

**BUSINESS MODEL ASSESSMENT AND INNOVATION: A DIAGNOSTIC
APPROACH TO DEFINING THE RIGHT TIME TO UNDERTAKE
TRANSFORMATION**

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List of Abbreviations

| | |
|--------|---------------------------------------------------------|
| A&P | Advertising and Promotion |
| AGP | Ambulatory Glucose Profile |
| BM | Business Model |
| BMA | Business Model Assessment |
| BMI | Business Model Innovation |
| CEO | Chief Executive Officer |
| CGM | Continuous glucose monitoring |
| CRM | Customer relationship management |
| CSOFT | Customer, Service, Organisation, Finance and Technology |
| CVP | Consumer Value Proposition |
| DBA | Doctor of Business Administration |
| DTC | Direct-to-Consumer |
| DTP | Direct-to-Patient |
| DVD | Digital versatile disk |
| e.g. | exempli gratia (for example) |
| et al. | et alia (and others) |
| etc. | et cetera (and so on) |
| GDM | Gestation diabetes mellitus |
| GM | General Manager |
| GO | Government Official |
| HCP | Health Care Professional |
| HR | Human Resources |
| IDF | International Diabetes Federation |
| i.e. | id est (that is) |
| ICT | Information Communications Technology |
| IPR | Intellectual property rights |

| | |
|-------|------------------------------------------------------------|
| IT | Information Technology |
| JTBD | Job-to-be-done |
| KR | Key Resources |
| KP | Key Process |
| NCD | Non-communicable disease |
| NHS | National Health System |
| OECD | Organisation for Economic Co-operation and Development |
| P&L | Profit and Loss |
| PF | Profit Formula |
| PVP | Patient Value Proposition |
| R&D | Research and Development |
| RCOV | Resources, Competences, Organisation and Value Proposition |
| ROA | Return on Asset |
| ROI | Return on Investment |
| ROS | Return on Sales |
| SG&A | Selling, General and Administrative costs |
| SMBG | Self-monitoring blood glucose |
| TPI | Third Party Intermediary |
| UN | United Nations |
| VARIM | Value, Adaptability, Rareness, Inimitability, Monetization |
| WHO | World Health Organisation |
| € | Euro |
| \$ | US Dollar |
| £ | Sterling Pound |

Abstract

In a rapidly evolving economic context, leaders of established organisations must detect weak signals from the “inflection points” representing fundamental changes in the business environment (McGrath, 2019). Organisations able to detect these shifts early enough are better positioned to take timely and appropriate decisions to reinvent their business models (Bertolini et al., 2015).

The purpose of this study is to shed light on the business model innovation process, with particular attention to the role of the assessment step within an established organisation active in the healthcare space. The organisation selected, here called MDM, represents a unique case for understanding how the traditional “treatment-driven” business model was transformed in favour of a “patient-centric” business model in the period between 2012 and 2014. Considering the limited knowledge on this topic, I have selected an inductive investigation guided by the Grounded Theory approach and based on a qualitative interpretative perspective.

The literatures on system theory and on business model assessment and innovation have been combined in this study to show how MDM leaders have been able to detect the inflection points emerging from the business environment and accordingly transform the extant business model. This involved a process made up of three critical phases: (1) Sensemaking, (2) Shaping, and (3) Executing.

This study emphasises how the systemic approach adopted by the MDM leadership team-working to assess the relevance of the extant business model at both the single components level and the interrelations level has been crucial for detecting the emerging inflection points and aligning the organisation around a transformation agenda in a market context where all other major competitors kept their original business models. Combining contributions from the literature with the evidence from the MDM study, a Business Model Dashboard has been developed to support leaders in understanding when is the right moment to start innovating their business model. Finally, the research contributes to the business model literature by offering a system theory perspective on its innovation, providing insights about the fundamental determinants of the transformation process with which leaders need to be able to deal to maintain their relevance in the market and thrive.

Declaration

I, Alessandro Ortolani, declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Roma, July 2021

Chapter 1 Introduction

1.1 Research Problem

All organisations are continuously dealing with environmental changes driven by more sophisticated and conscious consumers, emerging technologies, new and more stringent regulations, and fierce competition coming from within the same industry and, increasingly, from outside it. Additionally, the changes affecting organisations are developing at an increased pace, as reported by the corporate longevity forecast of S&P 500 companies issued by Innosight: in 1964, the average tenure of these established companies in the S&P 500 group was 33 years, while by 2016 it narrowed to 24 years, and it is expected to shrink to just 12 years by 2027 (Anthony et al., 2018).

In such rapidly evolving market situations, the leaders of established organisations must detect the weak signals emanating from “inflection points” that represent fundamental changes in the business environment (McGrath, 2019, p.1). Leaders are also expected to make sense of these changes and take appropriate decisions to maintain their organisations’ relevance. Organisations able to detect these shifts early enough are better positioned to take timely action to reinvent their business models and prosper over time (Bertolini et al., 2015).

In this research, the business model concept is defined as a system of interdependent components whose interaction shapes the organisation’s ability to create, deliver, and capture value from the relationship with its consumers. One example of an organisation that has successfully made the transition towards a stronger and more sustainable business model is Rolls-Royce, which, by introducing a pay-by-the-hour revenue mechanism in 1991, allowed airline companies to pay only the cost of the operating hours of the engine without carrying the cost of buying the power turbine (Smith, 2013). The new business model had been triggered by the company’s need to counterbalance vanishing, highly profitable revenues from spare parts: this was due to the inflection point represented by the technological improvements and the reliability of new engines developed by Rolls-Royce and its competitors in the previous 20 years. The move from a product-centric business model to a service-based one has generated compelling support for the company’s growth: while in 1991 only 25% of its total revenues of £5.6 billion came from services, in 2011, about 53.4% of the total revenues of £11.3 billion were generated that way (Smith, 2013).

Netflix represents a second example: it started in 1997 as a website DVD rental service before moving in 2007 into streaming services, leveraging the technological advancements of its

digital connections and applying a subscription method as its main revenue model. The inflection points, in this case, were represented by technological changes (i.e. speed and quality of content streaming) and new consumers' expectations (e.g. no advertising interruptions and the possibility to watch preferred movies and series anytime and anywhere). Today Netflix competes with TV networks directly on original content creation thanks to their ability to understand their consumers. For Netflix, the financial impact of the business model change, in combination with other drivers, has been even more impressive, moving from total revenues of \$3.6 billion in 2012 to \$15.8 billion in 2018 (Netflix Annual Reports, 2016 and 2018).

Despite these successful examples, several cases show how inertia from different sources protects the status quo, representing a key challenge for business model innovation (Doz and Kosonen, 2010). Blockbuster and Kodak are examples of organisations whose reaction to emerging inflection points was too slow (Bertolini et al., 2015). Blockbuster, for instance, was not able to accelerate investments in emerging streaming technologies as they were still counting on physical interaction with their consumers. In addition, the company was heavily focused on collecting revenues coming from late fees. In this case, two major inflections points were overlooked by Blockbuster's leaders: emerging technology able to support the high-quality streaming of video content, on the one hand, and on the other, consumers' dissatisfaction with late fees. Despite late efforts to manage these initially-overlooked inflection points, the organisation went bankrupt in 2010.

In the case of Kodak, despite the in-house availability of the digital camera, the leadership team did not allocate enough resources to effectively prioritise this new product and use it to balance out the decreasing performance of its traditional film-based business. The inflection point, in this case, was represented by the inability to detect the changing needs and expectations of consumers regarding the role of pictures as a playful way to express their identity. The technology to match new consumer needs was available. However, internal barriers (e.g. the enterprise's openness to change and its different functions' separation) limited the required speed of action, reducing the company's chances to take advantage of the emerging digital market opportunity.

What emerges from the examples above is that organisations often fail to reinvent themselves, not necessarily because they are not able to manage the challenges of the innovation process, but because they wait too long before taking action (Nunes and Breene, 2011). Nunes and Breene (2011) have discovered that the organisations able to reinvent themselves share some common elements. These elements include the ability to spot in a timely way the need to re-think

a business's configuration thanks to the adoption of three measures, in addition to the use of the financial indicators, normally lagging indicators. These measures are intended to detect the organisation's market relevance, the distinctiveness of its capabilities, and its talent development (Nunes and Breene, 2011), normally using leading indicators. This means that understanding the right time to transform the business model and align the organisation to move forward represents a critical capability that leaders should be able to master.

Although there is growing interest around the business model innovation concept, there is only limited evidence of how established organisations assess their extant business model from a holistic perspective to define when is the right time to start the innovation journey (Schneider and Spieth, 2013; Wirtz et al., 2016; Foss and Saebi, 2017 and 2018). Based on the premise above, the problem that leads to this research is the ability of leadership teams in established organisations to keep their business models relevant for consumers in environments characterised by frequent inflection points.

This research problem presents two different and connected dimensions of investigation. The first, basic dimension relies on the leadership's ability to articulate the organisation's business model and its interrelated components. The second, higher dimension is based on the leaders' ability to assess a business model in terms of its relevance in serving the consumers and its eventual innovation. Both dimensions are important, as the first serves as a foundation for managing the second. Keeping this double dimension approach is crucial based on the findings I gathered during the pilot project for this study. Indeed, I have experienced how different leaders have different interpretations of the same organisation's business model based on their perspective, experience, and expertise. This fact represented a challenge to be solved before moving to the second dimension, since a shared understanding of the extant business model is a prerequisite for any assessment or innovative effort.

To keep a business model relevant over time, an organisation's leaders should periodically assess it in the face of emerging inflection points so as to eventually take timely and appropriate decisions about its innovation. Therefore, the time dimension of the leaders' decision-making is critically important for realising the successful transformation of their organisations. One of the challenges affecting the timing of action is the fact that different leaders within the organisation may develop different ideas about the potential impact of the inflection points regarding both the type of implications (e.g. positive or negative impact), the size (e.g. how significant the impact is) and their timing (e.g. when we will see this impact). One strategy to manage this roadblock involves

the convergence of the leadership team on a shared vision of the potential future to overcome the natural inertia of organisations determined by the presence of existing complementarities (Stieglitz and Foss, 2015). This alignment represents the condition for a timely mobilisation of all the organisation's resources towards the objective of crafting a new business model.

Furthermore, the research aims to contribute to the business model assessment practice by developing a Business Model Dashboard framework to support leaders in creating a consensus within the organisation regarding the right time to start innovating the business model.

1.2 Research key concepts

Based on the ideas introduced in section 1.1 regarding the research problem, it is worth clarifying how different concepts have been used in this research.

The business model, defined as a system of interdependent components whose interaction shapes the organisation's ability to create, deliver, and capture value from the relationship with its consumers, is the concept underpinning the overall inquiry structure. The components of the business model discussed here are the ones offered by Jonson, Christensen, and Kagermann (2008):

1. Consumer Value Proposition
2. Profit Formula
3. Key Resources
4. Key Processes

A second important clarification regards the distinction between the business model assessment concept and the business model innovation concept. In this study, the assessment of the business model is a combination of activities performed at the single component level as well as at the system level, with the objective to understand whether the extant business model is, and is expected to remain, relevant for serving the consumers in the face of emerging inflection points. The inflection point term has been used in this research, to refer to fundamental changes in the business environment, as explained by McGrath (2019). Through business model assessment the leaders of an organisation should be able to answer the following questions:

1. Given the emerging inflection points, to what extent are these changes affecting our business model in terms of relevance for consumers?

2. Do these changes require our intervention in terms of business model innovation to restore our relevance for consumers?

The answers to the above questions can shed light on leaders' decisions to undertake a revision of an extant model, triggering its innovation process.

Business model innovation, on the other hand, refers to the process of designing a substantially new architecture among the different components of the model and their interrelations to improve the creation and delivery of value to consumers, as well as the capture of a fair part of it for the organisation. The two concepts are different but, at the same time, represent sequential steps leaders should consider in the effort to keep their business models relevant. Therefore, business model assessment is a preliminary and critical step before considering innovation and it has its own relevance, as not all assessments will lead to innovation. More broadly, the business model innovation concept includes assessment, representing the step where leaders become eventually aware of the need to transform their organisations. In this research, both concepts are considered and analysed under the consideration that a solid assessment will support the innovation step in the following ways:

1. By creating among the leadership team a shared view of the potential future;
2. By generating the required sense of urgency to take appropriate actions;
3. By providing the direction to start the transformation journey.

Another concept worth clarifying is that of the transformation or innovation journey. It represents the organisation's effort to move from the extant business model towards a new configuration. Therefore, when associated with the business model, the transformation or innovation journey is considered as the combination of the leadership's decisions and actions to materialise the business model innovation objective. In this thesis, it has been used as a synonym of business model innovation. These key concepts will be further analysed and clarified in Chapter 2.

1.3 Growing interest in business model innovation

The literature concerning business models is relatively young when compared with other more established managerial concepts. At the same time, the growing interest demonstrated in the last 20 years can be easily appreciated by considering the number of scientific studies of business

models and, more recently, business model innovation, confirming that the latter concept as a different and still emerging theme to be studied.

To quantify this interest, Foss and Saebi (2017) carried out an analysis based on data extracted from the Scopus database for the period of time between 1972 and 2015. Over that time, the business model concept (BM) scored 7,391 hits, business model innovation (BMI) scored 349 hits, dynamic capabilities (DC) reached 1,562 hits, and open innovation (OI) generated 1,700 hits, as shown in Figure 1.

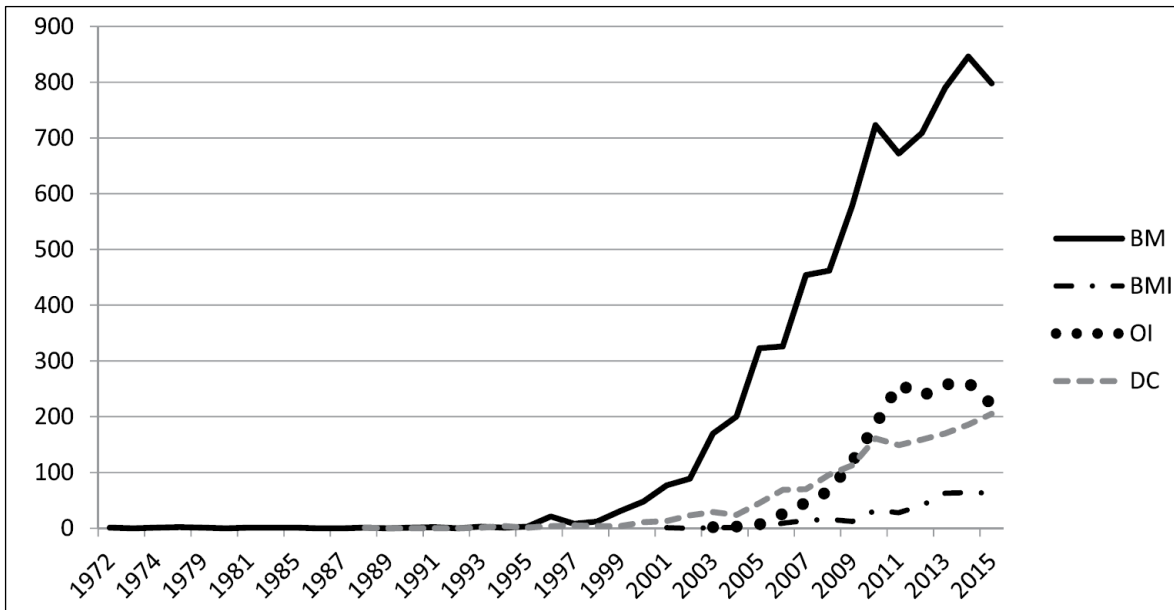


Figure 1: Use in the literature of macro-constructs - Source: Foss and Saebi (2017, p.203)

Wirtz et al. (2016) provided a second source of analysis based on data extracted from the EBSCO database for the period 1965 to 2013.

From the analysis of Wirtz et al., two elements are worth mentioning:

1. Out of the total of 16,950 articles, about 16.7% are articles published in peer-reviewed journals, while the remaining 83.3% are articles published in non-peer-reviewed journals;
2. Focussing the attention on the peer-reviewed articles, 79.4% of them are classified as conceptual contributions while only 20.6% are based on empirical analysis; in addition, about 80.0% of these empirical articles have used the case study method, with the remaining 20.0% employing quantitative methodologies such as regression analysis, structural equation modelling, and other statistical techniques.

The first observation clearly confirms practitioners' high level of interest in the business model concept. Regarding the reason behind that, preliminarily, it can be said that practitioner interest is driven by the possibility of re-establishing the market relevance of existing organisations when other innovation efforts have been only partially successful. The second observation is also informative and presents the case where most research efforts are still concentrated in the conceptual area. Empirical studies are limited, mostly based on qualitative research methods, and are oriented towards theory exploration as compared to quantitative research designs oriented towards theory confirmation.

The business model is a relevant concept as it represents the "stories that explain how enterprises work" (Magretta, 2002, p.87). These stories should be able to clarify who the customers are and what they value, as well as what is the underlying economic logic an organisation leverages to generate that value for the customer using a specific set of resources, processes, and eventual partnerships. Based on Magretta's definition, every organisation has a business model whether its leaders know it or not and whether they are able to clearly and easily articulate it or not.

As a business model provides evidence of "how an organisation creates, delivers, and captures value" (Osterwalder and Pigneur, 2010, p.14), every business decision affecting this logic should start from a shared understanding within the organisation. If leaders do not have the same idea of the business model and how it works, it is possible for decisions to be made that can improve one aspect of the model but undermine its overall ability to serve targeted consumers profitably. For example, the decision to move to a cheaper supplier can create value for the organisation, but if the way to receive the service/product is in a form (e.g. timing, location, shape, etc.) not supporting the value proposition, the choice can ultimately harm the organisation's ability to serve its consumers. As external market conditions change over time, the business model should be the framework for evaluating how these changes could affect the organisation's current ability to generate, deliver, and capture, value as well as how they could be interpreted and integrated into a new business model.

Based on the previous clarifications, below are some considerations that potentially explain how and why the innovation of the business model concept is a relevant area of study for both scholars and practitioners. Innovation is a critical component of an organisation's success, whatever the shape it may take. It has always played a determining role in supporting organisations' ambitions for growth and competitiveness. As lucidly expressed by Joseph Schumpeter, "all successful firms have been entrepreneurial at some moment in their histories, though a given company is certain to

be more entrepreneurial at one point and less so at another. When their innovations dwindle, firms begin to die” (McCraw, 2007, pp.179-181). In a static and more predictable business environment, technological improvements and new solutions have been the primary innovation options for many organisations, mainly focused on the product and service dimensions. As soon as the business environment started to become more connected and integrated, also due to a sharp decline of ICT costs (i.e. Information, Communications, and Technology), organisations realised the necessity to reconfigure themselves. More specifically, they faced the challenge of defining the critical activities they must maintain within the firm’s boundaries while engaging with external providers to manage activities considered less relevant to the organisation’s purpose. Under these circumstances, innovation has had a relevant role in helping organisations define the activities to manage and the necessary capabilities to perform them, considering the expected level of efficacy and efficiency.

However, in the current business environment, as presented by Chesbrough (2007, p.12), “the costs of creating, developing, and then shipping these novel products have risen tremendously (e.g. think of the cost of developing a new drug, or building a new semiconductor fabrication facility, or launching a new product into a crowded distribution channel).” In addition, “shortening product lives mean that even great technologies no longer can be relied upon to earn a satisfactory profit before they become commoditised” (Chesbrough, 2007, p.12). As a consequence, “today, innovation must include business models, rather than just technology and R&D” (Chesbrough, 2007, p.12). The capability to generate business model innovation has been associated, for example, with the opportunity of opening new revenue streams from the same product, as in the case of Adobe, which moved from licensing their products to a subscription model for their use. A further benefit of business model innovation has been the opportunity to target potential consumers so far excluded from the market, as in the case of Tata with the launch of its Nano car for the Indian market.

Business model innovation is a powerful capability that “reshaped entire industries and redistributed billions of dollars of value” (Johnson et al., 2008, p.52). Consider what Apple did with the launch of the iPod and the support of iTunes in 2003, which together generated revenues of about \$10 billion; it was not about a new technology, but rather an existing technology was embodied in a well-designed product combined with a new business model that allowed people to easily and conveniently bring their preferred music anywhere they liked. As mentioned at the beginning of this introduction, it is not only what must be done that matters, but also the fact that the organisation is able to assess the right moment to start moving towards a different model.

Therefore, the innovation of the business model should be part of the organisation's capabilities, together with product and process innovation. A similar perspective has been taken by Gassmann et al. when affirming that "it is no longer sufficient to focus on product or process innovation" as "new technologies, blurred industry boundaries, changing markets, new competitive players and changing regulations all combine to make products and processes obsolete" (Gassmann et al., 2014, pp.4-5). Building on this point, Markides (2008) illustrates how, in a series of studies, organisations employing a new business model to attack more prominent and established competitors in different industries have been able to survive despite the consistent gap in resources. In some cases, organisations have even been able to emerge as industry leaders: examples like IKEA, Starbucks, Southwest Airlines, MinuteClinic, Netflix, Skype, and Metro International have been cited, to mention only a few. Big corporations have also been able to maintain leading positions and open up new markets, redefining their prevailing business models, for example, Apple with the iPod, and Nestlé with Nespresso. In both cases, these organisations "did not try to be better than their rivals," but "they actively adopt a different strategy (or business model) and aim to compete by changing the rules of the game in the industry" (Markides, 2008, p.X). Although relevant for organisations aiming to expand their growth options, this new innovation route is much more complex in terms of assessment and successful execution.

In the practitioner case, several pieces of research emphasise the relevance of developing a business model innovation competency to manage organisations under volatile conditions, as expressed by some of the most renowned consulting firms. As "CEOs recognise that the lines between industries are blurring, 65% of them are concerned that new entrants are disrupting their business models, and 53% of them believe that their company is not disrupting their industry's business models enough" (Now or Never, 2016 Global CEO Outlook, KPMG, p.6).

1.4 Limitations in the literature on business model assessment and innovation

Despite the growing number of publications, "many questions have not yet been investigated," so scholars consider the business model innovation concept to be "still at an early stage" (Wirtz et al., 2016, p.48). In addition, while the larger part of the literature has focused on the definition of the conceptual and structural dimensions of the business model, very limited empirical evidence has been developed to support leaders from established organisations in understanding when is the

right moment to undertake the business model innovation endeavour and how to manage this transformation journey.

Recently, both scholars and practitioners have expressed their interest in understanding the nature of business model innovation, considering the circumstances requiring the adoption of this specific and pervasive strategic decision, and how the innovation process can be structured based on the findings generated by assessing emerging inflection points.

From the perspective of the academic community, the critical dimensions to be further researched are highlighted by the results of a recent survey involving twenty-one international scholars renowned for their interest in the field. The scholars questioned “deem change & evolution as well as the innovation of business models particularly relevant” for further research (Wirtz et al., 2016, p.49). More specifically, the “change & evolution” area included elements regarding “the fundamental determinants of an evolutionary adjustment of business models across time” (Wirtz et al., 2016, p.46). In the “innovation” area, although this strategic decision has been considered a vital new source of competitive advantage “in today’s rapidly changing business landscape” (Voelpel et al., 2004, p.259), so far “the interfaces and the interaction between the different business model components have not been researched much” (Wirtz et al., 2016, p.51).

A similar approach has been taken by Foss and Saebi (2017, p.222), who recommended working towards the areas of “simplification, conceptual clarification, theoretical models, and cumulative empirical works,” while Schneider and Spieth (2013, p.26) have invited researchers to consider that “what enables firms to conduct business model innovation, a deeper understanding of the process of business model innovation and the effects of conducting business model innovation on a firm’s results and capabilities need to be further emphasised.”

Since the business model can be considered as a system of interdependent components whose interaction shapes the organisation ability to create, deliver and capture value from the relationship with its consumers, one pertinent element emerges from this definition: its systemic nature.

Adopting the systemic perspective, a successful business model innovation should be performed ensuring a “dynamic consistency” among the different business model components (Demil and Lecocq, 2010). However, it is not evident in the literature how this dynamic consistency can be maintained when the changes emerging from the environment initially have an impact on some of these components. In other words, there is only limited evidence about how leaders in

established organisations, can detect the initial signals regarding a potential impact on some components of the extant business model to understand when the overall business logic needs to be transformed. The contributions now available in the literature on the business model assessment (Afuah, 2014; Heikkilä et al., 2016; Haaker et al., 2017; Schaller et al., 2018) are mainly static and focused on a single business model component.

1.5 Rationales for focusing on established organisations in the healthcare space

To tackle the research problem, I have decided to focus on established organisations active in the healthcare space for the following reasons. The first consideration is linked to the need to reduce the business model innovation capability gap, as new entrants are, by nature, more familiar with the business model development capability than established organisations. Considering that the latter organisations are mainly focused on executing existing business models (Trapp, 2014 and Johnson et al., 2008), there is an opportunity to fill this gap with potentially positive implications for their ability to thrive in the longer term, in the face of emerging inflection points. The second consideration is based on the expected impact organisations can exert upon their market thanks to the use of the business model innovation capability. In fact, if established organisations can learn how to innovate their business models, they can greatly impact their enterprises thanks to their ability to scale it up rapidly and efficiently. The third consideration is oriented towards creating better and stronger organisations. Ries (2017), in the “respect the past, invent the future” chapter of the Start-Up Way, clarifies how “a modern organisation is disciplined at the rigorous execution of its core business- without discipline no innovation is possible- but it also employs a complementary set of entrepreneurial tools for dealing with situations of extreme uncertainty” (Ries, 2017, pp.37-38).

Regarding the healthcare space specifically, there are several reasons for my choice of emphasis, including: its long-term sustainability based on the challenges currently affecting the industry; the availability of a fully-developed research site I had access to in relation to the phenomenon under study; and my personal interest, based on my professional career.

To support the point of healthcare sustainability, according to United Nations (UN) and World Health Organisation (WHO) projections, the global population is expected to increase by 1 billion in 2025, with more than 500 million people over the age of 50. The same estimates foresee that 70% of all illnesses will be chronic diseases by the same year. This trend will go hand in hand

with higher healthcare spending driven by an ageing population, as Global Healthcare Spending is expected to rise from \$8.4 trillion in 2015 to \$18.3 trillion in 2030 (Elton and O’Riordan, 2016).

This situation will not be sustainable and will put incredible pressure on governments, HCPs (Health Care Professionals), healthcare organisations, patients and on all the other health-related stakeholders. At the same time, it represents an opportunity to re-think the healthcare space and develop a different understanding of how this sector should be approached in the years to come with regards to its sustainability.

The second motivation to support the focus on the healthcare space is linked to my access to an established organisation, here called “MDM,” representing the diabetes division of a large and diversified healthcare company called here “Corporate House.” Between 2012 and 2014, the MDM leadership team successfully went through a business model innovation process, representing a unique opportunity to shed light on the research problem presented in section 1.1 above. I have considered this organisation as fully-developed regarding the phenomenon under study as some years have passed since the business model innovation was completed. This situation offered the chance to analyse the phenomenon from an adequate distance, controlling the potential impact of the feelings and emotions affecting participants in the middle of the process.

The third motivation is a personal one, as healthcare is the space where I have spent most of my professional career. It is also where my passion lies, considering the millions of people affected every day, which is in full coherence with the expectations of a DBA study (Bareham et al., 2000). Finally, it is essential to clarify that I intend to generate insights by studying a case within its rich context and from different perspectives in the healthcare space: the findings could be potentially applied, after adequate adjustments and validation, to other business settings.

1.6 Business model assessment and innovation from a system theory perspective

Based on the material in section 1.4 regarding the “dynamic consistency” among the different business model components (Demil and Lecocq, 2010) as a requisite for a successful business model innovation, system theory represents an attractive theoretical base for its assessment. This means that the business model concept requires two different levels of analysis and reasoning: the internal one, among the different components of the model, and the external one, regarding the relation between the environment and the whole model. Based on this double-level perspective, a business model cannot be explained only by analysing single components and cannot be conceived in

isolation from the context where it operates. In fact, changes in the environment initially impacting one component generate indirect impacts on the other components. To fully grasp the implications of the emerging inflection points on a business model, it is not enough to limit the focus at the single component level. Therefore, this research aims to combine the evaluation of single components with the interrelation among them to reach a comprehensive understanding of the implications generated by an inflection point. Consequently, adopting the system theory perspective is helpful in order to develop a holistic understanding of business model assessment and eventually proceed with its innovation.

The above considerations confirm that there are several points of contact between the business model concept and system theory to support its assessment and innovation practice. First, a complex system comprises different parts that interact in a non-simple way (Simon, 1962). Secondly, when applied to organisations, system theory conceives that “a system may be defined as a set of elements standing in interrelation among themselves and with the environment” (Von Bertalanffy, 1972, p.417). Based on that, the energy inbounded in an organisation and its transformation in an output can be performed through a continuous interaction with the context where it competes (Von Bertalanffy, 1950). The description of a system and its performance within the environment where it competes has several elements in common with the business model concept. To adopt a systemic perspective, a certain degree of integration and coordination is required among the different components of the business model to guarantee stability in the face of environmental changes. In other words, to achieve a successful adaptation to external conditions, a specific congruence among the different components of a system is necessary (Velu, 2017).

Integration and coordination among the different business model components are fundamentally based on the element of “fit” introduced by Porter (1996), which highlights how the level of the performance of one activity is determined by the configurations adopted to perform other activities.

This concept can take the forms here below presented:

1. Basic consistency, where each activity is aligned with the organisation’s value proposition and everyone contributes incrementally to the dominant theme;
2. Complementarity, when activities complement or reinforce one another;
3. Substitution, when performing one activity allows the elimination of a different one.

Embracing the systemic perspective, business model assessment should be performed considering the single components as well as the interrelations among them.

The limitations in the literature on the assessment and innovation of the business model, together with the considerations of the system theory stance, represent the opportunity to conduct my research from this particular perspective (Ennen and Richter, 2010; Wirtz et al., 2016; Ritter and Lettl, 2018; Foss and Saebi, 2017, 2018).

1.7 Research questions and their rationales

Now that the preceding sections have clarified the research problem, key concepts, limitations emerging from the preliminary review, and the specific system theory perspective adopted, it is worth introducing the questions I expect to answer through this research. These questions are as follows:

1. How does a healthcare organisation assess its business model to define when is the right moment to innovate it?
2. How does a healthcare organisation manage the transformation journey from the current model to the new one?
3. What are the considerations and challenges a healthcare organisation must manage along this transformation journey?

Monitoring the inflection points, which represent the fundamental assumptions an organisation is based upon, is a responsibility of the leadership team. The timing of starting the innovation is a critical challenge to overcome in order to succeed. This is supported by the fact that in organisations failing to reinvent themselves, their inability to take action, even when they were clearly aware of the threats to manage, plays a relevant role (Nunes and Breene, 2011; Bertolini et al., 2015; McGrath, 2019). Different understandings by members of an organization's leadership about how these inflection points can affect the business model can reinforce organisational inertia and maintain the status quo. To avoid that trap, a shared vision of the potential future among the leadership team can create the necessary sense of urgency to mobilise the organisation's resources in a new direction. As I believe business model assessment should be able to realise this shared vision of the potential future, the first research question is expected to shed light on what has been measured and how this measurement has been performed in the selected organisation. As soon as a clear need for action has been established through business model assessment, the second

research question is expected to investigate how the transformation journey unfolds, from the extant to the new model. As this type of innovation is costly and complex, having a framework to navigate the journey can be highly beneficial for the leadership's team. Finally, developing a preliminary understanding of the considerations and challenges associated with the process can favourably prepare the organisation's leaders to tackle them properly along the way. This is the aim of the third and last research question.

1.8 Conclusions

In evolving competitive conditions, leaders of established organisations are expected to detect the weak signals from those inflection points that represent fundamental changes in the business environment (McGrath, 2019). To cope with these changing conditions, a proper assessment of the business model is the first step to detecting these inflection points early enough and taking timely and appropriate decisions to reinvent the business logic (Bertolini et al., 2015).

Despite this straightforward consideration, empirical facts show that inertia within organisations protect the status quo, representing a key challenge for the innovation of an extant business model (Doz and Kosonen, 2010). In fact, organisations often fail to reinvent themselves because they do not take timely decisions even when they know how to potentially deal with environmental changes (Nunes and Breene, 2011). Based on the above considerations, understanding when is the right time to transform the business model and align the organisation to move forward represents a critical capability for the leadership team.

Wirtz et al. (2016) recently presented a study of the business model literature from which two key elements clearly emerged: an increased level of practitioner interest in understanding how to manage the transformation journey associated with the business model innovation, and the need for additional empirical studies, as most of the research is still conceptual.

