos….we started developing these for Android tablets then will realize no one uses Android tablets, we had to have it for the iPad".* Additionally, he explained that there has been a change on the software user interface as well to make it simpler and they also made adjustment on the software to make it compatible with the use of a lens and a button for easy manipulation. *"We simplify a lot of the product, it used to be more difficult and more geared towards facial and now this is something you can set up basically with wide* *angle lens and then you can clip this on here and then film again from this angle"*. According to the CEO, the business model is constantly evolving and changes are constantly made on the business model.

C) Innovativeness

Levelup as an innovative business is frequently making changes on their business model, as stated by the CEO, they business have undergone some radical changes as well as incremental changes, the most radical change made to their business model was changing the platforms that is moving it from android to IOS and moving their value proposition from a statistical analysis to video analysis *"These big changes we do maybe once a year ...so far ... moving from Android platform to IOS and moving from statistics to videos"*. Furthermore the most important incremental innovation to him has been the modification of their software from a complex to a simpler version and easy to use and the addition of a button and lens control functions on the application *"I will consider that adding the simplifications to our software…. that was incremental…. adding buttons"*. When asked about the reach of the innovation, the CEO asserted that there is a high innovative reach. According to him the innovation was not only new to the market but it was also changing the industry trends, most software were either used with desktop or those you could find on an IPad did not have all the functions, you needed a separate camera for the videos before you could make the analysis *"There is a lot of Novelty in our product……firstly the way this is changing the industry we are in… it's mainly on portable devices….our focus is on mobile devices".* Furthermore, there is a high degree of complexity of business model innovation in Levelup. According to the CEO, the constantly make changes on their business model components and when that is done it eventually trigger changes other components *"If one thing changes the other things you need to adjust, if we change a part of a product we have to change our website pages or the pages in the applications or presentations or maybe our business plans".* In total, 7 components of their Business model were changed.

D) Drivers

Building on the interview we found out that innovation at Levelup was mostly driven by external forces. The respondent detailed that changes were mainly based on their customers feedback, for example at the early stage of the business they proposed a statistical analytical software but soon found out that clients were not interested in the statistics. They recognized an external opportunity in the market to provide video analytics software, so they pivoted to developing video analytic software. Furthermore based on the feedback they got from their customers they were able to make minor changes in their business model for example changing their product details from complex to simple user interface and so base on the feedbacks they changed the platform from android to IOS. *"We were trying to sell statistics, clients said it was interesting but they don't care about statistics that much it was all about videos. At some point we had to ...refocus on videos"*

E) Process

The business model innovation process at Levelup mainly started with feedback from customers, the CEO discussed with clients extensively about their product to get their reactions and what they disliked. The next step in their business model innovation process was talking with the partners and looking at the possibilities of how change can be done on their business model. *"I recognize what's wrong and then share with my co-founders, and explain to them that we have been doing this wrong, normally,...I also try to explain to them how we can fix it"* .The next step in innovating their business model is by searching for new ways of designing and how their application should be modelled to look like. They work together on the new design and the next step is testing and depending on the feedback received they make adjustment.

F) Barriers

We found that in innovating their business model, Levelup face some challenges. In the interview with the CEO we could distinguish both organizational barriers and cognitive barrier. According to the CEO like most startups the main constraint was related to finance, another barrier stated by him was time. Because changes entails time, it was a barrier to them because whenever changes were to be done, it meant spending a lot of time to make the changes which was also costly *"we need the time to carry out changes..... need a longer runway to carry-out this changes instead of 6 months to 1 year .... So not just hesitation, not just the budget and finding new ways to having income to the company."* Furthermore there was some sort of cognitive barrier every time they make changes because they always had a second thought about the change and if it was necessary *"They listen to this suggestions and they can* *have a second guest are you sure this is the right way because this doesn't make sense here"*.

4.1.3 Peemix

A) Background and description

Peemix IVS is a trading company located in Aggersundvej 39, 9220 Aalborg. They are specialized in the sales of used, refurbished and new medical equipment and spare parts worldwide. Their main target market for equipment's is Africa. They also trade in food to countries across the globe. Peemix was founded in 2016. Originally two partners owned Peemix but due to some differences they had to split. Now it is owned and managed by Emmanuel Oban. The company currently have 9 employees which include two permanent employees located in Denmark, and the six others are affiliated employees located in the US, Cameroon and Russia.

Unfortunately, we were able unable to find secondary data about the annual turnover and balance sheet of Peemix. Nevertheless because it has less than 10 employees we categorized it as a "Micro SME". Regarding the legal form, it's an autonomous SME since it's fully owned by one person (data.virk.dk). The interview was conducted with the owner and manager Emmanuel Oban. Base on the Danish company registration act Peemix is an IVS (www.erhvervsstyrelsen.dk).

B) The Business model Component

The manager of Peemix knew about the business model concept but was unable to explicitly articulate the business model of the firm. We therefore mapped out a business model for the firm. (See figure 4.4) Furthermore, although he could not clearly articulate the business model of the firm, the manager of Peemix believed that their business model itself is quite unique compared to the business models of firms that operate in the same market because they combine multiple forms of trading while maintaining back to back trading (He defines back-to-back trading as buying and selling without keeping any inventory) as their core business. *"We have a business model that is a little bit different from what our competitors are using. Which is back to back trading and developing the business from that perspective."* Additionally they barely change their business model. When asked how often they changed their business model the manager responded *"Not really that much but it will change as the year goes by"*. The main components they have changed in their business model are their value proposition, channels and key resources. Initially they only sold medical equipment's but overtime, they started trading in food. Additionally they have added the forms of trading they do. *"The first thing we have done is we have been able to not only do back to back trading but we have been able to do what we call the underground selling"*. (Underground trading means trading with very little marketing and advertising campaign, due to lack of advertising budget). Furthermore they have increased their key resources by acquiring a warehouse.

