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BUSINESS MODEL INNOVATION IMPLEMENTATION: THE EFFICIENCY OF KEY ELEMENTS AND BARRIERS TO CONSIDER

İPEK SENA TAN

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İpek Sena Tan

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: İpek Sena Tan

Signature :

ABSTRACT

BMI IMPLEMENTATION: THE EFFICIENCY OF KEY ELEMENTS AND BARRIERS TO CONSIDER

İpek Sena Tan

Master of Science, Engineering Management

Supervisor: Burze Yaşar

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In today's world, everything varies expeditiously. Technology is growing at an unpredictable rate, and internet usage is spreading. Therefore, staying up to date and being sufficient has become more inconvenient than ever, especially in business life.

Business Model Innovation (BMI), a relatively new kind of innovation with a growing community of supporters, has been dubbed "the fundamental to successful firms nowadays." Firms in the market are having difficulty replicating the success of companies like Apple, Netflix, and Uber. This is due to the fact that when it comes to the concept of Business Model (BM) and BMI, experts in businesses face a lot of ambiguity.

The following is the problem statement being investigated in this study: Professionals lack knowledge of critical barriers and key elements that aid in the process of successful BMI, which is necessary for transforming businesses.

The core research topic is formulated based on the problem description. The followings are the central research questions:

What are the key elements used for BMI and what are the barriers to BMI?

A literature review was conducted to answer this question adequately, essential elements that could facilitate the BMI implementation process were identified, and frequently encountered barriers were found. Interviews were held with companies in different sectors that carry out BMIs. During the interviews, the key elements that companies use while innovating their BM and the barriers they encounter were analysed and these analyses are included in the article as result of semi-structured interviews. Afterward, a dataset containing 66 BMIs was obtained, and this dataset was examined in detail over critical elements. With the data analysis and semi-structured interviews, a s was obtained that can be used to make the BMI implementation process effective. Key elements that can be used in BMI have been identified and exemplified. In addition, the barriers frequently encountered in BMI have been identified with sample applications. According to the sampled cluster, the most used BMI key element was the customer interface, while the most frequently encountered barrier was financial barriers.

Keywords: BMI, BM, BM Canvas Key Elements, BMI Barriers, Sustainable Development Goals, Circular BM

ÖZET

İŞ MODELİ İNOVASYONU UYGULAMASI: ANAHTAR ELEMENTLERİN VERİMLİLİĞİ VE DİKKAT EDİLMESİ GEREKEN BARİYERLER

İpek Sena Tan

Master of Science, Mühendislik Yönetimi

Tez Yöneticisi: Burze Yaşar

Ekim, 2022

Günümüz dünyasında her şey hızla değişiyor. Teknoloji öngörülemeyen bir hızla büyüyor ve internet kullanımı yaygınlaşıyor. Bu nedenle gelişmelere uyum sağlamak ve yeterli olmak, özellikle iş hayatında hiç olmadığı kadar zor bir hale geldi.

Yeni bir inovasyon tarzı olan İş Modeli İnovasyonu, "günümüzde başarılı firmaların temeli" olarak adlandırılıyor. Ancak firmalar iş modeli inovasyonunun öncü örnekleri olarak klasikleşen Apple, Netflix ve Uber gibi şirketlerin başarısına ulaşmakta zorluk çekiyor. Bu durumun temel nedenleri ise İş Modeli ve İş Modeli İnovasyonu kavramı söz konusu olduğunda, işletmelerdeki uzmanların çok fazla belirsizlikle karşı karşıya kalması ve bu konu ile ilgili yeterli uzmanlığa sahip olmamalarıdır.

Bu çalışmada araştırılan problem ifadesi aşağıda belirtilmiştir;

Uzmanlar, işletmelere rekabet avantajı kazandırmak için gerekli olan başarılı bir İş Modeli İnovasyonu sürecine yardımcı olan anahtar unsurlar ve dikkat edilmesi gereken bariyerler hakkında yeterli bilgi sahibi değildir.

Temel araştırma konusu, problem tanımına dayalı olarak formüle edilir. Aşağıda ana araştırma sorusu belirtilmiştir;

İş modeli inovasyonu yapılırken kullanılan anahtar unsurlar ve karşılaşılan bariyerler nelerdir?

Bu soruya yeterli cevabı verebilmek için literatür taraması yapılmış, iş modeli inovasyonu uygulama sürecini kolaylaştırabilecek anahtar unsurlar belirlenmiş ve sıklıkla karşılaşılan bariyerler tespit edilmiştir. İş modeli inovasyonu gerçekleştiren farklı sektörlerdeki şirketler ile görüşmeler gerçekleştirilmiştir. Görüşmelerde, şirketlerin iş modeli inovasyonu yaparken kullandıkları anahtar elementler ve karşılaştıkları bariyerler analiz edilmiştir. Sonrasında, 66 iş modeli inovasyonunu içeren bir veri seti oluşturulmuş ve bu veri seti, iş modeli inovasyonunda kullanılan anahtar elementler üzerinden detaylı olarak incelenmiştir. Veri analizi ve firma görüşmeleri ile iş modeli inovasyonu uygulama sürecini etkin kılmak için kullanılabilecek bir rehber elde edilmiştir. İş modeli inovasyonunda kullanılabilecek anahtar elementler belirlenmiş ve örneklendirilmiştir. Ek olarak iş modeli inovasyonunda sıklıkla karşılaşılan bariyerler örnek uygulamalar ile saptanmıştır. Örneklenen kümeye göre en çok kullanılan iş modeli inovasyonu anahtar elementi müşteri arayüzü olurken, sıklıkla karşılaşılan bariyer ise finansal bariyerler olmuştur.

Anahtar Kelimeler: İş Modeli İnovasyonu, İş Modeli, İş Modeli Kanvası Anahtar Elementleri, İş Modeli İnovasyonunda Karşılaşılan Bariyerler, Döngüsel İş Modeli inovasyonu, Sürdürülebilir Kalkınma Hedefleri

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To My Parents…

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LIST OF ABBREVIATIONS

BM	Business Model
BMI	Business Model Innovation
b2c	Business to customer
b2b	Business to business
SaaS	Software as a service

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1 INTRODUCTION

1.1 Background

In the 1900s, innovation was limited to tangible products or services (Osterwalder and Pigneur, 2010). However, over time these innovations became insufficient to gain a competitive advantage. Furthermore, technology and customer demands have evolved due to the easy accessibility of information and rapid economic developments. As a result, conventional studies are not enough, and businesses are seeking for new ways to obtain a competitive advantage (Enev & Liao, 2014). Because of this pursuit, the business model (BM) concept began to be emphasized. The concept of a BM was first introduced in the 1990s to help companies in quickly communicating complicated business concepts to potential investors (Zott, Amit, and Massa, 2011). Over time, it evolved into an instrument for assessing and rearranging one or more organizational units, as well as large areas of the environment (Doleski, 2015). BMs, according to scholars, can be viewed as critical resources for competitive advantage (Afuah,2004).

The BM is a concept that provides the business's sustainability and clarifies how it gains a competitive advantage. In today's fast-changing world, innovation is necessary for this competitive advantage gained through the BM to become sustainable (Wirtz et al., 2010). Therefore, businesses need to change their current models and successfully implement them to maintain competitive advantage (Amit and Zott, 2010). A business model innovation (BMI) has the same approach as BMs, just a more advanced version. BMIs entail "the search for the firm's new business logic and new ways to produce and capture value for its stakeholders to respond with changes and opportunities in the firm's environment (Casadesus-Masanell and Zhu, 2013)". Companies give tremendous effort and use their resources to innovate products and processes. However, the returns of these innovations are generally uncertain. Besides, BMs and their innovations ensure success when executed correctly (Chesbrough,2010). BMI is about developing the creation of advantages and value-making changes through the fundamental BM of the organization.

Because technology has radically changed how businesses operate and deliver services to clients, the digital age has become a catalyst for BMI. BM lifecycles have been shortened as a result of digital disruption, and innovation has become vital to financial success. In addition, companies must respond to greater international competition and the increased potential for systemic risk due to the global marketplace, which has fuelled the demand BMI. These constrains pressure businesses to innovate their current models to stay competitive and flourish in the global economy.

Creating value is crucial aspect of innovating a successful BMI. Increases in financial indicators such as return on equity, total asset turnover, net profit margin, and return on assets, changing or creating a new sales channel, strengthening a company's position in the sector, and so on are examples of value creation. The fundamental purpose of a successful BMI is to create new revenue streams by increasing the value of products and changing how they are delivered to customers. While investments may be required to actualize a BMI, BMIs are only developed within the company organization and may not incur any cost. Furthermore, BMI is far less expensive than product innovation and does not involve R&D costs (Chesbrough, 2010).

To better understand a successful innovation model and create a framework for how it is done, BMI examples worldwide are examined in the next section. With these examples, the significance of BMI and the gains companies get with BMI are investigated.

1.2 BMI Examples

Currently, BMI is implemented various companies in different sectors through all over the world. One short example of them, when competition threatened Hilti's profitability from power tool sales, the company developed a new BM centred on a fleet management service. Hilti's competitive position and profitability were recovered after adopting the BMI. Nespresso can be accounted another example for BMI. Nestlé started selling its Nespresso coffee machines at low margins but with high margins on the capsules, which led to significantly higher growth and profit margins for the Nespresso business. At last, but not least, when IKEA switched from mail order to selling low-cost,

dismantled household products at standardized locations, the industry and customers' perceptions of what furniture purchases entailed changed dramatically.

1.2.1 Apple

Apple has innovated its BM by integrating its goods with the services it provides via channels. Apple has created service systems that can only be used through its products and has created a subscription model for these service systems. Apple created iTunes as a music streaming service, iCloud as a storage service, App Store as an application service, and Apple TV as an entertainment service. In its BMI, Apple did not content itself with the service model but also created ancillary products that can only be used with Apple products such as Apple Watch and Airpods.

While Apple was about to lose its power in the market and its success in competing with its competitors, it started to rise again with its BMI. In 2001, iTunes, which provides online music services related to iPhone, and its new product iPod, brought Apple to the top of its sector. However, this success was not only due to product innovation. Apple's success was due to it defining a viable BM for downloading music. (Lindgardt et al.,2009)

Apple is now at the centre of a much larger market than its original market due to a mix of product innovation and BMI. It also allowed Apple to increase its share of the computer market, as new consumers grew so enamoured with their iPods that they gave Apple's PCs another look.

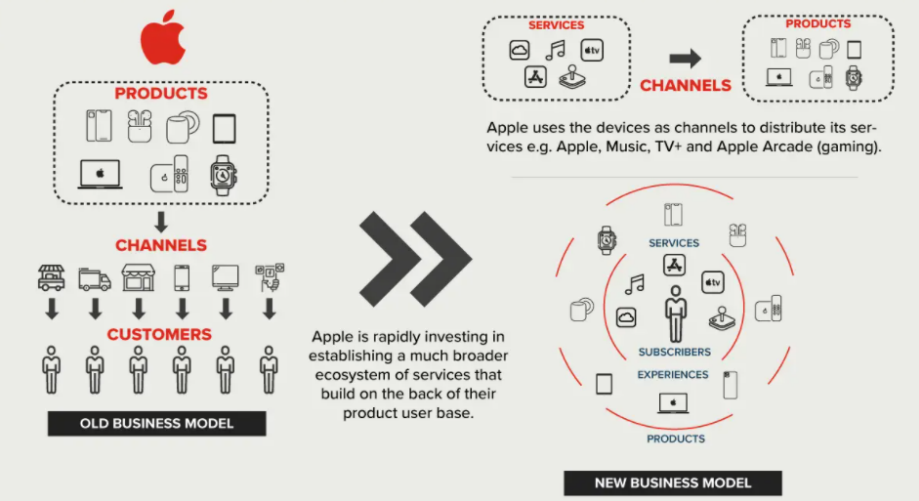


Figure 1. Apple BMI Demonstration (Boehmer, 2017)

Apple's innovation focus has shifted from products to BMs, and the company's revenues, profits, and stock price have represented this successful BMI (Amit and Zott,2012). Apple's BMIs influence not just the company's primary shareholders but also market movements, which impact general economic growth. Apple's stock hit a high of $636.00 in April 2012, bringing the company's market capitalization to $570 billion (Montgomerie and Roscoe,2013).

1.2.2 Netflix

Netflix is an inspiring example of a firm that has successfully modified its BM numerous times and grown massively as a result. They began by renting DVDs, then moved on to provide on-demand entertainment to meet various requirements around the world. Netflix allows you to watch your favourite episodes whenever and wherever you choose.

When Netflix started sending DVD rentals in April 1998, everything got underway. A year later, Netflix changed its business model from pay-per-use to subscription. About ten years later, Netflix changed its product to a streaming service, revolutionizing how millions of people spend their free time. Video rental companies dominated the home entertainment industry when software developers Reed Hastings and Marc Rudolph launched Netflix in 1997. Hastings was dissatisfied with the market's lack of customer service, blaming it on the excessive penalties charged to customers for late returns. Netflix saw an opportunity to conduct rentals differently and began renting DVDs by mail in April

1998, both a game-changer and a significant risk in the video-rental sector. Reed and Rudolph calculated that if the market grew to 20% of households, they'd have a profitable business. They had the wisdom to take the risk, and their prediction proved correct: 95 percent of all homes had a DVD player by the end of the decade. Thus, they have achieved a disruptive BMI by almost dominating the market. Blockbuster, a long-time industry incumbent, has been disrupted by the arrival of a new market participant, Netflix. Its disruptively innovative strategy was basic enough to appeal to modest customer segments while quickly gaining traction in the market. Netflix finally disrupted the market titan Blockbuster and the living rooms of consumers (Hansen,2017).