Knowing how to perform a business model innovation is a powerful capability (Johnson et al., 2008) and it becomes even more urgent given that "existing business models are being exhausted faster, and long-term growth is declining, which means companies must continually generate new ideas to grow sustainably" (Bailey et al., 2019, p.4). These considerations highlight how business model innovation is relevant for both scholars and practitioners. Despite the growing interest around the business model innovation concept, however, little evidence is available on how established organisations in the healthcare space assess their extant business model from a holistic

perspective to define when is the right moment to start their innovation journey (Schneider and Spieth, 2013; Wirtz et al., 2016; Foss and Saebi, 2017 and 2018).

Finally, business model innovation should be performed ensuring a “dynamic consistency” among the different business model components (Demil and Lecocq, 2010). However, empirical evidence on how to consider the systemic perspective in this transformation journey is scant in the literature and offers the opportunity for additional research.

1.9 Research structure and main objectives

1.9.1 Purpose of the research

Based on the above considerations and limitations of the existing literature, this research aims to make two main contributions. The first contribution is to identify how an established healthcare organisation performed its business model assessment to start its business model innovation process and how that overall process unfolded, highlighting the considerations and challenges associated with it. The second contribution is to develop a Business Model Dashboard, combining the findings from the literature with the evidence that emerged from the organisation studied. This framework aims to support leaders in understanding when is the right time to undertake business model innovation based on the changes emerging from the environment.

1.9.2 Academic contribution articulation

1. Understand how an established organisation in the healthcare space assessed its current business model from a systemic perspective;
2. Highlight the nature and the framework of the process followed by the selected organisation to design and implement a new business model;
3. Present the challenges this organisation faced in managing the implementation of a new business model.

1.9.3 Managerial contribution articulation

Articulate the practical behaviours that both practitioners and leaders can use within their organisations to develop the business model innovation capability. The research aims also to develop a Business Model Dashboard to enable leaders to concretely define when is the right

moment to start transforming the business model in order to respond in a timely way to the challenges posed by an evolving environment.

1.9.4 Thesis structure and main objective by chapter

Figure 2 reports the overall thesis articulation, with the objective and structure by chapter.

Chapter 1: **Introduction**

This chapter articulates the context of the present study, starting with the research problem and its relevance for scholarly and practitioner audiences, both of which are interested in developing a stronger understanding of the selected phenomenon. The key concepts have been introduced before briefly reviewing previous studies and their limitations. Space has been devoted to presenting the rationales for the focus on an established organisation, active in the healthcare business, and those supporting the specific system theory perspective adopted. The research questions and the purpose of the study in general, and its main expected contributions, conclude the chapter.

Chapter 2: **Literature Review**

The chapter provides a structured review of previous studies addressing the research problem. The main elements covered in the chapter refer to the business model, business model components, and business model assessment and innovation concepts, in addition to the systemic perspective on the innovation journey. These concepts have been analysed in-depth to understand how previous researchers addressed them, highlighting the main research gaps. The chapter closes with the articulation of the research questions and the expected contribution to knowledge.

Chapter 3: **Research design and methodology**

This chapter introduces and justifies the selected approach for conducting the research, based on my philosophical perspective. Additionally, it clarifies the research design and the methods adopted to answer the research questions.

Chapter 4: **Business model assessment and innovation: the MDM case**

The chapter presents the findings from the analysis and interpretation of the data collected from the MDM organisation on the innovation of their business model. It presents the informants'

perspectives on the overall assessment and innovation process undertaken, presenting their “in vivo” voices.

Chapter 5: **Discussion**

The chapter compares the insights that emerged in the literature with the evidence from my research to develop a comprehensive discussion. Furthermore, this discussion introduces the Business Model Dashboard with the objective of supporting leaders in defining the right moment to transform their business models. The Business Model Dashboard has been preliminarily validated by MDM and from executives operating in other industries to understand how it can support leaders outside the healthcare space.

Chapter 6: **Conclusions**

This chapter provides both theoretical and managerial implications as a result of the answers to the research questions. It summarises my personal learning developed from the DBA journey and the contributions to the literature and to practice. At the same time, it clarifies the limitations of the research together with the opportunities for further studies on the topic.

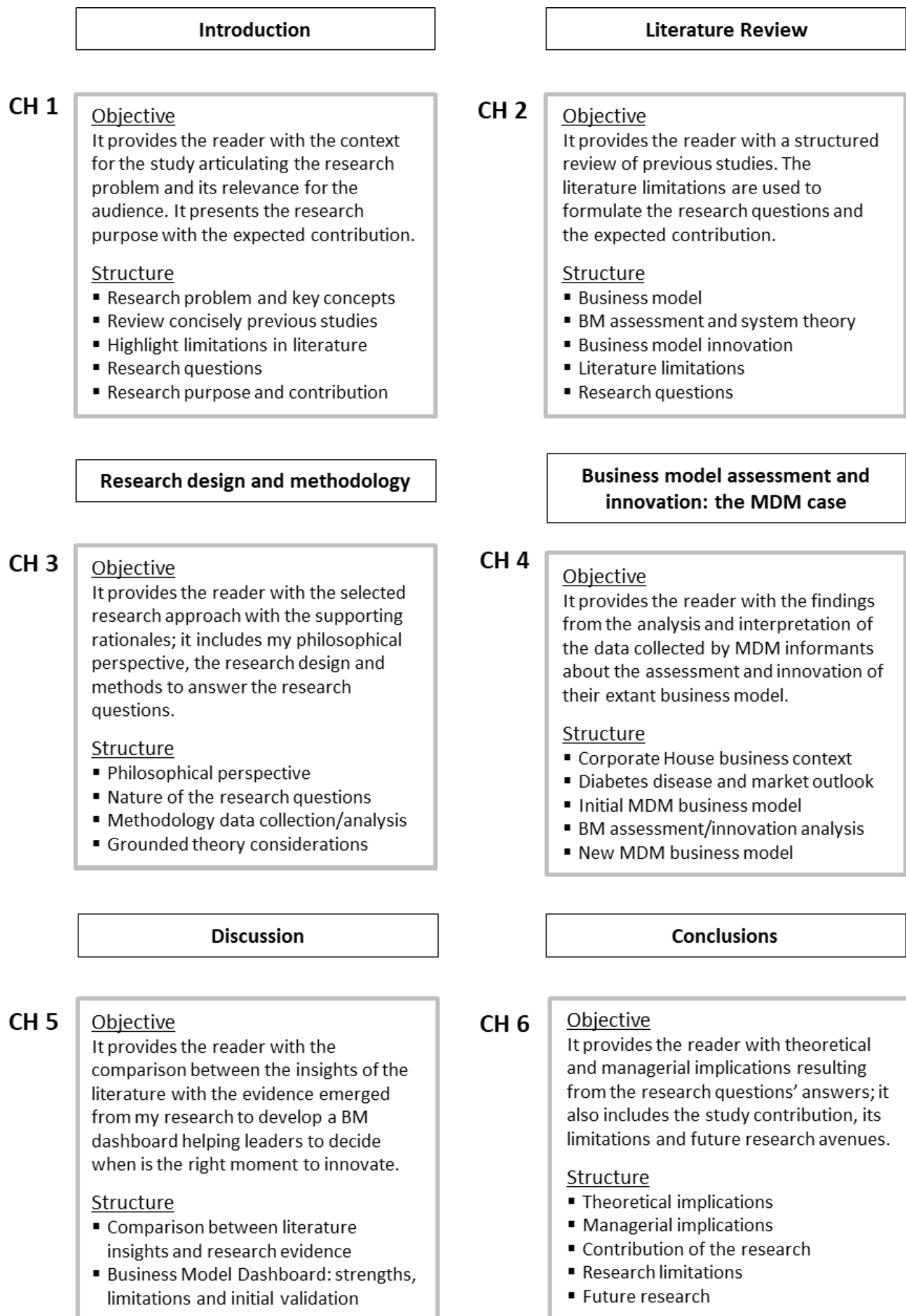


Figure 2: Thesis articulation by chapter – own elaboration

Chapter 2 Literature Review

2.1 Introduction

The objective of this literature review is to understand the current status of knowledge around the business model concept and the evidence from the research to support leaders to take informed decisions about the business model assessment and its innovation in their organisations.

This review has been conducted with the objective to answer the following question: how do established organisations in the healthcare space manage the assessment and innovation of their business model?

To answer this question, the literature review is articulated to cover how the business model is defined and what its components are, how organisations perform the business model assessment, from a system theory perspective, to define when is the right moment to innovate and, how the business model innovation process unfolds. To help the navigation through the literature review, Figure 3 presents the literature review navigation map.

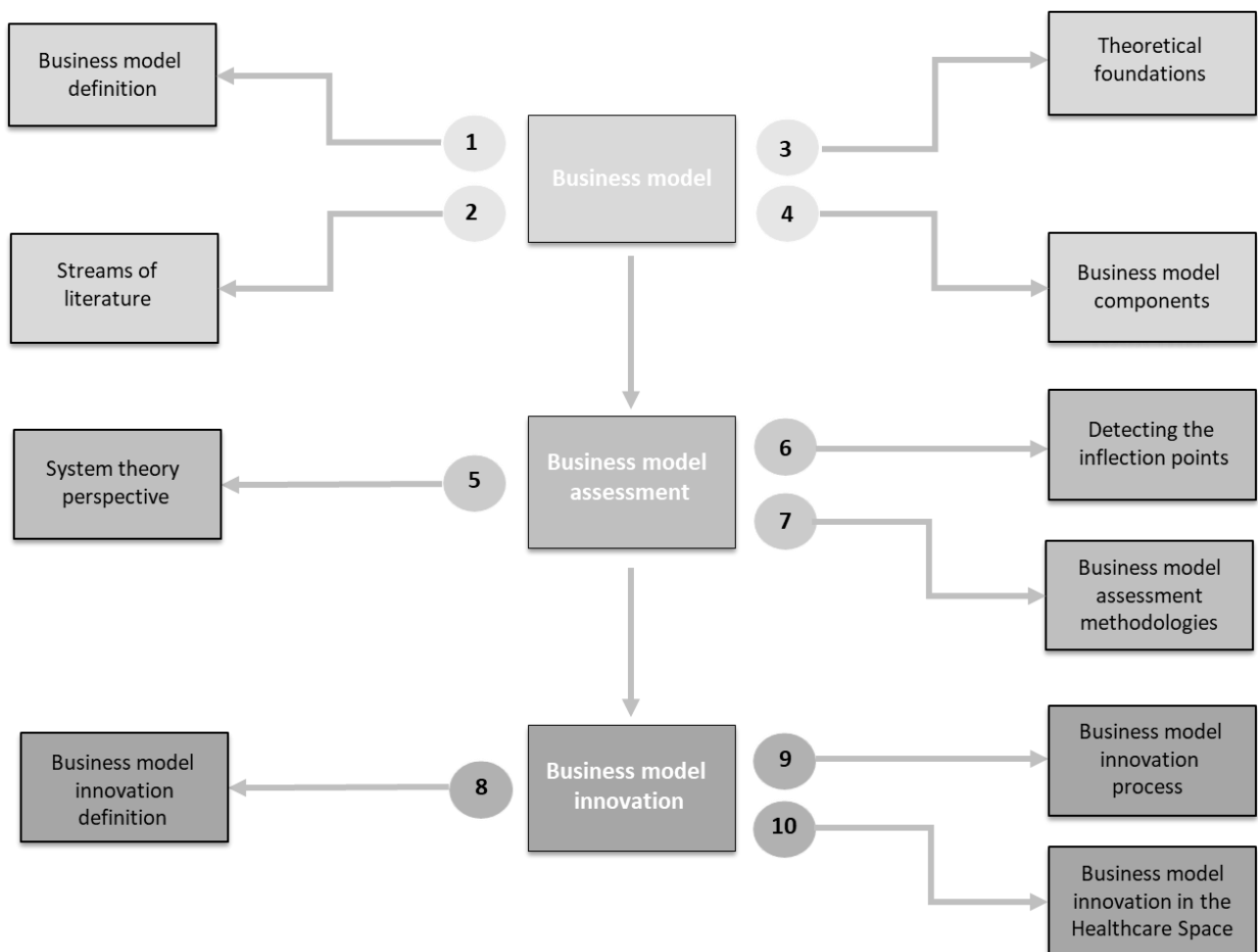


Figure 3: Literature review navigation map – own elaboration

This review starts from a static perspective, considering the definition of the business model, its components and its purpose, to then move towards a dynamic perspective with the objective to understand the mechanisms enabling its successful transformation.

The decision to start the review with the business model concept is grounded on the need to understand the specific perspectives adopted by the different scholars, as proposed by Zott, Amit and Massa (2011).

My intent, reviewing the literature for a doctoral research in business administration, is to develop a project that is "... concerned with researching real business and management issues via the critical review and systematic application of appropriate theories and research to professional practice" as expressed by the Association of Business School and reported by Bareham et al. (2000, p.398). As a consequence, the objective of filling an eventual gap in the literature represents only a second-level motivation in undertaking my study (Birkinshaw et al., 2014).

Regarding the nature of the organisations under consideration, the main focus is attributed to established organisations in the healthcare space, already having a functioning business model, as opposed to start-ups whose business model can be considered as "the hypothesis about each component of the model by the founders ... that must be confirmed in face-to-face or online interaction with customers" (Blank and Dorf, 2012, p.37).

After having explored the business model concept, I have covered its assessment and innovation concepts with the intention to understand when and how they are performed and implemented. The objective is to build a rigorous understanding of their origin, role, context of application, internal as well as external factors influencing them. Finally, I have focused the attention towards the implementation process, highlighting the challenges the organisations' leaders are asked to manage. Considering the complexity and implications of the business model innovation, leaders should have an unambiguous framework to follow when the assessment clearly shows the opportunities and the risks associated with that strategic decision. All these aspects represent challenges leaders should be aware of to maintain their organisations relevant in the marketplace over time.

2.2 Approach to literature review

This literature review has been conducted in two steps: the first referring to the reviews done by the authors of three journal articles; the second based on further publications I have considered relevant and accountable, because on their quality. The articles selected to create the basis of the literature review are:

1. Zott, C., Amit, R., and Massa, L. (2011). The business model recent developments and future research. *Journal of Management*, 37(4), 1019–1042.
2. Wirtz, B. W., Pistoia, A., Ullrich, S., and Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, 49(1), 36–54.
3. Foss, N. J., and Saebi, T. (2017). Fifteen years of research on business model innovation: how far have come, and where should we go? *Journal of Management*, 43(1), 200-227.

The first two articles focus on the business model concept, while the third considers the business model innovation concept.

Zott et al. (2011) have used the following steps to building their literature selection:

1. Research for articles that contain the term business model in the title or keywords, published between January 1975 and December 2009 in leading academic and practitioner-oriented management journals, resulting in 70 publications;
2. Search in the EBSCO Business Source Complete database (this database included more than 1,300 business journals) for articles published between January 1975 and December 2009 containing the term business model in the title, abstract or keywords, resulting in 1,202 publications;
3. The total number of articles considered were 1,253; these articles were examined to identify the relevant articles using three selection criteria: a) analysis of the business model concept in a nontrivial and non-marginal way; b) connection with the business firm theme; c) article included in journals ranked in the ISI Web Knowledge;
4. The result of the above process was 133 articles included in their review.

Wirtz et al. (2016) used the following steps to select the material to be reviewed:

1. Research through EBSCO database (Business Source Complete as well as Academic Search Complete) in the period between 1965 and 2013 where the term business model was included in the title or abstract, resulting in 16,950 articles, of which 2,823 published in peer-reviewed journals, to ensure quality of research;

2. The articles were allocated to specific research area categories (definition and scope, forms and components, value system, actors and interaction, innovation, design, implementation, operation, change and evolution, performance and controlling), and, to guarantee a stronger reference with the business model concept, only the articles including the concept in their title were considered, resulting in 681 articles finally selected.

Foss et al. (2017) followed the here below reported process for their literature review:

1. A first search was done through EBSCO database for academic articles containing the term “business model innovation” in the title, abstract, or keywords limited to peer-reviewed work in academic journals;
2. Considering that other terms have been used in addition to innovation, the search included terms like reinvention, renewal, dynamics, transformation and evolution, resulting in 276 articles with the first publication dated 2000;
3. A second search was done through the search engine Science Direct, using the same terms (innovation and related terms) in the title, abstract and keywords, resulting in 61 articles;
4. The combination of the above searches generated 313 articles further skimmed to ensure their relevance with the topic selected: the result was 132 relevant articles left to analyse; to that stock, the authors added works found in leading practitioner-oriented journals like MIT Sloan Management Review, California Management Review and Harvard Management Review, reaching a final number of 150 publications to be reviewed based on their conceptual theoretical and empirical development and contribution.

Starting from this basis of references, I have selected additional articles from peer-reviewed academic journals, managerial articles, books and conference presentations based on their relevance with the business model, business model assessment and innovation concepts. Finally, I have enriched the literature with the concept of system theory, to improve the understanding of the business model assessment and innovation process.

2.3 Business model concept

2.3.1 Definition and purpose of the business model concept

Despite the growing interest in the business model concept and considering the increasing number of the articles published on the topic, there is not unique and widely accepted definition for it at

this point in time. In Table 1, a selection of the most cited definitions of the concept in the academic literature is reported, in their chronological order of appearance.

| Author(s) and Year | Business Model Definition |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Timmers (1998) | The business model is “an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefit of the various business actors; a description of the sources of revenues.” |
| Venkatraman and Henderson (1998) | “An architecture along three dimensions: customer interaction, asset configuration and knowledge leverage.” |
| Stewart and Zhao (2000) | A “business model is a statement of how a firm will make money and sustain its profit stream over time.” |
| Linder and Cantrell (2000) | “A business model, strictly speaking, is the organisation's core logic for creating value.” |
| Hamel (2002) | “A business model is simply a business concept that has been put into practice. A business concept has four major components: Core Strategy, Strategic Resources, Customer Interface and Value Network.” |
| Amit and Zott (2001) | A business model unveils “the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities.” |
| Weill and Vitale (2001) | “A description of the roles and relationships among a firm’s consumers, customers, allies and suppliers that identifies major flows of product, information and money and the major benefits to participants.” |
| Chesbrough and Rosenbloom (2002) | A business model is “the heuristic logic that connects technical potential with the realisation of economic value.” |
| Magretta (2002) | Business models are “stories that explain how enterprises work. A good business model answers Peter Drucker’s question: who is the customer? And what does the customer values? It also answers the fundamental questions every manager should 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?” |
| Alexander Osterwalder, Pigneur and Tucci (2005) | “A conceptual tool that contains a set of elements and their relationships and allow expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, to generate profitable and sustainable revenue stream.” |
| Morris, Schindehutte and Allen (2005) | A business model is a “concise representation of how an interrelated set of decision variables in the area of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets.” |
| Chesbrough (2006) | “The business model is a useful framework to link ideas and technologies to economic outcomes.” “It also has value in understanding how companies of all sizes can convert technological potential (e.g. products, feasibility, and performance) into economic value (e.g. price and profits) .” “Every company has a business model, whether that model is articulated or not.” |
| Johnson, Christensen and Kagermann (2008) | Business models “consist of four interlocking elements, that taken together, create and deliver value”: customer value proposition, profit formula, key resources, and key processes. |
| Skarzynski and Gibson (2008) | “The business model is a conceptual framework for identifying how a company creates, deliver and extract value. It typically includes a whole set of integrated components, all of which can be looked on as opportunities for innovation and competitive advantage.” |
| Casadesus-Masanell and Ricart (2010) | “A business model is [...] a reflection of the firm’s realised strategy.” |

| | |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| David J. Teece (2010) | "A business model 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 value." |
| Christoph Zott and Amit (2010) | A business model is "a system of interdependent activities that transcends the focal firm and spans its boundaries." |
| Massa and Tucci (2013) | "... systemic and holistic understanding of how an organisation orchestrates its system of activities for value creation." |
| Wirtz et al. (2016) | A business model is a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products and/or services are generated by means of a company's value-added component. |

Table 1: BM definitions - Source: Zott et al. (2011, p.1024), Baden-Fuller, Morgan (2010, p.158), Stampfl (2016, pp.27-28), Wirtz et al. (2016, p.41)

The presence of so many different definitions, only partially converging to a shared perspective, has led some authors to take some rigid positions on the concept and its proposed value. Examples of that are: the case of Zimmermann, when affirming that the "business models are perhaps the most discussed and least understood terms and aspects of eBusiness, eCommerce and eMarkets" (Petrovic et al., 2001, p.1); Porter (2001, p.73), presenting his critique of the ambiguity of the business model research, considered "an invitation for faulty thinking and self-delusion:"

Although the business model definitions do not converge towards one clear statement, all of them share the common purpose of representing the activities organisations select and manage in order to be in the position to create, deliver and capture value. Additionally, these contributions, even if not sharing a common definition, suggest some common themes regarding the business model concept (Zott et al., 2011):

1. It represents a new unit of analysis;
2. It offers a holistic perspective describing how organisations do business;
3. It includes the activities the organisation has selected to manage;
4. It highlights how the value is generated interacting with the consumers, distributed, and partially captured by the organisation.

Reviewing all the different definitions presented above, it seems important to define a way to make sense of them to provide clarity, at the beginning, and to define patterns useful for leaders to support their decision-making.

With this aim, particularly interesting is the perspective of Morris et al. (2005); the authors identify three main levels to make sense of the concept:

1. Economic level
2. Operational level
3. Strategic level

They see these levels in sequence and with a hierarchical perspective, whereby the economic category represents the basic point of analysis, followed by a superior operational category to finish with the strategic category.

“At the most rudimentary level, the business model is defined solely in terms of the firm’s economic model” (Morris et al., 2005, p.726). At this level, the focus is predominantly on how the organisation is able to generate profit. Among the presented definitions, the one offered by Stewart and Zhao (2000, p.290) is aligned with this economic level, as it focuses on the organisation’s ability to generate profit. In fact, they believe that a “business model is a statement of how a firm will make money and sustain its profit stream over time.”

At the second level, labelled operational level, the model’s purpose is to frame an architectural configuration, referring to “internal processes and design of infrastructure,” to allow the organisation to create value (Morris et al., 2005, p.727). The definition of Osterwalder et al. (2005, p.17) clearly presents these characteristics as they consider the business model as “a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value proposition, to generate a profitable and sustainable revenue stream.”

At the final strategic level, the definition mostly focuses on aspects related to the organisation’s market positioning, vertical integration and interactions with other organisations, transcending the traditional firm boundaries and evaluations to pursue growth opportunities. In such a category, the definition of Zott and Amit (2010, p.216) could be included, which depicts the business model as “a system of interdependent activities that transcends the focal firm and spans its boundaries.” The definition of Morris et al. (2005, p.727) can also be considered as belonging to this category, as a business model, from their perspective, is a “concise representation of how an interrelated set of decision variables in the area of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets.” In this attempt, highlighting the business model’s systemic nature, the concept can portray something different and more valuable than simply the sum of its components.

Regarding the purpose of the business model, “besides promoting understanding

throughout the company- as well as the core logics of providing service, also realising the promise of service, satisfying consumer needs- the general success plus the continuing and new development of the business model can be identified as main purposes of a business model” (Wirtz et al., 2016, p.40). In other words, the business model should keep “the promise of service, the satisfaction of needs, and profitability, which can be subsumed under the assurance of a long-term competitive advantage” (Wirtz et al., 2016, p.40).

In this research, the business model concept, closer to the one presented by Johnson et al. (2008), is defined as a system of interdependent components, whose interaction shapes the organisation’s ability to create, deliver and capture value from the relationship with its consumers. This choice is based on the presence of this definition’s systemic and dynamic nature. In fact, as the internal and external conditions change over time, the business model should be the framework to evaluate how these changes could affect the current organisation’s relevance in the market and to understand if these changes require a new business model configuration. When the incremental approach to modifying some business model components is considered insufficient to restore the organisation’s performance, leaders have to consider a business model innovation. This attempt should be made adopting a “dynamic consistency” among the different components (Demil and Lecocq, 2010).

2.3.2 The research streams supporting the business model concept

These heterogeneous definitions can be explained by the different perspectives adopted by the researchers, and can be better understood by reviewing the context of analysis where the literature has been developed:

1. e-business development
2. Strategic management
3. Innovation and technology management

Regarding the e-business stream, researchers are interested mainly in “understanding the gestalt of firms engaging in (new) internet-based ways of doing business and the (new) roles that these firms play in their respective ecosystems,” as presented by Zott et al. (2011, p.1028). Their intention seems to be descriptive and mainly oriented towards defining a common language to be used by the different stakeholders regarding how a firm does business. As a consequence, the contributions of these scholars are focused on (i) defining and representing generic e-business models, (ii)

developing typologies and taxonomies, and (iii) partially exploring the causal explanation or empirical testing. This approach has the advantage of allowing a comparison among different business models and understanding their specific features, but, at the same time, it does not fully clarify the relationship among the different components of the business model.

Within the strategy discussion stream, Zott et al. (2011) highlight the conceptual differences existing between the business model and certain aspects of the firm's strategy, but, at the same time, acknowledge the relevant role the concept can play in a firm's strategy execution, as supported by several scholars. In this field, Richardson (2008), for instance, considers the business model concept as the framework to align the strategy formulation with its execution. The author affirms that the strategy frameworks allow the strategist to abstract from all the details in order to "detail and capture the essential elements of competition" (Richardson, 2008, p.134). On the other hand, when moving towards the strategy implementation, all the details we discounted in the initial strategy formulation assume a vital role. Based on that, "the proposed business model framework provides a consistent logical picture of the firm that helps to guide the myriad choices and actions involved in execution" (Richardson, 2008, p.135). Similarly, Casadesus-Masanell and Ricart (2010, p.205) consider the business model as "a reflection of a firm's realized strategy." In the strategy area, the business model adoption is mainly connected with three factors:

1. The networked nature of value creation;
2. The relationship between business model and firm's performance;
3. The distinction between the business model and other strategy concepts.

Considering the lack of convergence on what a business model is and its intersection with other strategy concepts, Zott et al. (2011) propose that some progresses can be made, at least by clarifying what a business model is not. From their point of view: (i) the business model cannot be represented as a linear mechanism for value creation, from the supplier to customers as it involves a "more complex, interconnected set of exchange relationships and activities among multiple players" (Zott et al., 2011, pp.1031-1032), (ii) the business model is not the same as product market strategy or corporate strategy, and (iii) the business model goes beyond the firm's boundaries as, for instance, the value creation can include other actors from the ecosystem not directly controlled by the organisation under analysis. In every case, the business model can be considered as a source of competitive advantage stemming from the organisation ability to execute its strategy.

In the innovation and technology domain, two main ideas seem to emerge from the different pieces of research involved in the business model concept.

1. The business model is a vehicle to extract value from technologies.
2. The business model represents a new subject of innovation, to be considered in addition to the more traditional product, process and organisational innovation.

Based on the first idea, the business model provides the leaders of an organisation with the understanding of how to unlock the value potential of new technologies to convert them into profitable consumer's solutions. In this stream, one of the most interesting contributions is the one provided by Chesbrough and Rosenbloom (2002), which presents an in-depth case study of Haloid Corporation (the name of the company before changing it to Xerox). They were able to commercialise the "914 printer" model successfully thanks to the ability to challenge and adjust the prevailing business model within the company. Instead of selling the copy machine, the company decided to lease it to its customers, realising, using the authors' words, "that technologies that make little or no sense in a traditional business model may yield great value brought to market with a different model" (Chesbrough and Rosenbloom, 2002, p.538). In the authors' interpretation, the business model represents the construct able to mediate the value creation process through "selecting and filtering technologies, and packaging them into particular configurations to be offered to a chosen targeted market" (Chesbrough and Rosenbloom, 2002, p.550).

Moving to the second idea, both scholars and practitioners have highlighted in the last 15 years how business model innovation can really represent an important capability to manage an organisation's transformation successfully, and even create game-changing options, reshaping the entire industry. Despite its relevance, this type of innovation is much more complex to be assessed and executed and can provoke a consistent and not-taken-for-granted impact on the organisation's ability to create value for its stakeholders, compared to the more familiar avenues of innovation. Additionally, in established organisations, this type of innovation is difficult to implement as it challenges the very fundamental logic of the organisation. Sometimes, it requires a preliminary change of the organisation's identity. Both cases create consistent destabilising situations that represent potential barriers for the business model innovation.

Chesbrough and Rosenbloom (2002, p.550) offer their interpretation of the challenging nature of this peculiar innovation attempt as they believe that an "heuristic logic is required to discover an appropriate business model, and an established corporation's sense-making task will be

constrained by its dominant logic, which is derived from its extant business model.” The authors continue to clarify that “in contrast, a start-up seems likely to be less constrained in the evaluation of alternative models” (Chesbrough and Rosenbloom, 2002, p.550).

The second important barrier leaders embarking on business model innovation projects should be aware of is the role played by the organisation’s identity. “Just as individuals develop, often unconsciously, a narrative of who they are, so do organisations, reflecting the context of their founding and the identities, motivations and values of their founders” (Bouchikhi and Kimberly, 2003, p.20). Therefore, before being in the position to successfully implement a brand-new business model to maintain the ability to compete in a changing environment, the leaders should assess the organisation’s identity with all the implications of the vested interests the different stakeholders may have. As organisations cannot easily prosper without a solid identity, this feature can be transformed into a trap when constraining strategic options; “unless managers work to transform the company’s identity, genuine strategic change is not possible,” Bouchikhi and Kimberly clarify (2003, p.22). Several contributions are offered by academics to be used by leaders to overcome these barriers, from experimentations (McGrath, 2010), to the development of meta-capabilities like strategic sensitivity, leadership unity, and resource flexibility (Doz and Kosonen, 2010), and organisation’s leaders commitment towards paradoxical strategies (Smith, Binns and Tushman, 2010).

In conclusion, the specific perspectives adopted by the different research streams considered above represent one of the main reasons for the heterogeneity of the business model definitions without diluting its valuable support for the researchers referring to its different versions.

2.3.3 Theoretical foundation of the business model concept

In this part of the review, the theoretical foundations that underpin the development of the business model are explored, summarised and critiqued. These involve the competitive strategy, the dynamic capabilities, the resource-based view, transaction cost economics, and the “modelling perspective.” The system theory contribution, which can be considered a further foundation for the business model explanation, has been extensively presented in section 2.4.1.

Starting with strategy, if we consider the business model as essentially the combination of activities performed either by the organisation under observation or by its suppliers, partners,

customers and consumers, then the link with the strategy territory becomes evident and well supported. For instance, let us consider the answer Porter provides to a critical question about what strategy is, in one of his well well-known contributions, entitled “What is strategy?” (Porter, 1996). In this article, to support his definition of strategy, Porter (1996) introduces the concept of strategic positioning, defined as the attempt to achieve a sustainable competitive advantage by identifying and preserving what is distinctive about an organisation. According to the author, a strategic positioning is achievable by “performing different activities from rivals or performing similar activities in different ways” (Porter, 1996, p.62). Strategic positioning should be considered as different from that of operational effectiveness, whereby the key is performing similar activities better than rivals do. According to Porter (1996, p.64), “the essence of strategy is in the activities – choosing to perform activities differently or to perform different activities than rivals” and, as a second element, “advantage or disadvantage results from all a company’s activities, not only a few” (Porter, 1996, p.62). This action-oriented definition of strategy denotes a clear overlap with the business model concept, where the decision to select some elements instead of others is one of the critical aspects to generate a different, and supposedly better than rivals, value for the organisation’s consumers. Based on what Porter has presented, the basic unit of competitive advantage is represented by the activities the organisation has decided to focus on, by how these activities are configured and, most importantly, by how these activities relate to each other (Porter, 1996). To further clarify this point, “while operational effectiveness is about achieving excellence in individual activities, or functions, strategy is about combining activities” (Porter, 1996, p.70). If we consider decisions as a form of activity, in particular cognitive activity, then this concept of strategy has many elements in common with that of the business model. From this perspective, strategy is based on the entire system of activities and a competitive advantage can be built on how the selected activities fit and are able to reinforce one another. This introduces the concept of “fit,” considered central for the organisation’s attempt to build a competitive advantage. Here below are some critical considerations about this concept.

1. Evaluating the fit is crucial if we look at the organisation as a whole and not only as a sum of different parts.
2. Fit is important because discrete activities often have an impact on other activities.
3. Fit among activities can be generic, as they apply to every organisation, or “strategic-specific as able to enhance a position’s uniqueness and amplify trade-offs” (Porter, 1996, p.71).

There are three different, even if not mutually exclusive, types of fit supporting a holistic perspective considered more powerful than the relevance of any individual part (Porter, 1996):

1. First-order fit, reached when there is consistency between each activity and the organisation's overall strategy;
2. Second-order fit, reached when different activities are reinforcing each other;
3. Third-order fit, reached when different activities are designed specifically to obtain an optimisation of the whole system.

The strategic fit, additionally, is not only important for the competitive advantage but also for its sustainability over time. Porter, in fact, recommends that an organisation crafts and builds its strategic positioning on an activity system primarily built on second and third-order fit, as they are more difficult to decode and imitate by rivals. Finally, fit among organisation's activities creates the basis and incentives to improve operational effectiveness, which in turn protect the system from external imitation. A determinant element in this discussion is around the dimension of time, more specifically around the requested frequency to challenge and revise the assumptions initially adopted.