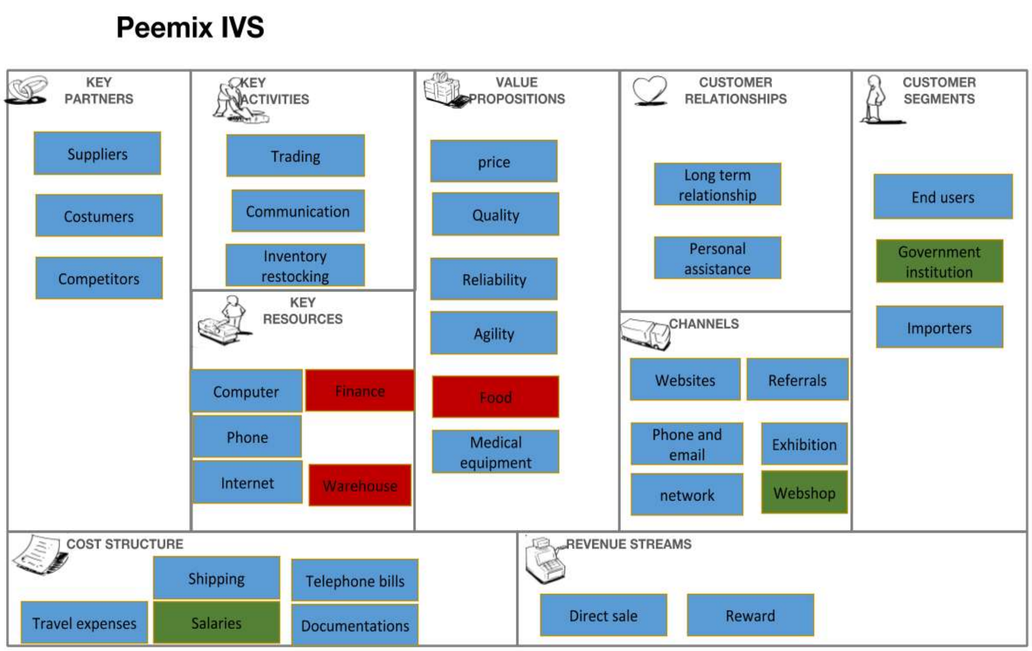

Figure 20: The business model of Peemix

Source: Own illustration, based on Osterwalder & Pigneur, 2010, pp.18-19 and the interviews + website.

The stickers in blue describe the business at the early stages; the red stickers describe the changes made on the business model of Peemix. The stickers in green indicate what they plan to change.

C) Innovativeness

With regards to the radicality of business model changes, most of the BMI changes carried out at Peemix are incremental changes. *"I think I am doing mostly incremental changes"*. But some major changes have also been made. According to the manager on of the major change they have made is in their revenue stream. They have changed their payment terms. At first they only accepted prepayment before the goods were delivered. Now they also make sales on credit. *"My customers made prepayment but right now, I am changing my payment terms ... I have accepted that they can now pay me after the goods have been shipped. That is a major change"*. As for the reach of innovation, all they changes done in Peemix were only new to the firm. Additionally, we found a low degree of complexity in the BMI, since only 3 components of their business model were changed.

D) Drivers

From the interview we had with Peemix we could discern that the drivers to BMI were both internal and external. They made changes as a result of external threats from their competitors. When they realize that their sales were dropping and some of their clients could leave because they were offered better payment terms by their competitors they decided to change their payment terms accordingly. *"It was my principle that all my customers made prepayment but right now I am changing my payment terms because I can see that I am not making enough sales if my customers need to go with prepayments so I have to accept that they can now pay me after the goods have been shipped. ...But for me it was also because my competitors were providing excellent payment terms. And my customers were asking me; why should I buy from you if the price is the same"*. Some changes are also driven from within since the manager is always trying to differentiate Peemix from other firms in the market and to provide better quality service to his customers.

E) Process:

Peemix always begin their BMI process by doing some research on their market to see if the change they intend to make is possible. Then, the manager usually decides either alone or after consulting some individuals if weather to make the change or not. When asked how decisions to implement changes were reached in Peemix he replied, "*I have mentor so most of the time I use the service of my mentor and my accountant* *to discuss if I have to make a huge change. But 90% of the time I take the decisions myself."* The manager then oversees the change process to make sure everything works out well. *"I try to understand how best I can manage the change and prepare for the outcomes"*

F: Barriers

Similar to the previous companies examined, Peemix equally had some factors, which prevented BMI. Especially organizational barriers. The main one was resource, especially financial resources. But they also lacked some human resources. *"Finance, I think is the biggest barrier I have right now. Yes that is the biggest. The other one I think like logistics which is also a small problem for us because we don't really have the team yet".* He also argued that finance was a big problem for them because of their sector of activity, which requires large capital. *"Finance is what we need because our business is more of a voluminous business for example moving one container from A to B could cost minimum 25 000 Euro".* As for cognitive barriers, which could prevent the manager from initiating change, Peemix welcomes change and are open to trying new things. "*From my ... point of view I look at things differently, I want to make changes. I want to bring a change into a new business so from that perspective change is already part of me".* To overcome the problem faced by lack of finance Peemix regularly plough back their profit into the business.

4.1.4 Café Spiret

A) Background and description of the company

Café Spiret Aalborg ApS is a cafe and restaurant located in Boulevarden 24 Aalborg, 9000. They offer a wide variety of food and drinks and are open from 9:00 am to 22:00 PM every day. Café Spiret is owned by Lars Helmuth Larsen. The firm currently has at least 30 employees.

Café Spiret is a "Small SME" base of the categorization of the European commission (2005) since they have more than 10 employees and in the years 2016/2017 they had an annual turnover of 3.855.327 DKK (Virk, 2018). According to the legal forms presented by the European commission (2005) Cafe Spiret is an autonomous enterprise, since the enterprise is independently owned. Base on the Danish company act, Café Spiret is classified at a private limited company (APS) (www.erhvervsstyrelsen.dk). The interview was conducted with Teena who is the manager of the café and has been working there for about 10 years.

B) The Business model and components

Similar to previous interviewees, Teena knew the company had a business model but could not clearly enunciate their business model. "*Yes. I have heard about the term "business model". Not that we have it written down like "this is the business model"* Therefore we proceeded to mapping out their business model. Similar to other firms, Café Spiret had also made some changes on their business models for instance in their value proposition. They have refined their menu, and now do a cake table once every week which is something they did not do before. *"We changed the menu.... Just recently. We changed our brunch. That is up to date as well and every Sunday we have a cake table. That's a new thing for us to have something like that. Yes again trying to follow the trend".* Additionally, another change also in relation their value proposition was improving the comfort of their customers by changing the outlook of the restaurant. *"Like 3 year ago we changed the whole look of the cafe. So we changed all the tables and all the chairs. ..... We just updated it because it was not up to date. So we just made it fresh so people can feel more comfortable".* They have also changed their key resources especially employees. However the seven other parts of their business model have not been changed. Regarding how often changes were made, the interviewee could not recall small changes, and stated that big changes were not done often. Finally she insisted that they will only undertake change for a strong reason and once they make a change they stick to it. *"..When we make a change it is because we believe in it. So we don't just change every day so if we make a change ...then we believe in, then we stick with it. And that's for a while. We don't change it because this week is not good, we change it because these months were not good or something".* (See Figure 4.5)