1.2.3 Xerox

Xerox has implemented a BM to commercialize the technology that other companies rejected, and it has been quite successful (Chesbrough,2010). The Xerox 914 which is the first plain paper photocopy machine, was invented and commercialized by Xerox in 1959, revolutionizing its reach to information. The 914 was developed over a decade and with a considerable R&D investment. The machine was ground-breaking, producing 2,000 copies each day, which was 100 times faster than the typical corporate copier at the time. Due to the 914's high price, it was decided to implement a leasing scheme to make it more affordable. Customers could cancel their leases with just 15 days' notice, reflecting Xerox's faith in its value proposition.

1.2.4 Rolls Royce

The British aircraft turbine maker Rolls Royce's BM is one of the most well-known examples of successful BMI. Before the innovation launch, Rolls Royce's engine manufacturing was solely a product business: the engine was sold to aircraft manufacturers for a relatively substantial one-time payment. The new BM sells thrust hours to airlines rather than engines: airlines pay for the running hours of the engines and are no longer required to purchase the turbine engines. Rolls-Royce retains ownership of the engine and is responsible for its upkeep and repair. The BM of Rolls Royce is built on performance-based contracting or performance-related payment. The flight performance hours can be obtained with the evaluated engine, not the engine's value per se (Bleicher et

al., 2016). The operation, maintenance, and repair costs are already factored into the pricing. Rolls Royce has not only gained benefits for itself and its clients but has also enabled low-cost carriers such as Southwest Airlines to operate with this BMI.

1.2.5 ALD Vacuum Technologies

Another successful example, ALD Vacuum Technologies, is now a leader in vacuum process technology solutions in the world. In addition to conventional plant sales, ALD Vacuum Technologies carried out BMI with the “Own & Operate” model (Gleich et al., 2008). With its new model, the company began to address customers' needs directly. Own & operate" focuses on providing a service to customers that lack the requisite know-how or technology. For example, ALD has served as a service provider to meet customer requirements for heat treatment where customers lack technology and knowledge for proper processes. With this new BM, it has become able to support customers in product development and get a share of added value.

1.2.6 DELL

As another good case in point, DELL focuses on selling personal computers to end-users directly, without the involvement of retail intermediaries. It reduced inventory holding costs with an order-oriented system (Kraemer et al., 2000). In addition, Dell pioneered the configure to order manufacturing strategy, which allowed for widespread customization. Dell accomplished this with a just-in-time assembly process that used standard components to create virtually personalized goods shipped out individually. Demand soared, and the company made over $73 million in its first year (Abraham, 2013).

1.2.7 Dow Corning

Last but not least, with its cost-based 'no frills' business strategy, Dow Corning produced one of the most trustworthy BMI examples. Above all, the new BM was developed in tandem with the existing value-based business strategy. The new strategy centred on delivering products to the mass market at low prices, even if it meant sacrificing quality. Dow Corning applied the new BM by launching Xiameter, a new and independent brand (Bucherer et al., 2012). Xiameter became an essential aspect of Dow Corning's service offering, preventing firms focusing on commodities consumers from eroding their

market share (Koen et al., 2011). The new brand specialized in the internet-based sales of standardized offers at the most competitive costs.

1.3 BMI at COVID-19

Every firm requires the flexibility to innovate and pivot its BM from time to time, yet altering the model quickly and significantly is extremely challenging. Since the Covid-19 pandemic began, almost all businesses have had to make some changes, even if they haven't completely innovated their BMs. COVID-19 reactions, according to McKinsey's report 2020, have accelerated the adoption of digital technologies over many years, and many of these new habits may be around for a long time. The most significant of them is the rise in remote working, which employees said happened 40 times quicker than they anticipated before the pandemic. As a result, businesses and organizations are scrambling to find ways to overcome these changes. Additionally, entrepreneurs are figuring out how to take advantage of this disruptive era by launching a firm during COVID-19. Businesses are adjusting to getting through the crisis in almost every field, whether it's through Zoom and Hangouts meetings, online fitness programs, or take-out alcohol cocktails. Individual fitness capsules, for example, have shown to be incredibly innovative in attracting people back to gyms.

1.3.1 Virtual Shopping – Streetify

People turned to online platforms to shop with the restriction of social life due to the covid-19 pandemic. Those who enjoy shopping will not go to the main streets and try their favourite products right away. As a result, Streetify has opted to bring high-street stores to their customers' homes. Streetify hopes that its free platform will help customers connect with neighbourhood businesses and keep them alive. It also offers one-year free access to merchants in the United Kingdom, the United States, Canada, India, and Australia. Users can choose a street to visit by going to the app or the website. Then they move around the street by scrolling up and down, left and right. They may view digital showcases and access each store's Streetify site by clicking on it. Within the 'shop,' customers can see all of the unique bargains, discounts, and promotions that have been acquired from well-known sale sites like Groupon and Rakuten. Business owners can also

add messaging, special offers, distribution choices, in-stock products, and more in their interactive storefront windows. Shoppers can even create their shopping streets with stores, selecting their favourite retailers and sharing them on social media.

1.3.2 Virtual Experience – Club Vino

Lately, Wine tasting events had grown increasingly popular, but the COVID-19 outbreak halted them immediately (Dressler and Paunovic,2020). Club Vino discovered a method to modernize and adapt to the current situation. Customers may get a home sampling package from the website, including a personalized bottle holder, downloadable tasting notes with food pairing suggestions, and a film that takes them through the wines and recounts the bottle's history as if they were at a real party.

1.3.3 Online Fitness Classes

Exercise is good for stress management and cognitive performance, in addition to physical benefits. On the other hand, many others failed to find the time, as they lived their lives with obligations. Moreover, the expensive cost of gym memberships has long been a typical impediment to exercise. In addition to all these, when the restrictions of the COVID-19 epidemic are added, it has become impossible to do sports in gyms or even outside. Therefore, as the COVID-19 hit and at-home exercises became the standard in the form of live online and pre-recorded classes, many people who wanted the group experience moved to virtual wellness.

1.3.4 Uber Transportation and Delivery

Uber has rapidly adapted its BMs with the necessary technological innovations to meet the developing needs during the COVID-19 outbreak (Liguori and Pittz,2020). By changing the current BM, it has started to provide transportation of necessities such as food, aid package, and medicine with its vehicles.

In conclusion, many businesses were impacted by the covid-19 pandemic and had to innovate their business strategies in order to maintain their competitive advantages and remain profitable. All the examples mentioned above were given to show how companies use business model innovation to be sustainable and maintain their place in the market.

2 RESEARCH DESIGN

2.1 Problem Statement and Research Questions

Looking at the past decades, we can see that business people and academics widely use the BM and BMI (Ramdani et al., 2019). In addition, papers in scholarly (peer-reviewed) journals were found using the EBSCOhost research databases.

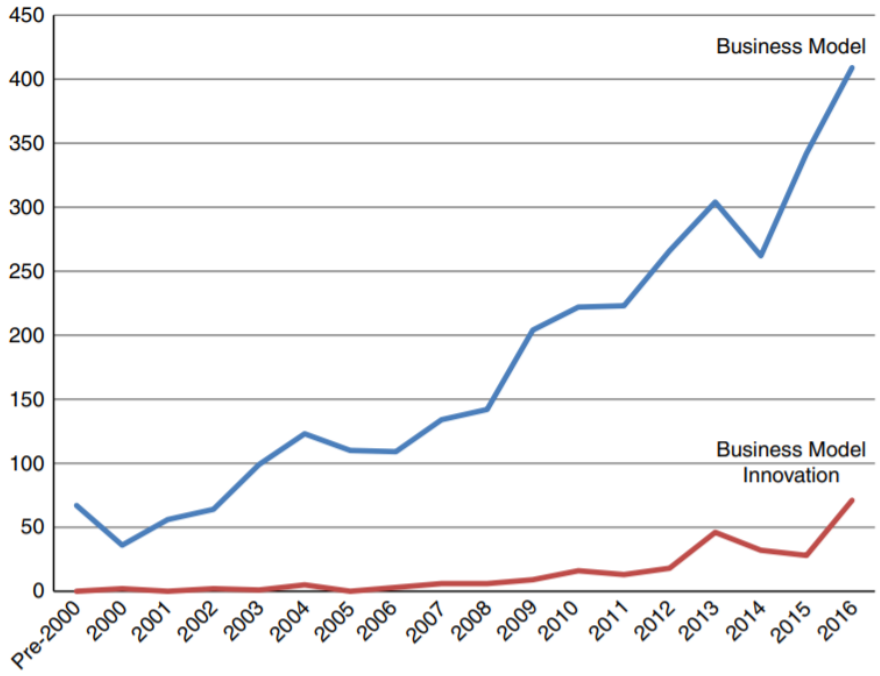


Figure 2. Number of research about BM and BMI (Reference: EBSCOhost)

Despite its rising popularity, there is a dearth of theoretical grounding and empirical investigation to address significant phenomena in the literature, necessitating a dedicated research effort (Foss & Saebi, 2017). The stages of adopting and expanding BMI are primarily unexplored (Chatterjee, 2013; Kesting & Günzel-Jensen, 2015).

The literature is fractured, with various points of view from various fields, authors, and experts. However, according to recent results, there is some agreement on BMs (Wirtz, Pistoia, Ullrich, & Göttel, 2016). Nevertheless, the phrase "BM" is not always used correctly, and it is sometimes misinterpreted as a "business idea," "business strategy,"

"revenue model," or "economic model" (Magretta, 2012; Massa, Tucci, & Afuah, 2017). The same can be said for BMI; there are significant differences of opinion among practitioners and scholars over the definition of the term (Zott, Amit, & Massa, 2010). Such holes need the introduction of clarity, which necessitates more investigation.

The second problem is that BM and BMI are defined incorrectly and incompletely by those who implement it (Neeli, 2019). Professionals are unaware of why the implementation of BMI in companies is failing. The main barriers hindering the implementation process are unclear and the key facilitators helping to overcome these barriers.

How do businesses experiment with new BMs and put them to the test? When it comes to BMI, it is critical to test new ideas in a systematic approach that decreases risk (Murray and Tripsas, 2004). It has been suggested that companies must engage in extensive experimentation to capitalize on new BMs (McGrath, 2010). However, the literature mostly ignores why and how businesses might test new BMs.

According to Chesbrough (2007), to create a new BM, experienced leaders must devote a significant amount of time to driving innovation. A successful BMI is nevertheless hindered by the organizational culture of firms, where such seasoned individuals constantly change jobs and roles. In addition, businesses' leadership qualities are insufficient to deal with new BMs (Doz & Kosonen, 2010). Additionally, when the central structure of bigger multi-unit organizations attempts to reform through BMI, changes to one unit of the company may conflict with the strategic initiatives of another unit (Santoset al., 2009). Experts' shifting attitudes within organizations have a detrimental impact on innovators, and organizational culture is also a significant impediment (Santos et al., 2009).

Maintaining the status quo or refusing changes to the BM is commonly regarded as a barrier, not for valid reasons, but rather for the simple reason that it is difficult to move to a new model (Chesbrough, 2010; Mudaly, 2016). Major businesses are unwilling to put resources into things that may or may not work, which prevents them from innovating and sustaining the status quo (Nair & Paulose, 2014). Dominant logic may limit ideas or

actions that do not follow the logic when exploring innovations within a business, which can be seen as a losing of competitive advantage (Wrigley, Bucolo, & Straker, 2016)

When it comes to BMI, there is often a disappointment due to problems and setbacks along the way. The interdependence of a BM's components makes development more difficult and complicated, and the character of effective BM configurations makes things more complicated (Mudaly, 2016).

Given the high failure rate of BM implementation, the lack of study in this field underscores the need to focus on the implementation aspect of BMs (Mentzer, 2011). By filling this gap, this thesis contributes to how and through which elements of BMI are made and the difficulties encountered while innovating BM.

The path from a BMI idea to execution, user acceptability, and market success is long, and many executives believe it is too demanding and unclear. While investing in BMI may be advantageous, several obstacles can prohibit a BMI from being initiated and implemented. For example, consumers do not indicate forcing incumbent management to contemplate a change during the initial stages of discontinuity before the transfer to the new BM (Graziano, 1998). As a result, the incumbent BM is frequently left unquestioned until it is too late to recover lost revenue. In other circumstances, there may be a lock-in to the current BM, which is bolstered by the fact that senior management rose through the ranks by following the current BM. As a result, they could be hesitant to look into options that involve changing their current BM (Chesbrough, 2007). It is vital to completely comprehend the processes of BMI in or implement a successful BMI. According to the Cambridge BMI scheme, BMI consists of 3 primary concepts. Figure 3 demonstrates BMI processes, activities, and challenges. The technique entails eight sequential but iterative phases or processes, meaning that while the organization can follow the process step-by-step, it can also go back and forth through the procedure, repeating and removing stages as necessary to meet its needs and limits.