All these considerations really reinforce the position that sees the business model firmly based upon the solid foundation of strategy. However, despite this relevant overlap between the two concepts, I favour the opinion that the business model differs from the strategy, at least for two main reasons. The first reason is based on the Casadesus-Masanell and Ricart's (2010, p.205) definition of business models "as reflection of the realized strategy," whereby the business model implementation reflects the existence of organisation's capabilities able to realise what the strategy has been able to conceptualise. To support this distinction, the role of strategy is to build dynamic capabilities to effectively cope with existing and future contingencies considered relevant to the organisation's success (Ambrosini and Bowman, 2009). The role of these dynamic capabilities, as has been defined by Teece, Pisano and Shuen (1997, p.515), is to "appropriately adapting, integrating and reconfiguring internal and external organisational skills, resources and functional competences to match the requirements of a changing environment." Based on that, the dynamic capabilities are the intermediate element between the definition of a strategy and its practical implementation through the business model (DaSilva and Trkman, 2014). The second reason in favour of the separation of the two concepts is based on the evidence that "every organisation has some business model" but, at the same time, "not every organisation has a strategy," as expressed by Casadesus-Masanell and Ricart (2010, p.206), presenting the case for a potential temporal

distinction between what the organisation is expecting to become, represented by its strategy, and how the same organisation concretely functions at the moment of the discussion, summarised by its business model. When the extant reality matches the organisation’s ambition, the two concepts overlap. A clear distinction exists when “the firm’s plan of action calls for modifications to the business model (e.g. changes in policies and/or assets and/or governance) when particular contingencies take place” as offered by the authors (Casadesus-Masanell and Ricart, 2010, p.205). Figure 4 reports the distinction among strategy, business model and tactics proposed by Casadesus-Masanell and Ricart (2010), where the latter can be defined as decisions taken within the potential options offered by the business model selection and can be easily adjusted based on local market conditions.

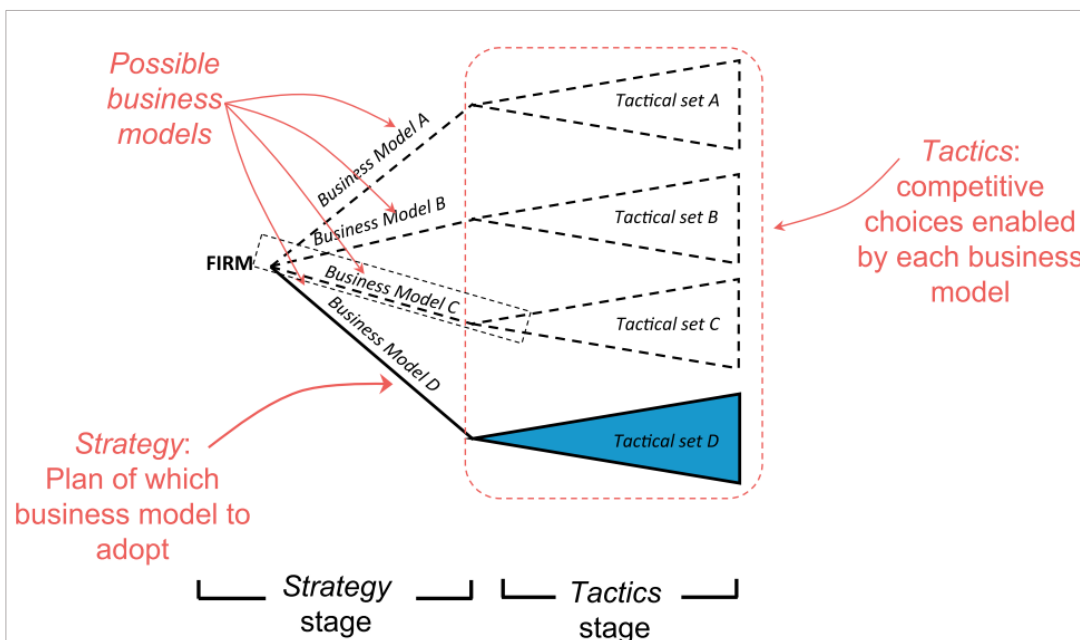


Figure 4: Strategy, BM and tactics - Source: Casadesus-Masanell and Ricart (2010, p.204)

Dynamic capabilities are included in three groups of processes and managerial initiatives: (1) sensing, referring to the ability to detect and assess opportunities; (2) seizing, with regard to the mobilisation of internal and external resources to address these opportunities and extract value from them, and (3) transforming, focusing on the ability to renewing the organisation on a continuous base (Teece, 2007). In highly volatile situations, all of these capabilities are closely related to the organisation’s ability to innovate the business model. In fact, the sensing ability allows the organisation to monitor the environment in order to understand where the most promising opportunities come from, while through the seizing ability, resources are allocated to extract value

from these opportunities. Finally, transforming specifically deals with the ability to selectively dismiss what is not relevant anymore to deliver the consumer value proposition while adopting different and even radically new configurations to maintain the market relevance. Organisations with strong dynamic capabilities are in the position to detect environmental changes early, requiring a certain degree of innovation of their extant business model (Leih et al., 2015). Based on that, dynamic capabilities enable organisations to integrate, build and reconfigure both internal and external competences and are very valuable in a rapidly changing environment shaping new forms of competitive advantage (Teece et al., 1997). For that reason, they are considered high-order capabilities as they are able to meet the current consumer needs as well as shape the organisation to be prepared for incoming opportunities (Leih et al., 2015). Dynamic capabilities, therefore, can be very relevant to assess environmental changes and define the new and most appropriate business model configuration to thrive.

The resource-based view of the firm (Wernerfelt, 1984), considering the firm as a bundle of resources and capabilities, suggests that these resources need to be valuable, rare, imperfectly imitable, and not substitutable, to sustain a competitive advantage (Barney, 1991). Based on that, as the business model represents the logic for the organisation to create, deliver and capture value, these resources represent a critical foundation to build a business model upon. Despite their importance, without the involvement of these valuable resources in transactions, the firm is not in the position to create, deliver and capture value as eloquently presented by Chesbrough and Rosenbloom (2002), illustrating the case of Xerox. This organisation, in fact, was able to generate several promising technologies without being able to directly exploit them with the prevailing business model used to successfully commercialise the copying machines. This is the reason for combining the resource-based view of the firm with the transaction cost economics theories, as illustrated by DaSilva and Trkman (2014).

Finally, regarding the modelling foundation of the business model construct, Baden-Fuller and Morgan (2010) propose three interesting lines of reflection here below summarised:

1. The descriptive thought, using the “scale model” and “role model” interpretation to classify business models, using a taxonomy or a typology approach;
2. The investigation thought, where business models are compared with the model organisms in biology and mathematical models in economics to understand what is the result managers can expect as a consequence of specific initiatives;

3. The “recipe” thought, enabling the replication of business logic but also the basic understanding of it to elaborate variations and innovations.

On the descriptive thought, as presented by the authors, “one role of business models is to provide a set of generic level descriptors of how a firm organises itself to create and distribute value in a profitable manner” (Baden-Fuller and Morgan, 2010, p.157). In business discussions, the business model is often associated with the name of the firm it is intended to describe or with the elements representing a specific and recognisable behaviour; the “Google business model” is an example of the first one, while the “low-cost airline model” represents well the second one. In both cases, the acceptance of the term “model” suggests two complementary ideas: the nature of the scale model that offers a simplified description of real things, and the nature of the role model that offers a presentation of an ideal case. Based on the authors’ perspective, “scale models are copies of things; role models are models to be copied,” and, in the case of business models the two connotations converge (Baden-Fuller and Morgan, 2010, p.157). Starting with the scale model, it is interesting to note that the business model operates at an intermediate level between the peculiarity of the real-world enterprise and the generalizability of theories of firm’s behaviour. This is the “generic level” used by the authors to present the business models as “generic kinds of behaviour which are distinctively different” (Baden-Fuller and Morgan, 2010, p.159). In this descriptive attempt, the business models are considered as “ideal type” based on Weber’s description, whereby ideal refers to the concept of idea and type refers to mental constructs. From this perspective, the business model is able to powerfully mediate between people ideas and theories, on the one hand, and elements present in the world people need to describe and explain in practical ways, on the other (Baden-Fuller and Morgan, 2010). This notion represents the synthesis between the taxonomy as kinds of things observed in the world through empirical work and typology as types of things conceptualised by scientists using a top-down approach. On the investigation thought, this perspective of analysis moves from its description to include a more dynamic aspect, with the objective to understand the consequences of different “what if” questions. In management, like in biology and economics, models are important to reinforce and develop knowledge. In this regard, models are employed to align general ideas, framed in theories, with the observations of specific events to progress in knowledge. Scientists contrast the model findings with the initial theories on the one hand, and with the observation of the world, on the other, to evaluate how accurate and reliable these model findings are compared to the reality their models aim to explain. In this context, in addition to the requirement of the description, the analysis of business models is driven by the

interest in understanding why and how a model is successful. The opportunity to understand how a business model works represents the premise for leaders to do experiments and move to a different, desired model they wish to develop in future. The recipe thought represents the third stream of reasoning. It considers business models as a practical thing that leaders use in a dynamic perspective in order to experiment, re-invent and innovate their organisations. With this purpose in mind, what has been presented above as an ideal type of business model represents a recipe already successfully tested by others and ready to be taken for further experimentation with limited or consistent variations compared to the basic version. Like every recipe, it requires both ingredients and the process to combine them to reach a desired result. Following the authors, the recipe metaphor includes “both the organisation and integration of the main elements of the firm’s activity” in order to reach a specific output (Baden-Fuller and Morgan, 2010, p.166). This analogy seems to support leaders in the experimentation of their business model for its innovation.

Baden-Fuller and Morgan (2010) suggest that business models are models in the three different logics as they are not mutually exclusive. This feature justifies, for the authors, the main reason for the business model’s current diffusion and growing interest among both academic scholars and practitioners, but it also clarifies why it is difficult to define it univocally.

The fact that different theoretical perspectives support the business model concept adds value to the stance that sees its contribution to the academic discussion “by enabling a connection between theories” (Ritter and Lettl, 2018, p.7). I tend to agree with this perspective as the business model’s value lies in “its ability to explain and enable interconnections among theories” (Ritter and Lettl, 2018, p.7). Despite the long discussion supporting or contrasting the consideration of business model as a theory, I believe this potential role of mediator among different theories does not limit its relevance and can be extremely helpful for both scholars and practitioners to make sense of different and interdependent theoretical perspectives.

2.3.4 The business model components

The description of its components represents an additional element to improve our understanding of the business model concept. Based on the analysis of the different, and sometimes contrasting, definitions presented in section 2.3.1, a clear consequence is the heterogeneity of the business model components consideration.

Before entering the presentation and discussion of the different perspectives regarding the components to consider when framing a business model, it is worth highlighting the efforts in defining a “standard framework” to describe a business model. According to what has been presented above in section 2.3.3 section by Baden-Fuller and Morgan (2010) on the model connotation, the authors clarify that, in order to be useful, a model should be able to represent firms in general and, at the same time, satisfy the needs of the specific organisation’s leaders. In such an attempt, Morris, Schindehutte and Allen (2005, p.729) present a framework based on “three increasingly specific levels of decision making, termed the ‘foundation’, ‘proprietary,’ and ‘rules’ levels” and additionally, “at each level, six basic decision areas are considered.” At the foundation level, leaders should use the model to take generic decisions, clarify the nature of the organisation’s business, and guarantee an internal consistency among these decisions. At this level, the decisions taken are considered generic, as every organisation has to cope with them, with the positive side effect of creating the opportunity for universal models whose adoption allows a comparison among different organisations. Morris et al. (2005) select the following components:

1. Offering factors
2. Market factors
3. Internal capability factors
4. Competitive strategy factors
5. Economic factors
6. Growth/exit factors

At the following level, the proprietary one, the decisions become firm-specific as they should enable the organisation to be built around a unique combination of such decisions in order to create the premise for a competitive advantage. The third and final level of analysis is related to the executional aspect of the model, and this is where the presence of rules provide direction and guidance on running the business operations, reinforcing the decisions taken at the previous two levels.

The comprehensive way of combining coherent decisions at these three different levels represents the premise for model sustainability grounded in the components’ consistency. This consistency should be achieved both internally as well as externally; the internal fit regards both “consistency and reinforcement within and between the six components of the model” above described, and the external fit deals with the “consistency between the decisions taken in the six components and the conditions of the external environment” where the organisation competes

(Morris et al., 2005, p.732). Table 2 provides a detailed overview of the different contributions regarding the business model components presented by the different authors.

| Author(s) and Year | Business Model Components |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horowitz (1996) | price, product, distribution, organisational characteristics, and technology |
| Viscio and Pasternak (1996) | global core, governance, business unit, services, and linkages |
| Timmers (1998) | product/service/information flow architecture, business actors and roles, actor benefits, revenue sources, and marketing strategies |
| Markides (1999) | product innovation, customer relationship, infrastructure management, and financial aspects |
| Donath (1999) | customer understanding, marketing tactics, corporate governance, and intranet/extranet capabilities |
| Mahadevan (2000) | value stream for partners and buyer networks, revenue stream, logistical stream, profit stream |
| Stewart and Zhao (2000) | profit stream, customer selection, value capture, differentiation, and strategic control |
| Gordijn et al. (2001) | actors, market segments, value offering, value activity, stakeholder network, value interfaces, value ports, and value exchanges |
| Linder and Cantrell (2000) | pricing model, revenue model, channel model, commerce process model, internet-enabled commerce relationship, organisational form, and value proposition |
| Chesbrough and Rosenbaum (2000) | value proposition, target markets, internal value chain structure, cost structure and profit model, value network, and competitive strategy |
| Wirtz (2000) | combination of production factors for strategy implementation, core competencies and core assets, market and customer segmentation, service offer and value proposition, systematisation of revenue forms, combination and transformation of good and services, production factors and suppliers, financing and refinancing |
| Gartner (2003) | market offering, competencies, core technology investment, and bottom line |
| Hamel (2002) | core strategy, strategic resources, value network, and customer interface |
| Petrovic et al. (2001) | value model, resource model, production model, customer relations model, revenue model, capital model, and market model |
| Dubosson-Torbay, Osterwalder and Pigneur (2002) | products, customer relationship, infrastructure and network of partners, and financial aspects |
| Afuah and Tucci (2001) | a system of components, customer value, scope, price, revenues, connected activities, implementation, capabilities, and sustainability |
| Weill and Vitale (2001) | strategic objectives, value proposition, revenue sources, success factors, channels, core competencies, customer segments, and IT infrastructure |
| Applegate (2001) | concept as market opportunities, capabilities as resources needed to turn concept into reality, and value to measure the return to investors and other stakeholders |
| (Amit and Zott, 2001) | transaction content, transaction structure, and transaction governance |
| Alt and Zimmermann (2001) | mission, structure, processes, revenues, legal issues, and technology |
| Rayport and Jaworski (2001) | value cluster, market space offering, resource system, and financial model |
| Rappa (2001) | sustainability, revenue stream, cost structure, value chain positioning |
| Betz (2002) | resources, sales, profits, and capital |

| | |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Osterwalder (2004) | value proposition, customer segments, partner's network, delivery channel, revenue stream, relationship, value configuration, capability, cost structure |
| Morris et al. (2005) | factors related to offering, market factors, internal capability factors, competitive strategy factors, economic factors, and growth/exit factors |
| Bonaccorsi, Giannangeli and Rossi (2006) | product and service delivery, customers, cost structure, income, costs |
| Brousseau and Penard (2006) | costs, revenue stream, sustainable income generation, goods and services production and exchange, pricing strategies, relationships, network externalities |
| Demil & Lecocq (2010) | resources and competences, organisation, value proposition, volume and structure of revenue streams, volume and structure of cost streams |
| Johnson et al. (2008) | key resources, customer value proposition, profit formula, key processes |
| Osterwalder and Pigneur (2010) | key resources, key partners, customer relationship, channels, customer segments, value proposition, revenue streams, key activities, cost structure |

Table 2: BM components' definitions – Source: Morris et al. (2005, p.728), Zott et al. (2011, pp.1027-1028), Wirtz et al. (2016, p.43)

The analysis of the business model components summarised in the Table 2 presents a substantial heterogeneous result, as indicated at the beginning of this section.

One driver that can be used to highlight a pattern for a better understanding has been offered by Wirtz et al. (2016), considering the degree of abstraction adopted by the different scholars. Some of them have focused their attention on a few components able to represent a business model, as in the cases of Hamel (2002), while other authors presented very articulated and detailed components like, for example, in the cases of Wirtz (2016) and Osterwalder and Pigneur (2010).

From my perspective, the business model should offer a simplified overview of the reality in order to support the generalisation attempt to improve the level of comparison among different models and, at the same time, it should allow the leaders to articulate the specific case under analysis, capturing the critical features that represent the base for the organisation's competitive advantage.

Based on that perspective, the business model components introduced by Johnson et al. (2008) have been adopted in this research. In this study, the business model is defined as a system of interdependent components whose interaction shapes the organisation ability to create, deliver and capture value from the relationship with its consumers. The four interdependent components of Johnson et al. (2008), as illustrated in Figure 5, represents a fully coherent choice as either the concept or the framework are based on the systemic perspective.

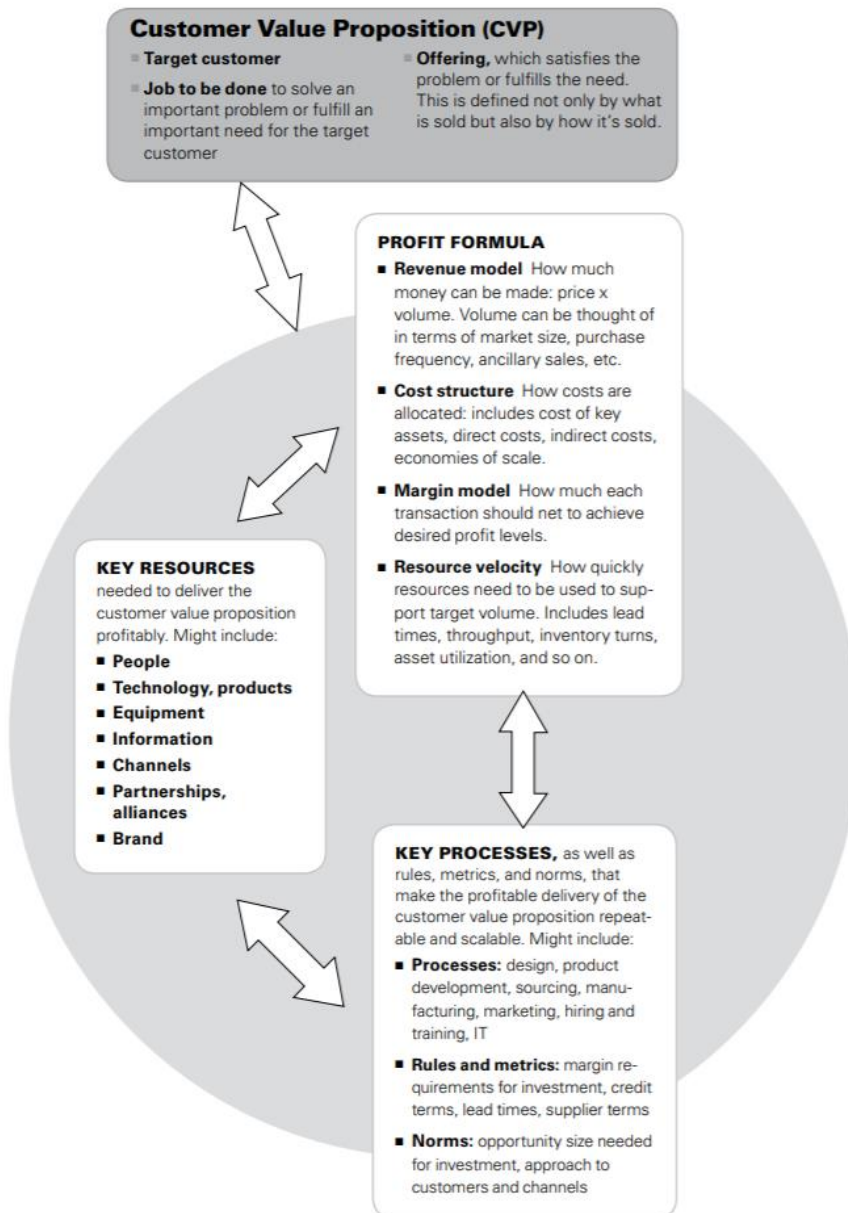


Figure 5: The elements of a business model – Source: Johnson et al. (2008, p.54)

Before describing the elements included in the different components and what their level of interdependency is, I believe it is worth providing the rationales supporting my decision in addition to the systemic perspective already clarified. These rationales reside on the parsimony and completeness of the components considered in the Johnson et al. model offer (2008). In other words, the Johnson et al.'s framework provides an accurate and complete representation of the business model with the minimum number of components that are easy for people to understand and describe. These aspects are critical during the data collection and interpretation steps, and this reduces the risk of misinterpreting the experience described by the research informants.

Regarding the customer value proposition, I prefer to use the word “consumer value proposition” (CVP) to avoid any potential misunderstanding with the customer representing, in many businesses, the intermediate step before a product, or service, reaches the final consumer. The consumer value proposition is represented by the solution (i.e. product, service or the combination of both) a user relies on to solve a job at a specific price in an effective, reliable, and convenient way. Anthony W. Ulwick has introduced the job-to-be-done (JTBD) concept as a different approach to translating consumer inputs into potential areas for innovation. Instead of approaching consumers to ask for solutions, they should be asked for outcomes; that is, “what they want a new product or service to do for them” (Ulwick, 2002, p.92). The term has been then popularised on the broader audience by Christensen discussing about the way companies segment their markets, going beyond traditional consumer demographics or product features. The consequence of this traditional approach is that companies differentiate their offerings by adding features and functions, often unsuccessfully, without fully understanding the consumers’ job and how they hire products and services to do this specific job for them (Christensen et al. 2007). Based on that, companies need to understand the jobs that consumers need to do in their daily lives and how their offerings may be hired. It is relevant to say that for the same job-to-be-done the consumer may use different products in different situations. In summary, the consumer value proposition is the combination of the consumer target considered, the job-to-be-done he needs to fulfil, and the offering designed to satisfy that specific job.

The second component of the business model is represented by the profit formula that summarises how the organisation creates value for itself and its stakeholders. Fundamental elements of the profit formula are:

- 1) Revenues model: it explains how the organisation gets remunerated for the solution offered to consumers.
- 2) Cost structure: it clarifies the direct and indirect costs sustained to manufacture and distribute that solution.

Looking at this in more detail, the revenues result from the unit price and volume sold over a specific period of time. The volume sold depends on the number of consumers attracted by the company offer, the number of units per transaction and the number of transactions every consumer does in a given time period. The price can be defined by many aspects, such as the volume bought, the frequency of the different transactions in a specific period of time, the nature of the transaction, the delivery of the solution, and the timing of purchasing. On the other hand, the cost structure is

the mix between direct costs and overheads associated with the production and delivery of the solution, where the level of the volume manufactured plays a vital role in the potential economies of scale the organisation could leverage.

The third component is represented by the key resources that include the qualification of the people employed, the technology adopted, the brands in portfolio, the channel of distribution, the partnerships with selected stakeholders, and the facilities and equipment. These key resources' combination is necessary to generate and deliver the value proposition. They represent the result of how an organisation has decided to compete in the market among all the possible available combinations. These key resources are also coherent with the foundation of the resource-based view of the firm, presented in the section 2.3.3, especially in case the organisation has been able to craft and nurture resources that are "valuable, rare, imperfectly imitable, and not substitutable" (Barney, 1991). They represent the assets the organisation is building, renovating and leveraging to deliver the consumer value proposition.

Finally, the key processes represent the way some fundamental tasks are performed by the organisation, like product design, production, marketing, sales, critical stakeholders' management, business intelligence, IT, business development and investment requirements. Marketing and sales, for instance, should be performed to ensure that the market share and volume are coherent with the expected unit cost considered as a target in a specific period of time. The combination between key resources and key processes (i.e. the resources and how to extract value from them through specific and original capabilities) can also be seen as the two sides of the same coin to deliver, in a distinctive way, the value proposition that resonates with the targeted consumers, in a profitable and sustainable manner.

The competitive advantage of the organisation resides in the unique combination of these components as "the power of this deceptively simple framework lies in the complex interdependencies of its parts" and "major changes to any of these four elements affect the others and the whole" (Johnson et al., 2008, p.53).

2.3.5 Why is the business model concept attracting so much interest?

Before proceeding with the literature review, I would like to approach one of the first points that emerged at the beginning of this chapter regarding the reasons behind the high and growing level of practitioners' interest in the business model concept. Despite the lack of consensus in the

literature on many elements like its definition, the components it is made of, and the presence of different theoretical foundations underpinning the concept, leaders within organisations are very interested in the business model as it represents a very powerful construct potentially allowing them to:

1. Conceptualize their organisation's value orientation based on a holistic perspective, in contrast to the alternative approach where every component is defined, analysed and managed in isolation;
2. Take decisions on the different components to create, deliver and capture value in a systemic manner, in order to ensure a distinctive and sustainable combination, where the final result is more important than the result of every component singularly considered;
3. Improve the organisation's overall understanding and the employees' and partner's commitment to ensure consistency among the different daily operational decisions with the aim to reinforce the fit among the components.

From my point of view, these are very valid reasons that justify the consistent and growing interest of the practitioners' community in the business model, its assessment and innovation.

2.4 Business model assessment

2.4.1 System theory perspective about business model assessment

In section 2.3.3 of this chapter, different theoretical contributions have been represented as the foundation upon which the business model has been conceptualised. More in detail, in that section, the competitive strategy, the dynamic capabilities, the resource-based view of the firm, the transaction cost economics, and the "modelling perspective" have been covered. To complete that review, this section considers the business model concept from the system theory perspective. The objective is to understand how this perspective could contribute to defining a solid foundation for the mechanisms of value creation and appropriation as well as for its evolution over time. As clarified in the section 2.3.1, in doing my research, I have adopted the definition of the business model as a system of interdependent components, whose interaction shapes the organisation's ability to create, deliver and capture value from the relationship with its consumers. The central element of this definition resides in its systemic perspective as the value generation, delivery and capturing result from a combination of selected components.

Let us see how the system theory could support the business model assessment. First of all, a complex system is composed of different parts that interact in a non-simple way (Simon, 1962). In this kind of system, the whole is something different than the sum of its parts, as “given the properties of the parts and the laws of their interactions, it is not a trivial matter to infer the properties of the whole” (Simon, 1962, p.468). Two central themes seem to be relevant to this introduction, the “hierarchic system,” as “complexity frequently takes the form of hierarchy,” and the “nearly decomposable system” (Simon, 1962).

By hierarchic system, Simon (1962, p.468) intends that a system “is composed of interrelated subsystems, each of the latter being, in turn, hierarchic in structure until we reach some lowest level of elementary subsystems.” In addition, regarding the nearly decomposable system concept, there are two different levels of interaction: on the one hand, the interactions among subsystems and, on the other hand, the interactions within subsystems (Simon, 1962). Both these themes present a relevant explanation about how a business model is conceptualised, with the components interacting for the higher benefit of generating, distributing and capturing value from a consumer relationship. These components are then made of different elements representing the interactions within the subsystems. If we consider the consumer value proposition, introduced in section 2.3.4, the three elements to consider are the targeted consumer, the job-to-be-done and the offering to fulfil that job. A stronger interaction among these three elements can be interpreted as a relevant proposition able to create value for the selected consumer. On the other hand, this proposition could be created and delivered only because of the interaction and the contribution the consumer value proposition has with the other three components of the business model: the profit formula, the key resources, and the key processes subsystems.

In addition, system theory, when applied to organisations, conceives that “a system may be defined as a set of elements standing in interrelation among themselves and with the environment” (Von Bertalanffy, 1972, p.417). In this external perspective, energy inbounded into the system is transformed into an output due to the continuous interaction with the environment where it is based (Von Bertalanffy, 1950). As this environment is constantly changing, the organisation needs to establish a link and detects signals from it, to be in the condition to make sense of these signals and takes corrective actions. In order to ensure stability for the organisation while performing these changes, mechanisms able to support a certain degree of integration and coordination are required among the different components of the business model. In other words, to achieve a successful adaptation to evolving external conditions, a specific congruence among the different components

of a system is necessary (Velu, 2017). This is fully coherent with the indications provided by Demil and Lecocq (2010), who recommended that a successful business model innovation should be performed, ensuring a “dynamic consistency” among the different business model components. This type of innovation requires leaders to develop the ability “to anticipate change sequences and implement incremental or radical changes to adapt the business model to maintain or restore ongoing performance” (Demil and Lecocq, 2010, p.243).

Reviewing the above definitions, the system theory perspective can be fruitfully applied to the business model innovation thanks to four common characteristics elaborated by Velu (2017) and here below presented. First, a clear distinction among the different business model components is possible. Second, the single components can themselves be considered as subsystems, where both the single elements and the whole can be a system. Third, relationships among the single components can be seen in terms of feedback loop, correlation and causality. In addition, these relationships can be structural or dynamic, where the interaction takes place from one to another, generating a certain level of complexity. Fourth, different perspectives can be considered when analysing the single components and their relationships. This means that the system, considering both the components and the whole, can assume a different meaning from a different observation point. This characteristic offers the opportunity to see a system as a mental model to simulate how actions can generate an impact in the single components and in the whole, enabling a better understanding of the cause-and-effect interaction among these different parts, in line with the perspective offered by Baden-Fuller and Mangematin (2013). This last consideration is particularly important for leaders reflecting on how to re-configure their extant business model when environmental changes directly affect some components with different degrees of relationship with the other components.

Based on the above considerations and owing to the ability of the main principles of the system theory to explain how the business model works and can be transformed, the model’s assessment should be performed at two different and integrated levels: the single-component subsystem level, to consider the impact determined by an environmental change; and the interrelation among different components level, to consider the impact the single component exercises on the other ones. This means that a business model should be evaluated in front of a potential environmental change in terms of how the single components will react to that change and the relationships these components have to each other. This latter aspect calls for the introduction of the concept of “modularity,” defined as “the degree to which a complex system can

be conceived in terms of subsystems” (Aversa et al., 2015, p.159). Based on that, the single component’s inquiry “needs to be combined with a holistic overview at the system level to understand how the parts influence the whole” (Aversa et al., 2015, p.165). Therefore, “assessing the appropriate level at which modularity should be applied takes into account the current business processes as well as potential new processes that could be innovated or acquired” (Aversa et al., 2015, p.165). Consequently, the extant business model modularity represents a critical element to be assessed before considering any innovation attempt.

Despite the interesting contributions to the business model assessment and innovation endeavour, it is worth mentioning the potential limitations the use of system theory can place when referring to organisations. In fact, Kast and Rosenzweig (1972, p.453) states that “all systems may be considered to be organized, and more advanced systems may display differentiation in the activities of component parts– such as the specialization of the human organs.” At the same time, “however, all systems do not have purposeful entities” (Kast and Rosenzweig, 1972, p.453). For instance, “an organisation is composed of subsystems able to exercise their own wills” in opposition to organisms whose subsystems cannot “be considered as purposeful entities in themselves” (Kast and Rosenzweig, 1972, p.453). As a consequence, “organisms, the foundation stone of general system theory, do not contain purposeful elements which exercise their own will” (Kast and Rosenzweig, 1972, p.453). The distinction introduced by Kast and Rosenzweig is very valuable but, from my point of view, does not prevent the system theory from offering a solid theoretical foundation for the business model concept. The fact that in organisations, the subsystems are able to exercise their own wills increases the level of complexity without diluting the potential contribution of the system theory perspective. In fact, the management component is the element expected to align the different subsystems’ orientations, within organisations, towards a unified strategic intent.

2.4.2 Detecting the inflection points emerging from a changing environment

One of the conditions to thrive in a market under the current evolving environment is to recognise that “no business survives over the long term without reinventing itself” (Bertolini et al., 2015, p.93). This means that leaders should be in the position to lead improvement initiatives or articulate more pervasive innovation programmes, based on the outcomes of the business model assessment in the face of a changing environment. All organisations are exposed to that change, sometimes in the form of savvier and more sophisticated consumers, others in the shape of emerging technologies,

or new and more stringent regulations, with current and new competitors emerging from the same business arena but also from outside of it. The faster pace of that change represents an additional element with which organisation leaders have to deal with. This point is supported by the results of the research conducted by Innosight, focused on the corporate longevity forecast regarding established companies included in the S&P 500. The result of the study revealed that, in 1964, the average tenure of presence of the S&P 500 companies was 33 years, while in 2016, it narrowed to 24 years, and it is expected to shrink to just 12 years by 2027 (Anthony et al., 2018). Based on that, in order to maintain their relevance, organisations need to understand well in advance when is the right moment to innovate their business model, taking appropriate actions to implement it.