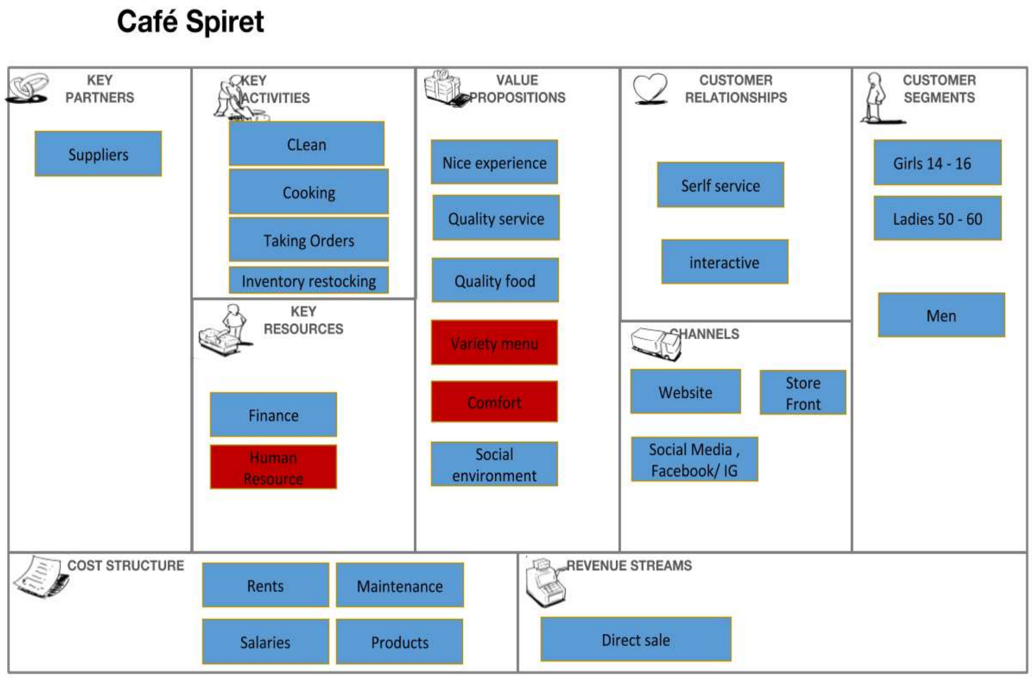

Figure 21: The business model of Café Spiret

Source: Own illustration, based on Osterwalder & Pigneur, 2010, pp.18-19 and the interviews + website.

The stickers in blue describe the business at the early stages; the red stickers describe the changes made on the business model of Café Spiret. The stickers in green indicate what they plan to change.

C: Innovativeness

The manager was also able to distinguish between incremental and radical changes on their business model. She considered the change of their brunch as a major change and stated that it was the first time they had changed their brunch in a long time. *"Well, we just changed this brunch again. That was a big change. That's something completely new. That was a big change we did here. And I think that maybe the first time we did that. In about five years"*. We assume that it was considered a major change because it involves a change in more than one item on their menu at once. While she considered changes on specific items of their Menu such as a burger as incremental changes. *"Last year we changed some smaller stuff like removing a burger because it's not going that well…"*

As for the reach of the BMI, the changes operated in Café Spiret were not only new to the firm but also new to the market. According to the manager the brunch was made with a special recipe, which was not made anywhere else in Aalborg. *"Right now we do the brunch. What we know is no other place in Aalborg does that. They do it in Aarhus and Copenhagen but not here in Aalborg….."* Unfortunately, we lacked the time and resources to validate these assertions therefore we can only believe them to be right. Regarding Complexity, the manager did not explicitly state that they had simultaneously altered more than one component of their business model. But since just 2 components of their BM were changed we can suggest that the level of BMI complexity at Café Spiret was low.

D) Drivers

We observed that all drivers for BMI in Café Spiret originated from outside. Most of their changes were motivated by a drop in customers or a drop in sales. *"....We can feel that the customers are going down. When we don't have that much customers. We are looking if there is something we can do ourselves or if it is just the market that is like this"*. The manager also conceded that the growth of business in the city threatened their position. *"...now in Aalborg there are a lot of new places so you have to .... reach out to a lot of people and tell the people that "you are still here"*. We found no evidence of BMI originating from within the organization.

E) Process

The manager vividly described the BMI process in Café Spiret stating that once a decision is reached, first they evaluate their resources to see if the change is feasible, then the change is planned. Followed by implementation and adjustments are made latter if necessary. *"Well we have to be inspired by something first of all and then look into it, it is possible for us to do this change? do we have the resources to do this with the kitchen we have?, with the bar?, the machinery? all that. Is it possible for us to do this brunch or do this burger or something? If we believe that it is. The next process is how is it going to be? What is going to be on this menu? How is it going to taste? We have to adjust it. We have to make up some recipes for all of it. ...And then the change of menu. And then you have to write the menu, look into it and make sure it's right before you get to print it"*. After making change, Café Spiret doesn't retract once they have made a change. *"... When we do it, we do it and then we can make some smaller changes to see how we can do it better when it's here".*

F) Barriers

We equally found out that Café Spiret faced some difficulties following the changes they made on their business model. Their barriers were more organizational than cognitive. The main organizational barrier they faced was insufficient resources, precisely skills. It was difficult for the staff to adapt to changes. *".. trying to get the staff to do it. As we want them to do and trying to explain it, so that they understand us."* This was a barrier to the success of BMI after it had taken place. There were also some barriers related to the time when changes could be done and the scope of the changes, which could be made. These barriers are related to the nature of the organizational. *"We can't change that much otherwise, because we have to put it in the menu and everything is written in the menu so we can't change a lot unless we change the menu and that's twice a year"*. These three aspects were the main barriers to BMI in Café Spiret. Finally, we realized that good communication was one way to overcome these barriers, since the manager attached a lot of importance to good communication. *"If you don't understand your leader then you don't know what to do then it won't work. That's pretty simple and we do our best trying to communicate"*. Another finding was that although the manager was afraid of changes and recognized that adapting to them could be hard, she still believed making changes was necessary.

4.1.5 TM Multiservice

A) Background and description

TM multiservice is a multipurpose cleaning service firm in Aalborg, The company is located in Hobrovej 505, 1 Sal 9200 Aalborg SV, It is a private limited company (APS) with over 25 employees. They provide the following services; household cleaning, industrial cleaning, window cleaning, gardening, office cleaning, floor polishing and maintenance and most recently, real estate management. Niels Thomas Madsen who is the current managing director of the firm founded TM multi service in 2014.

TM multiservice is a "Small SME" since it currently 25 permanent employees and a few temporary employees. In the financial year 2016/2017 they had an annual turnover of 2.953.539 DKK (Virk, 2018). According to the legal forms presented by the EU commission (2005) TM Multiservice is an autonomous enterprise, since Neil Thomas Madsen independently owns the enterprise. According to the Danish company act TM multiservice is classified as a private limited company (APS). The interview was with the Director, Johan Lorasch Seimann together with the company's secretary Camilla Arlofelt Andersen.

B) The Business model and Components

We found out the company's does not have an already existing business model and they could not implicitly or explicitly articulate their business model, Thus we mapped out their business model using the information they gave us in the interview and additional information we got from the company's website.(See figure 4.6)