Phases	Concept Design			Detail Design			Implementation	
Process	**Ideation**	**Concept Design**	**Virtual Prototyping**	**Experimenting**	**Detail Design**	**Piloting**	**Launch**	**Adjustment Diversification**
Activities	-Vision/purpose formulation -Stakeholder definition -Value mapping/Ideation -Sustainable Value analysis -Evaluation and selection of ideas	-Integration of ideas -Discussion of technological and general trends -Definition of value creation, delivery, capture system/BM elements/BM dimensions"	-Benchmarking within industry -Benchmarking with generic BM concepts -Prototype building -Prototype evaluation and selection	-Identification of key variables -Experiment design -Running experiment -Analysis and lessons learned	-Detailed definition of all elements -Overview of each element -Business transformation tool	-Planning -Implementation -Analysis -Adjustments -Documentation and communication -Identification of failure modes	-Realization planning -Implementation -Scale-up	-Monitoring -Reflection -Adjustment -Scale-up -Diversification -Iteration of the BMI process.
Challenges	-Failed identification of opportunities -Important stakeholder missed -Failed to integrate top management from the beginning -Lack of ambition/innovativeness	-Insufficient mutual understanding -Insufficient understanding of boundaries of the company's capabilities to innovate -Communication failures	-Failed integration of important stakeholders into the process -Too much effort/prototypes become too big	-No experiments -Methodological issues -Too much effort	-Unsuited level of design -Missing of information from previous steps -Insufficient documentation -Poor understanding of risks	-No pilots -Unrealistic setting -Too much effort	-Insufficient information about failure modes -Insufficient funding -Inadequate timeframe/expectations -Communication issues	-Premature, too late, or too little adjustment" -Unsuited diversification (agent, motivations, missing core competencies, no ownership advantage,)

Figure 3. The Regenerated Version of Cambridge BMI Process

The Cambridge BMI Process contains 8 steps. The steps are as follows:

1. Ideation: The value proposition and early conceptual concepts are conceived, as well as the objective of the BMI and its key stakeholders.

2. Concept design: A first basic conceptualization and documentation of the major BM features are created.

3. Virtual prototyping: To enhance and express the BM concept, various prototypes are created and amended. Benchmarking with other parties' solutions and concepts is also part of this phase.

4. Experimentation: Ideally, randomized controlled trials are used to examine the concept's fundamental assumptions and factors.

5. Detail design: All parts of the BM and the relationships between them are thoroughly examined and detailed.

6. Piloting: By executing a scaled-down version of the BM in a segment of the target market, the entire concept is put to the test.

7. Launch: The BM is disseminated to all appropriate organizational units and the target market.

8. Diversification and adjustment: The company model is adjusted by initial intentions, expectations, and strategic fit. Adjustments and diversifications are made based on this evaluation, and the entire BMI process may be repeated depending on the comprehensiveness of the necessary modifications.

Thanks to its descriptive and prescriptive properties, the method can be utilized to close the design-implementation gap. The Cambridge BMI Process was developed to give a more comprehensive framework than those available in the literature, capable of encompassing all stages of BM, considering their fundamental traits and elements, core tasks, phase transitions, and potential barriers. As a result, the framework may help organizations plan and execute BMI.

However, only a tiny subset of this technique is implemented by companies (Rashid et al., 2013). The reasons for this are summarized under the term design-implementation gap shown in Figure 4. The term covers the difficulties that arise in organizations' BMI process that hinder the successful and sustainable implementation of BMs.

NO FOLLOW-UP	**NO IMPLEMENTATION**	**COMMERCIAL FAILURE**
Concept Design	**Detail Design**	**Implementation**
Ideas are not followed-up	Concepts are no implementation	New business models fail in the market

Figure 4. Design-Implementation Gap in Sustainable BMI (Reference: Geissdoerfer et al., 2017)

New BMs experience commercial failure in the market, as seen in Figure 4 (Geissdoerfer et al., 2017). managers resist radical change even if they seize a business opportunity with low risk (Burmeister et al., 2016). Furthermore, a constantly changing environment prevents business experts from implementing BMI (Trimi & Berbegal-Mirabent, 2012). According to an earlier study conducted along these lines, disputes arise as a result of organizations adopting new components to innovate their BMs, as managers reject experimentation that could jeopardize the company's value and believe it is preferable not to innovate (Amit & Zott, 2001; Chesbrough, 2010).

All changes in a BM do not always result in success; misunderstandings, lack of information about the obstacles, and other factors lead to managers rejecting change in general. The lack of research and the sluggish pace of exploration give even more grounds to investigate significant obstacles to implementation in these fields, as well as essential enablers that aid in their removal.

Considering the problems mentioned above, the problem statement of this research:

The literature and practitioners lack of knowledge about the key drivers, barriers, and elements used in the BMI process. Therefore, according to this problem definition, the research question emerged as follows:

What are the key elements and barriers faced while innovating the BM?

To adequately answer the main question, some sub-questions were determined. These are;

1. What are the key elements used for BMI?
2. What are the barriers to BMI?

The theoretical importance of this study is to consider how and through which key elements a BMI process is carried out and to identify the barriers encountered while innovating a BM.

2.2 Research Methodology

The term "quantitative research method" refers to a collection of methods for employing statistical or numerical data to methodically investigate social issues. Quantitative research therefore requires measurement and assumes that the events being studied can be quantified. Its objective is to search for patterns and correlations in the data and confirm the measurements made (Watson and Roger,2015). It's primarily deductive: measurements are taken, analysis is performed, and conclusions are derived.

Qualitative research is based on observations and interpretations of people's perceptions of various events in natural settings (Weiss, 1982). To understand concepts, opinions, or experiences, qualitative research entails gathering and evaluating non-numerical data (e.g., literature, video, ethnicity, gender, recording, etc..). It is being used to learn more about an issue or to come up with new research ideas.

Since the current research is for academic purposes, the focus will be on grasping the BMIs and analysing the obtained data to adopt the mixed study method. Research in which both qualitative and quantitative data are obtained, analysed and interpreted is called mixed method research. (Leech,2008).

2.3 Research Scope

The scope of this study includes the implementation of BMIs all around the world. In particular, it focuses on why and how BMIs are made, which key elements based on Osterwalder’s four elements are used, and which barriers are encountered while doing them.

2.3.1 BM Canvas Elements

Because of its shown utility as an analytical tool, the BM canvas approach is adopted in this study (Okkonen and Suhonen, 2010). Furthermore, the idea enables organized analysis and comparison of market solutions (Wüstenhagen and Boehnke, 2008). What's more, the BM concept aids in the construction, change, and control of a firm's operations based on anticipated future challenges (Johnson, 2010).

According to the BM canvas, the value proposition is at the heart of BMI. Therefore, elements are used to create the value proposition and transfer it to the customer. You can see the table of the BM canvas elements selected for this research.

Table 1. *BM Canvas Elements*

Key Elements	Definitions
Infrastructure Management	Defines a company's network and logistical method to deliver the value it has developed, including partnerships, know-how, and (physical and intangible) assets.
Supply Chain	The supply chain may assist design novel consumer value propositions and guarantee that the overall company model is more resource-efficient. Companies that have taken a long-term approach to sustainability and incorporated it into their BM are already taking advantage.
Customer Interface	Identifies how the firm interacts with customers, including how the company manages its relationship with customers, which customers the company targets, and how it interacts with (possible) customers.
Revenue Model	The relationship between costs and revenues, or the costs incurred by the firm and the money created by the company, is highlighted.

Four of the nine building blocks of the BM canvas, shown in the table above, were selected because the nine building blocks are organized into four pillars: value proposition, customer interface, infrastructure management, and revenue model (Osterwalder and Pigneur, 2010).

2.3.2 Encountered BMI Barriers

BMI entails more than having a great idea at the right time and in the correct location. BMI must be deliberately nurtured, well supported, and openly maintained to provide a reliable, competitive advantage (Lindgardt et al., 2009).

BMI can help businesses break out of a vicious cycle of competitive pressure. Product or process innovations are easily copied, competitors' strategies have merged, and long-term advantage is difficult. It can assist in dealing with upheavals such as legislative or technical shifts, which necessitate fundamentally different competitive methods. With BMI, companies can gain a competitive advantage and increase their profit margins. In that case, why aren't more companies investigating to identify viable new BMs before external breakthroughs render their current ones obsolete? The short answer is that businesses confront considerable barriers when they innovate their current BM (Chesbrough, 2010).

According to the literature reviewed, barriers are generally classified into the following subcategories: institutional, market, economic and financial, behavioural, technological, and organizational (Michaelis and Carey, 1973).

In addition to that, the barriers encountered and to be encountered while innovating the BM were determined and analysed. You can see the chosen barriers in table 2.

Table 2**.** *BMI Barriers*

Type of Barrier	Definitions	Examples
Institutional	Barriers are imposed by (for example, political) institutions in the form of "game's rules."	Laws, policies, legislation, regulation, budgetary measures, and investment conditions
Organizational	Firms are social systems with aims, habits, organizational structures, and other factors influencing them.	Managerial systems, company plan or focus
Financial	The financial status of companies	Investment capacity, profit-loss balance, assets
Behavioural	Values and attitudes of employees in the workplace	Lack of focus, a sense of lack of control, a lack of knowledge, the risk-averse mentality of existing market operators, and so on.
Market	Market circumstances, the state of the economy, and value network	Monopolies, oligopolies, supplier leverage, a lack of knowledge, cost of labour, material and energy costs, and so on are all factors to consider.
Technological	Accessibility, technological infrastructure, and know-how	Absence of equipment or resources, high technological costs, inability to support technology, and so on.

2.4 Research Relevance and Contribution

The majority of the existing research is about BMI's definition, implementation, and advantages. On the other hand, the detailed BMI research according to specific business

sectors is slightly less. Therefore, this thesis aims to contribute to gaps in existing knowledge by examining BMI.

2.5 Thesis Structure

The thesis structure created to answer the sub and main research questions are represented in Figure 5.

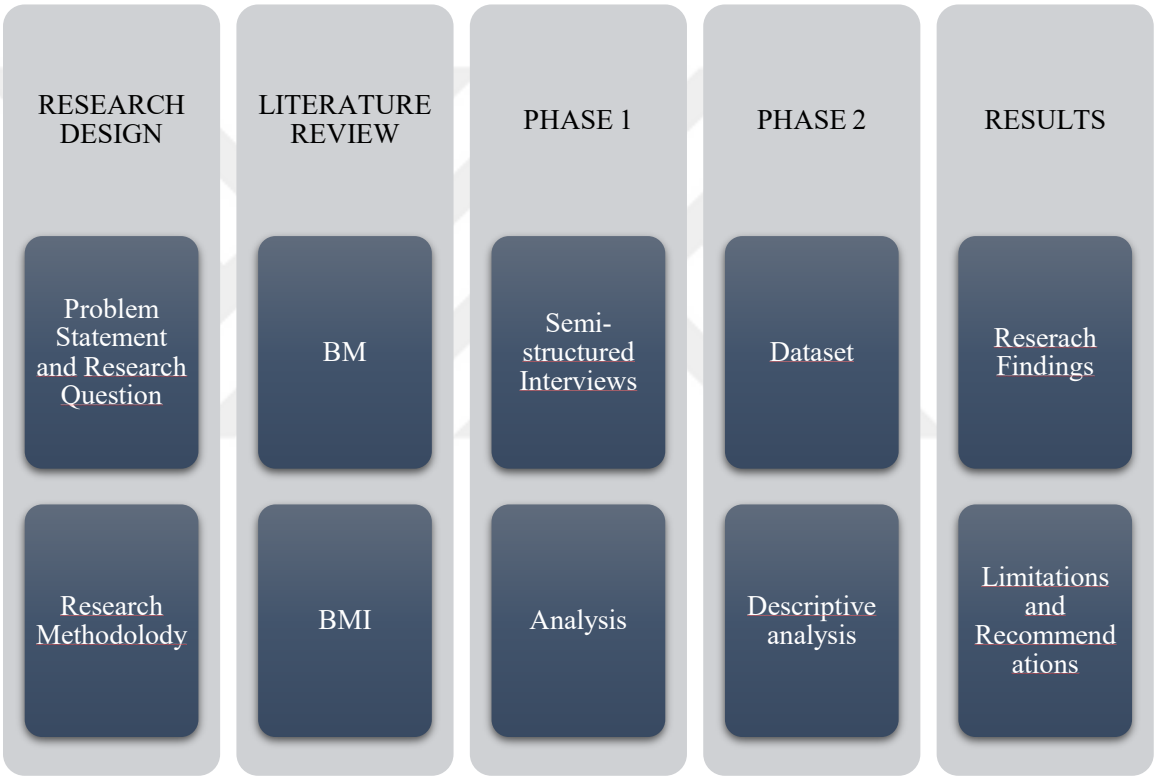


Figure 5. Thesis Structure Demonstration

The thesis structure is generated from five main sections, starting with the problem definition and ending with the conclusion. After analysing the problem, the problem statement, as well as the research objective and research questions, are defined in the research design. A comprehensive analysis of academic and non-academic documents is done in the literature search. It continues with semi-structured interviews and data collection and analysis of the obtained indications, followed by the results. Finally, the results section is completed by discussing the findings, evaluating the results, and making recommendations.

3 LITERATURE REVIEW

3.1 BM

The "BM" concept was first mentioned in 1957 in an article about business strategies (Bellman et al., 1957). This article aims to look into the creation of business games for training purposes. The BM concept appears to be inextricably linked to a representation of reality, a model-based simulation of the real world (DaSilva,2014). Then, the first academic article with "BM" in its title was published (Jones,1960). With the occurrence of internet firms and the progress of information and digitalization technologies, BM swiftly received attention between operators and business academics. The BM concept gained popularity during the dot-com boom of the 1990s through its driving and various research activities. In this context, the BM concept was initially used to convey mixed business opinions to potential investors quickly (Zott et al.,2011). Here, the purpose of the developed concept came to be seen as a tool for planning, systemic analysis, and communication of the structuring and implementation of one or more organizational units and their respective departments in the face of organizational complications (Knyphausen-Aufsess and Meinhardt, 2002).

In recent years, the conditions for doing business successfully have changed due to the rapid rise in innovation, globalization, and increased competition. To survive in this highly competitive environment, companies must develop new business ideas and strategies, examine whether existing business processes still comply with these new plans, and update their processes if necessary. In addition, a BM supports employees and managers in constructing their opinions, clarifying how they relate to and creating value for the customer (Johnson,2010).