In literature, there are some contributions to the organisation's necessity to periodically assess the business model in order to be in the position to detect early enough the environmental changes early enough and to test them against the current business logic (Olson et al., 2008; Nunes and Breene, 2011; Bertolini et al., 2015; McGrath, 2019). In fact, in such an evolving situation, leaders of established organisations are asked to detect the weak signals of what McGrath (2019) calls the "inflection points," Olson et al. (2008) articulate as "stall points," Nunes and Breene (2011) name "S curve" and Bertolini et al. (2015) present as the "fault lines." These situations represent significant changes in the fundamental aspects of the business and consistently alter the assumptions adopted by leaders to manage their organisations (McGrath, 2019). Leaders are also expected to make sense of these changes and take appropriate and timely decisions to maintain their organisations' relevance for their consumers. The organisations' ability to detect these environmental shifts early enough renders them better positioned to take timely and appropriate decisions to reinvent their business model and prosper over time (Nunes and Breene, 2011; Bertolini et al., 2015).

Based on McGrath's research, the weak signals of an impending shift, whenever recognised early by the leaders, can represent an opportunity not only to prepare the organisation to manage the shift but also to shape it in its own favour (McGrath, 2019). Moreover, these inflection points can be triggered by one or a combination of the following situations:

1. Technological changes
2. New Regulatory requests
3. Social evolutions
4. Demographic changes
5. New connections among formerly isolated elements

6. Political changes
7. Other changing factors

Additionally, the inflection points' progress is not linear but more similar to a "stop and go" approach. This justifies the presence of different opinions among people within the same organisation that may assign a different importance and probability to happen to events, at different moments in time. In the ambiguous time when potential changes start to take form, they can represent an opportunity or a threat, depending on the specific perspective leaders adopt to interpret them. As explained by McGrath (2019, p.39), "it is a confusing, frustrating period, when people can legitimately have major differences of opinions about how important, consequential, dangerous, or valuable a shift in the environment might be." This misalignment represents a further challenging element as leaders should understand the potential implications of these shifts even when people do not necessarily share the same beliefs. Evidence also shows that the upheavals generated by the inflection points take some time to materialise, starting to take form in the "periphery" of a business. The following practices are therefore recommended by McGrath (2019) to improve the organisation's ability to stay on top of these changes:

1. Establish a connection between people exposed to the market and who are internally responsible for the strategy definition;
2. Leverage diversity of thought;
3. Balance an irreversible decision-making approach with an experimental, revertible approach;
4. Foster little bets to improve the organisation's learning ability;
5. Establish a direct contact with the external environment;
6. Create incentives for people to focus on useful, even if awkward, information;
7. Avoid people's denial;
8. Expose the organisation to situations where the future is already unfolding today.

To detect a trend or discontinuity of it, leaders can use lagging indicators, as they represent an outcome or a consequence of activities implemented in the past, (e.g. market share, net sales, number of customers served in a period of time, etc.). Although helpful to provide leaders with a complete picture, the above indicators are not able to equip leaders with indications to understand what initiatives to undertake in order to succeed in the future (McGrath, 2019). On the other hand, leaders can employ leading indicators to "represent things that are not facts yet in your business" (McGrath, 2019, p.46). At that moment, they represent suppositions and assumptions but with the

potential to lead to relevant facts later on. They are primarily qualitative as they can be articulated only through narrative at the beginning. To translate these narratives in potential inflections points to be measured, the author recommends managing the following two steps (McGrath, 2019):

1. Clearly articulate a specific situation that might occur in the future, representing the inflection point to monitor (e.g. a new regulation requiring a specific protocol to manage patients affected by a specific disease);
2. Define some potential warnings around that potential future, using the question: what would have to be true at 6, 12 and 18 months for the expected scenario to occur?

The indicators monitoring the progression of the specific situations at 6, 12 and 18 months represent examples of leading indicators that support organisation's leaders to detect these possible futures.

The availability of a set of leading indicators should then be operationalised, assigning a business responsibility to somebody in the organisation to constantly monitor them, including their updates in the relevant and appropriate management meetings. As mentioned by Jeff Bezos, "it isn't usually all that difficult to identify key trends, the hard part is knowing when to move and bringing the organisation with you when you decide to take action" (McGrath, 2019, p.81).

Based on Nunes and Breene's (2011) study, built on the Olson et al. (2008) contribution, organisations often fail to reinvent themselves not necessarily because they are not able to manage what it is required in these situations but because they wait too long before taking actions. These organisations "invest most of their energy managing to the contours of their existing operations—the financial S curve in which sales of a successful new offering build slowly, then ascend rapidly, and finally taper off— and not nearly enough energy creating the foundations of successful new business" (Nunes and Breene, 2011, p.82). On the other hand, organisations able to reinvent themselves have been the ones who went beyond the financial S curve and managed three much shorter but critically important hidden S curves, highlighting the basis of competition, renewing their capabilities and nurturing a supply of talent, as indicated in Figure 6. These organisations have solved existing consumer job-to-be-done in a superior way or at a cheaper cost, sometimes heavily shaping an entirely new industry (e.g. Netflix with its streaming proposition in the home entertainment business or Apple with the i-pod in the music one).

THE HIDDEN S CURVES OF HIGH PERFORMANCE

Three aspects of a business mature—and start to decline—much faster than financial performance does. They need to be reinvented before you can grow a new business.

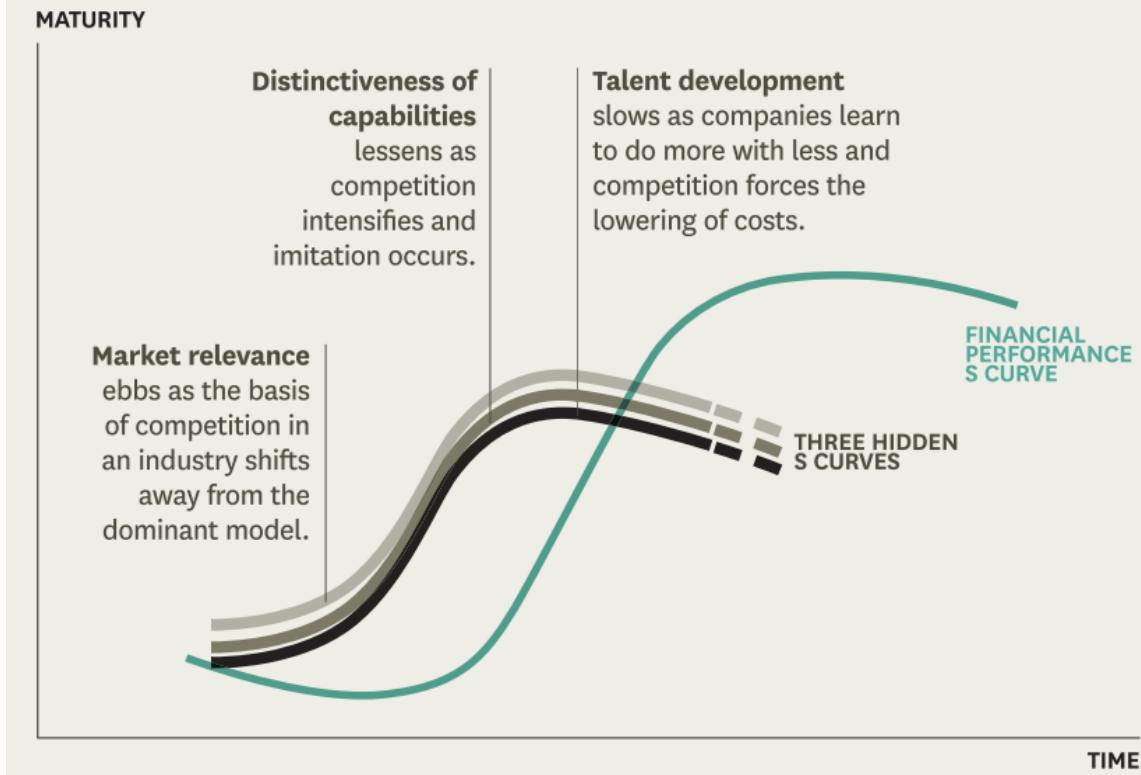


Figure 6: The hidden S-Curves to monitor – Source: Nunes and Breene (2011, p.84)

To properly define when the extant business logic needs to be reinvented, leaders should complement the performance monitored through financial indicators with measures able to detect the business foundations shifts, the capabilities expected to play a role in the incoming future and the talent development to execute this transition. For the authors, the strategies to increase the possibilities for the organisation to broaden the perspective beyond the limiting financial measures can be summarized as follows (Nunes and Breene, 2011):

- 1) Ensure a solid link between the periphery and the centre of the organisation, through an edge-centric strategy;
- 2) Change mindset at the top of the organisation, balancing the short term with a long-term thinking approach;
- 3) Create a talent's surplus, represented by a large enough number of people ready to manage the challenge associated with a new business model development.

Managing all these S curves appropriately has allowed the high performing organisations studied by the authors to start the reinvention process well in advance. Their extant business model has shown a declining relevance from the consumers' point of view.

Finally, Bertolini et al. (2015, p.92) suggest monitoring five interrelated "fault lines," indicating that "the ground beneath a company is more unstable than it may appear." Leaders able to detect these signals well in advance can prepare the organisation and build consensus to undertake the change by leveraging the stakeholders' support. The framework offered by the authors is based on the identification of the major gaps "between an organisation's current state and where it needs to be to thrive in the future" (Bertolini et al., 2015, p.92). This framework can support the leaders to define how to transform the organisation. The authors present five areas to consider with the objective to define the right moment to undertake their innovation journey:

1. Customer focus, to highlight the functional, social and emotional needs to be satisfied together with the frustration consumers might feel;
2. Performance metrics focus, as traditional ways of measuring success in a changing environment, can lead to decline and failure, despite the fact that the short-term financial performance is still healthy;
3. Industry position focus, to understand if other players are entering the same space adopting a low-cost strategy;
4. Business model focus, to assess how well it is structured to serve the consumers and employees, independently of the current financial performance;
5. Talent and capabilities, to continuously assess what are the skills, competences and organisational set-ups to compete and thrive in the future.

The fault lines framework can help leaders to detect the "roadblocks along the way" and create the appropriate alignment to support the change among the stakeholders, "years before the situation becomes dire that there is not enough time or capital to execute a new plan" (Bertolini et al., 2015, p.101).

In conclusion, navigating through the different perspectives assumed by the studies under analysis, several common themes seem to emerge. As a first consideration, all the authors highlight the importance to build a system to support leaders to detect the weak signals early, using a combination of financial and non-financial indicators to assess the relevance of the extant business model. Second, to ensure a stronger future-forward approach, lagging indicators should be

combined with leading indicators to start detecting things that are still not facts but can potentially contribute to constituting an inflection point in the near future. Third, the fault lines are interrelated elements, combining internal and external elements, which can impact different components of the extant business model.

On the other hand, the studies are not fully aligned on what business leaders should monitor. Some authors are more externally focused and general in their approach (McGrath, 2019), while others adopt a balanced selection of specific internal and external elements (Nunes and Breene, 2011; Bertolini et al., 2015).

Synthesising all the contributions, I believe is that all of them offer a very interesting perspective on the business model assessment, to define if and when to start the innovation journey, considering both internal and external elements, using lagging as well as leading indicators and measuring the impact on the single business model components but also their interrelations. Despite the considerations about the importance of detecting the weak signals to take appropriate decisions, the authors do not present a quantitative framework to be practically used by organisation leaders in their daily practice.

2.4.3 Business model assessment methods

As a consequence of the concluding remarks of the previous section, the aim here is to review the literature with regard to practical methods that have been developed to support leaders within established organisations in assessing their business model, in order to define when is the right moment to innovate it. The contributions available in the literature on the business model assessment are limited. Only a part of them are quantitative, and, most importantly, they are mainly static and focused on the single business model components (Afuah, 2014; Heikkilä et al., 2016; Haaker et al., 2017; Schaller et al., 2018). In this section, these different contributions are reviewed.

Afuah (2014) presents a framework, named VARIM (i.e. Value, Adaptability, Rareness, Inimitability and Monetization), to appraise the potential profitability of a current or a new business model. This framework is based on three strategic management theories, the resource-based view, the competitive positioning and the dynamic capabilities view. Based on the assumption that capabilities are relevant only in case they can grant a specific level of profitability for the organisation that owns them, the framework objective is to measure the following elements:

1. Value

2. Adaptability
3. Rareness
4. Inimitability
5. Monetization

The author argues that “we can assess the profitability of a business model by exploring the extent to which each of these characteristics of a model contributes to profitability” (Afuah, 2014, p.26). The contribution of the different attributes is assessed through a set of questions, reported in Figure 7.

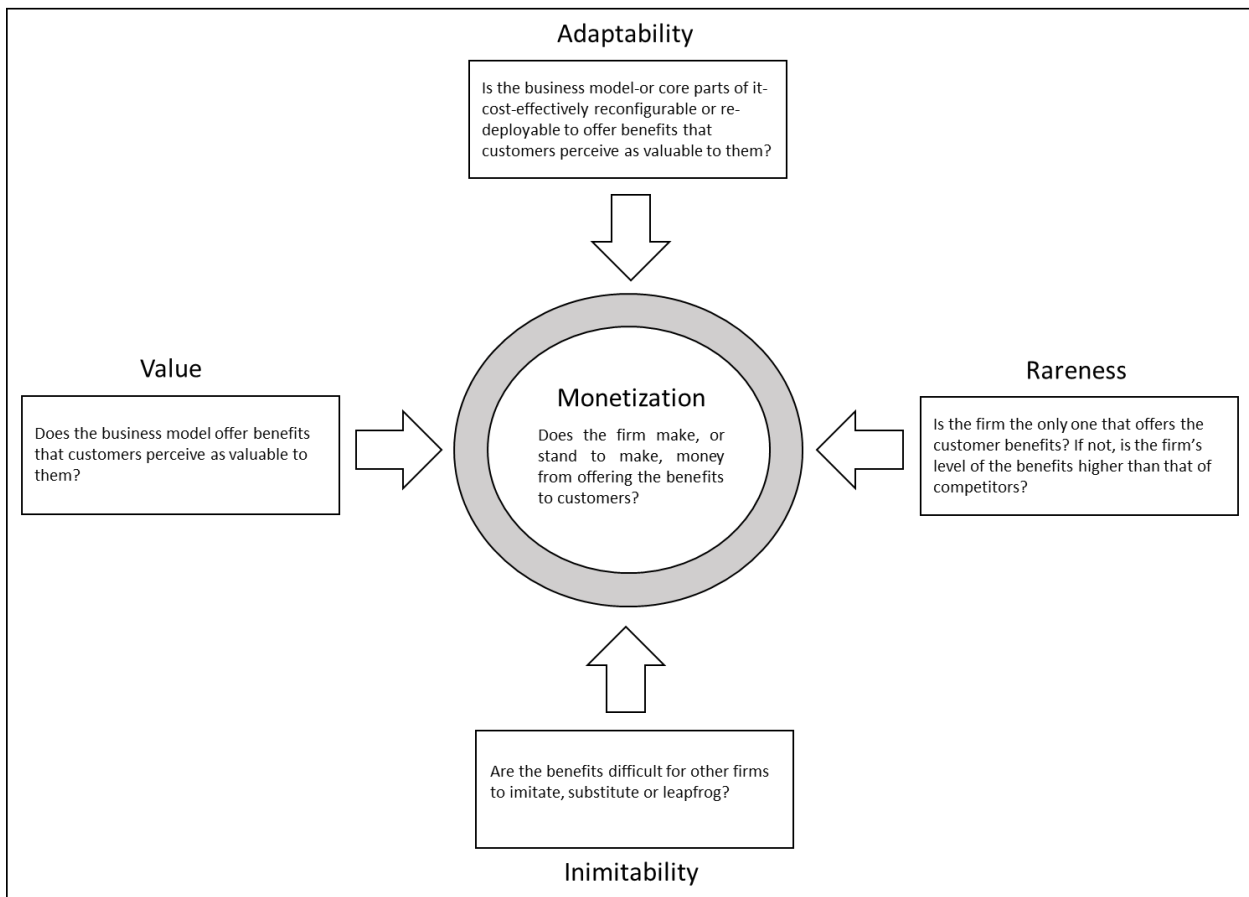


Figure 7: Components of the VARIM framework – Source: Afuah (2014, p.26)

The value component assessment has the objective of understanding to what extent the business model provides benefits that consumers consider valuable. Considering the evolving situation to which organisations are exposed, the business model should keep a certain level of flexibility to accommodate changing consumer needs, technology advancement and new requirements.

Based on that, a second component to be assessed is the adaptability one; this measures to what extent the business model, or the core part of it, can be redeployed in a cost-effective way.

In order to differentiate their offer from their competitors' one, organisations need to include a certain degree of rareness in their business model, ensuring that consumers keep purchasing from them.

The fourth component is represented by the inimitability, which expresses to what extent the consumer benefit is difficult to imitate or replace. Finally, the monetization component measures the organisation's ability to make money through the relationship established with the targeted consumers. In Table 3, I have reported some examples of measures used to assess the single VARIM components.

| Component | Key Question | Measures (examples) |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value | Does the business model offer benefits that customers perceive as valuable to them? | <ul style="list-style-type: none"> ▪ Customer satisfaction and loyalty ▪ Market Share ▪ Benefits offered to customers relative to competitors' offerings ▪ Reputation/image as perceived by customers ▪ Quality of resources ▪ Quality of activities |
| Adaptability | Is the business model-or core parts of it-cost-effectively reconfigurable or redeployable to offer benefits that customers perceive as valuable to them? | <ul style="list-style-type: none"> ▪ Number and diversity of new products (benefits) offered by firm ▪ Level of «improvement» in the benefits that customers perceive ▪ Revenues from new products ▪ Flexibility of valuable capabilities |
| Rareness | Is the firm the only one that offers the customer benefits? If not, is the firm's level of benefits higher than that of competitors? | <ul style="list-style-type: none"> ▪ Number of competitors or firms with substitute products ▪ Level of the benefits from firm compared to those from competitors |
| Inimitability | Are the benefits difficult for other firms to imitate, substitute, or leapfrog? | <ul style="list-style-type: none"> ▪ Number of imitators ▪ Inimitability of resources ▪ Inimitability of activities |
| Monetization | Does the firm make, or stand to make, money from the offering the benefits to customers? | <ul style="list-style-type: none"> ▪ Return on sales or any other measure of profitability ▪ Right pricing ▪ Importance and value of complementary assets ▪ Number of customers with high willingness to pay ▪ Number and quality of sources of revenues ▪ Cost structure ▪ Industry attractiveness and firm's positioning in it |

Table 3: VARIM framework assessment measures for BMs – Source: Afuah (2014, p.28)

In case this assessment reveals a level of profitability not in line with the organisation's expectations, leaders can start an internal discussion to understand if the issue is in the business model set-up or in the organisation's ability to execute it operationally.

In case the analysis reveals that the problem is driven by the model set-up, it can lead to a new business model configuration. The comparison between the profitability of the extant business model and the one of the new business model represents the value generated by its innovation attempt.

Afuah's contribution offers a broad perspective to assess the characteristics of the business model components quantitatively by going beyond the sole financial indicators. In addition, the assessment is oriented towards the single components without considering their eventual interdependencies, as suggested by the system theory perspective. Finally, the model clearly assesses the profitability of the different business models without supporting the leaders with a proper guideline about how to conduct the transformation journey, resulting in a static depiction of the business logic.

From Heikkilä et al.'s (2016) perspective, a business model assessment can be performed through a selection of metrics able to track the performance of the different components of the business model.

This framework considers both financial and non-financial metrics (predominantly leading indicators), supporting Dossi and Patelli's (2010) findings. The authors consider the non-financial metrics as very important ones to support the learning and dialogue in the relationships with external partners.

The model's structure is also aligned with Melnyk et al. (2010), who propose that business renewal is better sustained through measures focused on the means by which these outcomes are expected to be achieved, limiting the use of metrics on the intended outcomes.

The proposed framework is a combination of the CSOFT business model design, where the components internally focused (e.g. Customer value, Service, Organisation, Finance and Technology) are combined with indicators expected to capture elements from the environment (e.g. process alignment or information exchange). The authors have developed this model especially for networked enterprises. An example of the repository offered by the authors has been reported in Table 4:

| Perspectives | Metrics | Theme (from Table 1) |
|----------------------|--------------------------------------------------------------------------------------|--------------------------------------|
| Customer value | ARPU (exceeding xx €/qtr., all consumer segments) | C2: Market segment and market share |
| | Market share (objective xx %, consumer segments: 1, 2, 3) | C2: Market segment and market share |
| | Regional coverage (xx % of full potential in geographical area, consumer segment: 3) | C2: Market segment and market share |
| | Conversion rate of contacting (>xx %) | C2: Market segment and market share |
| Service | Delayed deliveries (<X %) | C3: Website-related indicators |
| | Time to market (days) | C3: Website-related indicators |
| Technology | Interoperability/Integrity (# of exceptions, relative changes) | S2: Quality |
| | Mean time between failure (of hardware elements) | S2: Quality |
| Organization | Capacity utilization rate internal processes (>xx %, relative change) | T3: Interoperability |
| | | T4: Accessibility and Up-time |
| Finance | Profit (xx %, consumer segments: 1, 3, 4) | O2: Access to resources |
| | Turnover (absolute M€, consumer segment: 2) | F2: Profitability |
| | Net cash flow | F2: Profitability |
| | Fees from add-on services to the cost (>X€) | F2: Profitability |
| | OPEX (personnel costs) | F3: Costs |
| | Marketing costs (€) | F3: Costs |
| Value exchange | Right-sizing | V3: Value attributed to transactions |
| Information exchange | Transactions (absolute figures, relative changes) | I3: Information accessibility |
| | Active consumer base (user categories/priority schemes within segments) | |
| Process alignment | Throughput (% of full capacity) | P2: Process throughput |
| | Utilization rate intra-organizational processes (>xx %) | P2: Process throughput |

Table 4: Case 1 business model assessment – Source: Heikkilä et al. (2016, p.350)

The adoption of metrics and expected performance levels in the design of a new business model creates the need to have a more detailed and fact-based conversation within the leadership team, and represents a condition to maintain a solid alignment with the organisation’s strategy while implementing the business model (Heikkilä et al., 2016).

The Heikkilä et al. (2016) assessment helps leaders to understand the causality and dynamic dimension, evaluating the implications of different actions in a quantitative and detailed manner. However, these measures do not clarify if the performance is driven by the ability to execute a

business model or by the business model’s relevance in the market. Furthermore, this approach is fundamentally focused on evaluating the single business model components in a static fashion. In the case of a component performing below the expectations, it is not evident how to support leaders to drive the transformation towards a new business model.

A third contribution is offered by Haaker et al. (2017) with the business model stress testing. Their method combines scenario planning and business model design intending to support strategic forecasting able to improve an organisation’s ability to interpret and respond to changes. The stress test introduced by the authors is designed to test how well the business model can perform under the stress and pressure determined by a specific environmental change. In other words, it is “a systematic analysis of the robustness of business model components in different future environments” (Haaker et al., 2017, p.17). A representation of the stress test heat map is reported in Figure 8.

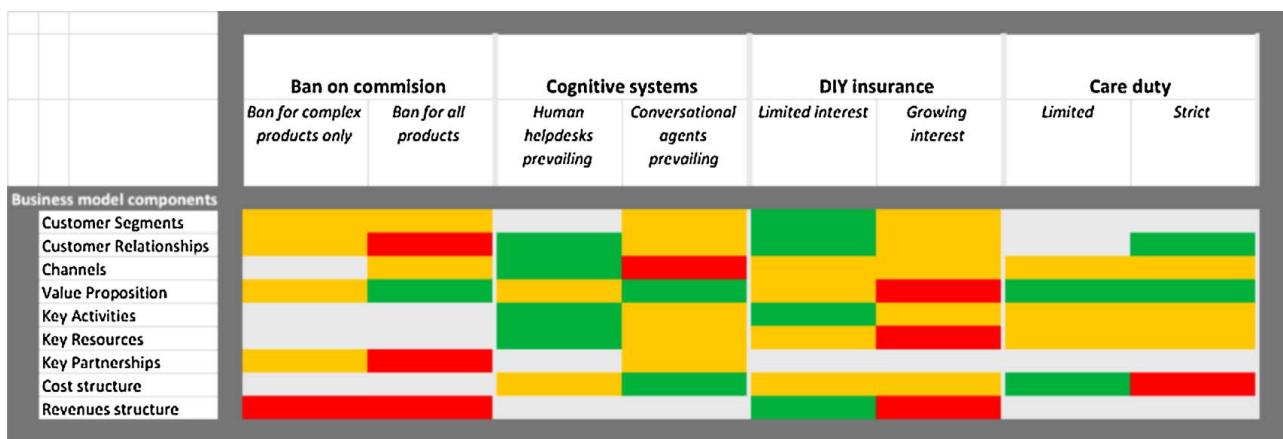


Figure 8: Business model stress test map – Source: Haaker et al. (2017, p.22)

For every potential scenario, the authors have developed two different levels of implications, like a light impact and a hard impact. In the columns of Figure 8, for instance, the scenario of “ban on commission,” as one of the revenue streams for an organisation, can be limited to complex products only or be extended to all the products in portfolio. These two manifestations of the ban on commission scenario have then assessed on every business model component to understand the level of impact it may have on them. This assessment has been expressed through a colour code, as follows.

1. Gray code: the outcome of the stress factor does not affect the business model component.

2. Green code: the outcome of the stress factor does affect the feasibility or viability of business model component positively.
3. Yellow code: the outcome of the stress factor makes a business model component no longer viable; in this case, leaders should review the business model for solutions.
4. Red code: the outcome of the stress factor makes a business model component no longer feasible; in this case, the stress factor can drive the organisation to define a new business model configuration.

The analysis and estimation of how the selected scenarios impact the business model components provide the leaders with valuable insights to understand the main vulnerabilities in their business logic, requiring innovation and redesign.

From my perspective, this approach offers two particularly useful elements. First, it represents a systematic analysis of the business model robustness based on different future conditions. Second, the method can identify the components that are more vulnerable under specific scenarios. Based on the latter consideration, this method can be considered as a semi-dynamic attempt assessing the extant business model when compared with the first two contributions. Finally, the business model stress testing is a qualitative approach and informs leaders if and how a given scenario can have an impact on the business model components taken in isolation.

A final contribution is represented by the business model innovation road-mapping presented by Schaller et al. (2018). The authors consider the business model road-mapping as a forecasting and planning tool able to recognise and act on the events triggering a change in the consumer value proposition.

This approach provides leaders with a clear process to enhance the organisation's ability to assess potential threats and opportunities in the business environment, covering the planning horizon among short, mid and long-term perspectives.

It is intended to support leaders in the early phase of a business model innovation when a change is considered indispensable to maintain the organisation's competitiveness in the future. For the authors, three distinctive drivers lead to a business model innovation journey:

1. Technological progress
2. Dynamic environment with tougher competition
3. Change in customer needs

Figure 9 presents the Road-mapping model.

| Layers | Sub-layers | Time | | | Layers connect |
|-----------------------|-------------------|--------------------------|------------------------------------------------------------------------------|----------|--------------------|
| | | Initial Situation | Short-term | Mid-term | |
| Market | | | | | When |
| Business Model | Value Proposition | | | | Why |
| | Profit formula | | | | |
| | Key resources | | | | What |
| | Key processes | | | | |
| Activities | Content | | | | How |
| | Structure | | | | |
| | Governance | | | | |
| <u>Aim:</u> | | Assess initial situation | Which domain needs to be transformed and which activities should be executed | | New business model |

Figure 9: Business Model Innovation Road-mapping – Source: Schaller et al. (2018, p.5)

The process of the business model innovation road-mapping is structured in the following five steps:

1. Evaluate the environment and the future trends;
2. Analyse the current business model;
3. Identify the business model domains (i.e. components) that will be in scope for the change;
4. Define the design elements to be performed on business model domains;
5. Match the changed business model with the current situation and market fit.

The main benefit of this approach is to provide “a structured and clear view of the business model innovation process,” maintaining a link between the strategic level and the operative one (Schaller et al., 2018, p.7).

From my point of view, the road-mapping offers interesting points for reflection thanks to the temporal dimension included in the framework and considering the activity layers moving from strategy to execution. Based on that, this framework can be considered as a dynamic model to perform the business logic assessment. However, the approach does not clearly show how a potential environmental threat or opportunity should be evaluated at domain level (i.e. business model component level) and at activity level. Finally, it is not clearly defined what qualifies a change to be considered indispensable to start the business model innovation process.

In conclusion, the different business model assessment approaches, even if starting from different perspectives and adopting alternative solutions, represent a point of reference for leaders

to make sense of the relevance of the business logic adopted. Each framework represents a starting point that should be complemented along the way with the contributions offered by the other models to allow leaders to have a broader and deeper perspective.

As these frameworks also have the role of aligning the leadership team around a common agenda, I suppose that a purely qualitative method, despite the valuable discussion it could trigger, can still leave open some determinant aspects regarding the shared sense of urgency within the organisation.

With regard to the dynamic considerations, as the assessment phase should clearly highlight the time perspective to trigger an appropriate intervention (Nunes and Breene, 2011 and Bertolini et al., 2015), the contributions based on the static approach could potentially limit the leadership team's ability to timely undertake the innovation journey.

2.5 Business model innovation

2.5.1 From business model assessment to business model innovation

After presenting the literature on business model and its assessment, this section introduces the different contributions regarding the business model innovation topic. As for the previous two concepts analysed, the business model innovation maintains a consistent level of heterogeneity of positions, perspectives and streams of understanding.

In the initial section, the different definitions of business model innovation are presented in order to clarify the different dimensions that need to be considered when undertaking such an attempt.

In a separate section, space is allocated to review the contributions on the business model innovation process, considering the steps leaders must consider when approaching that journey and the associated challenges to manage.

Finally, a specific perspective is introduced to highlight the contributions regarding the business model innovation in organisations active in the healthcare space, as part of the purpose of this research.

2.5.2 Definition and purpose of business model innovation

In introducing the business model innovation topic, it makes sense to clarify how to use the term innovation. Schumpeter, in his research “The Theory of Economic Development,” qualifies innovation as a new combination of materials and forces “to produce different things or the same things by using different methods” (Schumpeter, Edited by Becker et al., 2011, p.).

Schumpeter presents different options to innovate, with a growing level of complexity as well as an expected reward for the organisation considering them: from product innovation, to process and technological innovation; from geographical expansion to new supply definition and coordination with external partners; and new methods for organising a firm in order to build a specific and valuable position within an industry. This last, more pervasive way of conceptualising innovation shares some critical elements with the innovation of the organisation’s business model.

Another important point of view on innovation is the one offered by the OSLO Manual, where it is clarified that “an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD, 2005, p.46). A relevant consideration to qualify an innovation as such “is that the product, process, marketing method or organisational method must be new (or significantly improved) to the firm” (OECD, 2005, p.46). Finally, “innovation activities are all scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations” and “some innovation activities are themselves innovative, others are not novel activities but are necessary for the implementation of innovation” (OECD, 2005, p.47).

Based on these definitions, in this research, I have adopted the innovation term as a way to define a new and distinctive configuration among the interdependent components of a business model with the aim to create, deliver and capture value in a different way from the previous logic. This type of innovation can be assimilated to the new organisational methods in business practice, including external relations with partners and customers above offered by the OECD definitions.