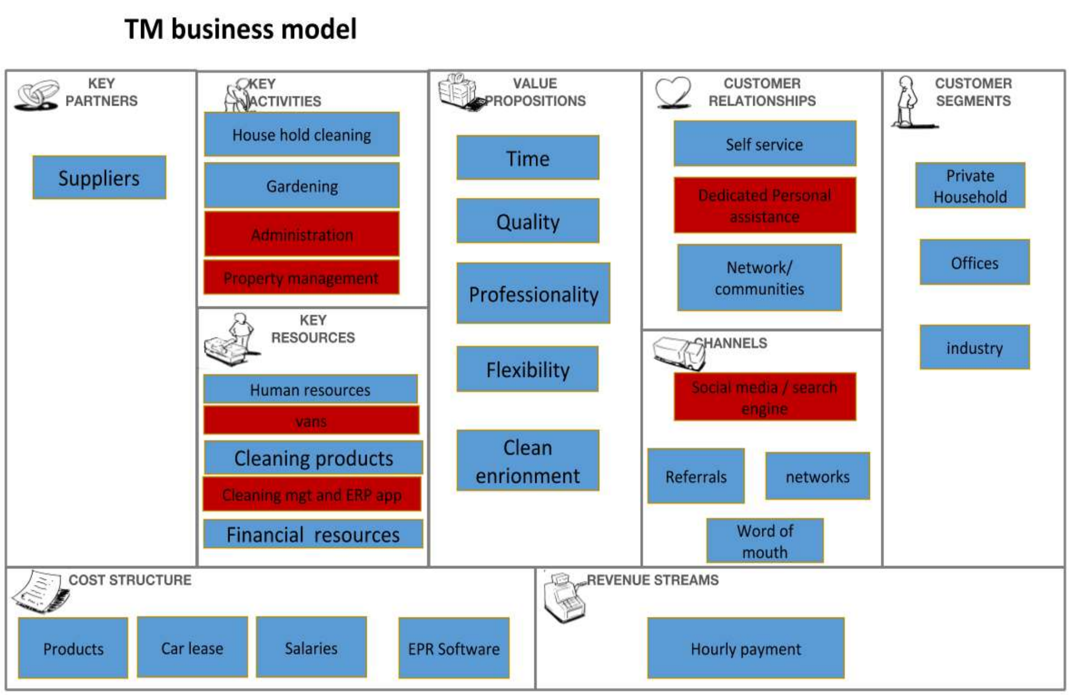

Figure 22 : TM Multiservice business model canvas

Source: Own illustration, based on Osterwalder & Pigneur, 2010, pp.18-19 and the interviews + website.

The stickers in blue describe the business at the early stages; the red stickers describe the changes made on the business model of TM multiservice. The stickers in green indicate what they plan to change.

TM multiservice like many businesses at the early stages has undergone many changes in other to adjust and grow. From their business model canvas presented above it is evident that TM multiservice has made some changes in their business model. We observed that they have added new channels, new resources and some new activities. According to the director, in the beginning the company only did floor cleaning and gardening. Now they have added other services like window cleaning, floor maintenance and polishing, and most recently they started property management. *"In the beginning was mainly garden, cleaning and now it's much more professional"*. Furthermore, the have appointed team leaders to handle the activities of different team.

There have also been changes in their key resources, the organization introduced enterprise resource planning software (ERP) and cleaning app to improve planning and scheduling within the organization. Another change in their business model can be seen in the channels used, they spend huge amount on AdWords and SEO so as to make their site more visible on search engine.

C: Innovativeness

Building on the information acquired through the interview there was a lack of understanding about what could be classified as very innovative (radical) and less innovative (incremental). Based on the understanding of the interviewee, what he considered as a big or major innovation in their business model was the hiring of a skilled employee as team leader to head the various teams and what could be considered less innovation was making schedules calendars for their customers. *"Changing the system was not a big change. A major change was hiring skilled employee to handle team leader and a medium change was making calendars for schedules for our customers"*. We examine that there is a low degree of complexity in their business model innovation. The degree of complexity can be observed on the number of changes on the elements. There have been changes in very few components of their business model.

To understand the reach of innovation at TM multiservice, we determined that most of the changes in the components where mainly new to the firm, the used of ERP software and the clean manager application was new to the firm and not new to industry. As for managing real properties, we think it was new to the firm and to the market.

D: Drivers

Drawing on the interview we found that business model innovation is mostly driven from the outside. Most of the changes were induced by their customers demand and their desire to satisfy their customers at all costs. *"I think it's because so many customers call asking for this change, asking if we can do this or that"* However the director also noted that some of the changes were motivated by the opportunities of a new market for example they found that if they could handle cleaning, gardening and everything within the estates they could as well manage the property on behalf of their client therefore not only providing cleaning service but also handling the payment of bills and utilities on behalf of the owners.

E: Process

The management could not vividly articulate the process of business model innovation at TM multiservice. When posed with the question on decision making on changes at the organization, the director explained that most decision were taken at the level of the team and they were less consultation or less formal conversations. *"We don't actually do a formal conversation but we talk about it, we just discuss and see if it's something we can do"*

E) Barriers

Like most organizations, TM multiservice face some challenges during the business model innovation process. However, the barriers mostly originated from organization rather than cognitive. According to the respondents the main barriers where financial and human resource barriers. "*We think skill was also a barrier which included employees. Finance too is a major constraint and includes hiring employees to take care of assignment".* The director also insisted on their desire to continue making changes even when they face barriers, this is in line with their desire to keep their customers satisfied. ”*We always try to do new thing and we also want to do it perfectly and that is also what our customers expect from us”*

4.2) **Discussion**

On this sub part we shall analyze the interviews presented above following the analytical framework we presented in our literature review to understand how SMEs in Aalborg innovate their Business model. We shall equally identify the differences between “Small SME’s” and “Micro SME’s”

4.2.1 **Business Model Innovation**

In literature reviewed above we detailed that there is no unanimous agreed upon definition of business model innovation. The definitions still lack specificity and uniformity. We identify some different perspective scholars hold regarding the concept of BMI, for example while some focus on the components of the BM (e.g. Lindgardt et al 2009, Johnson et al., 2008; Bucherer et al., 2012) others on the architecture (e.g. Zott & Amit (2012). We decided to use components rather than architecture for analyzing BMI. We also so detailed that the was disagreement on the scope of the number of changes BM components that could be classified as business model innovation, while some scholars argue that a change in one component is enough (e.g. Zott & Amit 2012, Santos et al 2009) others require a change in two or more components (e.g. Lindgardt et al 2009) and some have a more extreme stance, suggesting a change in all BM blocks. For our analysis we have defined business model innovation as “any change in one or more components of the business model”. In this analysis we have adopted one of the approaches suggested by Trapp (2014) for evaluating BMI in a case study, which is describing the BMI with the help of a framework consisting of predetermined components. We decided to use the nine building blocks of Osterwalder and Pigneur 2010 as predetermined components for analyzing BMI in SME’s.

After mapping of the business model canvas of all 5 companies using data from our interviews, we found out that they have all made changes in their business model components. This therefore supports the findings of Marolt et al (2016) that SME’s innovate their business model. However some have made more changes in their models than others. For example while Cafe' Spiret has made only 2 changes in their BM that is on their value proposition and key resources. Flexifix has made 4 changes on their BM. They have changed their value proposition, key resources, channels and revenue streams. Table 14 below illustrates the different components changed in each firm.

Company	**N° components changed**	**Components changed**
Flexifix	4	Value proposition Key resources Channels Revenue
Levelup	7	Partners Channels Value proposition Customer Segments Revenue Stream Key activities Key resources
Peemix	2	Value proposition Key resources
Café Spiret	2	Value proposition Key resources
TM Multiservice	3	Channels New resources New activities

Table 14: Business model components changed by each firm.