The concept of "BMs" has recently become a popular research topic. Many types of research have been and are being done on this concept. In the literature, the BM concept appears with many different definitions. For example, Casadesus-Masanell and Ricart (2010) claimed that the BM helps understand how companies create, offer and capture the value and reflect the company's strategy.

In general, the BM is a concept that provides the business's sustainability and clarifies how it gains competitive advantage. Table 3 shows other BMI definitions in the literature.

Table 3.*Selected BM Definitions*

Author	**Definition**
Timmer, 1998	"A BM is "an architecture for the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenue."
Amit & Zott, 2001; Zott & Amit, 2010	"The BM depicts the content, structure, and governance of transactions designed to create value through the exploitation of business opportunities. Based on the fact that transactions connect activities, the authors further evolved this definition to conceptualize a firm's BM as "a system of interdependent activities that transcends the focal firm and spans its boundaries."
Chesbrough & Rosenbloom, 2002	"The BM is the heuristic logic that connects technical potential with the realization of economic value"
Magretta, 2002	"BMs are stories that explain how enterprises work. A good BM answers Peter Drucker's age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?"
Morris et al., 2005	"A BM is a 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.

	It has six fundamental components: Value proposition, customer, internal processes/competencies, external positioning, economic model, and personal/investor factors."
Johnson, Christensen, & Kagermann, 2008	"BMs consist of four interlocking elements, that, taken together, create and deliver value. These are customer value proposition, profit formula, key resources, and key processes."
Johnson, 2010	"A BM can help managers and business owners structure their ideas, making clear how these ideas relate and lead to value for both the customer and the company."
Osterwalder and Pigneur, 2010	"BMs are the rationale of how an organization creates, delivers, and captures value."
Casadesus-Masanell & Ricart, 2010	"A BM is a reflection of the firm's realized strategy."
Zott et al., 2011	"BMs are referred to as a description, architecture, conceptual tool, model, structural template, pattern, set, framework, statement, or representation."
Wirtz et al., 2016	"BMs are "a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products, and/or services are generated using a company's value-added component. In addition to the architecture of value creation, strategic as well as customer and market components are taken into consideration, in or drove the superordinate goal of generating, or rather, securing the competitive advantage."

In a study of 103 BM articles, Zott et al. (2011) discovered that authors disagree on the concept of a BM. According to them, BMs are described as a description, design, conceptual instrument, model, structural framework, pattern, set, template, expression, or representation in general (Zott et al., 2011). Chesbrough and Roosenboom's BM concept is one of the most often used (2002). According to these scholars, a BM describes a company's organizational and financial design (Chesbrough and Roosenboom, 2002).

For this study, the definition of Teece is chosen. Since this definition has a broad scope and fully describes the BM;

"A BM articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value"

The 'BM canvas,' as defined by Osterwalder and Pigneur (2010), is a set of nine building components for a BM (Osterwalder and Pigneur, 2010). Key partners, key activities, key resources, customer value proposition, customer connections, elements, customer segments, cost structure, and income stream are the nine building elements of the BM canvas (Osterwalder and Pigneur, 2010).

3.1.1.1 Customer Segments

BM Canvas' first building block is customer segments. It identifies the various persons or organizations that a company wishes to contact. Businesses cannot succeed without profitable clients. When it comes to client segments, it's critical to divide people into numerous groups to meet their demands better. The groupings could be small or large depending on their everyday needs, behaviours, geography, or features. Firms can learn more about interacting effectively with different groups and discover what works best for each potential customer.

3.1.1.2 Value Proposition

The value proposition is the solitary building element that makes up the value proposition portion, which is in the centre of the BM canvas. The value proposition, according to

Osterwalder and Pigneur (2010), explains how the company's goods and services offer value for customers.

3.1.1.3 Channels

The channels building block determines how businesses will communicate with each consumer segment and provide the value proposition. Social media, advertisements, search engines, websites, newspapers, and word of mouth are examples of these channels. Customers' knowledge of the product or service and delivery of the value propositions are supported via channels. Customers can also buy products or services through channels, providing post-purchase support.

3.1.1.4 Key Activities

What are the activities/tasks that must be accomplished to achieve the business goal? Businesses should establish a list of all the critical actions that must be completed for the BM to succeed. These critical actions should focus on delivering on the company's value proposition, reaching out to customers, maintaining relationships, and producing money.

Key activities are divided into three categories:

1. Production: Designing, producing, and distributing a product in large quantities and/or of high quality.
2. Problem-solving: Developing creative solutions to clients' particular concerns
3. Platform/Network: Platform creation and maintenance. Microsoft, for example, provides a dependable operating system that can run third-party software.

3.1.1.5 Key Resources

The critical assets required to make a business plan successful are known as key resources. These resources enable you to develop a distinctive value proposition, preserve critical client relationships, expand into new areas, and generate income.

3.1.1.6 Customer Interface

The Value Proposition component is closely related to the Infrastructure Management element, which consists of the "important partners, activities, and resources" building blocks. It is connected to the Value Proposition component because it includes all of the human and material resources, including networks and partnerships, that must come together to create the firm's value proposition (Teece, 2007).

3.1.1.7 Infrastructure Management

The Infrastructure Management part, which comprises the building blocks 'key partners, activities, and resources,' is strongly tied to the Value Proposition part. Because it encompasses the people and physical resources, including networks and partnerships, that must work together to produce the firm's value proposition (Teece, 2010), it is related to the Value Proposition part.

3.1.1.8 Revenue Model

The Revenue Model part comprises the building blocks 'cost structure' and 'revenue streams,' and it is located to match the other parts. This part examines the link between the firm's costs and its revenue to fulfil the value proposition.

3.1.1.9 Key Partners

External companies or providers that will assist in executing key activities are referred to as key partners. These alliances are formed to mitigate risks and acquire resources.

There are various types of partnerships.

- Non-competitive partners form a **strategic alliance**.
- **Coopetition** is a strategic relationship between two or more people.
- **Joint ventures** A joint venture is a type of business agreement in which two or more parties agree to pool their resources to complete a certain job. **Relationships between buyers and suppliers'** commercial transactions involving the acquisition and provision of commodities or services between organizations.

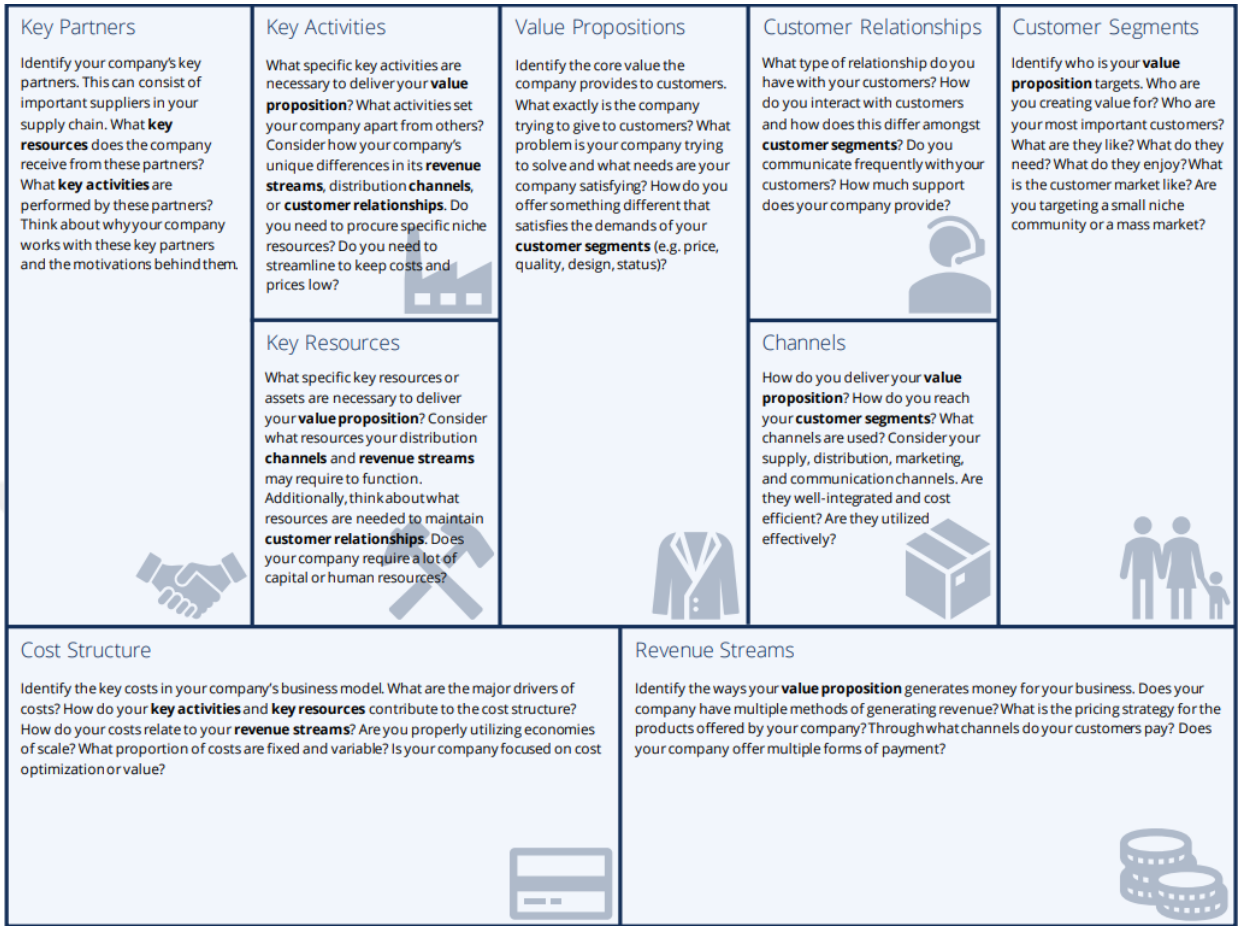


Figure 6. BM Canvas (Osterwalder and Pigneur, 2010)

As shown in figure 6, the BM canvas is a tool for building and planning a BM. As long as the correct answers can be found for the parts that make up the canvas, it makes it easier to create a BM and reveals the desired model. This article used the parts of the BM canvas, and analyses were made on these elements.

3.2 BMI

3.2.1 History and Definition of BMI

In the last three decades, the importance of BMs has grown in several areas, including technology and innovation management, strategy development, sustainability, and entrepreneurship, giving rise to the concept of BMI (Dodgson, Gann, & Phillips, 2014). In addition, the need for continual innovation is essential for start-ups and well-established businesses (Burmeister et al., 2016). A BM's innovation is more than just a new product,

service, or technology. It extends beyond single-function methods like improving the sourcing strategy or sales model. When two or more aspects of a BM are reimagined to generate value in a new way, innovation becomes BMI. However, BMI is difficult to execute and copy since it comprises a multifaceted and organized set of activities (Lindgardt et al.,2009).

BMI is about generating advantage and value by making changes through the fundamental BM of the organization. The innovation management literature accepts this requirement for innovation and describes BMI (Tiemann,2018). BMIs can be defined in many particular ways. Some researchers describe it as the companies' search for new business logic and different ways of creating and achieving value for their stakeholders (Casadesus-Masanell and Zhu 2013). Some of them divide it into categories; value creation innovation, value proposition innovation, and value capture innovation (Clauss 2016).

BMI operates differently from product and process innovation (Amit&Zott, 2002). BMI does not have to discover a new product or service compared to product or service innovation; instead, it uses new ways of creating and delivering up-to-date products or services and new ways to derive value from it (Yang et al.2017). Products and services can be easily imitated, but with BMIs, companies make an uncopiable difference (Kim & Mauborgne, 1999).

When the BMIs in the literature are sorted from the past to the present, they demonstrate some differences and changes. Although the definitions in the table differ, it is understood from all definitions that BMI has a dynamic structure, and its sole purpose is to add value.

Table 4.*BMI Definitions*

Author	**Definition**
Markides (2006)	"BMI is the discovery of a fundamentally different BM in an existing business" (p.20)
Aspara et al. (2010)	"Initiatives to create novel value by challenging existing industry-specific BMs, roles and relations in certain geographical market areas." (p.47)
Yunus, Moingeon, and LehmannOrtega (2010)	"BMI is about generating new sources of profit by finding novel value proposition/value constellation combinations" (p. 312).
Sorescu et al. (2011)	"As a change beyond current practice in one or more elements of a retailing BM and their interdependencies, thereby modifying the retailer's organizing logic for value creation and appropriation." (p.7)
Amit and Zott (2012)	"Innovate BM by redefining content (adding new activities, structure (linking activities differently), and governance (changing parties that do the activities).
Kaplan (2012)	"BMI is a better way to create, deliver and capture value" (p. 108)
Matzler, Bailom, von den Eichen, and Kohler (2013)	"BMI results when a company increases customer value and simultaneously creates a new value creation and revenue model that allows the company to capture some of the value created in a new way" (p. 31).
Bruchurer et al. (2012)	"We define BMIs as a process that deliberately changes the core elements of a firm and its business logic." (p.184)

Berglund and Sandström (2013)	"A BMI can thus be thought of as the introduction of a new BM aimed to create commercial value" (p.276)
Khanagha et al., (2014)	BMI "can range from incremental changes in individual components of BMs, an extension of the existing BM, introduction of parallel BMs, right through to disruption of the BM, which may potentially entail replacing the existing model with a fundamentally different one."
Geissdoerfer (2020)	"BMI is a stream in the work on BMs, and some authors of the latter assume it to be an implicit part of their conceptualization"

Casadesus-Masanell and Zhu's (2013:464) BMI definition is chosen for this study. The reason for choosing this definition is that it describes BMI in the most fundamental and comprehensive way.