The literature around the business model innovation has been developed mainly in the last 15 years, so we can consider it as “still at an early stage” (Wirtz et al., 2016, p.48). Despite the convergence on the importance and relevance of the topic presented by several scholars, a conceptual agreement has not been reached so far, as many transversal themes and priorities emerge from the different perspectives employed. From my perspective, the major drivers of this

heterogeneity are represented by the type of the innovation (e.g. incremental compared to radical) and the nature of the circumstances requiring such initiative (e.g. a proactive activity compared to a reactive one). Table 5 includes an overview of the definitions of business model innovation.

| Author(s) and Year | Business Model Innovation Definitions |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mitchell and Bruckner Coles (2004) | "By BMI, we mean business model replacement that provide product or service offerings to customers and end users that were not previously available. We also refer to the process of developing these novel replacements as business model innovation." |
| Markides (2006) | "BMI is the discovery of a fundamentally different business model in an existing business." |
| Giesen, Berman, Bell and Blitz (2007) | "[...] we first identified three main types of BMI, which can be used alone or in combination: innovation in industry models, in revenue models and in enterprise models." |
| Comes and Berniker (2008) | "The core of BMI lies in the new answers to the following two questions, the key answers that guide any business: 1. What value is the company providing to its customers? 2. How does providing this value profit the company?" |
| Skarzynski and Gibson (2008) | "[...] BMI is about creating fundamentally new kinds of businesses, or about bringing more strategic variety into the business you are already in, the kind of variety that is highly valued by customers." |
| Lindgardt, Reeves, Stalk and Deimler (2009) | "Innovation becomes BMI when two or more elements of a business model are reinvented to deliver value in a new way." |
| Santos, Spector and Van Der Heyden (2009) | "BMI [...] is a reconfiguration of activities in the existing business model of a firm that is new to the product/service market in which the firm competes." |
| Aspara, Hietanen and Tikkanen (2010) | "The firm's strategic emphasis on BMI was measured by asking the respondent-managers to rate the following statements: 1. In our strategy, is central to make initiative to create novel value by challenging existing industry-specific business models, roles and relations in certain geographic market areas; 2. In our strategy, is central to make initiative to provide entirely new value to certain people and/or organisations (customers)." |
| Bock, Opsahl and George (2010) | "BMI is a new-to-the firm changes in the design of organisational structures." |
| Gambardella and McGahan (2010) | "In this conceptualization, BMI occurs when a firm adopts a novel approach to commercializing its underlying assets." |
| Johnson (2010) | "Seizing the white space requires new skills, new strengths, new ways to make money. It calls for the ability to innovate something more core than the core, to innovate the very theory of the business itself. I call this process BMI." |
| Osterwalder and Pigneur (2010) | "Ultimately, BMI is about creating value, for companies, for customers, and society." |
| Yunus, Moingeon and Lehmann-Ortega (2010) | "BMI is about generating new sources of profit by finding novel value proposition/value constellation combinations." |
| Sorescu, Frambach, Singh, Rangaswamy and Bridges (2011) | "We define a Retail BMI as a change beyond current practice in one or more elements of a retailing business model [...] and their inter-dependencies, thereby modifying the retailer's organizing logic for value creation and appropriation." |
| Amit and Zott (2012) | "BMI can occur in a number of ways: 1. By adding novel activities [...]; 2. By linking activities in novel ways [...]; 3. By changing one or more parties that perform any of the activities [...]." |
| Bucherer et al. (2012) | "We define BMI as a process in that deliberately changes the core elements of a firm and its business logic." |

| | |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Abdelkafi, Makhotin and Posselt (2013) | "A BMI happens when the company modifies or improves at least one of the value dimensions [value proposition, communication, creation, delivery, capture]" |
| Björkdahl and Holmén (2013) | "A BMI is the implementation of a business model that is new to the firm"; "Specifically, the BMI phenomenon includes both creating value for customers and users, and capturing value for the firm." |
| Frankenberger, Weiblen, Csik and Gassmann (2013) | "At root, a BMI can be defined as a novel way of how to create and capture value, which is achieved through a change of one or multiple components in the business model." |
| Günzel and Holm (2013) | "As a process, and not merely a management concept, BMI encompasses developing new value chain architectures in different ways, from new product development to new delivery and marketing patterns, as well as innovative resource acquisition and application. The novelty presented by the new business models can potentially result in superior value creation." |
| Matzler, Bailom, Friedrich 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." |
| Velamuri, Bansemir, Neyer and Möslin (2013) | "[...] We define BMI as having a novel combination of 1. Value proposition; 2. Value chain architecture; 3. Revenue streams that are difficult to imitate." |
| Fielt (2012) | "BMI refers to organisations rethinking their dominant value logic and coming up with new ways of creating value for their customers and themselves." |
| Klang and Hoffmann (2012) | "In this study, we understand BMI as intentional changes in the specific activity system that is conducted to satisfy the perceived needs of the market and the specifications of the parties that form and conduct this activity system." |
| Rauter et al. (2012) | "In this paper, we treat BMI as an approach of changing the business model, therefore business model innovation is seen as the process itself and not as the result of the ongoing change." |
| Schneider and Spieth (2013) | "Consequently, BMI is defined as a conscious and significant change of at least one dimension of a firm's or a business unit's business model [value offering, value creation, architecture, revenue model logic]" |
| Mezger (2013) | "[...] BMI defines new concepts for firms to create and capture value; new business models represent new architectures and logics of conducting business, novel ways of creating revenues and defining value propositions for customers; it redefines a firm's activities within a business ecosystem of stakeholders and describes new transaction that essentially lead to increased value creation [...]." |
| Aspara et al. (2013) | "A change in the perceived logic of how value is created by the corporation, when it comes to the value-creating links among the corporation's portfolio of businesses, from one point of time to another." |
| Berlund and Sandström (2013) | "A BMI can thus be thought of as the introduction of a new business model aimed to create commercial value." |
| Casadesus-Masanell and Zhu (2013) | BMI is "the search for new business logics of the firm and new ways to create and capture value for its stakeholders." |
| Khanagha et al. (2014) | "BMI activities can range from incremental changes in individual components of business models, extension of the existing business model, introduction of parallel business models, right through to disruption of the business model, which may potentially entail replacing the existing model with a fundamentally different one." |

Table 5: Definitions of BM innovation – Source: Trapp (2014, pp.15-16)

Reviewing the above definitions, despite the expected level of heterogeneity, the following converging themes emerge.

1. Business model innovation is considered as a transformational effort.
2. Different circumstances can generate the necessity for the adoption of a new model.
3. The debate between the change of the extant business model and the creation of a new one.
4. Business model innovation as a reconfiguration of the business logic.
5. A new combination of components is required to design a new model.
6. This type of innovation is expected to improve the value dimension of the organisation.

Several scholars present the theme of the business model innovation as a process to be managed by the organisation's leaders. However, only a few researchers have devoted time to explaining the interlinks between business model and its innovation and the organisation's requirements to successfully manage that transition. With the objective to tackle the first aspect, a valuable perspective is offered by Demil and Lecocq with the intention to reconcile the static approach, considered "as a blueprint for the coherence between core business model components," and the transformational approach, where the concept can be employed to address changes and innovation in the business model (Demil and Lecocq, 2010, p.227). A specific framework, named RCOV (i.e. Resources & Competences, Organisation and Value Proposition), is used to represent a business model, which is expected to offer valuable support for leaders to reflect on the design of the logic employed in their organisations and highlight opportunities for its change. The authors stress either the assessment of the organisation's resources and competences, to be considered for current and future potential uses in order to "think creatively" about changes in both value proposition, resources and competences, or the selection of actions necessary to re-establish a coherence among the different components altered by changes in the environmental conditions. When the incremental approach to modifying some business model components is considered insufficient to restore the organisation's performance, leaders have to evaluate more radical changes of their business model. The authors named this management capability "dynamic consistency," representing the ability "to anticipate change sequences and implement incremental or radical changes to adapt the business model to maintain or restore ongoing performance" (Demil and Lecocq, 2010, p.243).

With regard to the requirements to manage the transition between two different models, Bucherer et al. (2012) compare product and business model innovation to check the potential transferability of insights and best practices, considering the consistent and solid literature

regarding the first type of innovation. Based on the author's findings, "there seems to be a similarity between product and business model innovations in regard to the high-level process steps (e.g. analysis, design of the innovation, implementation and control of the success); however, because business model innovations can be based on changes of different core elements, there are significant deviations for the concrete activities performed in these phases" (Bucherer et al., 2012, p.190). An important element to be considered in this comparison is the degree of novelty of the business model, with the case of incremental innovation being closer to the product innovation process, while the case of radical business model innovation is very divergent from the nature of the product innovation process. The authors in their discussion argue that "even though business model innovation is a distinct type of innovation, our cases indicate the importance to treat it not as an isolated activity but to align it with the company's innovation and long-term corporate strategy" where "contingency theory supports a need for a holistic approach to innovation management" (Bucherer et al., 2012, p.193).

Business model innovation initiatives take place under various circumstances, based on a proactive or reactive response of organisations to different opportunities or threats emerging from the external environment and the scanning of internal necessities. An interesting classification in this multiple direction is offered by the case studies conducted by Bucherer et al. (2012), considering, at first, situations where the organisation proactively engages in the innovation attempt of its business model to materialize an emerging opportunity, represented by the availability of a new technology to reach additional consumers or to serve the existing ones better. Although most of the literature presents the business model innovation as a way to proactively bring the organisation into a sustainable value creation area before the internal and external conditions become too divergent compared to the current ones, the majority of the cases analysed by the different contributors highlights a more reactive approach. This seems to support the fact that when organisations are threatened by situations that can potentially put at risk their existence, the orientation towards the innovation of their business model is definitely considered a valuable option, compared to situations representing opportunities to be captured. A similar conclusion is also reached by Saebi et al. (2016, p.574), affirming that "the more severe the external threat, the more likely that firms engage in business model adaptation," while "in contrast, perceptions of opportunity were found to be significantly associated with upholding the status quo of the business model" Saebi et al. (2016, p.576). A second classification offered by Bucherer et al. (2012) refers to the distinction between internal and external triggers for business model innovation. Examples of

the first category are internal resources and capabilities not anymore adequate, compared to the organisation's need, that can be leveraged to support other organisations. The second category is represented by "competitive threats, market shifts, and technology changes as well as commoditization of products, and legal or regulatory changes" (Bucherer et al., 2012, p.189). In summary, the authors recommend categorising the origin of this type of innovation using the following four groups: internal opportunities, external opportunities, internal threats and external threats. From my point of view, while the distinction between proactive and reactive as well as internal and external origin is observable, leaving little room for interpretations, the terms threats and opportunities are quite subjective; what one organisation can consider as an external threat, for instance, can be easily considered an opportunity by a different organisation, as a result of the specific design of the extant business model.

A different and more conservative approach to business model innovation is the one developed by Johnson et al. (2008), advising existing organisations to seriously consider if they really need to go through it, and recommending that the decision has to be supported by an opportunity "large enough to warrant the effort" (Johnson et al., 2008, p.57). The authors present the following strategic circumstances that often require a business model change to be consciously considered by organisations:

1. The opportunity to reach, through disruptive innovation, a large group of customers currently excluded from a market (Christensen et al., 2015);
2. The opportunity to capitalize on a new technology;
3. The opportunity to adopt a job-to-be-done approach within the organisation;
4. The need to defend from low-end disruptors;
5. The need to respond to a change on the basis of competition.

While the first three strategic circumstances represent opportunities for a proactive move, the last two are clear examples of threats to be managed using a reactive approach.

Regarding the ability to scan the internal and external factors to proactively evaluate alternative business models to be added or to substitute the extant one, McGrath favours the adoption of a "discovery-driven" approach compared to the "analytical" one. In fact, "in highly uncertain, complex and fast-moving environments, strategies are about insight, rapid experimentation and evolutionary learning as much as traditional skills of planning and rock-ribbed execution" (McGrath, 2010, p.247). The author introduces the centrality of experimentation as a

pre-requisite for a successful business model innovation, as in the moment of resource commitment, several elements that will turn to be “competitively important” later are not fully understood, requiring a model dynamic and experimental approach before defining the most appropriate model to adopt (McGrath, 2010). Approaching business model innovation through an experimentation perspective can reduce the risk of taking the so-called “black hole” investment strategy and capitalise on the emerging transient advantages. However, it requires a favourable culture within the organisation and a level of investment to test new hypotheses on creating, delivering and capturing value (McGrath, 2013).

Considerations on the degree of innovativeness introduce the debate between the change of the extant business model compared to the creation of a new business model. As a consequence, after reviewing the above definitions, the first element to clarify is around the use of the term “new” when associated with a business model to qualify as a business model innovation. Along the degree of novelty, the business model innovation can be considered as follows:

1. New to the world;
2. New to the industry/market (Markides, 2006 and Santos et al., 2015);
3. New to the organisation (Bock et al., 2010).

While developing a new-to-the-world business model seems to be quite rare, as also confirmed by Gassmann et al.’s (2014, p.79) study reporting “that over 90% of all business model innovations simply recombine existing ideas and concepts from other industries,” generating a new model for an industry by reconfiguring patterns already present in others suitably qualifies as a business model innovation. On the other hand, a new business model adopted by an organisation when it is already employed in the same industry cannot be considered as an innovation, even if this can represent a critical short-term move for the organisation to defend its position from its competitors’ attack. This theme is one of the most controversial aspects associated with the concept under discussion. From my perspective, this distinction is based on assumptions that should be clearly presented in order to fully appreciate the importance of this discussion. It is not the level of novelty per se that represents a valuable point for discussion, but the assumption that a first mover towards a new business model has an advantage over its competitors. Having clarified that point, it is a matter of leaders’ choice to focus on business model innovation as an attempt to support the organisation’s ambitions for profitable growth or to allow the same organisation to redefine an existing industry.

Amit and Zott point out that business model innovation can generate a solid advantage for the innovator even if the move does not qualify as a factor for the industry disruption (Amit and Zott, 2012).

An additional contribution on the level of innovativeness is represented by the research of Bucherer et al. (2012), who consider four different categories to describe the degree of innovation of business models replicating the classification for product innovation:

1. Incremental innovation
2. Market breakthrough
3. Industry breakthrough
4. Radical innovation

In the case of incremental business model innovation, the organisation uses a different model but without incurring in what the authors call “discontinuities,” often associated with the opportunity to serve an additional segment of consumers. The market breakthrough model enables the organisation to enter into a new market, while the industry breakthrough model allows the organisation to enter into a different industry. In both cases, the level of discontinuity with the extant model requires the implementation of a new one. Finally, the radical innovation model is characterized by a discontinuity along with both the market and industry dimensions and requires a very different approach by the organisation to redefine the value proposition offered, the modality to deliver it and to capture more value out of it than with the extant model (Bucherer et al., 2012). Some scholars consider business model innovation only the radical or disruptive attempts (Markides, 2006 and 2008; Johnson et al., 2008), while others are less restrictive in their definition and include the full range of innovations (Zott and Amit, 2002).

On the balance between the new combination of the model components and the reconfiguration of the entire business logic, Saebi proposes different definitions of business model changes based on the contingencies between these changes, on the one hand, and the environmental dynamics and dynamic capabilities, on the other, highlighting the following different changes verifiable in business models (Saebi, 2015).

1. Business model evolution: it “refers to the effective standardization, replication, implementation, and maintenance of the existing business model” (Saebi, 2015, p.150); the change affects only some of the components of the model at a time and, most importantly,

this change does not “significantly alter core-repeated standard processes of the firm’s business model” (Saebi, 2015, p.150).

2. Business model adaptation: this can emerge as a consequence of environmental changes and requires that several components of the business model be considered simultaneously. In adaptation, novelty can be a likely output of the process even if it does not represent a necessary requirement.
3. Business model innovation: in this case, the main motivation is to reconfigure markets or industries with the intention to create disruptive innovations working on different components of the business model at the same time, together with a redefinition or a creation of new core activities and processes.

At a more profound level, the debate is based on the different views of the business model, whereby the aggregation of components perspective contrasts with the system perspective of the model. Scholars, like Osterwalder and Pigneur (2010), adopting the first point of view, consider the decisions taken at every single component as relevant to supporting a business model innovation, comparing each component between the new model and the precedent one. Other scholars, like Santos et al. (2015) and Amit and Zott (2012), interpret business models as activity systems, where the inclusion of new activities, or new ways of linking the same activities or the change of the parties performing these activities, potentially represent a case for a business model innovation, based on the interconnected nature of the business model (Amit and Zott, 2012).

The last theme emerging from the business model innovation literature review refers to the expected value improvement associated with implementing the new model. As for other innovation efforts, also in the business model innovation, the organisation is expecting to improve its ability to create, deliver and capture value. This can be determined by serving a larger number of consumers, serving more effectively and efficiently the consumers already covered or serving a new consumer segment previously not considered. Similar considerations can be made for the value delivery aspect and, very importantly, with regard to the value capturing dimension. As recommended by Johnson et al. (2008, p.57), “there’s really no point in instituting a new business model unless it’s not only new to the company but in some way new or game-changing to the industry or market, otherwise would be a waste of time and money.”

On the same topic, other scholars, like Griffin and Page (1993), have provided different indicators to assess and measure the new business model performance considering that there is a minimum gestation time before the new model can start generating the expected results. These

indicators are typically built around the following four dimensions, leveraging the experience matured in the new product development literature:

1. Financial performance measures (e.g. net sales, product margins, profit, etc.);
2. Customer acceptance measures (e.g. adoption rate, customer lifetime value, churn rate, retention costs, average consumption per month, share of wallet, etc.);
3. Product-level measures (e.g. product gain & pain points, product P&L, product penetration among current users, etc.);
4. Firm-level measures (e.g. share value, credit score, ability to attract external investments, quality of the leadership team, etc.).

The indicators proposed, as well as additional ones able to measure an aspect of the business model not fully represented in that case, should be assessed against the following points of references, as recommended by Trapp (2014):

1. Shareholders' expectations;
2. Average of the business unit/entire organisation performance;
3. Main competitors' performance.

The thresholds to measure the above aspects of the business model can be represented by the performance of a specific competitor, the industry average performance or the expected performance the leadership team has provided to the organisation to be in the position to generate a certain level of ROI for all the stakeholders involved.

In conclusion, the business model innovation theme has been analysed and presented from a variety of perspectives. All these different observation angles have incredibly enriched the concept and supported a personal reflection on how to depict this type of innovation. Considering the breadth of the different contributions, I believe it is worth clarifying my interpretation of the business model innovation concept. In this research, based on the innovation term adopted in section 2.5.2, the business model innovation is a new and distinctive configuration of the interdependent components to create, deliver and capture value in a different way compared from the previous logic. Based on that, business model innovation requires a transformational effort, and its process is quite different from the product innovation one. The triggers to undertake this endeavour can be internal or external, and usually, they are both present, while the motivation inspiring leaders to act mainly refers to a proactive attempt to shape an industry/market. Regarding the circumstances potentially requiring a business model innovation, I totally agree with Johnson et

al.'s (2008) point of view, as the complexity of this endeavour requires leaders to expect a robust improvement in terms of relevance for the consumers and consequent performance to justify the effort. Finally, as already clarified in different discussions, I do consider this innovation from a systemic perspective, whereby the changes in one component generate some impact on the other ones.

2.5.3 The business model innovation process

In this section, I have given attention to the specific elements related to the business model innovation process that leaders should be able to lead and execute. In particular, I have covered the phases in which the process could be decomposed, the challenges the leaders are asked to manage, and the nature of the overall innovation endeavour to maximize the chances of success.

Regarding the process phases, the literature spans along two different levels of conceptualisation: the degree of abstraction compared to the activity orientation, on one side, and the design orientation compared to the operational focus, on the other.

Based on the first classification, some contributions are built around a few phases, like the three steps presented by Lindgardt et al. (2009): 1) uncover opportunities, 2) implement new business model, and 3) build platform and skills. Other scholars, like Pramataris et al. (Wirtz and Daiser, 2018) conceived the process in ten activity-oriented steps: 1) examining stakeholder roles, 2) defining business objectives, 3) identify value flows in the market, 4) identify key competitive drivers, 5) synthesising current business model, 6) embedding technology architecture, 7) defining requirements for technological capability development, 8) defining service provider mediation functions, 9) developing new coordination scheme, and 10) synthesising proposed business model.

Following the second type of classification, the design-oriented contribution of Voelpel et al., (2004) has been structured in four steps: 1) sensing the potential for change in the customer area, 2) sensing the impact of technology, 3) sensing the potential for value system and organisational configurations, and 4) sensing the potential economic feasibility of the new model. In opposition, Amit and Zott (2012) present six operationally focused steps: 1) customer needs analyse, 2) business model content innovation, 3) business model government innovation, 4) value creation of the new mode, 5) revenue model definition, and 6) launching the new model.

With the objective of offering a generic process, able to synthesise the multiple positions in literature, Wirtz and Daiser (2018) propose the following steps:

1. Analysis, starting from the extant business model to move towards factors like consumers, competitors, technology, regulations, etc.;
2. Ideation, where different business model ideas are generated focusing on the customers the organisation is oriented to serve;
3. Feasibility, where different assumptions on the external environment are considered looking for an alignment with the internal elements and their interdependencies;
4. Prototyping, including the analysis and development of alternative business model innovation approaches and development of several detailed concepts;
5. Decision-making, evaluation and selection among the different business model innovation design alternatives developed in the previous step, to start testing the approach selected;
6. Implementation, where the execution plan is defined, communicated and assigned, in term of responsibility, for a step-by-step realisation;
7. Sustainability, including all the activities of monitoring and adaptation of the process, when needed, to secure the expected growth coming from the competitive advantage built into the new business model configuration.

The above process represents a standard workflow supporting business leaders to define what their specific situation requires to manage the overall innovation endeavour.

A different perspective is offered by scholars grouping the different activities performed in homogeneous areas, as in the case of Frankenberger et al. (2013), who describe the process with the following stages:

1. Initiation, starting from the analysis of the eco-system;
2. Ideation, where new ideas are created;
3. Integration, referring to the building of the new business model;
4. Implementation, focusing on the realisation of the new business model.

A similar perspective is used by Stampfl (2016), considering the phases of (i) sense-breaking, (ii) sense-giving, (iii) freezing and (iv) refinement, and Sniukas (2015) with the (i) inception, (ii) evolution, and (iii) diffusion phases.

Regarding the challenges associated with the business model innovation process, particularly useful is Frankenberger et al.'s (2013) contribution, where these challenges have been grouped by the specific stages of the innovation process.

In the initiation stage, the two most cited challenges are: (1) understanding the needs of the players the organisation interacts with, such as the customers, suppliers, complementors, and competitors, and (2) identification of change drivers, referring to events that need to be decodified to understand their potential impact on the extant business model, such as technology and regulation changes, and digitalisation trend.

In the ideation stage, three main sources of challenge are detected: (1) overcoming the current business logic, referring to the team's difficulty in breaking out of the dominant logic of the space where the organisation competes, (2) difficulties in thinking in terms of business models, as the prevalent approach has been the product innovation and, (3) lack of systematic tools to develop new business model ideas, highlighting the unavailability of tools and methods specifically built to support the business model ideas generation.

At the integration stage, the study respondents mainly focused their attention on the following two challenges: (1) integrating all the pieces of their business model, as "changing one piece of the business is easy but aligning the rest is where it gets tricky" (Frankenberger et al., 2013, p.263), supporting the systemic perspective of the business model, and, (2) the involvement and management of the partners as a consequence of the complexity generated by new business logic, generating long discussions and complex agreements to negotiate.

Finally, during the implementation stage, the two main challenges are: (1) the internal resistance as people are reluctant to change (e.g. fear about the new situation, unclear reasons for the change when the extant business model still serves well the organisation), and (2) the ability to perform and learn from the experimentation approach adopted at that stage before a full roll-out of the new model, to be in the position to manage a fine-tuning of the new business model or more extensive adjustments whenever needed.

Sniukas (2015) summarises the innovation challenges around three clusters: (1) cognitive, (2) behavioural, and (3) emotional, while Stampf (2016) focuses the attention on barriers and drivers, including the following elements: (1) culture, (2) structure, (3) processes, (4) systems, (5) people, (6) context and (7) stakeholders.

Contrasting all the different contributions, a converging element is represented by the considerations about the nature of the business model innovation process, where almost all the studies consider this type of innovation as iterative (Frankenberger et al., 2013; Stampfl, 2016; Wirtz and Daiser, 2018) or presenting a blend between linear and iterative characteristics (Sniukas, 2015).

In particular, Frankenberger et al. (2013) offer evidence about three main iterative loops to consider during the innovation process:

- 1) Regular alignment between the changing ecosystem and the business model ideas generation, considered the external fit;
- 2) Alignment between the ideas generated and the business model components, defined the internal fit;
- 3) Alignment between the design phase and the realisation one.

In conclusion, the business model innovation process has been broken down into a more detailed or aggregated phase, based on the experience of the scholar involved. However, the real value for the leaders comes from a clear understanding of what each phase is expected to deliver and how they are linked along the entire journey. Based on that, I believe the generic process presented by Wirtz and Daiser (2008) is a valid and comprehensive summary of that. From my perspective, the drivers of the industry where the organisation competes, the extant business model set-up, and the specific environmental changes leaders are expected to deal with represent the factors able to further shaping the process at a more granular level. Regarding the challenges along the innovation process, I consider Frankengerger et al.'s (2013) contribution valuable: in the different phases, the solutions to manage and minimise these tensions are different in nature and composition, representing a great advantage for leaders able to anticipate them. Finally, about the nature of this innovation process, I tend to agree with the leading idea that emphasises its iterative character.

2.5.4 Business model innovation contributions in the healthcare space

The situation occurring in the healthcare space presented in section 1.5, with the Global Healthcare Spend expected to rise from \$ 8.4 trillion in 2015 to \$ 18.3 trillion in 2030 (Elton and O'Riordar, 2016), is clearly not sustainable. It will create challenges for all the stakeholders involved in the healthcare space, like governments, HCPs, healthcare organisations, patients, regulators, and to all the other health-related actors.

As costs rise, potentially fewer people will have access to healthcare. As a result, prices could potentially be under the control of the health authorities with limited access to specific treatments for patients. Fewer resources for manufacturers will potentially drive a consequent reduction in quality as companies will not have incentives to bring to market more innovative solutions. From a

strategic point of view, the critical aspects to be managed in healthcare are represented by the following three areas:

- 1) The cost of healthcare and access to healthcare insurance;
- 2) A clear distinction between the types of care under insurance responsibility compared to the types under individual responsibility;
- 3) The structure of healthcare delivery (Porter and Teisberg, 2006).

Based on Porter and Teisberg's analysis, the current structure of the healthcare market is the aspect determining the failure of competition in the sector. This assertion is based on the observation of the US healthcare system, but similar results can be found in other countries.

The healthcare sector is not structured to boost competition, the engine of improvements in quality and costs. Better services and products backed with more advanced technology will better serve the consumers, improving quality and driving costs down. As a consequence, innovative organisations will prosper while others will lag behind. The authors clarify that competition in this sector has taken place at a zero-sum level, where the advantage of one stakeholder has been materialised at the detriment of a different participant. This competition "does not create value for patients, but erodes quality, fosters inefficiency, creates excess capacity, and drives up administrative costs, among other nefarious effects" (Porter and Teisberg, 2006).

The recipe for reversing this situation is to move the competition towards value creation for patients, instead of minimising short-term costs and battling over who pays what (Porter and Teisberg, 2006). Competing on consumers' results will create the conditions for a positive-sum competition, where all stakeholders can capture part of the value generated.

Therefore, the healthcare sector requires a different and innovative approach considering the different stakeholders involved and the attention given to consumer outcomes per unit of cost (Christensen et al., 2011).

To pursue that shift, the focus should be given to the following three main avenues of innovation (Elton and O'Riordan, 2016):

- 1) Consumer-Centric Approach
- 2) Technology-Driven Innovation
- 3) Business Model Innovation

Considering the complexity of the healthcare sector and the number of stakeholders involved, a product/service innovation approach alone could not be enough for an organisation to maintain and nurture its relevance in the market (Herzingler, 2011), due to the rapidly growing number of patients combined with the National Health System budget pressure.

In such a context, without deprioritising the importance of product/service innovation, my belief is that long-term sustainability could be reached by including business model innovation. This kind of innovation, in fact, could be more difficult to imitate compared to the product/service one if leaders know how to design and implement it properly.

My position is also supported by the findings of a recent survey of 613 global healthcare executives and consultants conducted by Harvard Business Review Analytic Services and sponsored by Siemens (2017). In that survey, 91% of respondents said that great opportunity lies ahead for healthcare because of the disruption offered by new technologies and new business models. These disruptions hold the promise of providing better outcomes and more value while also changing the dynamics of healthcare. Overall, the main considerations that emerged from the survey can be summarized as follows.

1. Medicine will be more precise and affordable, with therapies tailored to the individual moving closer to the goal of the right treatment for the right patient at the right time.
2. Value will be at the heart of care delivery, and reducing costs without sacrificing outcomes will require dedicated teams working collaboratively across the full continuum of care.
3. Patients will be treated as consumers, as they will continue to bear more financial responsibility for their own care, and the search for better value will be the driving force shaping their decision-making.
4. Healthcare will be digital, and big data will continue revolutionising our understanding and treatment of diseases and the very nature of wellness and healthcare.

Respondents selected as their top three priorities the following topics: (1) providing better outcomes; (2) increasing patients' engagement, and (3) reducing expenses via process improvements through the adoption of new business models and technologies to improve value in health care.

Based on the above evidence, I believe business model innovation is particularly relevant in the healthcare space, where the new patient/consumer's expectation for higher value should be delivered at a lower cost. The value for the patient/consumer should be matched with the value for

the players in the healthcare space with regard to their sustainability and profitability. Eton and O’Riordar (2016) recommend that senior leaders to consider three core elements with their related business questions, as follows:

1. Clarifying their unique market positioning in the larger emerging healthcare ecosystem;
2. Highlighting the differentiating capabilities that are necessary to maintain the above-market positioning;
3. Creating an organisation whose structure and critical measures support the selected market positioning, leveraging the necessary differentiating capabilities.

Regarding the market positioning, leaders should define the patients their organisations will be focused on, the advantages these patients can get from the solutions delivered in comparison with the standard of care, and the differential advantage they will capture through their operating model. In this area, leaders should also fully understand the patient journey and how their organisations can positively impact the different touchpoints. Finally, more and more organisations will be required to show how the patients’ outcomes associated to their solutions can positively impact the healthcare system, e.g. through cost savings or patients’ quality of life.

The articulation of these elements can be delivered autonomously by the organisations or by leveraging new partnerships, focusing on specific assets and capabilities that can be developed or acquired externally. Some of the main reasons for the new and differentiating capability are represented by the focus on the patient in opposition to the product or the disease together with the shift from sales to patient outcome. As part of this process, medical affairs, sales organisations, data-management functions, R&D and supply chain represent departments particularly affected by changes.

Finally, creating a patient-centric organisation requires, among others: a new performing structure able to overcome the obstacles of the traditional silos approaches adopted by a product-focused organisation; a new set of metrics to measure success; new talent and skills able to translate the focus from the product to the patient outcome; a geographic sensibility to understand how to manage different areas evolving at a different pace with different and appropriate approaches.

The consideration of all these elements from the organisation leaders implies the need to assess their business models and eventually generate new ones. Eton and O’Riordar (2016) offer an interesting classification of emerging business models in the healthcare space. These business models adopt a different approach, starting from the ones that build on existing capabilities

deployed in a differentiating way, to the ones generating a new and different value to patients, delivered through a different combination of elements and based on new revenue models. The authors summarize these business models in the following emerging definitions:

1. Lean Innovators
2. Around-the-patient Innovators
3. Value Innovators
4. New Health Digitals

The lean innovators' business model "combines the best practices of efficient manufacturing, relentless cost management, return on investment rigour, advanced merger and acquisition expertise, and an eye for niche treatment where they may be significant latitude in pricing and market access approaches" (Eton and O'Riordar, 2016, p.52). The around-the-patient business model "still focused largely on producing drugs, seek to differentiate their offerings by developing ancillary services, algorithms, analytic capabilities, and more to create a new basis for product economics and add value for customers" (Eton and O'Riordar, 2016, p.52). The value innovators' business model, "by focusing completely on improving patient and clinical outcomes, it has great potential to make the healthcare system more efficient and effective overall" (Eton and O'Riordar, 2016, p.52). The new healthcare digitals' business model "are leading digital companies that are going healthcare by developing their technologies, infrastructure, and developer networks to health, wellness, and care management; they are also technology-savvy healthcare companies that have gone digital by putting digitally powered initiatives at the centre of their strategies" (Eton and O'Riordar, 2016, p.52).

From a different stance, Christensen et al. (2009), see the opportunity for the healthcare organisations to generate higher value for the patients reducing their costs by combining the disruptive technology perspective with the business model innovation. From their perspective, the "proprietary integration of the company's resources, processes, and profit formula in order to do a job the customer is trying to do is the essence of competitive advantage" (Christensen et al., 2009, p.14). The typology of the business models potentially used by the healthcare organisations are the following:

1. Solution Shops
2. Value Adding Process Businesses
3. Facilitated Network Businesses

Before presenting the characteristics of these business models and the potential results of their innovation, it is worth to clarifying how the authors define two critical terms, such as disruption and technology, in their contribution. “Disruption is an innovation that makes things simpler and more affordable, and technology is a way of combining inputs of materials, components, information, labour, and energy into outputs of greater value” (Christensen et al., 2009, p.1).

Solution shops are organisations structured to diagnose and make recommendations to clients having specific and unstructured problems, like consulting firms, law practices and general hospitals where the job is performed by specialised physicians, charging the clients on a fee-for-service basis. Value Adding Process Business, on the other hand, is represented by organisations normally doing their work in repetitive and replicable ways, where the value is embedded in the process performed and the equipment adopted. In this approach, organisations get paid by their clients for results. The diagnosis of health-related problems are normally performed through a solution shop business model, but as soon as this initial phase is completed, the recommended treatment can be delivered through a value-adding process model. The savings on care costs generated by adopting a value-adding process model compared to the solution shop model can range from 40% to 60% (Christensen et al., 2009). Organisations using the facilitated networks leverage a platform where a group of participants deliver a solution and receive a compensation from a different group of participants. They generate revenues thanks to their ability to organize, facilitate, and maintain the effectiveness and efficiency of the network, in the form of membership or transaction-based fees. Communities of physicians supporting patients to manage their disease are examples of the facilitated network business model.