Source; Authors

4.2.2 Innovativeness

After mapping the changes in the various building blocks of the business model, it was imperative to determine the level of innovativeness in each business. To measure the level of innovativeness in all business model innovations, we adopted Taran et al (2015) framework, as earlier stated in our literature. The framework to measures innovativeness from 3 dimensions, radicality, complexity and reach.

Radicality: Radicality ranges from low (incremental innovation) to high (radical innovation). Taran et al 2015 defines radical innovation as the extent to which innovation departs from previous product/process in the context. Tidd & Bessant (2009) define incremental innovation in terms of an improvement of exist product/service process. We adopt both definitions to examine the degree of innovativeness in this case. Furthermore we built on the notion of O'Sullivan &

Dooley (2009) that innovation is link with novelty and originality while novelty is subjective, hence what might be considered as a significant change by one might be considered as minor change to another. We used table 12 presented in chapter two to differentiate between incremental and radical innovation. We observed that in Levelup and TM multiservice there is a high degree of radicality. This is because in both cases they depart to some extent from their previous product/service. Levelup departed from providing statistical report to building a new value proposition in video analytics, which triggered changes in almost all component in their BM. TM multiservice change their BM to include property management as key activities, which deviate to some, extend from their original key activities which are cleaning and gardening.

In Flexifix, Peemix and Café Spiret we examine that there is a low degree of radicality in their BMI, most changes in their Business model where incremental, mostly minor improvement for example Café Spiret added a new menu to their already existing menu which did not actually depart from their existing BMI. However based on the definition of radical innovation by Taran et al, (2015) and building on the notion of O'Sullivan & Dooley (2009) we observed that what some of the firms consider as a radical change was different from what we considered as a radical change considered as a radical change.

Complexity: complexity ranges from low (changes in 1-4 building block) to high (5-9) building blocks. As detailed in our literature review, different scholars have attempted to identify the different components that should make up the BM framework; the number of components mentioned varies from 4-9. As earlier mention our analysis is based on Osterwalder & Pigneur (2010) 9 building block framework presented in what they called "the business model canvas". To examine the level of complexity of BMI in the firms studied, we examine the number of components/building blocks changes they had made on their business model. We found that in Levelup they had a high level of complexity in their BMI. Levelup made 7 components change in their BM, hence indicating a high degree of complexity in their BMI. In contrast we examine that Flexifix Peemix, Cafe Spiret and TM multiservice had a low degree of complexity in their BMI, changes made in the BM components of all 4 firms were between 1 - 4 and hence we assert that they have a low degree of complexity in their BMI.

Reach: It ranges from low (new to the firm or new to the market) to high (new to the industry or new to the world), we examine that 4 out of the 5 firms with the exception of Levelup indicated a low BMI reach. Furthermore we noted that while Flexifix, Peemix and TM multiservice BMI where mainly new to the firm however Café Spiret asserted that a change in their Business model could be viewed as new to the market (in this case Aalborg market). Levelup asserted that their BMI reach was high, it was new to the industry, the use of the app on mobile device was changing industry dynamics in a new direction.

4.2.3 **Drivers**

As propose in our literature review we adopt the framework of Bucherer et al 2012 to examine the drivers of business model innovation in our case studies, the framework suggests four different sources of business model innovation, these include internal opportunity, external opportunity, internal threat and external threats.

Internal opportunity: We noticed that BMI in Flexifix, Peemix and TM multiservice were driven by their internal opportunity. All three were driven by their desire for efficiency in the way they serve their customers. This point is important because researchers have cited efficiency as one of the drivers of business model innovation. Amit and Zott (2001) cite efficiency as one of the main drivers of business model innovation. Bucherer et al (2012) also view efficiency as a key internal driver of business model innovation. Additionally in Flexifix and Peemix, BMI is driven by organizational leadership, the owners detailed that changes in the BMI is mainly dependent on them. Organization leadership can be viewed as a key driver of BMI, for instance Chesbrough (2010) suggested organizational leadership as a key driver of business model innovation.

External opportunity: After examining the external opportunities that drive BMI in SME's we found that 3 of the 5 cases indicated external opportunity as a key driver of BMI. This where Flexifix, Levelup and TM multiservice. We equally observed that BMI in Flexifix and Levelup was driven by the opportunity to exploit a new market. This is further supported by the theoretical suggestion of, Bucherer et al (2012) who suggest that new market(s) are external opportunity (ies) which drives business model innovation. TM Multiservice viewed customers demand as an external opportunity to improve and supplement their key activities.

Internal threat: Some antecedents to BMI in SMEs have been internal threats. We observe these antecedents for business model change in two of the five case study (Peemix and Cafe Spiret). Peemix and Café Spiret have initiated changes in their business model as a result of internal threats to the organization. In both case a drop in sales triggered changes in their business model. In the case of Peemix, the drop in sale was a direct consequence of the upfront payment conditions, these therefore motivate a change is their business model to provide better payments terms for their customers. In the case of Cafe Spiret low customers turnout meant a drop in sales and this coerced them to make some changes in their business model.

External threats: We realized that in almost all cases, external threats were some of the main drivers of business model innovation; the threats were mainly related to competition. 3 cases (Flexifix, Peemix and Cafe Spiret) noted competition as the major driver of business model innovation. Changes were motivated by the desire to catch up with or overcome competition. We also noted that Flexifix was keen about low switching cost if customers where not satisfied. Theses threads as well as internal threads affirms Linder & Cantrell (2000) observations that firms are under constant pressure to make changes on their business model

In most of the cases we observed that though not explicitly stated novelty was a major driver for change in their business model. The desire to introduce a new activities activity in TM multiservice was a major driver for change. Furthermore, Waldner et al (2015) argue that the stage of the firm in the industry life cycle can be a driver to business model innovation. This argument was observe at Levelup, which possess common startup characteristics like constant change and pivoting and is bound to constantly make changes. Lastly we observe the notion of "trial and error learning" as proposed by Sosna et al, (2010) as an antecedent of business model innovation in Flexifix and Levelup. In these cases, innovation in their business model was driven by the notion to try new things and learn from their experience.

4.2.4 **Types of BMI in SME's**

We categorize the BMI of firm's base on Schaltegger et al (2012) typology. **A**s detail in the literature review Schaltegger et al,(2012) proposed four main types of business model innovation, these are, business model adjustment, Business Model adoption, business model improvement and business model redesign. It is important to note that if we follow the definitions for each typology literally then maybe all firms will be classified under one typology or a single firm could have more than one BMI typology. Since one type of BMI could be a combination of the other types of Innovation. For instance for a firm to do Business model redesign it must first do business model adjustments and business model improvement. For this reason, we will assign a single typology to each firm according to the type, which best suits, the business model changes undertaken by the firm.

Business Model Adjustment; Business model adjustment is defined as a type of business model innovation which involve the change in a single BM component or a minor number of BM components excluding the value proposition. We observed that TM multiservice innovated channel; resources and activities without making a change in their value proposition hence their business model innovation could can be categorized as a business model adjustment.

Business Model Adoption; Business model adoption implies making changes in the business model with the intention of catching up with competition of current market standards. This type of innovation best describes that changes that were made in Café Spiret and Flexifix. Cafe Spiret made changes on their menu and redesigned the look of the café, to be up to date with what was happening in the market while Flexifix started selling used bikes, renting bikes and also putting stickers on the bikes they repaired as some sort of advertisements, which is also a catch up strategy. For this reason we think their business model innovation typology can be categorized under business model adoption.