"At root, BMI refers to the search for a new logic of the firm and new ways to create and capture value for its stakeholder; it focuses primarily on finding new ways to generate revenues and define value propositions for customers, suppliers, and partners."

3.2.2 BMI Method

In this study, BMI is centred on the parts of Osterwalder and Pigneur's BM canvas (2010). These parts were defined by Richardson (2008) into three elements: value proposition, value creation, delivery, and value capture. Figure 7 depicts the link between the building pieces of the BM canvas and Richardson's elements. (Boons and Lüdeke-Freund, 2013) The value proposition is the product or service that the firm gives to produce a profit. The organization's heart should be value generation and delivery; it describes its essential operations.

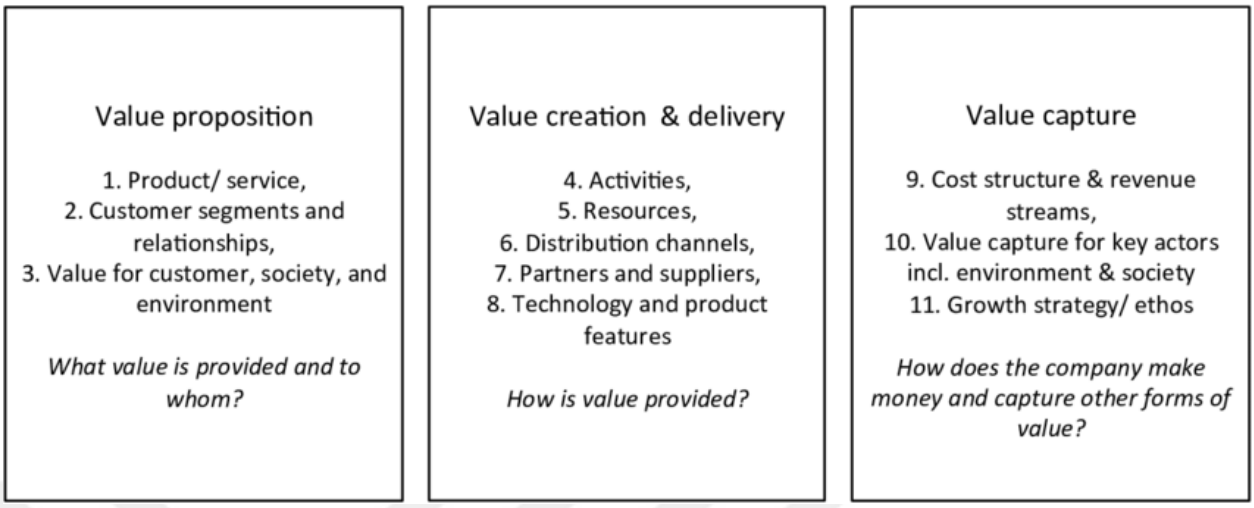


Figure 7. The conceptual BM framework of Richardson (2008)

The BM framework gives a logical image of the company that aids in guiding the many decisions and activities that must be made throughout execution. A BM isn't the same as a strategy (Porter, 2001). Instead, it is a conceptual framework that aids in connecting a firm's strategy, understanding how to compete and its operations, or strategy execution. The BM framework can aid strategic thinking about the specifics of a company's operations.

3.2.3 Barriers to BMI

Now that we understand what BMI is, the question arises: "Why are BMIs spreading so slowly?" (Specht and Madler, 2019). According to Chesbrough (2007), to create a new BM, experienced leaders must devote a significant amount of time to driving the innovation. However, due to the organizational culture of businesses, where such experienced professionals frequently change positions and roles, a successful BMI is hampered. In addition, businesses' leadership qualities are insufficient to deal with new BMs (Doz & Kosonen, 2010). Furthermore, when the central organization tries to implement transformation through BMI, the changes made to one section of the company may clash with the strategic activities (Santos, Spector, & Van der Heyden, 2009). The changing views of experts within organizations have a detrimental impact on innovators, and organizational culture is also a major impediment (Santos et al., 2009). The absence of a creative environment combined with a promoting atmosphere driven by corporate

politics is viewed as a significant impediment to BMI (Tikkanen, Lamberg, Parvinen, & Kallunki, 2005).

Two types of barriers to BMI were highlighted by Chesbrough (2010). The first barrier concerns a company's existing assets and how they are configured. When assets must be re-configured and operational processes must be altered, this barrier arises. The second barrier is that top executives who rose to their positions as a result of existing BMs may block the creation of new ones. On the other hand, committing resources to BMI, according to Simpson (2006), is a challenging investment, especially for incumbents. Companies that invest in BMI confront new asset and resource costs, as well as the risk that their previous BM will not mesh with the new one due to these costs. Furthermore, a corporation that switches from one BM to another, risks jeopardizing its fundamental competencies. As a different approach, Weber (2013) highlights two barriers to innovation; endogenous and exogenous. Endogenous barriers are created by established enterprises as a result of their competitive behaviour and responses to new market entries. Exogenous barriers are those that have to do with the environment and are rooted in market conditions. These barriers are usually out of a company's control or influence.

3.2.4 Circular and Sustainable BMI

Global resource consumption continues to rise, posing a challenge to today's resource-intensive economies and businesses. Due to market scarcities, growing governmental interference and geopolitical tension to obtain resources, and increased harm to global ecosystems, enterprises are faced with an uncertain supply of resources. The circular economy is a concept that depicts an economy with closed material loops. Furthermore, in addition to risk reduction, the circular economy implementation may expose new profit pools or lead to innovations that open up new commercial prospects (Mentik,2014). Circularity supports that a product or some parts of the product should be reused as a new product's raw material after its lifetime is over. A circular economy believes in a world in which there is no waste. It is perceived as a methodology to change a sustainable environment (Geissdoerfer, Savaget, Bocken, et al., 2017). Circularity defines economic, technological, and environmental elements that aim to reduce waste to zero and maximize resource reuse.

Murray, Skene, and Haynes (2015) explored the circular economy at three levels: firm, inter-firm, and full industrial. Managing supply chain operations at all three levels is critical to achieving the circular economy goal. Reduce, reuse, recover, remanufacture, and recycle actions throughout supply chains can help achieve this (Cooper 1999).

3.2.4.1 Sustainable BMI

SBMI has gained a lot of traction in the literature and in practice as a strategy to obtain a competitive advantage while also addressing social and environmental concerns (Dentchev et al., 2016). A survey study on the sustainability and innovation of BM done by the Massachusetts Institute of Technology and Boston Consulting Group (Kiron et al., 2013) identified challenges that the company has when it comes to incorporating sustainability-driven innovation into its BM. This viewpoint sees BMI as an instrument for developing sustainability cases. SBMI explains the procedures by which new BMs are generated, and companies transform their existing BMs to achieve long-term sustainability (Roome and Louche, 2016). In addition, it looks at how to anticipate social changes and adapt to sustainability concerns (Loorbach and Wijsman, 2013).

Technological, social, and organizational-centred innovations are the three types of sustainable BMI (Bocken et al., 2014). Figure 8 depicts the categories and archetypes that correspond to them and some instances of sustainable BMs in each category.

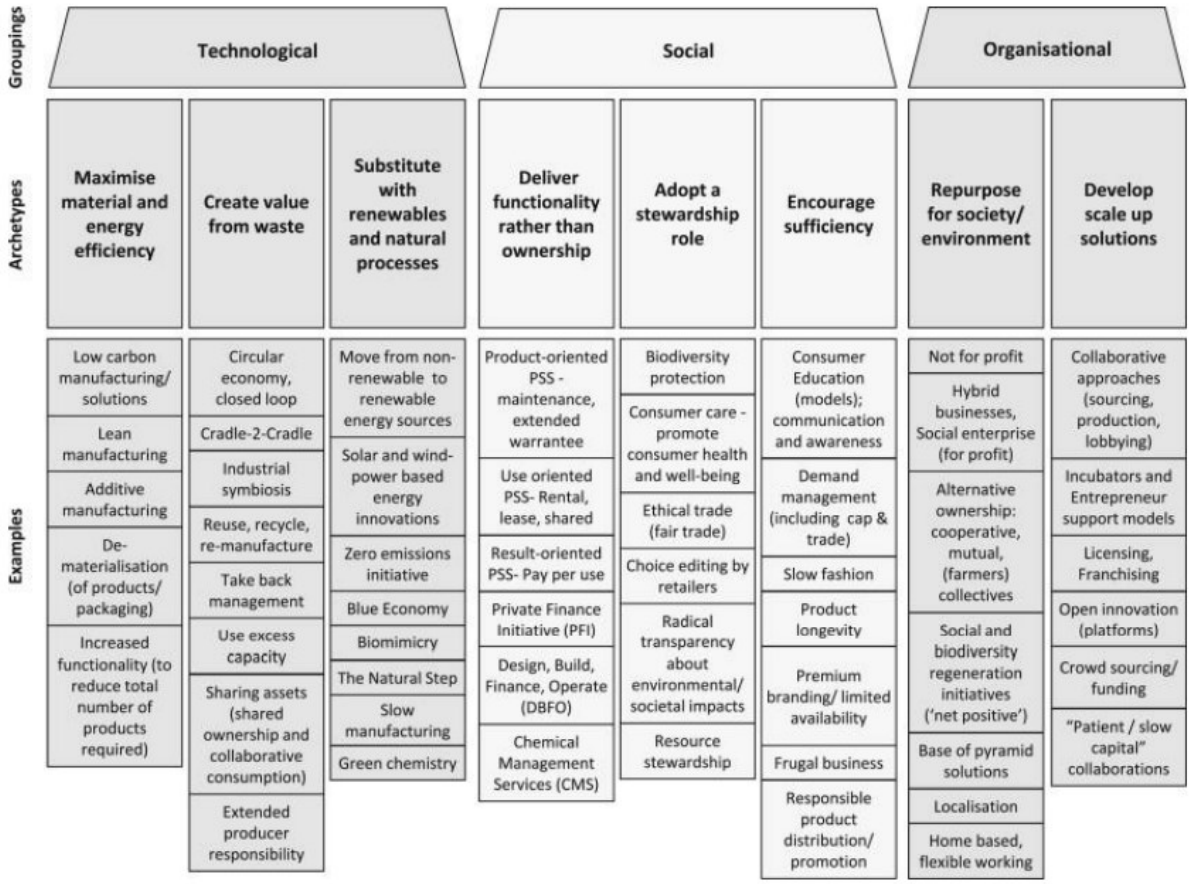


Figure 8. The sustainable BM archetypes of Bocken et al. (2014)

3.2.4.2 Circular BMI

Unfavourable effects of consumption and producing implementations are poorly included in pricing in today's economic system, resulting in many potential value creation possibilities for enterprises being lost, ignored, or destroyed (Bocken et al., 2014). Circular BMI can prevent this loss and turn it into profit. Therefore, it should be seen as a subgroup of BMI that fits within an economic system.

In a report by the Ellen Macarthur Foundation, the circular economy is portrayed as a business opportunity. (Ellen MacArthur Foundation, 2012). The business world and the concept of circular BMs have developed rapidly (Geissdoerfer et al., 2017). Academic

studies focused on circular BMs and their sustainable effects on the environment. (Kirchherr and Van Santen, 2019).

A circular BM is one in which the generation of economic value is combined with the limiting, decreasing, or closing of resource loops (Antikainen and Valkokari, 2016). Circular BMs attempt to retain the embedded value and functioning of goods, as well as the materials that make them up, to the greatest extent feasible (Webster, 2015).

BMs in the circular economy are built on the following key elements:

- Circular methods such as product reusing, maintenance, reprocessing, and recycling have been recognized as circular aims that can be achieved through innovation and action.
- BMI takes shape as a technique of applying these circular goals;
- BMI lies within the context of two other significant aspects: technical and social innovation.
- Recognition of proper policy, behaviour, and educational movement as key enablers for circular BMI.

Renswoude, K. et al. (2015) propose a circular BM scan along with a long list of questions to consider when transitioning to the circular BM. A circular BM scan divides an organization into six stages for mapping and assessing existing company activities along the value chain. The topics covered are value proposition, concept, supply, manufacturing, consumption, and next life. Because a circular BM only considers the whole circularity of raw materials, the value proposition, and design stage are outside the circle. Figure 9 demonstrates the circular BM process scheme.



Figure 9. Circular BM Process Scheme (Reference: Renswoude (2015)

4 METHODOLOGY & DATA

This chapter gives an elaborative explanation of the research methodology used to answer the research questions.

4.1 Phase 1

Data was gathered with qualitative and quantitative methods. In the phase-1, with semi-structured interviews, qualitative data was collected. Summaries of the inferences made with the collected data are indicated.

The semi-structured interview is a data collection technique that involves asking questions within a theme framework. The questions, however, are not in any particular order or format. Semi-structured interviews are frequently qualitative in research. In business, social studies, survey technique, they are usually utilized as experimental tools. They provide everyone with the same theoretical framework while allowing them to look into different aspects of the research issue. For this reason, this technique has been used in order to examine real example of BMIs in detail and to make inferences.

Companies that are implementing BMIs were selected. Interviews are implementing in four companies. The experts were interviewed to discover the key barriers and key elements related to the process of effective BMI.

Interviews occurred with fifteen questions. These question set was generated from two parts. The first part is investigated the organizational structure of company and the interviewer's position in the company. The second part is investigated the BMI, barriers faced when implementing BMI, and key drivers which are used in BMI. Interviews were conducted with founders, co-founders, and one project manager. The approximate duration of interviews varied from 30 to 60 minutes depending he interviewer. Before beginning the interview, each participant gave permission to record and use the content for the thesis. Appendix A contains all of the interview questions.