When disruption takes place across different types of business models, the chances to generate higher affordability and accessibility for patients are very high, and this is the trajectory the authors foresee in the healthcare space as a way to increase the value for patients and healthcare systems as well as to boost profitability and sustainability for healthcare organisations.

2.6 Literature limitations

Reviewing the literature around the concept of business model and its innovation and considering the evidence from the healthcare space, the following limitations emerged.

1. There is a lack of convergence on the business model definition (Zott et al., 2011), its components and its innovation attempt, although most of the definitions include aspects related to the creation, distribution and appropriation of value utilised by organisations.
2. Most of the peer-reviewed studies are conceptual, with only 20.6% of them classified as empirical (Wirtz et al., 2016).
3. While the innovation triggers and the degree of innovation of the extant business logic have been explored (Markides 2006, Chesbrough 2007, Johnson et al. 2008, Bock et al. 2010, Santos et al. 2015, Teece 2010, Osterwalder and Pigneur 2010, Bucherer et al. 2012, Saebi 2015), only a limited number of contributions are available on the business model assessment, either from the academic literature or from the practitioners' one (Afuah, 2014; Heikkilä et al., 2016; Haaker et al., 2017; Schaller et al., 2018; Giesen et al., 2008).
4. The scholars' perspective on the business model assessment is mainly static and focused on the single business model components, without integrating the system theory contribution.
5. Several contributions have been reviewed in the business model innovation process (Frankenberger et al., 2013; Sniukas, 2015; Stampfl, 2016; Wirtz and Daiser, 2018), with minimal opportunities to shed light on mechanisms regarding established organisations active in the healthcare space.

The literature limitations above mentioned do not fully support leaders in successfully managing their business model assessment and innovation efforts. In my view, the relevance of the topic for leaders and practitioners and the misalignment between theory and practice, as previously reported, fully justify the effort of doing research in this field. As a consequence, my doctoral research is focused on building the empirical evidence around the business model assessment and innovation process in an established healthcare organisation, in line with the purpose of my research presented in the Introduction chapter.

2.7 Expected research contribution and research questions

This research is grounded on the spirit of the DBA domain, and it has the main objective of enhancing evidence-based knowledge on the assessment and innovation of the business model in established organisations active in the healthcare space.

The intention is to support organisations' leaders in taking informed decisions about the right moment to undertake this transformation journey developing a business model dashboard to

holistically assess their extant business model in the face of the emerging environment changes. In summary, this research aims to contribute to knowledge as follows:

1. Providing organisations' leaders with a clear understanding about the right moment to innovate their business model thanks to a solid and holistic approach in assessing their extant business logic;
2. Contributing to the leaders' understanding of how the business model innovation process unfolds within established organisations operating in the healthcare space;
3. Shedding light on the considerations and challenges organisations' leaders undertaking the above transition need to manage;
4. Indicating potential areas of investigation for further contributions to the business model assessment and innovation literature.

In order to realise this contribution, the research is structured to answer the following research questions:

1. How do healthcare organisations assess their business model to define when is the right moment to innovate it?
2. How do healthcare organisations manage the transformation journey from the current model to the new one?
3. What are the considerations and challenges healthcare organisations must manage along this transformation journey?

Based on these research questions, the next chapter presents a description of the research design and the methodology selected to answer them appropriately.

2.8 Research key definitions

Before proceeding with the research design and methodological discussion, it is worth clarifying all the key concepts' definitions adopted in this study. These definitions have been presented in different points along the literature review, but here below in the Table 6, they are summarized to help the reader move forward.

| Key Concept | Definition | Source |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Business Model | A system of interdependent components whose interaction shapes the organisation's ability to create, deliver and capture value from the relationship with its consumers. | Own definition based on the concept of Johnson et al. (2008) |
| Business Model Components | The business model components are the following: <ol style="list-style-type: none"> 1. Consumer Value Proposition 2. Profit Formula 3. Key Resources 4. Key Processes | Johnson et al. (2008) |
| Business Model Assessment | A combination of activities performed at both single-component level as well as system level with the objective to understand if the extant business model is and will remain relevant for serving the consumers in the face of the implications generated by the emerging inflection points. | Own definition |
| Business Model Innovation | The process to design a substantially new architecture among the different components of the model and their interrelations, combined with their execution to improve the way to create and deliver value for the consumers as well as to capture a fair part of it for the organisation. | Own definition |

Table 6: Key Concepts Definitions – own elaboration

Chapter 3 Research Design and Methodology

3.1 Introduction

Research approaches and methods decisions represent critical steps in addressing the research gaps and answering the research questions to generate valuable knowledge in a rigorous way. Creswell (2014, p.3) uses the term “research approaches” to define “plans and procedures for research that spans the steps from broad assumptions to detailed methods of data collection, analysis and interpretation.” Building a plan in this context means taking several decisions regarding the selected approach to investigate a subject. This approach results from the combination of the philosophical perspective of the researcher, the strategies of inquiries and the research methods as forms to collect, analyse and interpret the data. In addition, these decisions are also influenced by the research problem (i.e. the reason that generates the need for the study) and the consequent articulation of questions, the experience of the researcher together with the level of engagement with the research context and the audience interested in the study (Creswell, 2014 and Easterby-Smith et al., 2018). Figure 10 summarises the different decisions taken to shape the research design.

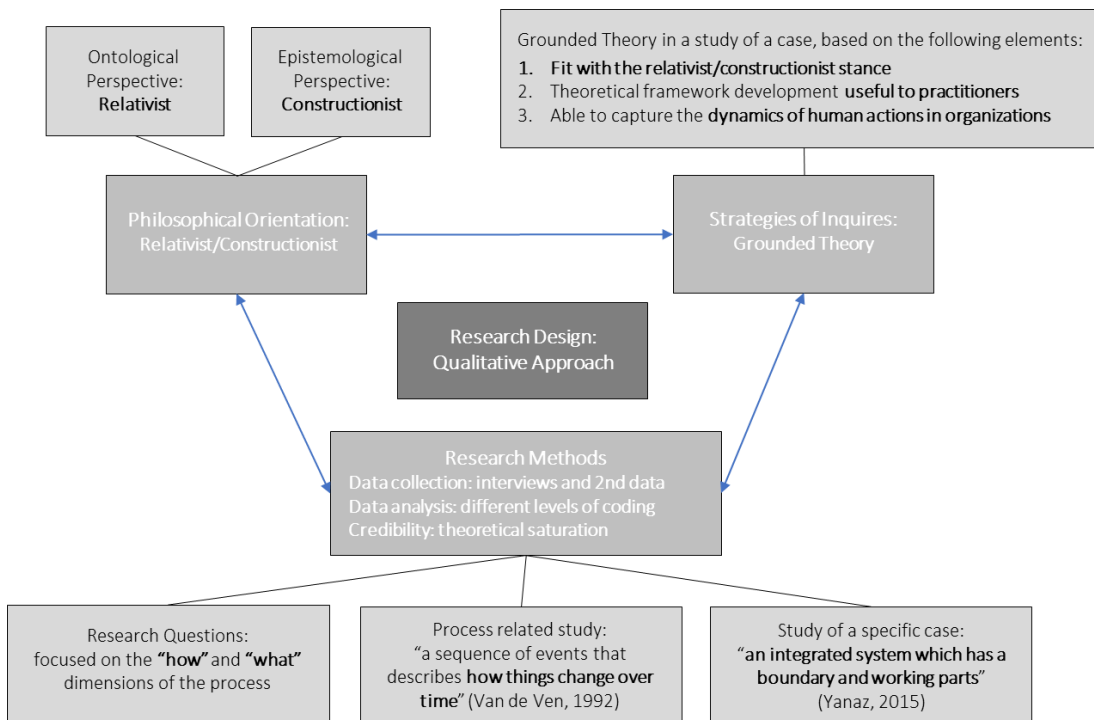


Figure 10: Research Design approach based on Creswell framework (2014) – own elaboration

In the following sections, the decisions taken to define the research approach/paradigm in conducting my research, with the appropriate rationales to justify them, are presented.

3.2 Research design

3.2.1 Philosophical perspective

There are very practical reasons for understanding and making explicit the philosophical perspective in doing research. In particular, Easterby-Smith et al. (2018) highlight the following four reasons for researchers to think about their philosophical position.

1. It helps to have a clear sense of the reflexive role in research methods.
2. It is essential to clarify the kind of evidence required and how to gather and interpret it, as well as how this will support the quality of the answers to the research questions.
3. It helps to recognise the most appropriate designs to select.
4. It helps to identify and even create designs with which the researcher has not previous experience.

First of all, from an ontology perspective, there is a continuum of positions to consider about the nature of reality and existence: realism, internal realism, relativism and nominalism. At one extreme, the realist position is based on a single truth where facts exist and can be analysed. The internal realism position claims that truth exists, but it is not easy to grasp; in this case, facts can only be observed indirectly. The relativistic perspective assumes that there are several truths where facts depend on the observer's point of view. At the opposite extreme, the nominalist position affirms that there is no truth and facts are all created by humans (Easterby-Smith et al., 2018). On the other hand, from the epistemology perspective, whereby the different positions focus on the nature of knowledge and ways of inquiries, we have two contrasting views, positivism and social constructionism. The positivist stance is based on the idea that the social world exists externally and its features could be measured using objective methods. In the social constructionist view, the reality is created by people instead of by external factors; in this case, understanding something is a process of assessing how people make sense of their experience.

In my research, I have taken a position closer to the relativist and constructionist perspective. The reason for this "view of the world" is based on the belief that we build our realities out of the reflections and meanings associated with the experiences we have interacting with others, and events happening around us. Consequently, the same situation can be seen from different perspectives and generate different but equally relevant truths based on the observer's point of view. This perspective has its root in the pragmatism stance, mainly originated by the writings of the American philosophers William James and John Dewey (Hookway, 2012). The

pragmatism position is characterised by the fact that “it does not accept that there are predetermined theories or frameworks that shape knowledge and truth, nor does it accept that people can construct their own truth out of nothing” (Easterby-Smith et al., 2018, p.82). Central to this position is the concept of meaning that “must come from the lived experience of individuals” (Easterby-Smith et al., 2018, p.82). The balance to consider assuming this philosophical perspective is between concrete and abstract, on one side, and between observation and reflection, on the other side.

According to Easterby-Smith et al. (2018), this position presents a series of characteristics here below summarised with the objective of clarifying the point more than presenting a complete and bounding picture of a researcher assuming this perspective.

1. The researcher is part of what it is observed.
2. Human interests are the most important reasons for doing science.
3. The research objective is to increase the general understanding of the case observed.
4. Research progresses through collecting rich data to generate ideas inductively.
5. Concepts include stakeholders’ perspective.
6. The unit of analysis may consider the complexity of the whole case.
7. Generalisation through theoretical abstraction.
8. Sampling required: a small number of cases specifically selected for a specific reason.

Combining the above relativist-constructionist philosophical perspective with business model research, three aspects are worth considering regarding the nature and approach to studying the concept.

First, the business model, among its multiple definitions, is a cognitive construct that organisation leaders use and manipulate in abstraction to configure and re-configure the current way of satisfying their consumers while capturing enough value from them to remunerate the resources used, based on their solid understanding of the business context, as presented by Baden-Fuller and Morgan (2010). Based on that, within one organisation, different interpretations of the same business model can coexist based on the different points of observation (e.g. organisation leaders compared to operational managers), experience (e.g. new to the company compared to long tenure managers) and expertise (e.g. human resources compared to finance or marketing). The differences among the series of interpretations tend to decrease the more the topic of business

model is discussed within the organisation. A common and shared interpretation emerges to drive the discussion forward, as in the case of business model innovation.

Secondly, the business model concept can be observed and understood at least from two different observation points, the single components, on one side, and the combination of them to form the whole, on the other. This can produce results only if all the components contribute to this aim, so a fruitful interaction among them determines its functioning. This characteristic is fully coherent with what has been presented about the systemic approach of the business model in the previous literature review chapter, in section 2.4.1. The nature of the concept, and therefore its knowledge, needs this parallel dual approach, single component and whole construct, as the result of the interaction among components.

Third, to reach a sort of a shared view of the business model within the same organisation, leaders and managers need to make an effort to understand each other through an interpretative understanding of their actions and meanings associated with the different components of the business model as well as to with the interdependency among them.

These three considerations substantially support the relativist and constructionist philosophical perspective adopted.

3.2.2 The nature of the research questions

In addition to the philosophical perspective, the nature of the research questions has a relevant role in the definition of the research design and methods. As expressed by Bryman (2007, p.5), “the research question is viewed as a crucial early step that provides a point of orientation for an investigation. It helps to link the researcher’s literature review to the kinds of data that will be collected.” The research questions I want to answer through this research are the following.

1. How do healthcare organisations assess their business model to define when is the right moment to innovate it?
2. How do healthcare organisations manage the transformation journey from the current model to the new one?
3. What are the considerations and challenges healthcare organisations must manage along this transformation journey?

The first question is focused on understanding how leaders assess and evaluate the business models of their organisations within the competitive context they operate. The intention here is to define the moment when the lack of fit with the context is such to require a re-configuration of the extant business model. The second question, strictly linked to the first, is related to the need of understanding how the business model innovation process unfolds in an established organisation. The third question is expected to provide clarity about the challenges that organisations undertaking such a transformation journey must manage along the innovation journey. In all of them, a specific interest towards established organisations in the healthcare space is clarified.

In other words, the research is intended to understand how the assessment of the extant business model provides indications for the timing and designing of a new business logic configuration, to trigger the innovation process, considering the related challenges and implications to be managed by the organisation's leaders. In all the research questions, the processual aspect of performing these activities and the implications related to them are evident, in full coherence with the systemic perspective of the business model, whose innovation over time can be determined considering the single components and their level of interdependency.

As the focus is on the process of assessing and designing the business model, it is relevant to review how the process concept has been defined and used in literature to study organisations' change over time. In this regard, I have used the propositions offered by Van de Ven (1992) and Van de Ven and Poole (2005) to define the type of process to inform the selection of the appropriate research design and methods. Van de Ven (1992, p.169) offers three definitions for the process concept:

1. Process "as a logic to explain a causal relationship between independent and dependent variables;"
2. Process as "a category of concepts or variables that refers to actions of individuals or organisations;"
3. Process as "a sequence of events that describes how things change over time."

The first definition of process refers to a situation where there is a causal relationship between inputs and outcomes and it is particularly helpful in explaining why an independent variable has a causal impact on a dependent variable. In the case considered for my study, this definition is not the most appropriate to answer the selected research questions. In the second definition, process constructs are considered as attributes of fixed entities. As a consequence of this process

representation, only *if* a change has materialised, can it be observed but not *how* this change has been realised. In my research, the presence of a new business model different from the original one offers only a partial contribution to practitioners and scholars if not supported by the understanding of how this process has been implemented. In the third definition, the process is considered as a sequence of activities, events and decisions leading to an outcome. This definition seems to be the most adequate representation of the attempt to assess a business model and its innovation, as these decisions can be considered a series of activities to measure respectively and then frame and implement a new business model.

Using the last definition of the process has specific implications for the selection of the research design and methods. In the context of business model innovation, the data collection means to gather the stories of the leaders involved in such type of discussions and to make sense of them, considering also the external context, the general environment and competitive settings, where the organisation operates (Van de Ven, 1992 and Langley, 2007).

The data required to understand that process seem to be of a qualitative nature, rich in details and based on the interaction between the research informants, their area of expertise, their hierarchical and geographical scope, their specific orientations and the environment where their orientations have been shaped. Based on that, it is difficult for these concepts to be separated into clear blocks of analysis, as every element plays a role *per se*, but also in relation with the others. In the next section, the implications coming from these considerations are discussed in relation to the decisions regarding the research design and methods.

3.2.3 Impacts on the methodological decisions

Based on the considerations introduced in the previous section, the most appropriate way to study the phenomenon of business model innovation through the answers to the selected research questions depends on the type of data supporting the process research. As already presented before, “process research refers to understanding phenomena involving complex dynamics or causal mechanisms, often embedded in nuanced social interactions” (Graebner et al., 2012, p.279). Considering that “complex causal mechanisms could involve feedback loops, balanced tensions, or multiple levels of analysis,” Graebner et al. (2012, p.279) recommend the use of qualitative data as their fundamental advantage “is in its richness, which enables researchers to unpack multifaceted, temporally unfolding situations and causal mechanisms in a detailed and sophisticated manner.” In

addition to that, as already emerged from the literature review, the way leaders assess their current business model and how this process leads to the design of a new business model has not been fully developed yet. As a consequence, a pure quantitative approach (e.g. experiment or survey) does not represent a viable approach to answer my research questions prevalently focused on understanding the “how” and “what” dimensions of the process under analysis (Yin, 2009). This decision has also been supported by the findings of the DBA pilot project, done in the second year of the program, where collecting data through a survey has generated a heterogeneous situation, as the informants assigned different meanings to the concepts of business model and its innovation. Furthermore, as my research questions do not require to “manipulate behaviours directly, precisely and systematically” (Yin, 2009, p.43) a more qualitative approach seems to be better suited to support my research.

Working in the qualitative realm, different research designs could have been selected, and I have chosen the study of a case as my focus is on contemporary and recent events within a real-life context with the objective of capturing as much as possible from the richness of the organisation under analysis (Yin, 2009). At the same time, and in contrast with the positivist perspective assumed by Yin, the case can be defined in alternative ways, like the one provided by Stake which is “a specific, a complex, functioning thing, more specifically an integrated system which has a boundary and working parts” (Yazan, 2015, p.139). In this case, the study of the case is based on a constructionist epistemology, “less concerned with issues of validity, and more concerned with providing a rich picture of life and behaviour in organisations and groups” (Easterby-Smith, 2018, p.116). Based on Stake’s position, case studies are “holistic, empirical, interpretative and emphatic” (Yazan, 2015, p.139). Holistic refers to the consideration that the case is highly interrelated with its context. Empirical refers to the fact that the research is based on the researcher’s field observation of the. Interpretative as the research is based on the researcher intuitions coming from the interaction between researcher and informants. Empathetic as the researcher reflects “the vicarious experiences of the subjects in a emic perspective” (Yazan, 2015, p.139).

The two approaches to case study differ, as mentioned before, mainly from the authors’ epistemological perspective, towards positivism in the case of Yin and interpretivism in the case of Stake, and in the design of the approach. Regarding the second difference, while Yin suggests a very structured design for the case study in order to match the four criteria of construct validity, internal validity, external validity and reliability, Stake opts for a much more flexible design based on the notion of “progressive focusing.” In this approach, “the transition from stage to stage, as the

investigation unfolds, occurs as the problem areas become progressively clarified and redefined” (Yazan, 2015, p.141).

In my research, I have adopted the case study closer to the Stake’s perspective mainly because there is not prevalent and commonly accepted “theoretical proposition” to refer to from the literature review regarding business model assessment and innovation process. The main strengths of this approach can be summarised as follows:

1. Potential ability to support the generation of a novel theory arising from paradoxical evidence (Eisenhardt, 1989);
2. Highly adaptable methodology to fit with different types of research questions and research settings (Rose et al., 2015);
3. Use of multiple sources of data and evidence allowing triangulation to support findings (Rose et al., 2015);
4. Viable solution to study a phenomenon in detail and within its natural context, especially in situations where there are several variables of interest are understood compared to data point observations (Rose et al., 2015).

On the other hand, however, there are also some limitations and criticisms summarised by Yin (2009) and Eisenhardt (1989):

1. Potential lack of rigour when compared to other methodologies, based on unsystematic procedures affecting findings and conclusions;
2. Limited basis for scientific generalisation, with the risk of presenting a theory of “a very idiosyncratic phenomenon” (Eisenhardt, 1989);
3. Very long and complex methodology, sometimes resulting in massive documents;
4. Not able to establish a causal relationship among different variables compared to true experiments.

To further support my decision, the evidence below presents other researchers successfully using a case study dealing with research questions and live phenomena similar to mine.

Eisenhardt points out that a case study is a very appropriate approach “when little is known about a phenomenon, current perspectives seem inadequate because they have little empirical substantiation, or they conflict with each other or common sense” (Eisenhardt, 1989, p.548). In this situation, even a single case can provide important information and insights around the topic

selected given its “phenomenon-driven” purpose (Eisenhardt and Graebner, 2007, p.26). On the other hand, when some theories exist around the live phenomenon of interest but the research questions cannot be properly addressed using a theory-testing research methodology, the case study can be used with the purpose of theory building, providing empirical evidence to support, extend or challenge the extant theory. In these situations, a case study allows the researcher “to create theoretical constructs, propositions and/or midrange theory from case-based, empirical evidence” (Eisenhardt and Graebner, 2007, p.25).

Additionally, several prominent scholars in the field of management (e.g. Mintzberg, Gersik, Eisenhardt and Pettigrew, just to name a few of them) have successfully used, even if not exclusively, case studies focusing on topics like strategy formulation, development of groups, internal technology transfer and decision making with research questions comparable to the ones I have decided to answer (Eisenhardt, 1989).

Finally, working within a qualitative research strategy by adopting a case study design, I have selected a methodology guided by the Grounded Theory approach. The three following considerations support this selection.

First, the Grounded Theory is well suited to support the constructionist/interpretative perspective (Easterby-Smith et al., 2018). Second, grounded theorists “are interested in developing theoretical elements that are useful to practitioners in the settings studied, providing them with some understanding and control over situations they encounter on a daily basis” (Locke, 2001, p.18). Third, the Grounded Theory fully supports the capturing of elements linked to “the dynamics of human actions in organisations,” following the Pettigrew’s tradition of process inquiry, where it has been defined as “a sequence of individual and collective events, actions and activities unfolding over time in context” (Locke, 2001, p.42).

In summary, a methodology guided by the Grounded Theory approach is coherent with my philosophical perspective, oriented to support practitioners in their daily activities, and fully supports the analysis of the organisation’s processes.

3.2.4 The study of the case selected

My thesis aims to explore how the extant business model of an established organisation active in the healthcare space has been assessed to trigger a new business model design and implementation decision. To conduct this research, I have selected one specific organisation, here called MDM, representing the diabetes division on a large and diversified healthcare company called Corporate House. The unit of analysis is the MDM business model assessment and innovation process performed in the period 2012 – 2014. Before 2014, MDM competed in the diabetes market through the self-monitoring blood glucose (SMBG) device adopting a “treatment-driven” business model. After assessing this business model and the consequent decision to innovate it, in the second part of the 2014, MDM started to adopt a new “patient-focused” business model to support the launch of its continuous glucose monitoring (CGM) system.

The selection of this organisation is based on the fact that it represents a unique opportunity of an established organisation, active in the healthcare space, that has successfully transformed its business model where the majority of the original competitors are still using the initial “treatment-driven” logic after six years since the MDM new business model adoption. In addition, focusing the attention on one single case has offered the opportunity to develop a deeper understanding of all the different elements affecting the business model assessment and innovation process and their relationships, while controlling the aspects affecting the competitive context.

The selection of this specific case is coherent with Stake’s view of qualitative case studies, distinguishing between instrumental and expressive studies. The instrumental approach selects a specific case with the aim of developing a general principle, while the expressive one looks for cases according to their unique features, independently of their eventual generalisability in other organisations (Easterby-Smith, 2018). The approach followed in my research is equally positioned between the instrumental and the expressive study. It is close to the first approach since I believe most of the findings could be potentially applied in another context. However, it is also close to the second approach, as the organisation selected can be considered unique to a certain extent, at least within the diabetes market.

Despite Stake’s connotation for the case study, some scholars highlight some limitations when using a single case study compared to other quantitative research designs or even multiple-case study, associating the first with a lack of rigour, comparability, and replicability (Barzelay, 1993). The critics are mainly focused on internal validity, referring to the ability of interpret causality, and

external validity, referring to the ability of generalise the findings (Mukhija, 2010). Many case study researchers have argued that case studies are appropriate for generalisation even if their concern on external validity is less relevant. On the other hand, they emphasised internal validity. The single case study can ensure internal validity because it combines the knowledge from the literature with the depth of details and richness of the narratives (Mukhiji, 2010).

Another aspect to consider is that studying multiple cases can generate a valuable result in various aspects when the researcher has the objective of comparing findings among different settings. On the other hand, when a researcher is focusing on a single case, the position taken is based on the fact that the study undertaken is not functional to understand other cases, as the main focus is to shed light on this one case, as affirmed by Stake (Yazan, 2015). Yin (2009) also supports this point of view, affirming that multi-case studies can dilute the overall analysis of the research.

My objective was to understand the complexity of this specific case to be in the position to build a conceptual framework that can shape organisation leaders' thinking approach, helping them to develop a broader perspective of their reality when assessing their business model with the intention to innovate it, more than reaching a generalisation of findings (Siggelkow, 2007).

It is also important to clarify that the study of the case selected has been facilitated because of the access I had to the leadership team working in the MDM organisation. In fact, during the research, I was working for the same Corporate House company, albeit in a different division. On the one hand, if this situation has facilitated the opportunity to come in contact with the people having a direct and rich experience about the MDM case under analysis, on the other side, it has represented a risk of potential bias, being associated with the same mother company organisation. A second potential source of bias could also be represented by my personal career development, regarding the roles and responsibilities managed over the years in large multinational companies with a profile similar to the one of Corporate House. In both cases, the potential risk was linked to the confirmation bias coming from my previous professional experiences and indirect exposure to MDM through the institutional business contacts with my division. To mitigate the above-mentioned risk, I have adopted the following strategies:

1. Data analysis transparency;
2. The voices of informants have been fully reported;
3. The adoption of the theoretical sampling approach.

Regarding the first strategy, I have adopted a line-by-line data fragmentation of the data gathered through the informants' interviews, following Strauss and Corbin's (Locke, 2001) recommendation. These data fragments have been summarised in schemes developed at different stages of the data analysis process described in section 3.4, and included in the Appendices B1, B2, B3, B4, Appendix C, Appendix D, and Figure 20 and 21 of Chapter 4. The description of the process I have followed and the availability of the data under analysis at different stages of the analytic development guarantee total transparency and represent the opportunity for other researchers to undertake the same process.

With regard to the second strategy, I have used as much as possible the alive voices of the different informants as much as possible. These voices have been fully reported, and the different informants have been quoted in Table 8, Table 9, Table 10, Table 11, Table 12, and Table 13, all included in the Chapter 4, in correspondence with every 2nd order themes developed during the data analysis. The use of the informants' voices mitigates the risk of reporting a possible partial interpretation of what they have expressed during their interviews.

Finally, to ensure full development of the higher conceptual categories used to present the theoretical framework of Figure 21, I have adopted the theoretical sampling approach engaging some informants in a second and third round of interviews, as reported in Table 6 of this chapter. This approach has been useful to fully clarify some of the concepts that emerged during the initial stages of the data analysis and shed light on aspects and reasons behind the decisions taken during the MDM business model assessment and innovation process.

I believe that the parallel use of the different strategies described above has represented a solid approach to mitigate the risks associated with my professional role, being, at the same time, conscious that the risk cannot be fully eliminated.

3.3 Research methodology

In its original version elaborated by Glaser and Strauss in 1967, the Grounded Theory's distinctive features have been "its commitment to research and discovery through direct contact with the social world studied coupled with a rejection of a priori theorizing" (Locke, 2001, p.34). The combination of rejection of pre-conceived theories and the focus on research and discovery, shapes the conception of knowledge as emergent.

Based on that, the first important element in Grounded Theory is the subject of the study that here is represented by the researcher that builds knowledge because of the close contact with the phenomenon under analysis. Regarding the avoidance of pre-conceived theory, it is worth clarifying that this does not imply that researchers should embark on their studies without bringing with them a general guidance provided by some sort of orientating theoretical perspective.

A second important element to consider in Grounded Theory is the distinction and close relationship among substantive theory, formal theory and practice domain, and the role played by concepts. Based on Glaser and Strauss's point of view, substantive theory can clearly support formal theory, and this can be reached by "working empirically to develop conceptual categories at higher level of abstraction and generality" (Locke, 2001, p.35). This evolution from a substantive theory to a formal one is based on the ability to develop conceptual categories, and, from Denzin's perspective, the concepts are the basic elements of the theory-building as they "define and shape the content of theories providing a new way of viewing the world" (Locke, 2001, p.36). Based on Patton's contribution, the concepts are able to structure the world when expressed in data documents, "highlighting what things go together and what things are distinctive from each other" (Locke, 2001, p.36). The description of the world included the researchers' field notes, the interview transcriptions, and all the other available data, can provide a structure and a coherence not able to be perceived before the act of the conceptualisation. Therefore, this new perception of the world is the result of the conceptualisation effort, considering that "a concept provides a new way to look at the world at the same time as it brings some aspects of the world into existence" (Locke, 2001, p.36).

A third element is the dual role assigned to a theory as it needs to explain the reality but, at the same time, to tell a story, as highlighted by Maxwell. The author argues that "a useful theory will tell an enlightening story about some aspects of the world, providing insight into and broader understanding of it" (Locke, 2001, p.36).

After introducing Glaser and Strauss's (1967) methodology for Grounded Theory, several thoughts and contributions have been developed. In this research, the Corbin and Strauss's (1998 and 2008) approach has been adopted based on the following rationales.

1. It provides space to the broader environmental and contextual factors (i.e. macro conditions) able to generate an impact on the phenomenon under study (Locke, 2001).
2. It is devoted to generating a theory that is both relevant and useful for action and practice (Corbin and Strauss, 2008).
3. It offers an straightforward guide for the data analysis resulting in a more structured approach to generating theory (Boadu and Sorour, 2015).

From a procedural perspective, the key features of the Grounded Theory approach are synthesised by the two following operations:

1. Assignment of meaning through the activity of naming and comparing;
2. Theoretical sampling.

These fundamental operations are discussed in the incoming sections supporting and informing the approach I have followed for the data collection and analysis. It is essential to clarify that there is an iterative dynamic between the collection of the data and their analysis in the selected methodological approach so that the analysis starts immediately after the first data has been collected (Birks et al., 2013; Locke, 2001). Based on that, there is an inextricable link between data collection and analysis, and as the preliminary concepts emerged from the initial data collection, further data gathering is supported from these concepts, creating the conditions for the theoretical sampling. Theoretical sampling "does not aim to identify representative populations, but rather to enrich the emerging concepts" (Birks et al., 2013, p.3). Additionally, the objective of this theoretical sampling is "to understand the nature and dimensions of emerging conceptualizations further, usually to sampling data in a way that varies a particular set of dimensions that emerge from prior data analysis" (Birks et al., 2013, p.3).

The comprehensive data collection and analysis undertaken to adopt the Grounded Theory guided approach in my research is summarised here below in the Figure 11.

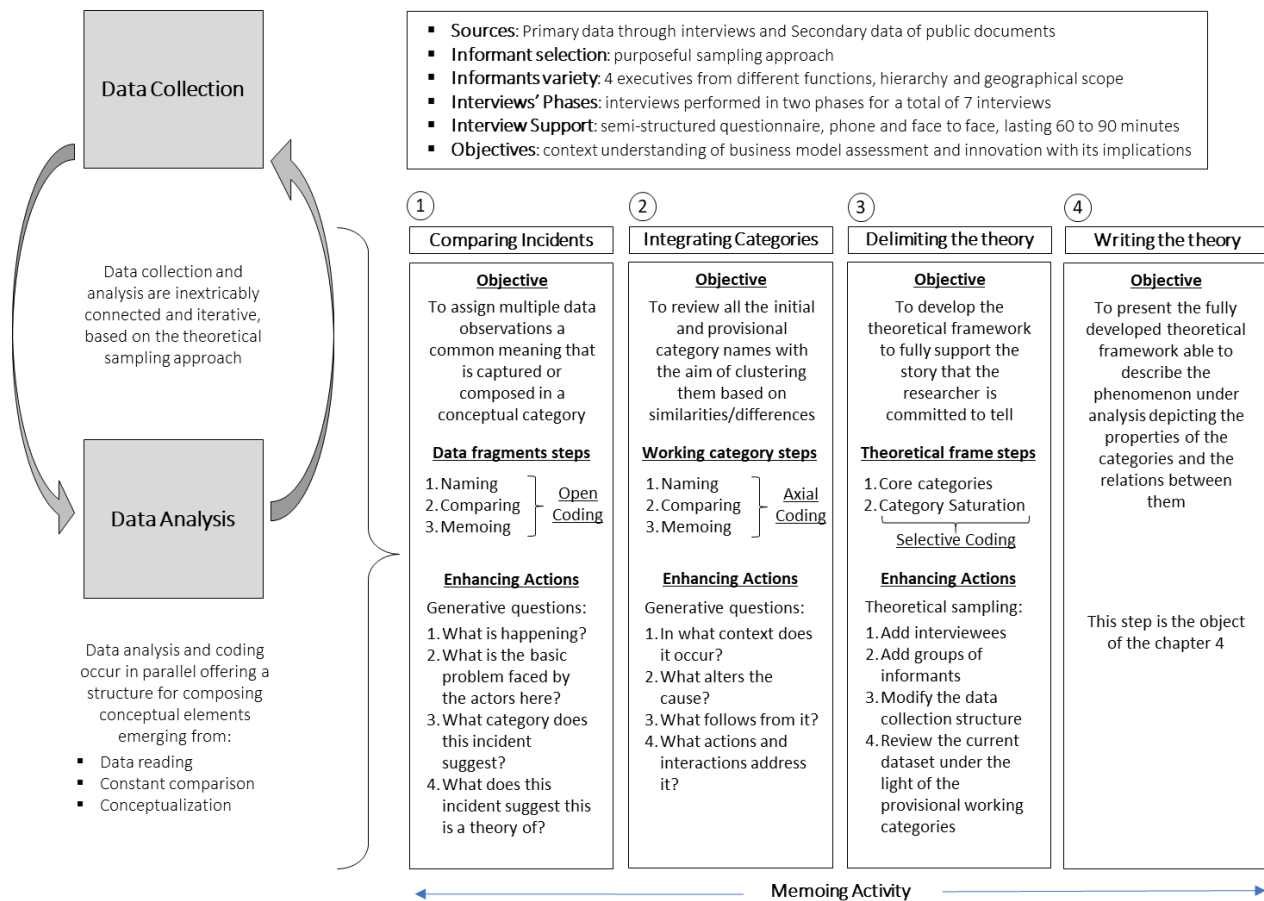


Figure 11: The Grounded Theory guided process adopted in my study – own elaboration

3.3.1 Data collection

As indicated in section 3.2.4, the organisation under analysis, here called MDM, is the diabetes division of a large corporation active in the healthcare sector, here named Corporate House.