Business model Improvement; This will involve changing multiple components of the business model without changing the value proposition. In almost all the cases discuss, there was a change in value proposition. In the case TM multiservice where there was no change in their value proposition, however there were few changes in other components of their business model (3 component). Therefore we feel that none of our cases can be viewed as a business model improvement.

Business Model Redesign; this involves business model improvement and a change in the value proposition. This definition best describe the case of Levelup. They made changes in many components (7 components changed) and also changed their value proposition. They started by offering statistical analytical reports as their core value, after they pivoted to providing video analytical report as their new core value, which triggered changes in almost all components of their business model.

Unfortunately the typology cannot best describe all our selected cases, for instance Peemix could not be categorize within any of the four typologies, this was due to the fact that, the made changes in their value proposition and only one other component change. It could not be categorized as Business adjustment because it involves a minor component change without a change in value proposition. Furthermore, it could not be viewed as a business model redesign because it involved multiples components change. Additionally, we can also classify the typology of BMI in our cases using the change models suggested by Linder and Cantrell (2000). The reaction of Café Spiret to deliver a new value proposition when faced by high competition, fits their definition of a renewal models, while the attitude of Flexifix, and Peemix to continuously find ways of making more money can be related to the realization model. Since TM Multiservice is trying to add expand its current market we can relate their BMI to the extension model. While Levelup that changed most of its business model components can be identified with the journey model.

<table>
<tr><th>Types</th><th>Adjustment</th><th>Adoption</th><th>Improvement</th><th>Redesign</th></tr>
<tr><td rowspan="2">Companies</td><td>TM Multiservice</td><td>Café Spiret</td><td></td><td>Levelup</td></tr>
<tr><td></td><td>Flexifix</td><td></td><td></td></tr>
</table>

Table 15: Business model innovation typology

Source; Authors

4.2.5 **Process**

In our chapter two we identified six main steps in the business model innovation process, which are, searching, mobilizing, designing, testing, implementing and managing. Because scholars failed to agree on the number of steps in the BMI process as well as which steps were necessary to follow when performing BMI and we combined the work of some scholars and develop a process for BMI. According to the data we collected from interviews, SME's follow different processes when innovating their business model. Some followed all the BMI steps, while other just followed some of the steps.

The first step identified was "search". At this stage the firm has to gather information about their market, competitors etc. and critically assess their current business model. Four of the five firm's studies followed this step. Flexifix, Levelup, Peemix and Café Spiret all did some research before making changes in their BM. Flexifix examined what their competitors (Danish bike repair shops) were doing, Levelup interacted with prospective customers, Peemix used the websites of other players in the industry to gather information. Café Spiret looked into what other restaurants within Aalborg and other towns did. This was the first step to innovating their respective business models. As for TM multiservice, we found no information suggesting they did research before making change on their business model.

The second step to BMI we identified was Mobilization. We describe mobilization as getting the right team on board and mobilizing the resources necessary undertake the BMI. Flexifix and Peemix showed no evidence of mobilization. This could be because they were autonomous firms with a small number of employees. Where a single person was in charge of making all key decisions. In Café Spiret and Levelup resources were mobilized before the business model was modified. For instance in Café Spiret they carefully evaluated their current resources and abilities in relation to the changes they wanted to undertake. The consulted all parties involved, those in charge of the bar and those in charge of the kitchen. We believe mobilization was important in their case since it had a significant effect on the success of the changes made. As for Levelup we believe that mobilization was necessary since it is a partnership and other members had to be consulted before main changes were made.

"Designing" the change was the third step. This basically means to conversion of ideas and information into a range of possibilities and seeing how it fits with other elements of the business model. Only Levelup and Café Spiret actually designed the change before implementing it. Café Spiret probably spend time to design because it is harder to annul a change once it has been made. For instance to add or remove an item from their menu, the whole menu needs to be re-printed for all the tables in the restaurant. As for Levelup, the nature of their business usually requires design before changes are made. Which is not the case in all firms. The other three firms didn't design the changes they wanted to make.

The next stage was "testing", that is attempting to see if the changes will be successful before fully committing resources. It helps reduce the uncertainty surrounding the change, which will be made. According to Chesbrough (2010) experimentation is very important when innovating the business model and a good experiment should have high fidelity and cost little. Flexifix and Levelup experimented some of the changes they made on their business model. It is also important to note that these experiments were characterized by high fidelity and were generally cheap thus a good form of experimentation. They both tested the changes they made on their main customers and received feedbacks before implementing them. Changes, which received positive feedbacks, were implemented, while those that received negative feedbacks were either adjusted or abandoned. Peemix, TM Multiservice and Café Spiret did not really experiment their changes.

The next step is implementing. Here the change is executed and properly communicate the across organizations. All the SME's interviewed implemented the changes made to their business model.

The last stage was to manage the change process, by evaluating the results of the changes made and making adjustments when necessary. All firms also managed the changes made on their BM except for Flexifix where the manager lacked time to evaluate the results of some changes he had done.

Furthermore, we also realized that the processes were been followed with regard to some particular components. For instance they process followed to innovate the Value proposition can be longer than the process used to innovate channels. Levelup will need to design and test changes made on their software but they may not design and test changes made on their channels or partners. Unfortunately we were unable to make that distinction here since the interviewees did not specify the business model components they had in mind when outlining their BMI process. For some it was easy to discern for others not. From the above explanations we could also observe that all SME's don't follow the same process when innovating their BM. These equally confirm the finding of Lindgren (2012) that SMEs lack a structured process when innovating their business model. Additionally only one SME (Levelup) followed all the BMI steps we identified suggested. This is probably because most literatures on these steps were written based on studies carried out in larger firms or tech firms. However we could see that SME's follow some of these steps in their own way. Another important thing is the fact that the number of people and level of authority of certain individuals within an organization can significantly affect the BMI process in the firm especially at the level of mobilization.

	Flexifix	Levelup	Peemix	Spiret	TM Multiservice
Search	Yes	Yes	Yes	Yes	No
Mobilize	No	Yes	No	Yes	No
Design	No	Yes	No	No	No
Experiment	Yes	Yes	No	No	No
Implement	Yes	Yes	Yes	Yes	Yes
Manage	No	Yes	Yes	Yes	Yes

Table 16: The BMI process in SME's

Source: Authors

4.2.6 Barriers

Earlier we defined a barrier as anything, which could "prohibit, impede or stand in the way of successful BMI". Groskovs (2016). Based on this definition, it's possible for firms to encounter some barriers before undertaking BMI (this will prevent BMI). And firms can also face barriers after BMI, which could undermine the success of the BMI. We also distinguished the two broad classes of barriers to BMI according to Fallahi (2017) which are; organizational and cognitive barriers. (Fallahi 2017). Based on the information collected from our interviews we were able to identify both organizational and cognitive barriers in SME's in Aalborg. In each case we noticed that some of the barriers hindered BMI, while others could make BMI less successful. We also found that SME's tried to overcome their barriers in different ways.