Interviews were held with 4 companies;

1. Poltio - Co-founder
2. Mektepp - Co-founder
3. Antikya - Owner
4. Need Map - Project Manager

These companies were selected in order to examine the BMIs made by companies of different sectors and scales.

4.2 Phase 2

In the second phase BMIs made by different companies in various countries are examined with quantitative approach. BMIs of 66 companies from 14 countries were found through the internet and database, and a dataset was obtained. Dataset contains;

- Company Name
- Country of the Company
- Implemented BMI Type
- Implemented BMI Information with answers to what, why, and how questions

The dataset was examined and expanded with BMI Key elements (Infrastructure Management, Supply Chain, Revenue Model, and Customer Interface). Points were assigned to key elements based on BMI information. Afterward, descriptive analysis was conducted.

5 FINDINGS & RESULTS

5.1 Qualitative Approach – Semi-structured Interviews

5.1.1 Poltio

5.1.1.1 What is Poltio?

Poltio was established in 2014 in İstanbul. It is in the IT Services and IT Consulting industry. It currently has 50 staff members. Poltio provides services in the areas of user engagement, segmentation data, lead generation, and insight creation.

Poltio is an audience engagement platform through which brands, publishers, or standard individuals can create any type of interactive content whether it's a poll, a quiz, or a more complicated interactive format, and share it with a large audience (https://www.poltio.com). The platform lies in between the client using it and their audience. Any type of poll that they create through the Poltio platform would be embeddable into a small space such as banner. It can be inside a mobile app or digital terminal so it's embeddable across all devices and channels. What Poltio focus on is not behavioural but declared data, so it would be the first-party information that a client a citizen a user shares with the brand directly; and Poltio focus on making the process non-intrusive, easier, and less boring.

5.1.1.2 Poltio's Initial BM and BMI

Poltio's initial BM was a social media type model, with a platform as a service extension. They called it a 'social polling' platform. It was a social network based on polling, but the polls were also embeddable on other websites.

Co-founder Ahmet Tosun mentioned that the "Poltio model was a YouTube like a model. You can upload videos to YouTube and different users can view your content and embed the videos uploaded to YouTube on your website or make it private and can share private links. Poltio was similar". You could create polls in any subject or format and share them with a large audience. You could also embed the polls on own website. The main focus of monetization was similar to other social networks - they tried monetizing the audience.

But they've seen that it was difficult to scale. A lot of metrics needs to be right and the service should be super 'sticky' for a business to customer (b2c) social network to be able to scale. B2c defines the structure where the sale of products and/or services takes place directly between the companies and the customers. Whereas they realized that the platform side is self-scaling. More brands were interested in using the platform side of Poltio's solution and were willing to pay. So, they pivoted to a new BM and Poltio today is a business to business (b2b) software as a service (SaaS) platform. Companies pay a monthly subscription fee to use the platform.

5.1.1.3 BMI Barrier

Poltio started as a start-up. Their start-up scene is based on KPIs. They have been monitoring various KPIs since their establishment. It was challenging for Poltio to give up on their in the BM that they worked hard to build it. However, due to the management problems of the b2c BM they decided to make deep down client interviews and tried to understand what clients use them for and clients' need. Client interviews were crucial in motivating and encouraging the Poltio team to innovate their BM.

Poltio has gone through an investor round prior to the pivot and it was difficult to raise a new round for an unproven BM. They realized that cash flow was a big issue. They stated 'While trying to complete the transition to the new model, it was like trying to operate two companies at same time'.

Financial constraints were a big challenge. Also, Turkey was Poltio's main market and it was trying to scale to the US. Turkish economy has a negative status and currency fluctuations affected Poltio's business negatively. In the light of this information, it can be stated that Poltio is faced with financial and market barriers while implementing its BMI.

Poltio is focused on being cash flow positive to overcome BMI barriers. They tried to maintain past clients that they have before the BMI and minimize the firm's cost. Main cost cuts were shutting their US Office and making a deal with Google to move their hosting infrastructure to them in return for credit. Hosting cost was one of the top lines of Poltio.

5.1.2 Mektepp

5.1.2.1 What is Mektepp?

Mektepp is a start-up company founded in 2022. Currently, it has 10 employees. It started as a blog with articles that could be useful for teachers. Afterward, a BM was established and it became a company.

Mektepp is a digital sharing space built for teachers who don't want their students to learn by rote learning and are looking for new ways to help them (https://www.mektepp.com/). Teachers can locate in-class activities and content that the student is engaged in on a one-on-one basis. They can share their activities if they want to.

5.1.2.2 Mektepp's Initial BM and BMI

At first, Mektepp's revenue model was based on their audience. However, they said that "we don't want to earn money from our audience because our audiences are teachers who try to develop themselves and raise their students in the best manner". Therefore, Mektepp decided to innovate their BM.

They've innovated their revenue model and eliminated the teacher pay scheme. Instead of charging teachers, they started to do social responsibility projects with companies, and to establish cooperation with companies that develop content in the field of education and want to publish and promote this content. Mektepp also innovated their customer interface for those companies who want to publish their content in Mektepp's platform.

5.1.2.3 BMI Barrier

Mektepp encountered financial barrier when innovates their BM. Since profit models' long-term viability has become harder due to new BMIs. They had to constantly expand their firm, discover new companies, and persuade them to collaborate in order to earn a profit.

5.1.3 Antikya

5.1.3.1 What is Antikya?

Antikya was established in 2011 in Hatay. Currently, it has approximately 50 employees. Antikya, thanks to the productive strength and support it has received from women entrepreneurs, has been meticulously successful in bringing the cultural values that it carried in its cuisine from the past into the present's tables full of tastes without compromising its naturalness and authentic codes.

Antikya is a restaurant with a menu consisting of local dishes from Hatay (https://www.antikya.com.tr/). Hatay is one of the oldest residential areas in Turkey, with a variety of great food specialties. In 2017, UNESCO designated it as a "City of Gastronomy" and added it to the "Creative Cities" network. These areas are also known as the "City of Civilizations," because they serve as a link between east and west. These areas, which have a thousand-year history, have a cuisine that reflects all ethnic origins through merging all civilizations over time. It has prepared around 600 various cuisine recipes for our tables. One of the biggest goals of Antikya is to spread this culture and make it sustainable.

5.1.3.2 Antikya's Initial BM and BMI

Antikya has innovated its BM to cope financially with the covid-19 pandemic while also spreading Hatay cuisines throughout Turkey, which is one of its main objectives. Antikya's first BM could only serve people living in Hatay, and Antikya was not present in any digital environment. Antikya innovated its BM by using key elements of infrastructure management and customer interface. Antikya aimed to reach all of Turkey with its BMI. It has developed a new service for this. By adopting special shipping and preservation methods, all the flavours offered to its customers in the restaurant can be delivered to anywhere Turkey. Afterwards, a customer interface was created in order to target audiences and make sales with this model, which was innovated. Antikya has added a special purchase tab for its customers to the new web page created. In this way, it has become possible to reach the tastes of Antikya from any part of Turkey with a single click.

Restaurants are now quite frequent in sending their products to customers' houses via freight inside the city they are in. However, Antikya, which started as a completely local restaurant, expanded its product line and used unique methods to make its products available throughout the country, that is a remarkable of BMI.

In addition to all these, Antikya has started to cooperate with companies in the same sector with its new BM. The agreement they made with Big Chef's restaurant chain to both promote the Antikya brand and increase profits was realized as a result of this BMI. Antikya has introduced its local flavours to the menu of BigChef's restaurant chains with the innovation of the BM. It is a completely new concept for a restaurant to add another restaurant's product to its menu and offer it for sale.

5.1.3.3 BMI Barrier

Antikya is changed its organizational structure. With its BMI, Antikya has completely changed its organizational structure, management style, habits and the way it transfers the business to the customer. Therefore, it faced behavioural and organizational barriers in making this innovation. The owner of Antikya said that “It was a challenging situation for the company to adapt its employees, who were accustomed to their old systems, to the new structure and convincing them to embrace it”. Employees at Antikya lacked knowledge about the new BMI that was to be developed. It was causing a behavioural barrier in this scenario. First and foremost, they needed to grasp why they needed this innovation and obtain the knowledge competence that this innovation demanded. Antikya attempted to overcome this barrier by first informing its staff about their mission and the new invention they developed, and then delivering training on the innovation's requirements.

BMI necessitated a major restructuring of the company. It was a significant barrier for Antikya in this circumstance. Antikya's management structure, corporate plan, purpose, habits, focus, vision, and mission were all altered as a result of this BMI. It took a lot of time and effort to make all of these improvements in the greatest and most appropriate way for Antikya. Once the most appropriate changes were determined, implementing these changes and applying them appropriately was a separate obstacle in itself.

5.1.4 İhtiyaç Haritasi – Needs Map

5.1.4.1 What is Needs Map?

Needs Map (https://www.ihtiyacharitasi.org/) is a map-based digital platform that brings people in need together with individuals, institutions and organizations that want to support. It facilitates cooperation and solidarity in fields such as education, health, culture and arts through proven map technology and community-based verification function.

The Needs Map's goal is to identify and assess the needs of people and communities, gather these needs and list them on a map, and make it easier for institutions, organizations, and private citizens to satisfy these needs. The map infrastructure enables the users to check the needs on neighbourhood-basis with addresses detailed to even street names. Additionally, Needsmap promotes transparency, visualizes data at the street level when it comes of need and support, and enables appropriate action. Since the platform is map-based and provides location-based solutions to social problems is an example of innovation and social innovation as well.

5.1.4.2 Need Map's BMI

While Needs Map brings people in need together with the supporters in terms of in-kind aid based on a peer-to-peer match, there are a module focusing on specifically local business development, namely Social Marketplace. This digital module also can be one of the good practices for innovative solutions by merging social development and innovation. Social Marketplace (https://sosyalpazaryeri.ihtiyacharitasi.org/) is a digital platform that aims to support both the people in need and the local economy by facilitating a module allowing to meet vulnerable families' basic needs for food, hygiene, clothes, stationary and etc. materials from local SMEs, businesses and enterprises.

Since the organization serves mostly on the platform and uses map-based solutions, the main activities and efforts mainly consist of technology-based projects and campaigns. It uses technology and develops map-based platforms in order to provide solution for companies, public institutions and NGOs in the field of social problems. After Need Map developed the platforms, it carried out trainings for the representatives of these institutions for capacity building about digital literacy.

For financial sustainability, it is highly important to focus on income generating activities. Although Needs Map is a non-profit organization, it has special focus on income and expense because it cannot be high profit at the end of current year. But it does not mean that Needs Map do not have customers and fund, cannot sell products (especially technological-based) or provide services.

5.1.4.3 BMI Barrier

Humanitarian aid is highly inefficient and corrupt yet a burning issue with an amount of approx. $60 billion funding annually. Huge amount of NGO budgets is spent for administrative costs, rather than serving those in need. As experienced in the past, the content and the amount of support sent for people in need failed to be effective either in terms of amount or material type where the support may have fulfilled the need elsewhere. There is need for transparent peer to peer systems that utilize technology and foster cross collaboration. Needs Map is a map based P2P data matching platform that enables in-kind transfers to those in need, by individuals or institutions who want to support. It is possible to sort/visualize map data or use the system at local, national, European and global levels. To reach that aim, they need to adapt Needs Map as a solution for contactless aid delivery to the world humanitarian aid system. However, project manager of Needs Map stated that "due to the lack of technological literacy, financial instruments for non-profit organizations and market circumstances, it was highly challenging to make it possible".

Need Map is a non-profit organization officially born in Turkey and mainly deals with managing to collect needs and donors throughout the country. It is simple for local authorities to recognize the requirements in their own region and take appropriate action. By locating the needs offered on the platform, businesses can more easily conduct social responsibility projects for any target population (women, children, the disabled, animals, etc.) they desire across the entire nation. However, there is a strict alternative for reaching financial instruments for non-profit organizations in Turkey and in the world as well. Thus, one of the main barriers is to create a financial sustainability.

As Need Map long-term target, they believe that a person from New York can support a person in need from Ghana by purchasing need material from local producers or SMEs

in Ghana. This dream will able to make humanitarian aid more efficient and will ensure that all support for humanitarian aid goes to the final beneficiary without intermediary organizations and administrative costs. To reach that aim, they firstly adapt Needs Map in all cities in Turkey and also have been working to make it sustainable in these cities. As a second step, they developed Social Marketplace module which is integrated to Needs Map infrastructure, and they ensure that local SMEs and businesses from 50 cities in Turkey are included as a vendor on this platform by visiting them in the field. For the next step, they aim to establish Needs Map to USA, UK, Europe and Africa after founding a good investment. For expanding Need Map core value to the global, they could not solve the finance issue.

To summarize semi-structured interviews, table 5 demonstrated the used key elements and encountered barriers in BMIs.

Table 5.*Interviews' Summary*

Company's Name	**BMI Key Elements**	**Encountered Barriers**
Poltio	Revenue Model	Financial, Market
Mektepp	Revenue Model, Customer Interface	Financial
Antikya	Infrastructure Management, Customer Interface	Organizational, Behavioural
İhtiyaç Haritası – Need Map	Customer Interface	Financial, Market

According to the results of the semi-structured interviews, it has been determined that BMI has been made mainly through the customer interface key element. In addition, it can be deduced that the risk of encountering financial barriers is high when innovation is

made through the profit model. When we look at the example of Antikya, we can assume that the emergence of organizational and behavioural barriers is directly related to the innovation of infrastructure management.