In adherence with the guidelines provided by the Grounded Theory, the field observations, including personal interviews, public company documents, internet articles and video presentations, have been analysed to ensure a broad and different perspective (Corley and Gioia, 2004) and to reduce sampling bias and insufficient variation in data (Birks et al., 2013).

The primary data has been collected through interviews done with four different informants (one executive was interviewed face-to-face while for the other three, a phone interview approach was used) coming from different functions. In selecting the research informants, I have used the “purposeful sampling” approach (Corley and Gioia, 2004), invoking the principle of comparison, to ensure rich and varied data. Thanks to a preliminary conversation with one of the leaders of the MDM organisation who had had the opportunity to oversee the whole business model innovation process, I reflected on the informants to consider based on their role, function and geographical

scope. Then, I selected four executives from different functions (HR, Commercial Excellence, Regional Country Management and Marketing, with a focus on Digital and CRM) and geographical scope (Global, EMEA, Europe and UK). These leaders had had a relevant role in the business model assessment and innovation process, at different hierarchical levels and geographical scope.

Seven in-depth interviews were conducted, with some of the informants involved in multiple sessions. The interviews were facilitated using a semi-structured questionnaire based on open-ended questions (see Appendix A). These interviews were performed face-to-face and via telephone, lasting between 60 to 90 minutes. I took extensive notes during every conversation, as for confidentiality reasons, it was not possible to record them. These conversations covered the analysis of the diabetes market, the assessment of the extant business model, the considerations made to start the innovation journey and, after the decision was taken, the innovation process and its implementations.

The objective of the questions was to solicit a description of the context when MDM was operating using the initial business model and how that model was assessed to understand if it was still adequate to compete in the evolving market successfully or the situation was developing in a direction requiring the design and implementation of a new business model. In addition, further notes and considerations were taken during the conversations with the informants going through the questionnaire. These notes were useful during the reflecting phase in the attempt to make sense of the activities and discussions described by the informants.

In the initial phase, I conducted one interview per informant, and, based on the preliminary concepts that emerged, three additional interviews were conducted with two informants to further develop some themes, in full coherence with the theoretical sampling approach. The number of interviews by informants and phase is summarised in Table 7.

| Informants' | Phase I | Phase II |
|------------------------------|----------------------------|-----------------------------|
| Role | | |
| Global Human Resources | # 1 phone interview | |
| Area Commercial Function | # 1 phone interview | |
| Regional Management Function | # 1 face-to-face interview | # 2 face-to-face interviews |
| Local Marketing Function | # 1 phone interview | # 1 phone interview |

Table 7: Summary of the interviews by Informants' role – own elaboration

In addition to the data gathered through interviews, additional secondary data was collected from public company documents, from both MDM and Corporate House, such as annual reports, digital articles and video presentations to professional operators.

3.3.2 Data analysis

One of the challenges for researchers using qualitative study is to transform the data collected in different ways to a comprehensive picture to provide a complete understanding of the case under analysis within its relative context. A critical role in this attempt is the coding step, where the researcher needs to provide meanings out of the informants and organisation data. The coding approach aims to define main themes that can be structured hierarchically. In this way it is possible to distinguishing high-order themes, to provide a general understanding of the case, compared to lower-order codes, to represent more detailed and specific activities. In the Grounded Theory approach, the coding and analysis of data occur in parallel, offering a structure for composing conceptual elements emerging from the data reading, a constant comparison among data, and the conceptualisation of the data.

Glaser and Strauss have structured this constant comparative method in the following four steps (Locke, 2001):

1. Comparing incidents applicable to each category;
2. Integrating categories and their properties;
3. Delimiting the theory;
4. Writing the theory.

In addition to the above steps, Glaser and Strauss introduced the “memoing” activity considered “as a reflexive practice that helps researchers to articulate and conserve their sense-making about what is going on in the data” (Locke, 2001, p.45). This activity is particularly important in Grounded Theory as it helps to capture ideas, develop alternative concepts from the analysis of the collected data, and move from the initial theoretical framework to the relevant theory.

In the following sections, every analytic step has been presented and discussed in detail, except for the fourth step representing the object of the Chapter 4 of this thesis.

3.3.2.1 Comparing incidents applicable to each category

The objective of this first analytical activity is “to assign to multiple data observations a common meaning that is captured or composed in a conceptual category” (Locke, 2001, p.46). To reach this objective, three activities must be performed in parallel, naming the data incidents, comparing data incidents and names, and memoing. These activities can be grouped into the open coding term. A data incident, or fragment, “may be an observed exchange recorded in field notes, a sentence in an interview transcript, or a phrase in a document” (Locke, 2001, p.47). The practice of fracturing the data documents into fragments represents the opportunity for the researcher to step back and analyse the basic elements collected. The aim is to conceptualise these data incidents abstracting from the specific situation from which they have emerged. This activity should be performed by the researcher temporarily suspending “all preconceived notions, expectations, and any previous theorising related to the substantive area” (Locke, 2001, p.46).

The activity of naming the data incidents consists of “conceptualise and develop abstract meaning for the observations or incidents in their data documents by articulating what they perceive is happening or is being expressed in those incidents” (Locke, 2001, p.47). The researcher in this phase aims to generate a broad and multiple ranges of possible interpretations for every data fragment. According to Glaser’s recommendation, this process can be improved by adopting the following generative questions (Locke, 2001, p.69).

1. What is happening?
2. What is the fundamental problem faced by the actors here?
3. What category or what aspect of a category does this incident suggest?
4. What does this incident suggest this is a theory of?

On the other hand, in adherence with their analytical style, Strauss and Corbin recommend using questions, such as Who?, What?, Where?, When?, Why?, How? How much?, etc. (Locke, 2001, p.70).

It is crucial to ensure a strong fit between the name selected and the observed data fragment so that the word chosen provides an easy and purposeful connection with the fragment analysed.

The activity of comparing data happens in parallel with the naming one, and it aims to separate what is similar compared to what is different in the data fragments with the objective of clarifying the structure of the data, distinguishing the stable and recurring elements from the episodic ones. The comparing activity is also important for creating conceptual categories for at least the following two reasons. First, it supports the opportunity of creating a common name or category aggregating multiple fragments, favouring the generation of more general conceptual categories. Second, it improves the ability of naming as, through comparison, the researcher can fine-tune the words used to categorise similar data fragments.

The memoing activity can take place very early, when reading the data, for instance, and support the process of the category's naming and further development, highlighting the features distinguishing different categories. In this regard, writing is the essence of knowing, as naming the categories is a method of developing thoughts in a visible and concrete way (Locke, 2001).

3.3.2.2 Integrating categories and their properties

In this second step of the data analysis, the focus shifts from the data fragments to the conceptual categories and their properties. This activity aims to review all the initial and provisional category names in order to cluster them based on similarities and differences, as recommended by Swanson (Locke, 2001). This practice allows the researcher to increase the level of generality of the working categories. Therefore, the naming and comparing activities are oriented towards working categories and take the name of axial coding, as proposed by Strauss, to develop category's properties, their eventual subcategories and, most importantly, possible relationships among them (Locke, 2001). To fully support the axial coding, Strauss and Corbin proposed using generative questions, such as

Who?, What?, Where?, When?, Why?, How?, and With what consequences?

Moving from the category's properties to conceptual templates with the objective of framing potential relationships among these categories, the coding paradigm activity represents a further step ahead, allowing the researcher to consider different theoretical schemes able to fit with the data under analysis. This additional stage could be supported by the 6 C's questions (Locke, 2001, p.75) here below reported.

1. In what context does it occur?
2. Under what conditions does it occur?
3. What causes it?
4. What are its consequences?
5. Do changes in any category cause change in the others?
6. What is the contingent upon?

Strauss and Corbin (Locke, 2001, p.76) adopted a similar approach but more focused on actions, taking the categories in motion using the following questions.

1. In what context does it occur?
2. What alters the causes?
3. What causes it?
4. What follows from it?
5. What actions/interactions address it?

This second step of the data analysis has been performed, by integrating the initial working category into further categories developed at a higher abstract level, still using the same excel file described in the previous section.

3.3.2.3 Delimiting the theory

The objective of this third step of the data analysis is to develop the theoretical framework to fully support the story that the researcher is committed to telling from the data regarding the phenomenon or social situation studied. To develop this theoretical framework, it is essential to define which of the categories developed in the second step can be considered "core," in terms of dimensions and relationships with other categories. The definition of a category as core, in other words, is based on its ability to "account for the largest amount of the data, occurring most

frequently and centrally, connecting or linking together a significant portion of the analytic elements” (Locke, 2001, p.79). In this step, this activity has been named selecting coding, to describe the analytic actions able to guarantee that the selected core categories, their subcomponents and relationships are properly developed, fine-tuned and saturated. This saturation needs to be performed by referring to the concept of theoretical sampling, representing one of the specific elements of the Grounded Theory approach introduced by Glaser and Strauss. In fact, in addition to the purposeful sampling initially performed to start collecting the data, as presented in 3.3.1 section, at this stage, the theoretical sampling is fundamental to fully develop the working categories and the working theoretical framework. We can say that at this stage, the sampling activity is theoretically driven. With this specific objective, the theoretical sampling in this third step can take the following forms:

1. Sampling decisions to include additional interviewees;
2. Sampling decisions to include additional groups of informants;
3. Sampling decisions to modify the data collection structure (e.g. adding new questions);
4. Sampling decisions to review under a new light generated by the provisional working categories of the existing data set.

The theoretical sampling assumes that the researcher pursues data collection to support the full category development “to the point of theoretical saturation and the attending development of the conceptual scheme until it stabilizes” (Locke, 2001, p.55). In full coherence with the Grounded Theory requirements, shaping the emerging theoretical framework from the data requires that data sampling and analysis should be done as much as possible at the same time. This activity should also be done “maintaining the tension between in vivo and theoretical conceptualizing” in order to develop a “theoretical framework that is both well-grounded and theoretically relevant” (Locke, 2001, p.66). Furthermore, as Grounded Theory fully leverages the pragmatist philosophical stance, a good theory should be “practically useful in the course of daily events” and “to be useful, the theoretical framework must be understandable to people working in the kinds of social situations studied” (Locke, 2001, p.59). Research credibility is ensured through the theoretical sampling of alternative and valuable perspectives to extend the analytical generalisability of the theory. This is particularly relevant and coherent with the DBA tradition as the objective is to develop knowledge in a rigorous way to improve the daily practice of people facing similar situations in other settings.

3.4 Step-by-step data analysis process

This section has the objective of presenting the different steps I have undertaken in the data analysis process to explain how its results have informed the definition of the theoretical framework summarised in Figure 21 (Chapter 4 of this thesis).

Following the structure illustrated in Figure 19, it is important to highlight that data analysis and data collection are inextricably connected and iterative, based on the adoption of the theoretical sampling approach. As the focus in this section is on the way the data have been analysed, this part of the process can be articulated in three steps, as presented by Glaser and Strauss (Locke, 2001):

1. Open coding
2. Axial coding
3. Selecting coding

Here below, every step has been described with the aim of providing complete transparency on how the data analysis has been performed in my research.

3.4.1 Open coding

In the first step of the process, I have adopted a line-by-line analysis, initially considering every interview singularly. To prepare for the analysis, I have defined the data incidents, or fragments, highlighting relevant sentences extracted from the interview transcripts. These data fragments have been then coded as the result of the following three activities done in parallel: naming, comparing and memoing.

To illustrate the different activities I have undertaken, Figure 12 represents an extract of the open coding data analysis performed on the fragments of informant # 1. The complete open coding for the same informant has been included in the Appendix B1, while the Appendices B2, B3 and B4 summarise the same analysis performed for all the other informants. This analysis has been managed through an excel file using the sort and filter functions of a basic database, with different colours used to initially group homogeneous data fragments.

| # | Data Fragment | Working Category I | Working Category II |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| 1 | SMBG market under preasure | Declining attractiveness | Deteriorating Outlook |
| 2 | Declining stripes' price | National Health System budget constraints | Deteriorating Outlook |
| 3 | Market structured in tenders and bids | National Health System budget constraints | Deteriorating Outlook |
| 4 | The incumbent organizations compete on commercial optimization initiatives | Declining attractiveness | Deteriorating Outlook |
| 5 | The incumbent focus was on go-to-market approach, HCP understanding and pharmacy channel optimization | Declining attractiveness | Deteriorating Outlook |
| 6 | The main MDM challenge was to compete in a growing market, driven by the increasing number of patients, with a declining % margins | Market Dynamics | Business model assessment |
| 7 | This paradox was a crucial warning to start thinking in a different way about the way to compete in the market | Market Dynamics | Business model assessment |
| 8 | To measure how well the business model was allowing MDM to compete in the market, the single business model components as well as the relationships among components have been considered | BM Inter-Components measure | Business model assessment |
| 9 | KPIs as the Net Sales and Division Margins have been connected to patient satisfaction to understand the interrelations among components | BM Components measure | Business model assessment |
| 10 | The patients were not satisfied with the solutions offered by all the manufacturers | BM Components measure | Business model assessment |

Figure 12: Open coding data analysis extract by informant– own elaboration

The data fragments have been extracted from the interview transcript of informant # 1, and they represent the opportunity to analyse the basic elements gathered, taking the appropriate distance from the situation presented. In Figure 12, the fragments are reported in the “data fragment” column maintaining the words expressed by the informants.

I have then named the data fragments applying the generative questions recommended by Strauss and Corbin, such as who?, what?, where?, why?, how?, how much?, in order to define the context in which the informant was operating and the main challenges she/he was facing at that moment. The names I have selected have been picked for their ability to provide a robust fit with the data considered. For instance, the data fragment “market structured in tenders and bids,” included in row # 3 of the Figure 12, has been initially named under the working category “NHS budget constraints.”

While naming the data fragments, I have started to compare them to group similar data in homogeneous clusters and differentiate the stable and recurring themes from the episodic ones. This was the first attempt to structure the data with the intention to preliminary define the emerging insights. For instance, comparing data incidents I have grouped into the same cluster data fragments initially assigned to specific names. Indeed, “market structured in tenders and bids” data

(row # 3 in Figure 12), initially named “NHS budget constraints,” and “the incumbent organisations compete on commercial optimization initiatives” (row # 4 in the Figure 12), initially named “declining attractiveness,” were assigned to a common working category, named “deteriorating outlook.”

The memoing activity has been performed transversally across the first two activities above reported. It can be described as the reflective practice supporting the definition of ideas, the development of concepts emerging from the data analysis and the overall progression from the initial theoretical framework to the final theory.

After completing the initial naming of every data fragment for every informant, I have compared the category developed in the different interviews to detect some common patterns and differences. The categories developed during this initial step have been considered 1st order codes, based on the indications provided by Gioia and Chittipeddi (1991) and Corley and Gioia (2004).

The different contributions have been then summarised in a single scheme, whose extract has been reported in Figure 13 (Appendix C includes the complete scheme).

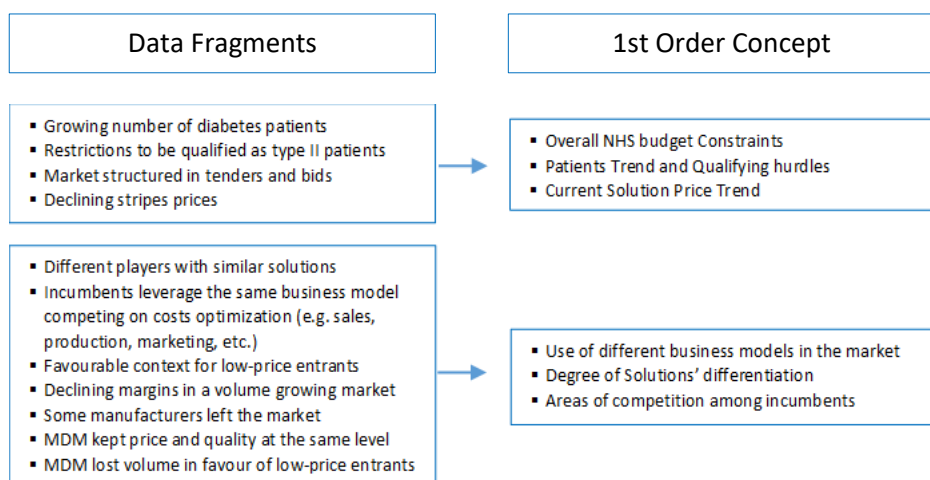


Figure 13: Summary of the open coding data analysis extract– own elaboration

For instance, building on the same example selected above, the data fragment “market structure in tenders and bids” has been coded as supporting a specific 1st order concepts cluster including “overall NHS budget constraints,” “patients trend and qualifying hurdles,” and “current solution price trend.” On the other hand, the fragment “incumbents leverage the same business model competing on cost optimisation (e.g. sales, production, marketing, etc.)” has been coded as

supporting a different 1st order concepts cluster, including “use of different business models in the market,” “degree of solutions’ differentiation,” and “areas of competition among incumbents.”

3.4.2 Axial coding

In the second step of the data analysis, called axial coding, I have shifted the focus from the data fragments to the 1st order conceptual categories developed as a result of the open coding performed in the first data analysis step and reported in Figure 13.

The objective of the axial coding was to develop the properties of the categories, check the potential presence of subcategories and define potential relationships among them.

This task has been strongly supported leveraging a set of questions recommended by Strauss and Corbin specifically focused on actions, with the aim of taking these categories in motion. The questions used have been articulated in the following way: in what context this category occurs; what alters the causes; what causes it; what follows from it; and what actions and interactions address it.

In Figure 14, I have reported an extraction of the full scheme developed as a result of the axial coding (Appendix D includes the complete scheme).

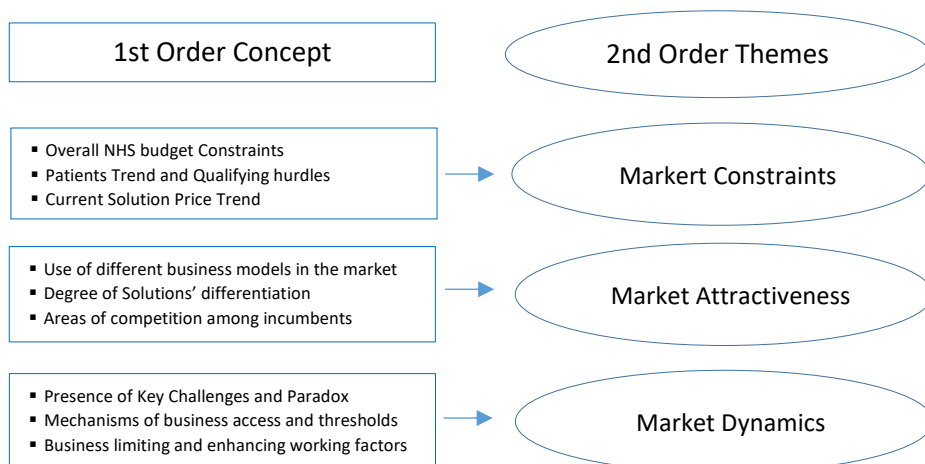


Figure 14: Axial coding data analysis – own elaboration

In this step, the initial 1st order concepts have been clustered into categories developed at a higher, more abstract level in order to consider different theoretical models potentially fitting with the data under analysis. The focus on the informants adopted in the first step has been moved towards the

theory in this second step.

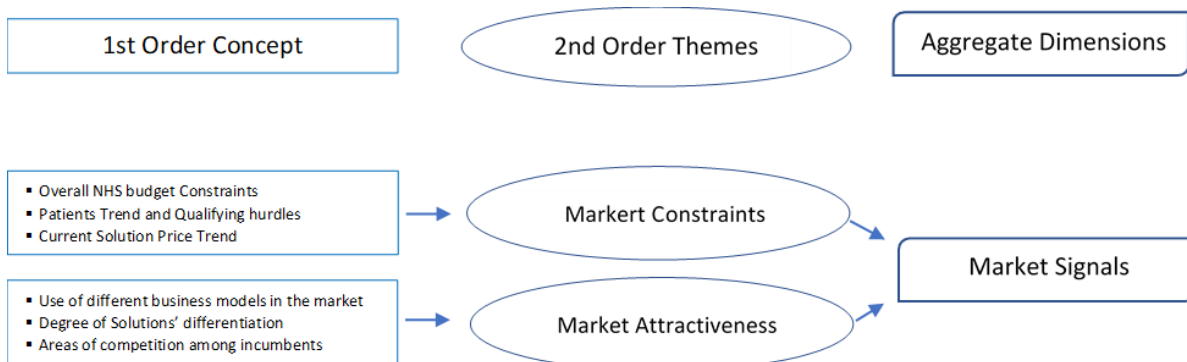
Using the example described in the first step, all the concepts describing the “overall NHS budget constraints,” “patients’ trend and qualifying hurdles,” and “current solution price trend” fully support the 2nd order theme named “market constraints.” This results from applying of the Strauss and Corbin’s action-oriented questions, more specifically answering the ones checking the context, business competitiveness, and causality, whose elements represent the root cause of the market conditions limiting the growth opportunities for the incumbents.

On the other hand, other 1st orders concepts, such as the “use of different business models in the market,” “degree of solutions’ differentiation,” and “areas of competition among incumbents,” all converged in defining a certain level of “market attractiveness.”

These emerging categories’ properties and relationships have provided an initial set of elements to draft a preliminary theory about the business model assessment and innovation performed in the MDM organisation.

3.4.3 Selecting coding

In the third step of the data analysis, called selecting coding, I have worked on the 2nd order themes developed as a result of the previous step to define which could have been considered “core” categories. A category can be defined core based on its ability to integrate a large amount of data, measured by the frequency of its use, and on its ability to make sense of a relevant portion of the analytic elements considered. The objective I have pursued in this step was to develop the theoretical framework with the aim of fully supporting the story about the phenomenon under study by leveraging the data gathered. Figure 15 represents an extract from the full structure represented in Figure 20 (Chapter 4) to illustrate the actions performed in the selecting coding step.



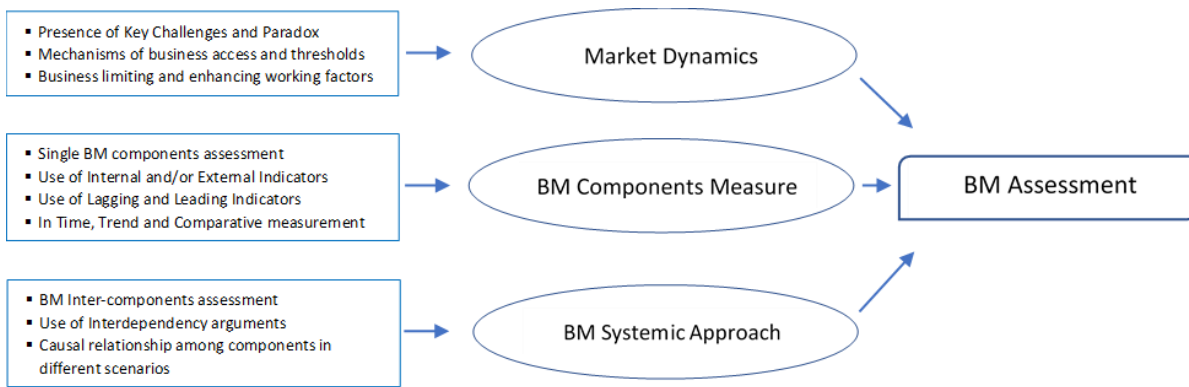


Figure 15: Extract from the full data structure – own elaboration

Using the same example developed above, both 2nd order themes named “market constraints” and “market attractiveness” have been considered relevant to affect the higher aggregated dimension defined “market signals.” In this analytic activity, the story starts to take form, whereby relevant signals about the market are expressed by both the external conditions that somehow limit and constrain the incumbents’ growth opportunities and the strategies these incumbents can adopt to compete in the market successfully.

The core categories selected have been the ones I have considered more relevant based on the following two parameters: the volume of data fragments able to be explained by the category, and the level of interdependency these categories were able to present with other categories of lower relevance. I have also found particularly useful working on the aggregated dimensions generated from a higher abstraction of the 2nd order themes to start delimiting the explanation of the process managed in the MDM organisation in the form of a comprehensive and accurate story about their business model assessment and innovation (Corley and Gioia, 2004). I have adopted the theoretical sampling approach to ensure that these categories, their eventual subcategories, and their relationships have been fully developed, fine-tuned and saturated.

In my research, I have applied the theoretical sampling approach in two different ways. First, re-structuring old questions and adding new questions to informants strongly positioned to support the development of specific working categories to their higher-construct level. In Table 6, I have reported the informants involved in a second and even third round of interviews as part of the theoretical sampling approach. Second, reviewing the interview transcripts under the light of the emerging working categories and the insights captured in the memos taken during the second step of the analytic activity to fully appreciate their contribution to the overall theoretical framework.

This categories' saturation has been useful to support the development of a comprehensive theoretical framework.

The findings of this third step have been summarised in the whole theoretical framework presented in Figure 21 (Chapter 4).

3.5 Grounded Theory considerations and limitations

In this section, the objective is to provide considerations about the appropriateness of the Grounded Theory in studies of management and organisations and, at the same time, highlight the tensions and constraints to which researchers adopting this approach are exposed.

Some management and organisational studies focus on improving the understanding of areas linked to decision-making, socialisation and change process. Additionally, these topics need to be analysed at the individual and group or organisation levels, requiring a constant interplay between zooming-in and zooming-out from the collected data. In such specific circumstances, the Grounded Theory is beneficial for the following reasons (Locke, 2001):

1. Capturing complexity;
2. Linking well to practice;
3. Supporting theorising of new substantive areas;
4. Enlivening mature theorising.

The Grounded Theory approach is well suited to capture the complexities within the context where the action unfolds, allowing the researcher to appreciate the details as well as the unifying aspects of a specific topic because of "its ability to produce a multifaced account of organisational action in context" (Locke, 2001, p.95).

With regard to the contribution to practice, it is relevant to introduce the concept of pragmatic usefulness as Grounded Theory "is particularly adept at bridging theory and practice, providing employees and managers with a way to identify and institute changes that might improve their situations" (Locke, 2001, p.96). A similar position has been taken by Partington, highlighting that Grounded Theory is very focused on contributing to the contemporary management research "aimed at advancing the interests of the practice" (Locke, 2001, p.96). In addition, based on Partington's perspective, this approach is able to unlock the tacit knowledge of organisational actors

to the extent that they develop a grounded normative model considering the actions of managers interested in implementing organisational change initiatives (Locke, 2001).

Regarding the ability to support theorising in new substantive areas, this approach has been successfully used in situations of strategic decision-making in volatile contexts, as adopted by Eisenhardt and Bourgeois, as well as researching about the organisational ability to achieve continuous change, in the case of Brown and Eisenhardt (Locke, 2001).

Finally, Grounded Theory is considered beneficial to advance a new and fresh perspective and theorising to established theoretical areas by updating the theoretical frameworks to stay aligned with the change organisations are currently exposed to.

That approach has shown its advantages to support my objective of creating a theoretical framework able to capture the actions along the overall process, highlighting the mechanisms and conditions that enable the move from one step to the next one, while still maintaining a focus on the overall organisation's need to stay relevant for its patients.

Despite the highlighted advantages, there are also limitations and tensions researchers should be aware of in order to develop appropriate strategies to minimise their potential impacts. These tensions are particularly evident in the step of assigning meaning to data, as they seem to show some contradicting messages. These tensions can be summarised in the following statements:

1. Becoming totally immersed in the data and, at the same time, getting a perspective about the personal thinking to fully articulate thoughts and to examine them critically;
2. Creating names that closely fit the data and, at the same time, creatively abstracting from them to achieve a higher level of generality;
3. Avoiding to early adopt existing theory and, at the same time, cultivating theoretical sensitivity.

The implications coming from the first tension can be mitigated involving other people, external to the research to discuss and respond to the researcher's thinking generated by the data analysis, with the objective to have a different and confronting perspective to consider. With regard to the second tensions, Mintzberg highlights the importance of the creative leap in the theory-building process, whereby the researchers should be comfortable to move back and forth between two poles: "at the one pole, exploring what is imaginatively and poetically evoked by the text inscribed in their data documents and at the other pole, confronting the concrete language terms of the text"

(Locke, 2001, p.88). Finally, the third tension can be managed by diversifying the possible sources of ideas to explain the data and their relationships theoretically. Glaser and Strauss fully support this approach and acknowledge that it can differ depending on the specific researcher's style and approach. Ultimately, the researcher should be able to activate creative and alternative sources of thinking about what is happening and, at the same time, reconcile the insights coming from the diversified approach while explaining the same data (Locke, 2001).

A series of strategies ensure the credibility of the Grounded Theory that the researcher should be comfortable with. During my study, I have managed the tensions described above in the following ways.

I have managed the risks associated with the first limitation adopting strategies able to create and show a clear link between the data gathered, the concepts developed and the overall theory, and creating a narrative where the own thinking is well balanced with the original data inserted throughout the text. This balance can be achieved when the pre-existing knowledge creates favourable conditions, as opposed to offering ready solutions, for an open mind approach to be applied by the researcher, supporting the emergence of new and original concepts from the data under analysis. The data analysis process described in section 3.4 of this chapter and the different schemes included in the Appendices clearly illustrates the output of the process followed in the different steps and improve the transparency of the approach adopted. The data gathered have also been triangulated with data gathered from MDM and Corporate House websites, online magazines and YouTube material.

To manage the second limitation, I have adopted the theoretical sampling approach, following Strauss and Corbin's recommendation (Locke, 2001). This strategy has ensured various perspectives and a numerosity of observations that can fully develop categories and theoretical framework until their saturation. The different rounds of interviews with the different informants have been summarised in Table 6.

Finally, to properly manage the limitations associated to the third tension, I have relied on the extensive use of the analytic techniques supporting the iterative process of data coding, incidents comparing, category development and memo writing. This approach has created the conditions for the emergence of the theoretical framework to fit the data while, at the same time, allowing space for alternative explanations to be considered. A detailed account of the analytical techniques adopted in the different steps of the data analysis is presented in the different parts of

sections 3.4, to the benefit of any review.

The strict implementation of the above strategies brings rigour and credibility to the research findings generated through the adoptions of the Grounded Theory informed approach.

Chapter 4 Business model assessment and innovation: the MDM case

4.1 Introduction

This chapter aims to present the findings coming from the analysis of the data collected from an established organisation operating in the diabetes market, here called MDM, with regard to its business model assessment and innovation process recently performed. This organisation is part of a large corporation active in the healthcare space, here called Corporate House. To help the navigation among the different sections of this chapter, Figure 16 introduces a summary of their content and main focus.