The most common organizational barrier identified in SME's in Aalborg was limited resources, precisely financial resources and human resources. Among the 5 firms studied, 4 openly described financial resource as a main inhibitor to BMI. This confirms the argument of Chesbrough (2007) that the limited resources of small firms can affect their ability to innovate their business model. Although we also noticed that this barrier did not prevent BMI to the same degree in all firms. For instance Peemix, which is a trading company, felt more affected by the lack of finance than Flexifix or Levelup. This is probably linked to the activity sector the firm. Trading will usually require larger finance than software development or bike repairs. The next main organizational barrier identified was human resources. 4 of the 5 firms we interviewed considered human resources as a barrier to BMI. In the case of Flexifix, Peemix and

TM Multiservice the lack of human resources prevented them from making certain changes to their business model. Meanwhile in the case of Café Spiret poor human resources could undermine the success of the changes they had made on their business model. Similar to finance, we also realized that the degree to which human resources could affect BMI was relatable to the sector and size of the firm. For instance Café Spiret and TM Multiservice, which require a lot of human resources to create and deliver their value proposition will feel more, affected by the lack of human resources than Peemix which saw human resources as a little problem. This affirms Arbussa et al (2017) assertion that some SMEs have small resources, skills and capabilities but are agile.

Some of the other barriers to BMI voiced out by the interviews were limited time, lack of space and lack of logistics etc. However we believe all these problems are associated to the lack of finance. For instance Flexifix could easily acquire more space by renting a larger work place. Additionally the manager of Flexifix could get more time to innovate the business model of the firm if he can employ more workers to handle the bike repairs and/or purchase an administration software which will him handle the administrative side of the business faster. Levelup is in a similar situation, if they could, they will simply hire more software engineers to make changes faster. So we conclude that the two main organizational barriers recognized by the SME's are inadequate finance and human resources.

However we also identified some organizational barriers, which were not explicitly stated by the interviewees. The first one was the "habits of the firm". Its describe by Johnson et al (2008) as those underlying rules and norms embedded within organizations to help them maintain their acquired status quo. In the case of Café Spiret they have pre-established rules such as changing the menu twice a year. Because of such rules it's difficult for them to make changes on their menu frequently even if their current menu is less successful. We could also observe the "Dominant logic" barrier suggested by Vorbach, et al 2017) who suggested that most firms assume they are currently doing the right thing and they only try to find new efficient ways to do what they already do rather than looking for new approaches. All the changes made by the SME's studied were based on the dominant logic of the firm. The only firm, which tried something new from what they currently do, was TM Multiservice who has started property management.

Regarding cognitive barriers which are barrier related to either the management or leadership of the organization, we found out that all the manager were willing to initiate change in their firms but only when they deemed it possible and necessary. One SME also considered leadership as an important step in BMI. Another key finding was the way SME's overcome barriers when innovating their business model. To overcome their barriers to finance, SME's plough back their profit (Flexifix, Peemix) or seek external funds (Levelup).

4.2.7 Differences and Similarities between Micro SME's and Small SME's

We equally identified some differences and similarities in BMI between the two categories of SME's used in this study. The first similarity was that both categories of firm had innovated their business model. With regards to the BM components innovated, both had innovated 6 components, that is value proposition, customer segments, channels, partners, key resources and key activities. Both categories of firms had also failed to innovate in their customer's relationship and cost. However, only the "micro SME" Levelup had made changes on their partners and revenue stream.

As for radicality, there was no difference between the two groups since both micro and small SME's had radical innovations and both categories also had incremental innovations. This could imply that radicality of innovation does not depend on the size of the firm but rather on other factors like the creativity of the firm, the resources they possess and the sector of activity of the firm. Moreover, we found out that the reach of innovation in both categories of firms was the same. This could also be related to the reasons stated above for the similarities in radicality. Regarding complexity micro SME's made more changes than small SME's on their business Models. Among the micro SME's, one made up to 7 changes in its business model and the other two made 4 changes (Flexifix) and 2 changes (Peemix) respectively. Likewise, in the Small SME's the highest number of changes made was 3. TM Multiservice made 3 changes while Café Spiret made just 2 changes. Thus we observed a higher complexity in micro SME's. We assume that micro SME's show higher complexity because they are more flexible and agile. It's easier to make decisions since fewer people have to be consulted.

We found no major difference in the antecedents for BMI in both categories. For micro SME's as well as small SME's, BMI was driven by opportunities or threats, which in turn were either internal or external to the firm. Similarly, the main barriers in both categories were finance and human resources. Although all firms had a need for more finance we noticed that the need for finance in micro SME's were more pressing since most of the other problems they had when innovating their business model were related to their lack of adequate finance. Both categories of firms didn't have any sort of cognitive barriers.

We found that both Micro and Small SMEs have some difficulties to follow a specific process when innovating their business model. This is likely related to the fact that a single person makes key decisions in the organization.

CHAPTER FIVE

CONCLUSION

5.1 Conclusion

In this chapter we shall first provide answers to the research questions we identified in chapter one. We shall also explain how this study contributes to existing theory on BMI. Then we shall express some of the limitations of this study. Finally, we shall suggest areas of future research.

As stated earlier the aims of this study were to understand how SMEs in Denmark innovate their business models and what similarities and differences exist between BMI in “Micro SMEs” and “Small SMEs”. To answer both research questions we further developed a couple of sub-research questions on the innovativeness, typologies, drivers, approaches and barriers in BMI.

First, we found out that SMEs we studied do not have a business model already mapped out although most of the leaders in the organization knew about the business model; and very few of them could explicitly articulate their business model. This is significant because it affirms (Chesbrough 2007) arguments that firms have business model even though some can’t articulate their business model. Secondly we uncovered that SMEs innovate their business model and have plans to make more changes on their BM in future. Additionally, among the 9 components of the business models of the SME’s, the most changed business model components were the key resources (5 firms) followed by the value proposition (four firms), the channels (3 firms), the revenue streams (2 firms), the key activities (2 firms) and partners (1 firm). Some changes where triggered by others this supports the findings of Heikkila et al 2017 who found that a change in one component could lead to changes in other component of the Business model. Lastly we review that BMI in SMEs in Denmark is a continuous development process.

Regarding the degree of innovativeness, we found evidence of high radicality, high reach and high complexity in SMEs. Although this was not the same for all SME’s, so innovativeness in SMEs varies. Furthermore the degree of innovativeness in SMEs depended on the industry. An SME in the Information and technology industry such as Level Up had a higher degree of business model innovativeness than an SME in the catering and hospitality industry such as Cafe Spiret.

Also, looking at the type of business model innovation in SMEs, we realized that, they did more than one type of innovation. We distinguish 3 types of BM innovation in SME's out of the four types of BMI we proposed in theory. However one form of innovation we didn't identify was Business model Improvement. This is due to the fact that most SMEs who made changes in their business model equally made changes in their value proposition.