5.2 Quantitative Approach – Data Analysis

Online data collecting, such as by e-mail and Web-based surveys, is becoming more common as a research approach (Granello et al.2004). While trying to find data, the keywords "BM, BMI, BMI examples, companies innovating BM" were searched. As a result of the research with keywords, various databases were reached in the resources section of the airtable website. This database originates from SustainAbility's Model Behaviour program (https://www.airtable.com/universe/exptcwr7mbDTTDbiz/business-model-innovation-database?explore=true) , which focuses on the significance of BMI in the context of sustainability and how it may be implemented. This database categorizes businesses based on their various types of BMI for sustainability. With this database created on a voluntary basis, SustainAbility hopes to encourage more focused conversation about BMI to better understand how BMI occurs and how we can use this method to achieve sustainable results.

The content of the dataset includes the company innovating the BM as you can see in figure 10, the country in which the company is located, the change it has made in the current BMI, why it is necessary to make a BMI, and what it does as a BMI and how it does it.

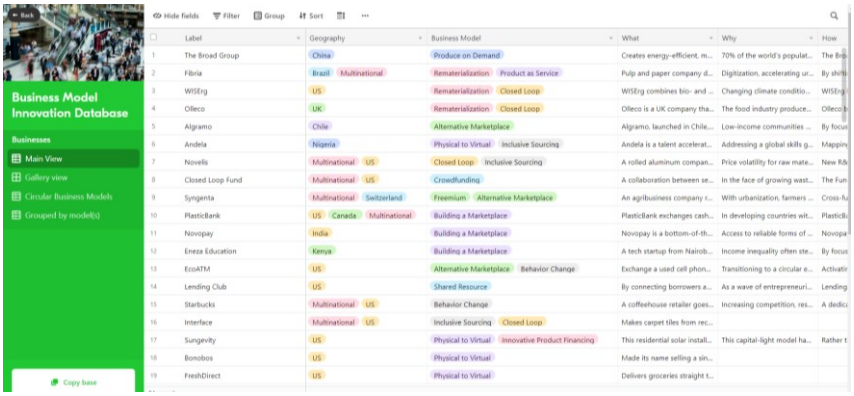


Figure 10. BMI Database gained from SustainAbility

Specific to this study, to measure the use of BM key elements, a scoring assignment was made according to the data in the dataset, and the dataset was expanded by adding BM key elements. The expanded data set is demonstrated in Table 6.

Table 6. *Expanded Dataset*

	LABEL	GEOGRAPHY	BUSINESS MODEL INNOVATION	WHAT	WHY	HOW	ELEMENTS			
							Infrastructure Manageme	Supply Cha	Customer Interfa	Revenue Mode
3	WISErg	US	Rematerialization, Closed Loop	WISErg combines bio- and high-	Changing c	WISErg lev	1		1	
4	Olleco	UK	Rematerialization, Closed Loop	Olleco is a UK company that se	The food i	Olleco bot		1		1
5	Algramo	Chile	Alternative Marketplace	Algramo, launched in Chile, use	Low-incon	By focusin				1
6	Andela	Nigeria	Physical to Virtual, Inclusive Sourc	Andela is a talent accelerator th	Addressing	Mapping th	1		1	
7	Novelis	US	Closed Loop, Inclusive Sourcing	A rolled aluminum company go	Price volat	New R&D,		1		1
8	Closed Loop Fund	US	Crowdfunding	A collaboration between severa	In the face	The Fund l	1			1
9	Syngenta	Switzerland	Freemium, Alternative Marketpla	An agribusiness company realiz	With urbar	Cross-func			1	
10	PlasticBank	US	Building a Marketplace	PlasticBank exchanges cash for	In develop	PlasticBan				1
11	Novopay	India	Building a Marketplace	Novopay is a bottom-of-the-py	Access to t	Novopay u	1			
12	Eneza Education	Kenya	Building a Marketplace	A tech startup from Nairobi's in	Income ine	By focusin			1	
13	EcoATM	US	Alternative Marketplace, Behavio	Exchange a used cell phone for	Transitioni	Activating	1		1	
14	Lending Club	US	Shared Resource	By connecting borrowers and le	As a wave	Lending Cl			1	1
15	Starbucks	US	Behavior Change	A coffeehouse retailer goes fro	Increasing	A dedicate	1			
16	Sungevity	US	Physical to Virtual, Innovative Pro	This residential solar installatio	This capita	Rather tha			1	1
17	Bonobos	US	Physical to Virtual	Made its name selling a single product: men's pants, c					1	
18	FreshDirect	US	Physical to Virtual	Delivers groceries straight to consumers' doors					1	
19	Warby Parker	US	Buy One Give One, Physical to Virt	Sells eyeglasses online and mails consumers five pairs			1		1	
20	LEGO CUUSOO	Denmark	Produce on Demand	This LEGO offshoot is an online	While ther	LEGO CUU	1		1	1
21	Threadless	US	Produce on Demand	A T-shirt company that invites artists to create design					1	1
22	Walkers	UK	Produce on Demand	The chip and crisp maker in the UK experimented with					1	
23	Waste Management	US	Rematerialization	This North America-based company provic	For examp		1	1		
24	Knowaste	UK	Rematerialization	Recycles disposable diapers and feminine hygiene pro			1			
25	Lehigh Technologies	US	Rematerialization	Takes scrap rubber from customers that have zero wa			1			
26	Rubies in the Rubble	UK	Rematerialization	Takes surplus fruits and vegetables before they're disc			1	1		

When the 66 companies in the database are investigated, it is seen that there are both small-scale domestic companies and large-scale multinational companies such as Starbucks, Tesla, Unilever, Airbnb, and Johson & Johnson that dominate the market in which they are located. The BMIs made by Xerox and Rolls Royce companies in the database have been mentioned before under the BMI examples. When companies are examined on a sectoral basis, it is seen that there is a broad spectrum from agriculture to automotive, from the service sector to technology.

It was determined which BM canvas elements were used for the value proposition while innovating the BM. You can see the pillar which is used in table 1.

After selecting the elements used in BMI, 66 BMI reviews were conducted.

First, as you can see in figure 11, the country distribution of BMIs was created. According to the result of the distribution, the countries with the most BMI were the United States, India, and United Kingdom, respectively.

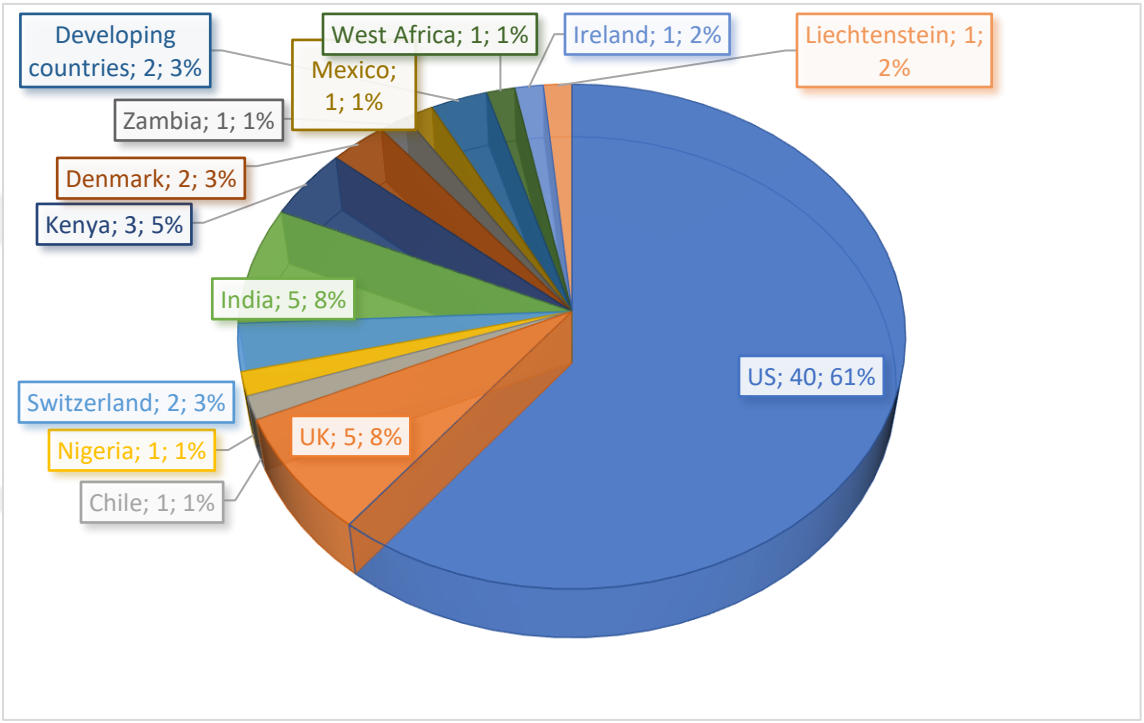


Figure 11. BMI Distribution by Country

After examining the country distribution, BMIs were divided into subgroups according to the changes made in the current BM. Nineteen subgroups were determined, and the number of BMIs belonging to each subgroup and their share percentages were calculated.

Change in BM	Number of Cases	Decreasing Percentage
Building a Marketplace	5	7,58%
Innovative Product Financing	2	3,03%
Pay for Success	3	4,55%
Subscription Model	1	1,52%
Differential Pricing	2	3,03%
Micro franchise	3	4,55%
Product as Service	4	6,06%
Crowdfunding	3	4,55%
Freemium	4	6,06%
Shared Resource	7	10,61%
Microfinance	1	1,52%
Behaviour Change	3	4,55%
Physical to Virtual	3	4,55%
Buy One Give One	4	6,06%
Rematerialization, Closed Loop	6	9,09%
Alternative Marketplace	6	9,09%
Inclusive Sourcing	4	6,06%

Produce on Demand	3	4,55%
Cooperative Ownership	2	3,03%

Figure 12. Change in BM

5.2.1 Change in BM

The explanations of the 19 BM changes in figure 12 are given below.

1. **Building a Marketplace:** A marketplace is any venue that facilitates the trade of goods between buyers and sellers, whether in person or online. A marketplace varies from a traditional retail store in that transactions take place in both directions, rather than just one. Marketplaces might sell anything from vehicle components to office supplies.
2. **Innovative Product Financing:** Methods for mobilizing resources and improving the effectiveness and efficiency of financial flows to address global social and environmental concerns. Innovative product financing focuses on how innovative financing structures may improve the effectiveness and efficiency of development projects by spreading risk, improving liquidity, and aligning investment terms to project demands.
3. **Pay for Success:** Pay for Success is an innovative model for funding high-impact social welfare programs. It is a combination of innovative outcomes-based financing and finance mechanisms that improve lives directly and measurably by directing resources toward outcomes.
4. **Subscription Model:** Selling a good or service in exchange for a recurring subscription fee which could be paid monthly or annually is the foundation of subscription BMs. In comparison to new customer acquisition, they prioritize customer retention more.
5. **Differential Pricing:** A differential pricing strategy enables a business to modify pricing in response to changing circumstances. Price differences take many forms, ranging from discounts for certain people to coupons or refunds for a purchase.
6. **Micro franchise:** Micro franchising is a BM that adapts typical franchising features and concepts to small enterprises in underdeveloped countries. It

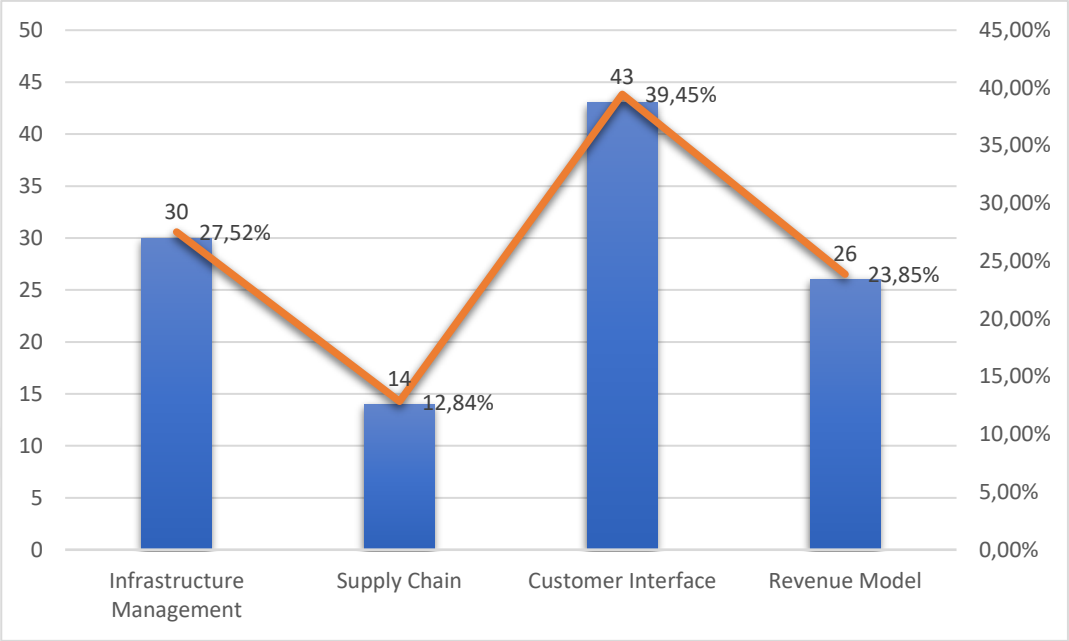
corresponds to micro-enterprise systemization and duplication. Micro franchising is a general term that refers to tiny enterprises that can be easily copied by using tried-and-true marketing and operational strategies.