Moreover, we also realized that BMI in SMEs is driven by both internal as well as external factors and can either be triggered by an opportunity or by a threat. Looking into the external drivers, we found that BMI in most SME's was triggered by competition. Likewise customer demand was the most common internal trigger for BMI in SME's. These could further explain the characteristics of SMEs as being competitive and having close relationship with their customers. Additionally, each SME was either driven by opportunities (Internal and external) or by threats (Internal and external) but not both. The only exception was Flexifix which was driven by opportunities and threats. Moreover, the desires to increase novelty, trial and error and the stage of the firms in the industry life cycle were also key drivers to BMI in SME's.

SME's also follow a process when innovating their Business model although the process varies from one SME to another. No two SME's shared the same process of BMI. Some steps in BMI where commonly exhibited across SMEs, these steps included search, implementation and manage phase. Mobilization and design steps were less common among SMEs. This equally confirms Lindgren (2012) suggestion that SMEs lack a structured process when innovating their Business model.

Furthermore, we differentiate between cognitive and organization barrier, we found that organizational barriers were most common within SMEs. Specifically we identified the lack of resources, especially human resources and finance as the two main barriers to innovation in SME. We also found that barrier to BMI may also depend on the industry, some barriers where more pernicious to specific industry for instance SMEs in Trading industry were more affected by the lack of finance than SME's in the Food and Hospitality Industry. This was significant because it further affirm Storbacka 2010 findings that the same barrier to BMI can be more hurtful to some industries than others. Furthermore Pachouri & Sharma (2016) suggested government policy; infrastructure and market constraint could also be a barriers to Innovation in SME's. However none of such problems were raised by the SME's we talked to. So we assume that the government policy and infrastructures in Demark is good enough for SME's. This supports the ranking of Denmark as 3rd on the doing business report of 2018.

Regarding our 2nd question, which was to distinguish between BMI in micro SME's and small SME's. The first finding was that micro SME's made more changes in their BM than small SME's although some components such as customer relationship and cost were not innovated by both categories of firms. Secondly, although they both share the same level of radicality and reach in BMI, micro SME's revealed a higher level of complexity when innovating their BM. We assume that this could be because "micro SME's are more flexible and agile compared to small SME's. Finally, we found that both categories of firms shared common drivers and barriers to BMI. Although the barrier of finance seemed to weigh more on micro SME's than small SME's. We also found that "habits of the firm" and "the dominant logic" mentality hindered BMI in SME's.

5.2 Contribution to Theory and Practice

Very few researches combine BMI innovativeness, driver, barrier, typology and BMI process. Our research contributes to theory by providing and in depth qualitative study of BMI in SMEs covering all these areas of BMI literature. Additionally this research contributes to theory by elaborating on BMI of SME' in Denmark and specifically in Aalborg. Also, most literature in BMI are developed for large firms. In this research we contribute to BMI literature in SME's. Furthermore our findings in the research suggest that most SMEs lack knowledge about the BMI process. The business model process outlined can help managers in SME's to better understand how to undertake successful business model innovation. Finally, the study contributes to theory by identifying BMI similarities and differences in "micro" and "small" SMEs. This could help policy makers when making decisions targeting a specific category of SME's.

5.3Limitations and further research

The first major limitation of the research is that we used very few SME's. For the reason, it's difficult to generalize the results of our findings. Furthermore, the fact that some of our interviewees couldn't easily express themselves in English language may have affected the amount of information they could give us. Additionally, It was hard to integrate all BM change since some of the changes may have been forgotten by the respondents. Also, in this thesis, we failed to consider the sectors of the firm in our analysis.

Our intended sample size was to have 3 companies for each categories of SME's, however due to lack of response from companies, the research was therefore conducted just based on the available cases. Thus the research was conducted with two categories of SMEs out of the 3 categories of SMEs which means the result cannot hold for all SMEs, we therefore propose that a researcher interested in pursuing the study further should cover all 3 categories and also include a fourth category (large firms) so as to better distinguish between BMI SMEs and large Firms

The research was conducted for SMEs in general, we did not choose a particular industry hence the result cannot be generalize with regards to one industry due to the unique characteristics of different industries, for further research a researcher could therefore conduct the research in a particular industry separating the SMEs into all 3 categories which would make the result valid for that particular industry.

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APENDIX 1

Introduction Question

1. What is your name?
2. What is your function within the firm? How long have you been working here

Business model question

3. What do you understand by business model?
4. Do you have and Existing Business Model
5. Do you use a particular framework to plot your business model?
6. Who are your customers? Is customer segmentation relevant? (Explain if necessary) If so, what are these segments?
7. What is the value that you offer to your customers? Are they prepared to pay for your services?
8. What is the value that you offer to your clients? Could you describe which service you offer?
9. What distinguishes you from other competitors?
10. What type of relationship does each of your customers segment expect you to establish with them?
11. In what way are the products/services delivered to your customers? Channels
12. What are the most important activities?
13. What are the most important resources for the business?
14. Do you have any partners? Who would you describe as the main stakeholders/partners?
15. To what extent do these or other stakeholders influence the business operation
16. For what value are your customers willing to pay? How are day currently paying
17. What are the main costs incurred in the business
18. What are the main costs incurred in providing services to your clients?

BM innovation

19. Do you see any issue in the current business model?
20. Have your made any changes to your business model over the past?
21. What changes have you made in your BM?
22. How can you categorize this changes? Very radical or Incremental
23. What was the reason for these changes?
24. Can you tell us any factors that influence the change of the business model?
25. When making the change, were there any obstacles? How did you overcome this obstacles ·
26. How do you approach business model innovation? Who do you consult? Alone? Customers? Partners?
27. Do you make research prior to the process?
28. How has the changes in your business model affected your business?

APENDIX 2

INTERVIEW GUIDE

Introduction Question

1. What is your name?
2. What is your role within the firm? How long have you been working here?
3. What is the legal form of this company?
4. What do you understand by the term" business model"? Do you currently have one?

Questions on BM components

1. Who are your **customers**? Are they segmented? If so, what are these segments?
2. What is the **value** do you offer to your customers? Which customer needs are you satisfying?
3. What type of **relationship** have you established with each of your customer segments and how do you maintain these relationships?
4. How do you reach your customers? Which **channels** do you use?

5. What are the most important **activities** within your organization?
6. What are the key **resources** you need in your business?
7. Do you have any **partners**? Who are the most important partners in your business?
8. What are the main **costs** incurred by your business?
9. How do you make money in your business? (**Revenue)**

Questions Regarding BM Change

1. Have you made any changes on your business model? What changes have you made on your business model?
2. How frequently do you make changes on your business model? Do you make more than one change every time?

Questions for Innovativeness

1. How innovative are the changes to the business model? Can this changes be categories as radical or incremental?
2. Where the changes new to the industry or market or the changes were just limited to the company?
3. Have you simultaneously altered more than 4 parts of the BM?

Questions for drivers

1. What was the reason for this change? What factors prompted you to make changes in your business?
2. Where this changes made as a result of some opportunities or where they made as result of a threat to your business?

Questions for processes

1. How do you approach business model innovation?
2. What steps do you undergo during the process of business model innovation?

Questions for Barriers

1. What are the barriers you faced when changing your business model?
2. What do you think can be done to overcome these barriers or how do you overcome them?