7. **Product as Service:** Product as a Service is a BM that enables clients to buy the desired outcome rather than the equipment that produces it. Both the customer and the provider gain from this model.
8. **Crowdfunding:** Project owners who want to gather money to fund a specific project utilize this BM. The investee provides the benefits, which are of symbolic worth.
9. **Freemium:** Freemium is a BM in which a corporation provides consumers with basic or restricted capabilities for free, then charges a fee for additional or advanced features.
10. **Shared Resource:** A Shared Resource is a long-lasting asset that you build once and then charge clients for repeatedly using. It's vital to strike a balance between asset usage levels: if businesses have few consumers, they won't be able to spread out costs; on the other hand, if they have too many, the asset will be overcrowded, reducing the user's experience.
11. **Microfinance:** Microfinance institutions exist to help underserved consumers by traditional commercial banks, and their BMs are, by definition, difficult. According to recent studies, the benefits of microcredit to borrowers are likely to be minimal.
12. **Behaviour Change:** At their most basic level, behaviour-change BMs seek to reduce consumption, alter purchase patterns, or alter daily routines. They provide consumers with insight into their consumption throughout the process, allowing them to analyse product or service usage.
13. **Physical to Virtual:** Any company that does all or most of its operations over the internet is referred to as a virtual BM. It may or may not have a physical presence (such as an office or warehouse), but it does not have a physical location where clients can visit. A virtual company concentrates on its digital capabilities while reducing its physical presence. While virtual businesses work together to bring work online, they all maintain varying amounts of physical operations.

14. **Buy One Give One:** Buy One, Give One (also called "one for one") is a social entrepreneurial BM created by Blake Mycoskie of TOMS Shoes: One essential object is given away for every purchase made.
15. **Rematerialization, Closed Loop:** A closed loop is an autonomous control system in which feedback regulates an operation, process, or mechanism. On the other side, the act of converting a client's electronic assets into physical certificates is known as rematerialization. These two concepts are used to turn the current BM into circular BMI. Sustainability is brought to the BM through innovation. In this way, a BM change is made in which loss is prevented, and gains become permanent.
16. **Alternative Marketplace:** It covers BMs that can be made in alternative markets where companies can take place without changing their current products or services
17. **Inclusive Sourcing:** By engaging low-income individuals into a firm's value chain, an inclusive BM aims to provide long-term advantages.
18. **Produce on Demand:** As the name implies, "on-demand" refers to serving customers when they want it. An on-demand BM aims to supply goods and services to customers as soon as possible. The on-demand economy is based on the speed and simplicity of solutions, which has made it popular in an age when we want quick answers to everything.
19. **Cooperative Ownership:** Co-operative ownership BMs adopt an ethical, long-term approach to business by addressing not only the economic but also the social, cultural, and environmental implications of their actions. As part of their corporate social responsibility and sustainability efforts, many companies are beginning to incorporate this values-based, triple-bottom-line strategy into their business strategies.

The BMIs made by various companies from different countries were examined one by one. Afterward, the BM canvas elements (Infrastructure Management, Supply Chain, Customer Interface, Revenue Model) used in the 66 BMIs examined were determined one by one, and points were assigned to these elements. The table below shows the scores and overall averages of the BM canvas elements according to the score assignment.

Table 7. *Representation of BMI Elements with Descriptive Statistics*



According to the analysis, it was concluded that the most used element when innovating the BM is the customer interface. The customer interface is expected to be the most frequently used channel in today's world, where technology is developing rapidly, and the transition from the physical to the digital environment is increasing. In addition, the fact that the customer interface element has the highest rate shows that most of the innovations made are based on the evaluation of customer demand.

The second most used element was infrastructure management. Again, this situation demonstrates the importance of proper resource management for BMI.

6 DISCUSSION OF RESULTS

The findings from the literature as well as practical insights are examined in this section, and the study's limitations are explored. The followings are the primary research question and minor sub-questions that this study aims to answer:

What are the key elements and barriers faced while innovating the BM?

1. What are the key elements used for BMI?
2. What are the barriers to BMI?

6.1 Research Findings

A literature review was undertaken to answer this research issue. Initially, the origins and history of BM and BMI and recent advancements were thoroughly investigated. This literature review provided the subject with a solid foundation. When defining the terms "BM" and "BMI," the literature is convergent in reaching the proper consensus from several perspectives. The phrase "BM" is separate from "business strategy" and has a distinct meaning in academia and practice. From both academic and practical viewpoints, a solid comprehension of the definitions of BM and BMI was achieved. First, the necessary infrastructure was created by scanning the definitions of BM and BMIs in the literature. Afterward, BMI was examined under two main categories: sustainable and circular. What needs to be done and the processes to implement a successful BMI were discussed through the BM canvas and the Cambridge BMI process. In the next phase, interviews and investigations were conducted. In semi-structured interviews, real-life BMIs, barriers, and key elements were analysed and summarized. After that, a detailed search was conducted to find key elements in BMI practices. Necessary information about various BMIs made by 66 companies from 14 countries was collected through the internet and databases. The final stage is the analysis of the findings. In this way, the most and least used main elements in BMI applications were determined, and a logical conclusion was reached.

These findings aimed to provide a practical approach to the application gap in the literature by helping to identify the key elements that can facilitate the implementation process of BMI.

6.2 Limitations and Recommendations

This section outlines the research's limitations. Before addressing and acknowledging the findings for further investigation, it is critical to understand the limits. The following are the limitations:

1. To achieve a homogeneous result in the scoring system, the initially planned sample size was 100. However, the information needed to score 66 BMIs could be found. As a result, expanding the sample size will lessen the errors and improve the generalizability of the results.
2. The research was conducted for a brief amount of time. To better understand the key elements, barriers, and the process of BMI, a study concentrated on a large study over an extended period of time and incorporating perspectives from different firms would be advantageous. This would be a better way to acquire more profound insights and expand on previous findings.
3. The BMI process guide, which consists of key elements and barriers to be considered, could not be applied in real innovation. However, trying out this guide by making a test model will be helpful to see the benefits and shortcomings.
4. Another recommendation is to group companies that innovate BMs by industry. In this way, a more accurate approach can be obtained.

6.3 Conclusion

Based on the literature review, semi-structured interviews, and the generated dataset, a guide was gained to implement the BMI process. The key elements that can be used in implementing BMI and the high potential barriers to be considered have combined to create a guide. With this guide, topics not covered in the literature were addressed, a different approach was discussed, and it helped fill the gap in the BMI practice in the literature. The guide includes all content which listed below.

- Definition and History of BM and BMI
  - In this study, the emergence of BM and BMI are examined, along with detailed and various definitions of the two concepts are given. BMI examples were provided to create better understanding.
- BMI Implementation Methods
  - Beneficial methods that can be used in the implementation of BMI were found and explained in detail; Cambridge BMI Process, BM Canvas, The Conceptual BM Framework.
- Circular and Sustainable BMI
  - Sub-categories of BMI were included.
- BMI Key Elements
  - The key elements which help BMI implementation were determined as customer interface, infrastructure management, supply chain, revenue model.
- BMI Barriers
  - The barriers which are faced through BMI implementation were found as financial, technological, market, institutional and behavioural.
- Interviews
  - Detailed sample models were presented with interviews with companies from different sectors that have implemented business model innovation.
- Data Analysis
  - With data analysis, information on BMI types and frequency of use was obtained. According to inferences, the most used BMI key element was

the customer interface, and the most common barrier was the financial barrier.

This research contributed to companies' BMI implementation processes. Through literature review, companies can gain detailed knowledge in business model and business model innovation. Companies who intend to innovate their business model can observe real life situations, establish what they need to do in this process, and learn about the barriers they may face due to the methodology's data analysis and interviews. With this study, companies can know which key elements can facilitate this process and make it more successful. Moreover, they can increase their awareness of the barriers they may encounter while implementing BMI and take the necessary precautions. Finally, companies will be more likely to implement successful business model innovation as a result of all of these analyses and findings.

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8 APPENDICES

8.1 APPENDIX A: Informed Consent Form for Application

Sayın Katılımcı,

Bu araştırma TED Üniversitesi, Mühendislik Yönetimi Yüksek Lisans Programında, öğretim üyesi Burze Yaşar danışmanlığında mühendis İpek Sena Tan tarafından yürütülmektedir. Bu çalışmanın teorik önemi, bir İş Modeli İnovasyon sürecinin nasıl ve hangi temel unsurlar aracılığıyla yürütüldüğünü ele almak ve bir iş modeli inovasyonu yaparken karşılaşılan engelleri belirlemektir. Bu çalışmanın katılımcıları iş modeli inovasyonu uygulaması yapan firmaların çalışanlarından oluşmaktadır.

Bu araştırmaya katılımınızı onayladığınız takdirde araştırmanın katılımcısı olacaksınız. Bu kapsamda sizden birtakım sorulara cevap vermeniz istenecektir. Çalışmada yarı-yapılandırılmış mülakat tekniği kullanılacaktır. Görüşme verilerinin kaydı yazılı olarak tutulacaktır. Sizler ile ortak bir şekilde belirlenen bir tarihte, telekonferans veya çevrimiçi bir toplantı yapılacak ve iş modeli inovasyonu uygulamaları ile ilgili birtakım sorulara yanıt vermeniz beklenecektir. Çalışma süresince ve sonrasında kimlik bilgileriniz araştırmacılar dışında hiç kimseyle izniniz dışında paylaşılmayacaktır. Bu çalışma kapsamında elde edilecek olan bilimsel bilgiler sadece araştırmacılar tarafından yapılan bilimsel yayınlarda ve bilimsel sunumlarda paylaşılacaktır. Toplanan veriler isminiz yazılmadan, bilgisayarda şifreli bir dosyada tutulacaktır.

Bu çalışmaya katılım gönüllülük esasına dayanmaktadır. Bu projeye katılımınız iş modeli inovasyonu uygulama sürecindeki bilgi eksikliklerin tamamlanmasına katkı sağlayabilir. Yaklaşık 30-35 dakika sürecek bu uygulamada yer alan hiçbir aşama, kişisel bir rahatsızlık verecek nitelikte değildir. Ancak herhangi bir nedenden dolayı kendinizi rahatsız hissederseniz, uygulamayı nedenini açıklamaksızın yarıda bırakıp araştırmadan ayrılmakta serbestsiniz. Araştırmadan çekilmeniz sizin açınızdan herhangi bir olumsuz sonuç yaratmayacaktır. Böyle bir durumda vermiş olduğunuz bilgilerin araştırmacı tarafından kullanılması ancak sizin izniniz ile mümkün olacaktır. Çalışma hakkında daha fazla bilgi almak için araştırmayı yürüten İpek Sena Tan ile (iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Bu proje kapsamında gereken ölçek uygulamalarında yer alacağımı biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

Araştırmaya katılmak istiyorum. Evet/Hayır

Yapılacak görüşmede verdiğim yanıtların yazılı kayıt alınmasını kabul ediyorum. Evet/Hayır

Adı Soyadı veya Takma İsim:……

Katılımcının İmzası:…….

Tarih:…….

Teşekkürler,
Araştırmacının Adı Soyadı ve İmzası
İpek Sena Tan

Araştırmaya katılımınız ve haklarınızın korunmasına yönelik sorunlarınız var ise ya da herhangi bir şekilde risk altında olduğunuza veya strese maruz kalacağınıza inanıyorsanız TED Üniversitesi İnsan Araştırmaları Etik Kurulu'na telefon numarasından veya eposta adresinden ulaşabilirsiniz.

8.2 APPENDIX B: Semi-Structured Interview

General

1. Please identify your role in the company
    - What is your position and job description?
2. Please define the current BM of your company
    - **Target Segment:**
        1. Which customer do you choose to serve?
        2. Who are the key partners?
    - **Product or Service:** How meet your customers' demands?
    - **Revenue:**
        1. How can you acquire profit with your offerings?
        2. What is the revenue model?
    - **Value Chain:**
        1. How do you define the value chain of your company?
        2. What is the value proposition of the company?
    - **Cost Model:** How do you balance the assets and costs to gain profit?
    - **Organization:** How can you support and maintain the process for finalizing the products with the staff?
3. What is the competitive advantage of your company and what does it come from?

BMI Processes

1. How do you define BMI?
2. Can you give an example of BMIs which are implemented in your company? **
3. How do you know when you need to innovate your BM?
4. What are the challenges and barriers you face when doing BMI? **
5. Choose the type that best fits the barrier you encounter while innovating the BM. Explain your reason for choice. **

a. Institutional: Barriers imposed by (for example, political) institutions in the form of "game's rules."

b. Organizational: Firms are social systems with aims, habits, organizational structures, and other factors influencing them.

c. Financial: The financial status of companies

d. Behavioural: Values and attitudes of employees in the workplace

e. Market: Market circumstances, the state of the economy, and value network

f. Technological: Accessibility, technological infrastructure, and know-how

6. How did you overcome the barriers you encountered? **

7. Which resources or key elements do you use when creating BMI? ** Explain your reason for choice.

Elements	**Definitions**
Infrastructure Management	Defines a company's network and logistical method to deliver the value it has developed, including partnerships, know-how, and (physical and intangible) assets.
Supply Chain	The supply chain may assist design novel consumer value propositions and guarantee that the overall company model is more resource-efficient. Companies that have taken a long-term approach to sustainability and incorporated it into their BM are already taking advantage.
Customer Interface	Identifies how the firm interacts with customers, including how the company manages its relationship with customers, which customers the company targets, and how it interacts with (possible) customers.
Revenue Model	The relationship between costs and revenues, or the costs incurred by the firm and the money created by the company, is highlighted.

8. Are company resources used to renew or further improve the BM?

9. Do you follow a specific pattern when planning and implementing BM improvements or innovations? Explain

10. What are the main steps and sub-steps involved in the BMI process?

11. Are prototypes of possible BMIs being created?

12. Do you implement BMIs severally or by integrating them into the existing BM?