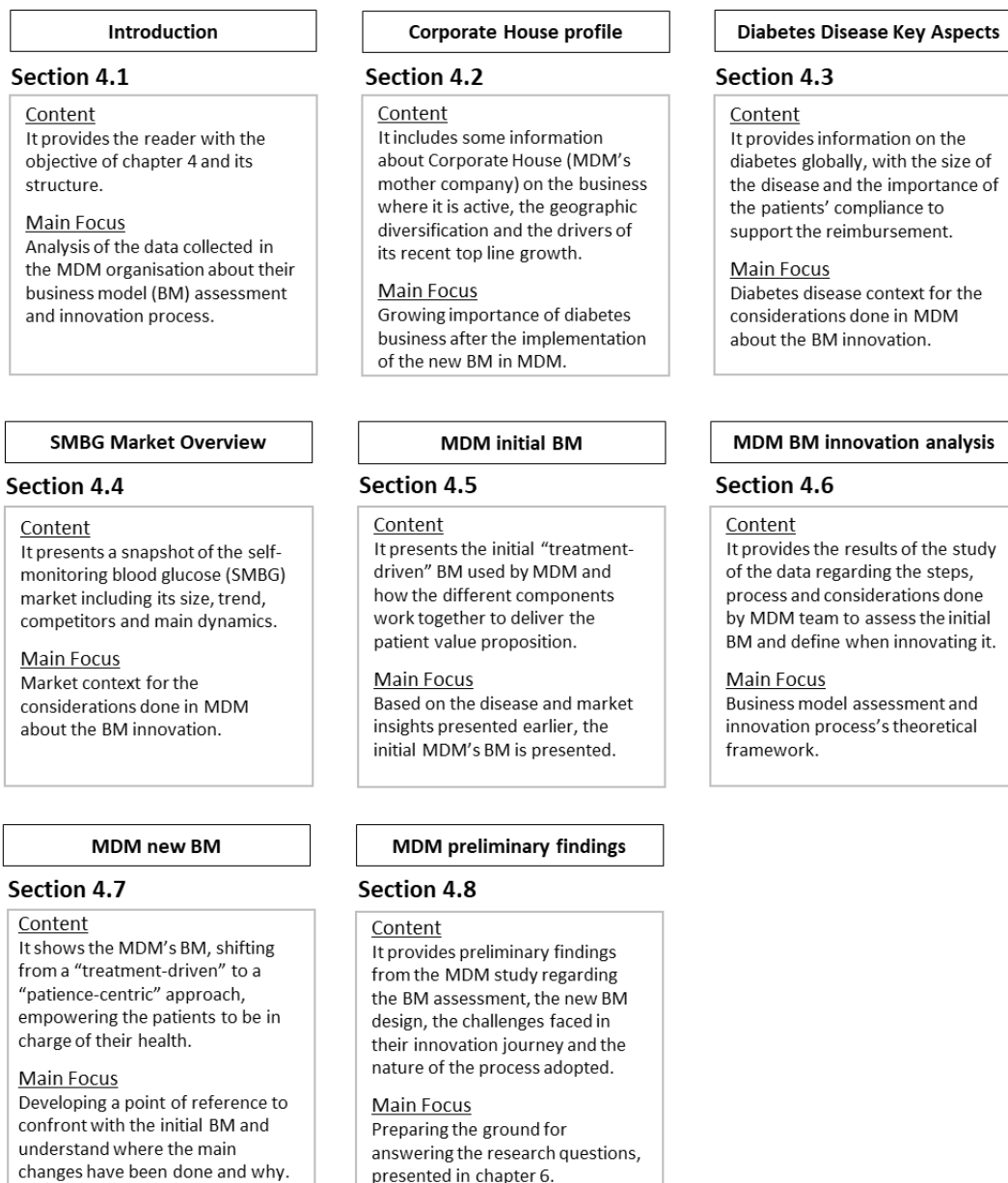


Figure 16: Chapter 4 navigation scheme – own elaboration

In line with the Grounded Theory guided approach, the presentation of the findings of this research is based on a combination of “extensive theoretical presentations and illustrative live excerpt from the setting” (Locke, 2001, p.116). This zoom-in and zoom-out approach is obtained by alternating between “telling” and “showing” during the research journey, through the model of “analytically forward to the developed theoretical elements and back to the data” (Locke, 2001, p.116). More specifically, based on Booth’s contribution, the researcher “shows” when presenting the detail observed in the settings accurately and “tells” when explaining the significance attributed to the detail (Locke, 2001).

4.2 Corporate House profile and business context

Corporate House is a globally diversified healthcare company offering a wide range of innovative products aligned with the dominant trends in the healthcare space, in line with what the company has done since its foundation, more than 100 years ago.

In terms of business diversification, Corporate House operates in businesses such as medical device, diagnostic, pharmaceuticals, and others, with a balanced approach in terms of business source as 50% of sales are direct to consumers and patients, and the remaining 50% is managed through customers. The company is constantly shaping the business portfolio to be present in the markets with the strongest growth opportunities, avoiding being over-exposed to a specific technology, therapy, geographical area, and payer. It has a global presence, with about 70% of the sales coming from markets outside its domestic market. In addition, 50% of the sales outside the domestic market are from emerging markets, where healthcare spending is growing at a higher rate compared to the GDP evolution. To maintain its market relevance, the company focuses on countries with a growing middle class and ageing population that can access to better healthcare solutions. The four businesses contributing to the sales have been summarised in Figure 17:

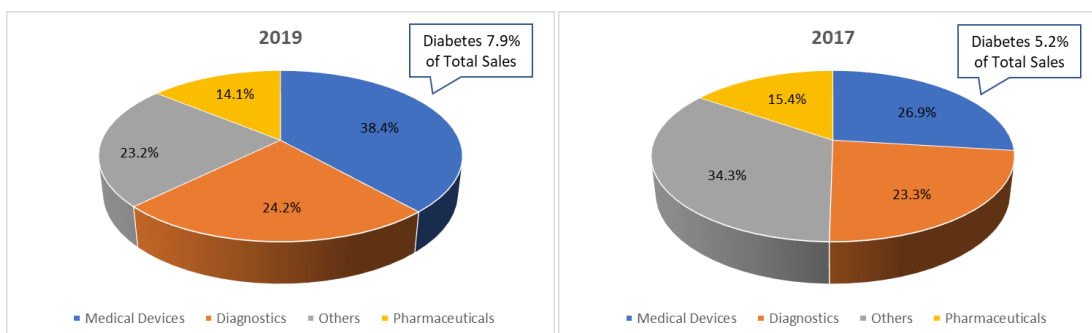


Figure 17: Corporate House sales by business 2017/2019 - Source: own elaboration on 2019 Annual Report

The diabetes business has been one of the growth drivers of the medical devices business in the period 2017 - 2019. The diabetes business has increased its relevance, both internally and in the market, after the decision to change the business model in conjunction with the launch of an innovative continuous glucose monitor device (CGM), initially introduced in some countries in 2014.

In the following sections, the diabetes disease key aspects and the SMBG device market are presented to provide a context for the MDM business model innovation.

4.3 Key aspects of the diabetes disease

Diabetes is a chronic disease generated by two different conditions; when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces.

At a global level, a recent study (Saeedi et al., 2019) estimates that about 463 million adults were living with diabetes in 2019, representing 9.3% of the global adult population (20-79 years). It is expected to reach 578 million adults in 2030 (10.2% of the global adult population) and 700 million adults in 2045 (10.9% of the global adult population). Comparing the latest numbers with the 108 million adults of 1980 provides a dramatic indication of the impact this disease is expected to have in the near future. Table 8 offers a summary of the key indicators trend in the period 2019 to 2045:

| At a glance | 2019 | 2030 | 2045 |
|---------------------------------------------------------|-------------------|---------------------|---------------------|
| Total world population | 7.7 billion | 8.6 billion | 9.5 billion |
| Adult population (20-79 years) | 5.0 billion | 5.7 billion | 6.4 billion |
| Diabetes (20-79 years) | | | |
| Global Prevalence | 9.3% | 10.2% | 10.9% |
| Number of people with diabetes | 463.0 million | 578.4 million | 700.2 million |
| Number of deaths due to diabetes | 4.2 million | - | - |
| Total health expenditures for diabetes ⁱ | USD 760.3 billion | USD 824.7 billion | USD 845.0 billion |
| Hyperglycaemia in pregnancy (20-49 years) | | | |
| Proportion of live births affected | 15.8% | 14.0% ⁱⁱ | 13.3% ⁱⁱ |
| Number of live births affected | 20.4 million | 18.3 million | 18.0 million |
| Impaired glucose tolerance (20-79 years) | | | |
| Global prevalence | 7.5% | 8.0% | 8.6% |
| Number of people with impaired glucose tolerance | 373.9 million | 453.8 million | 548.4 million |
| Type 1 diabetes (0-19 years) | | | |
| Number of children and adolescents with type 1 diabetes | 1,110,100 | - | - |
| Number of newly diagnosed cases each year | 128,900 | - | - |

ⁱ Health expenditures for people with diabetes are assumed to be on average two-fold higher than people without diabetes.

ⁱⁱ Age-adjusted prevalence.

Table 8: Global diabetes estimates and projection – Source: IDF (2019, p.35)

Diabetes also significantly impacts the National Health Systems (NHSs) and people when the patients bear these costs. The direct costs associated with the disease in 2019 are expected to be \$760 billion compared to an estimated \$825 billion in 2030 and \$845 billion in 2045, with an 8.6% and 11.2% increase respectively, compared to 2019. This represents a considerable impact as no economy is expected to grow at that rate in the same period, resulting in a growing portion of the overall healthcare spending allocated to diabetes. The incidence of diabetes on the total healthcare spending ranges from 8.3% in Europe to 19.4% in Central and Latin America (IDF, 2019). To complete the picture, indirect costs are expected to represent 34.7% of the total costs associated with diabetes, estimated at \$1.31 trillion in 2015 (Bommer et al., 2017). The four main drivers of these costs are labour-force drop-out, mortality, absenteeism and presenteeism, with the first two elements representing 48.5% and 45.5% contributions, respectively.

4.4 Self-monitoring blood glucose market overview

As indicated in section 4.3 above, one of the critical interventions to manage diabetes is the self-monitoring of the blood's glucose, allowing patients to stay on top of their health to adjust their diet, physical activity and medication based on the glucose level regularly tracked.

To monitor their blood's glucose, patients mainly use a lancet device to prick their skin and get a blood sample; the blood will be gathered through specific strips then inserted in a glucose meter to read the glucose level. The frequency of self-monitoring the blood's glucose is also fundamental because lack of regular monitoring predicts hospitalisation due to diabetes-related complications (Kirk and Stegner, 2010). Most of the patients still use the self-monitoring device, but more recently, the same activity can be performed using a continuous glucose monitoring solution, a less invasive way to monitor the blood's glucose level.

The SMBG market had continued to grow for several years at a double-digit rate till 2008 (when it reached a value of \$8.8 billion globally), when it started to register a slower value growth. This was the result of the combination between growing volume and a declining consumer price, as the strips have started to be considered a generic product by patients and insurers (Hughes, 2009).

From a competitive perspective, four leading players account for about 90% of the market at a global level, with the following value market shares:

- Roche: 30.8%;

- LifeScan: 27.2%;
- Bayer: 16.3%;
- Abbott: 15.4%;
- All others: 10.3%.

The same manufacturers have dominated the market for many years, confirming the challenge for new entrants to break into it. Generally speaking, this difficulty can be summarised in the following entry barriers:

1. Increasing competitive bidding in pharmacy formularies for the preferred manufacturer;
2. Limited shelf availability at the pharmacy level, also considering the increasing presence of private labels brands;
3. Limited opportunity to influence diabetes specialists and nurses to recommend a new product with limited improvements in an already crowded market;
4. High investments required to differentiate the offer from the existing competitors in order to sustain a premium price.

The SMBG market expected growth can benefit from the following elements:

1. The growing population of diabetes patients (from 108 million in 1980 to 463 million in 2019) driven by the obesity epidemic, the overall world population growth and the ageing population in many developed countries;
2. Expanding economies with growing affluent people in China, India and other Asian countries;
3. Better education of diabetes patients around the importance of regular self-monitoring of the blood's glucose thanks to the joint effort of HCPs, payers and devices manufacturers;
4. Improvements in SMBG testing technology able to simplifying and make it more convenient to perform the blood test for patients;
5. More robust dialogue and communication between patients and HCPs on how to define a shared plan of actions thanks to the patient data availability.

On the other hand, some constraints are limiting the opportunity for the market growth:

1. Shift of channel of distribution from pharmacy to discounted online delivery;
2. Increased presence of private label brands from drug store and pharmacy chains;
3. Price pressure from NHS and insurers;
4. Lack of resources to be devoted to managing the disease in low and middle-income patients;

5. Challenging educating programmes for patients to explain how the right frequency of testing can improve disease management with a positive impact on their health level.

In the SMBG market, technology plays a vital in bringing relevant product innovation to patients and improving their health conditions. Since 1970, when the first blood glucose tests were introduced, several different improvements have been reached.

Hughes (2009), in his study, reported that, to expand the SMBG market and create the conditions for long-term value growth, one potential solution can be represented by the convergence among technology innovations, patient education and economic incentives.

Over time, the blood glucose meters have changed from the initial bulky devices with many manual steps to more automated and less invasive solutions. The new devices are bringing the following improvements to patients.

1. The blood glucose data can be stored, analysed and transferred between patient and HCP.
2. The test requires less blood volume and generates results in few seconds.
3. The blood sample is becoming less painful as it can be taken from different sites such as the palm or forearm, in addition to the finger.
4. The testing process has been simplified as it does not require any control or coding.
5. The introduction of the continuous glucose monitoring device operating through a sensor implanted under the skin.

Figure 18 offers a representation of the market evolution in terms of devices and technology used:

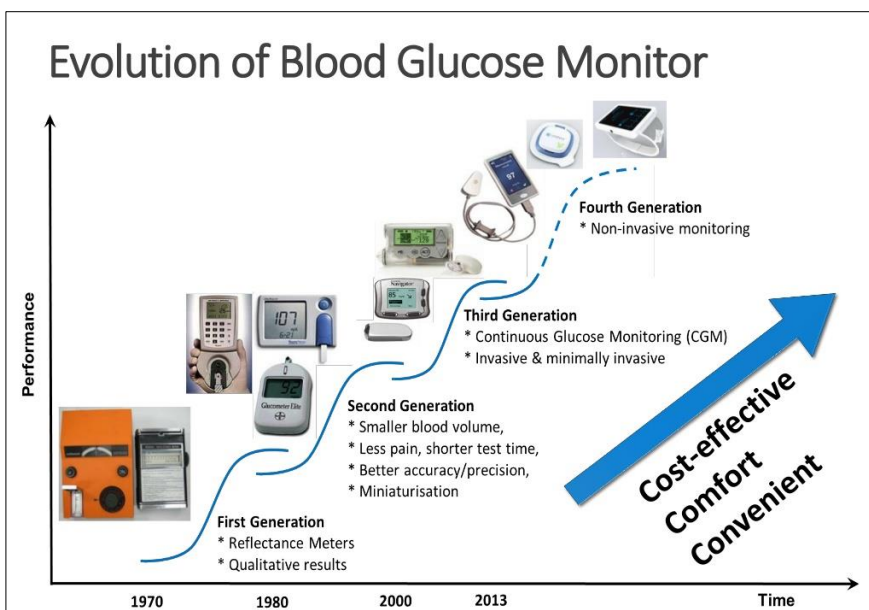


Figure 18: Evolution of blood glucose monitor - Source: Ho et al. (2014) www.slideshare.net

Based on the above comments, Hughes (2009) considers it a challenge for new entrants to craft a profitable space into the SMBG market while for the existing players, the possibility to sustain a profitable market growth is based on:

1. Reaching the “non-user” or increasing the test frequency for those already in the market;
2. Taking market share from the competitors by blending product innovation, marketing and pricing decisions or transforming their business models.

4.5 The initial business model adopted by MDM

Figure 19 represents the logic used by MDM till 2014 to compete in the SMBG market, working on the framework introduced by Johnson (2010).

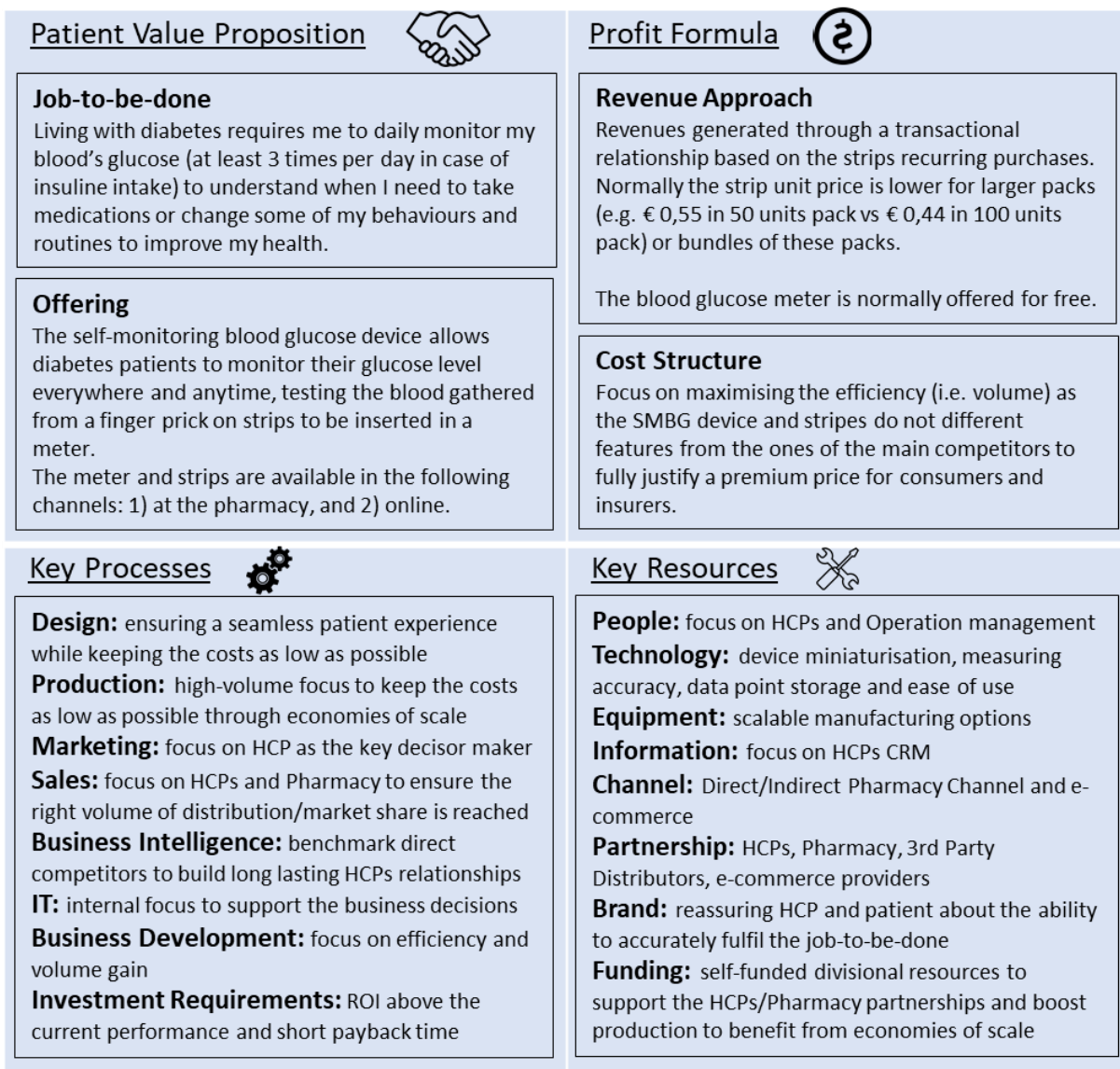


Figure 19: MDM initial BM – Source: own elaboration based on Johnson’s model (2010)

The patient value proposition adopted by MDM has been clearly oriented to helping the patient to perform the blood tests several times a day through the use of a device. Based on the results of these tests, the patient can understand the need for specific actions to bring the glucose to the right level using medications and/or insulin, based on the recommendations of the physicians they are in contact with. Assuming the job-to-be-done perspective presented by Ulwick (2002, p.92), defined as “what consumers want a product or service to do for them,” this proposition allowed the patient to be in control of the diabetes disease, supporting the most appropriate health decisions based on the blood glucose level. To satisfy this patient JTBD, MDM offered a self-monitoring of blood glucose device, a finger lancet device with lancets, and test strips. This offering was available in two channels:

- 1) Community pharmacies;
- 2) Online, through third-party providers (e.g. Amazon).

One important consideration is that the offering was well-suited to perform the glucose screening but has been associated by patients with a relevant pain point, represented by the need of the finger pricking necessary to take the blood sample, especially because this activity was requested several times both during the day and night. This critical element is further analysed in the section 4.6, in the business model assessment part.

The revenue stream was based on a recurring transactional relationship with the patients regarding the strips as the meter was usually provided free of charge and distributed through the recommendation of the HCPs. The strips’ price per unit varied depending on the pack size selected, with a lower price per unit as the pack size increased. Based on a recent on-line price analysis (done in March 2020), on average, the price per unit was € 0,55 in a 50-units strips’ pack compared to € 0,44 in a 100-units pack; the unit price can be even lower for bigger packs or bundle-packs in case of special offers.

In terms of cost structure, the MDM cost mix reflected the choice of investing in supporting the brand as a way to distinguish its offer from the competition. High quality and high price, compared to the market average, and strong support in promoting its brand towards patients and HCPs have been the commercial strategy adopted. To leverage the fixed costs of production and promotion, the focus has been on increasing its efficiency, selecting the initiatives able to offer a higher return on investment (ROI). This was the reason for the strong focus on the number of

patients enrolled in the MDM solution at the lowest possible level of investment to benefit from the consequent economies of scale from production.

In summary, maximising the efficiency through volume increase was the way to keep the P&L in line with the corporate expectations. The key resources to create and deliver the patient value proposition can be summarised as follows:

- 1) Strong partnership with the HCPs and pharmacy owners/managers; the HCPs were critical in the diagnosis of the disease while the pharmacists played a role in the selection of the brand bought by the patient at the point of sales;
- 2) People skills to match the scientific requirements for serving the HCPs and the commercial requirements to manage the pharmacy channel;
- 3) Production equipment with the objective of improving the unit cost through appropriate economies of scale;
- 4) Technology to deliver smaller and better transportable devices, able to guarantee an ease of use and an accurate measurement of the glucose level and to store enough data point to support the physician in providing suitable recommendations to the patient;
- 5) Brand equity, considered the vehicle to reassure both HCPs and patients about the reliability of the solution.

The above resources were interdependently linked with the key processes representing how the fundamental tasks have been performed. Key resources and key processes interplayed to deliver in a distinctive way the value proposition that resonates with the targeted patients in a profitable and sustainable manner. In the case of MDM, these key processes were related to:

- 1) Product design and production, to ensure a seamless and affordable experience to customers;
- 2) HCPs and the pharmacy channel understanding and engaging in activities to build a long-lasting partnership through appropriate use of the brand.

Based on the general system theory, where “a system is composed of interrelated parts or elements” (Kast and Rosenzweig, 1972, p.450), we can present the business model as the combination of the following elements. The partnership with HCPs and the pharmacy channel is essential to support the adoption of the MDM solution by patients to control their disease. Understanding and effectively engaging with these partners creates the conditions to generate the volume to improve production and promotion efficiency. All the initiatives put in place by MDM

need to be scrutinised based on their expected ROI as the business model's success depends on the ability to improve the level of efficiency among the interdependencies of its components.

Although able to generate positive results, this business model could not unlock all the potential value of the market despite the increasing demand; the majority of the competitors adopted the same logic in the presence of a dissatisfied patient with the result of creating pressure on the NHS budget. In addition, the declining price of the strips, as a way for the NHS to manage the increasing number of patients, convinced some players to adopt a low-price strategy.

The following sections aim to present how the MDM leadership team managed the extant business model assessment to define how to structure its innovation, in the competitive context presented above.

4.6 MDM extant business model assessment and innovation process analysis

Adhering to the guidelines provided by the Grounded Theory guided approach, the field observations, including interviews, company documents, internet articles and presentations, have been analysed and broken into fragments to be named using the open coding approach (Corley and Gioia, 2004).

This initial step to thinking in terms of “multiple possible interpretations” has been conducted with the support of the “generative questions” recommended by Strauss and Corbin (Locke, 2001), as highlighted in section 3.3.2.1 of Chapter 3.

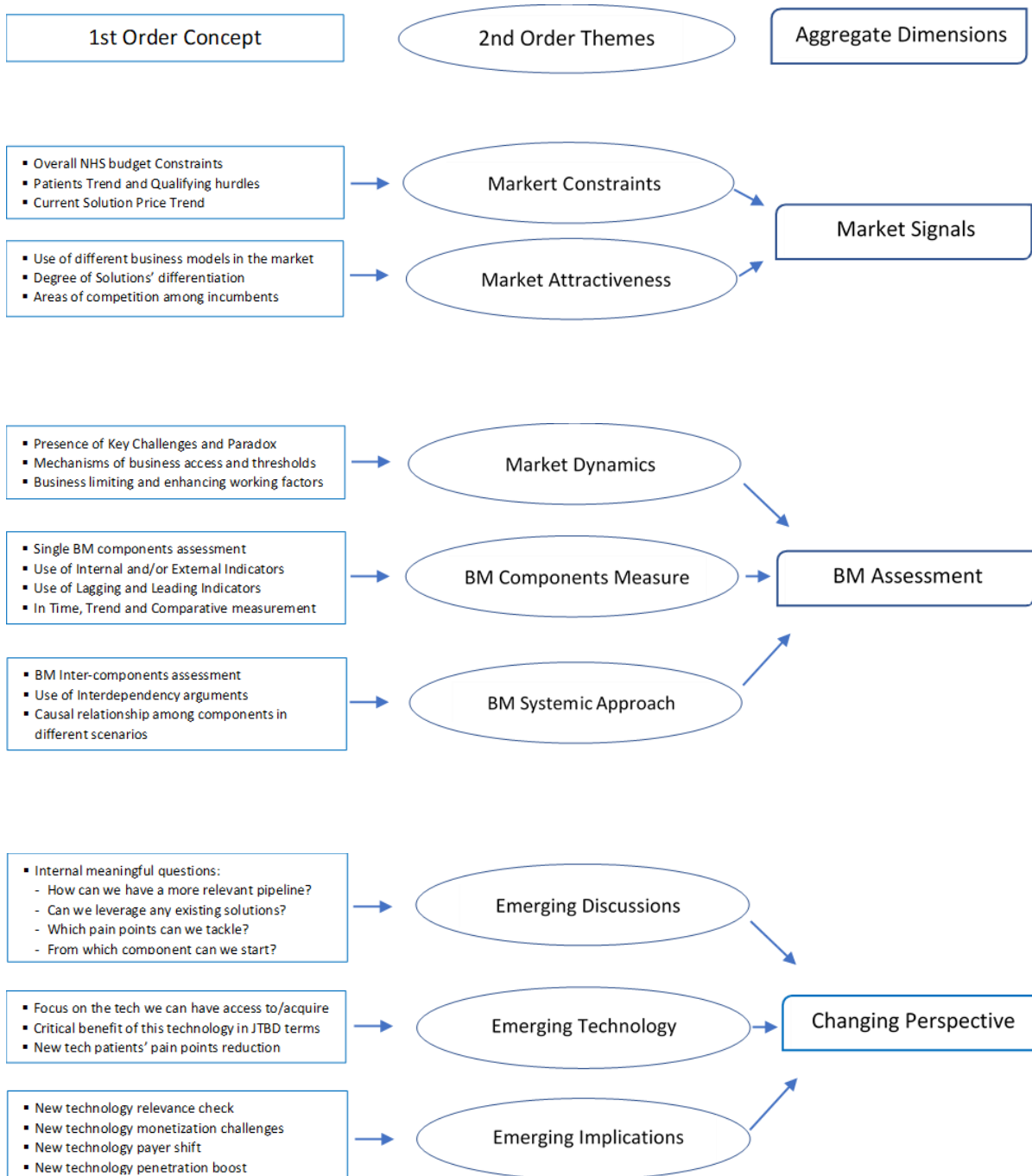
The result of this initial data analysis, necessary to move from data fragments to more general working categories to form the 1st order concepts, is included in Appendix C.

The following step of the analysis has been the axial coding, where the focus moved from the data fragments to these working concepts, intending to define their relationships and integration in order to cluster them into higher 2nd order themes (Corley and Gioia, 2004).

These themes have been then evaluated to consider their joint relationships in defining the impact on the “overarching dimensions” that represent the building blocks of the emergent framework.

This approach has been reiterated until the moment that transparent theoretical relationships have emerged in a way the 2nd order themes have been reduced in the critical elements to represent the business model assessment and innovation framework.

In Figure 20, the data structure is reported with the 2nd order themes and their aggregation at the higher dimensions level.



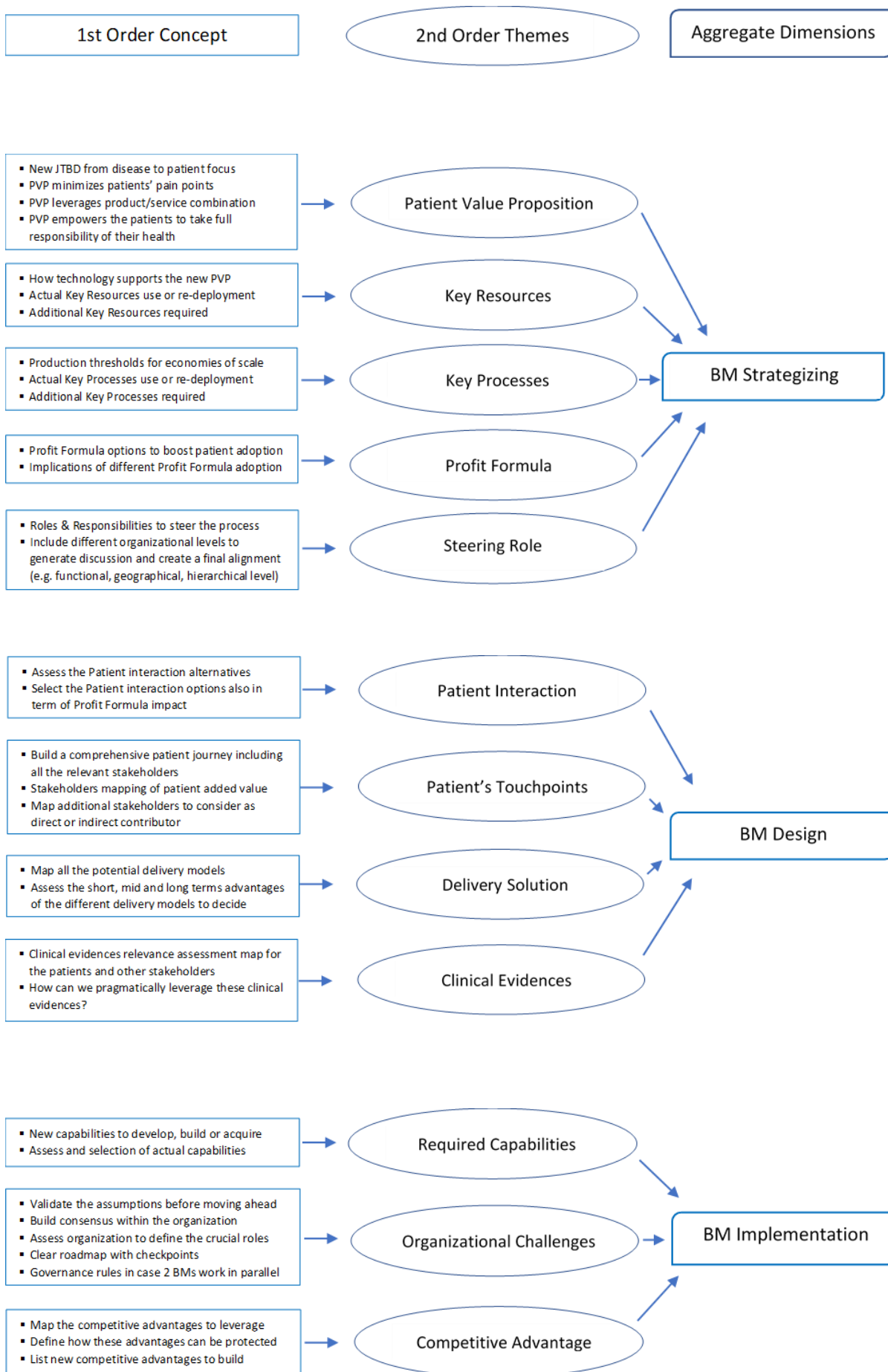


Figure 20: Full data structure – own elaboration

The data structure summarises the evolution from the 1st order concept to the 2nd order themes representing the basic elements able to shed light on the process of the business model assessment and its innovation. In contrast, the 3rd order aggregated dimensions, resulting from the grouping of the previous themes, bring the advantage of the synthesis to define the emergent theory framework.

As the different 2nd order concepts start to create a theoretical framework, the critical elements are represented by comparing these elements to understand their features and relations to each other. This process has the objective “to clarify the story they have to tell about the phenomenon or social situation that was studied” (Locke, 2001, p.52).

In Figure 21, the overall MDM business model assessment and innovation process framework is summarised:

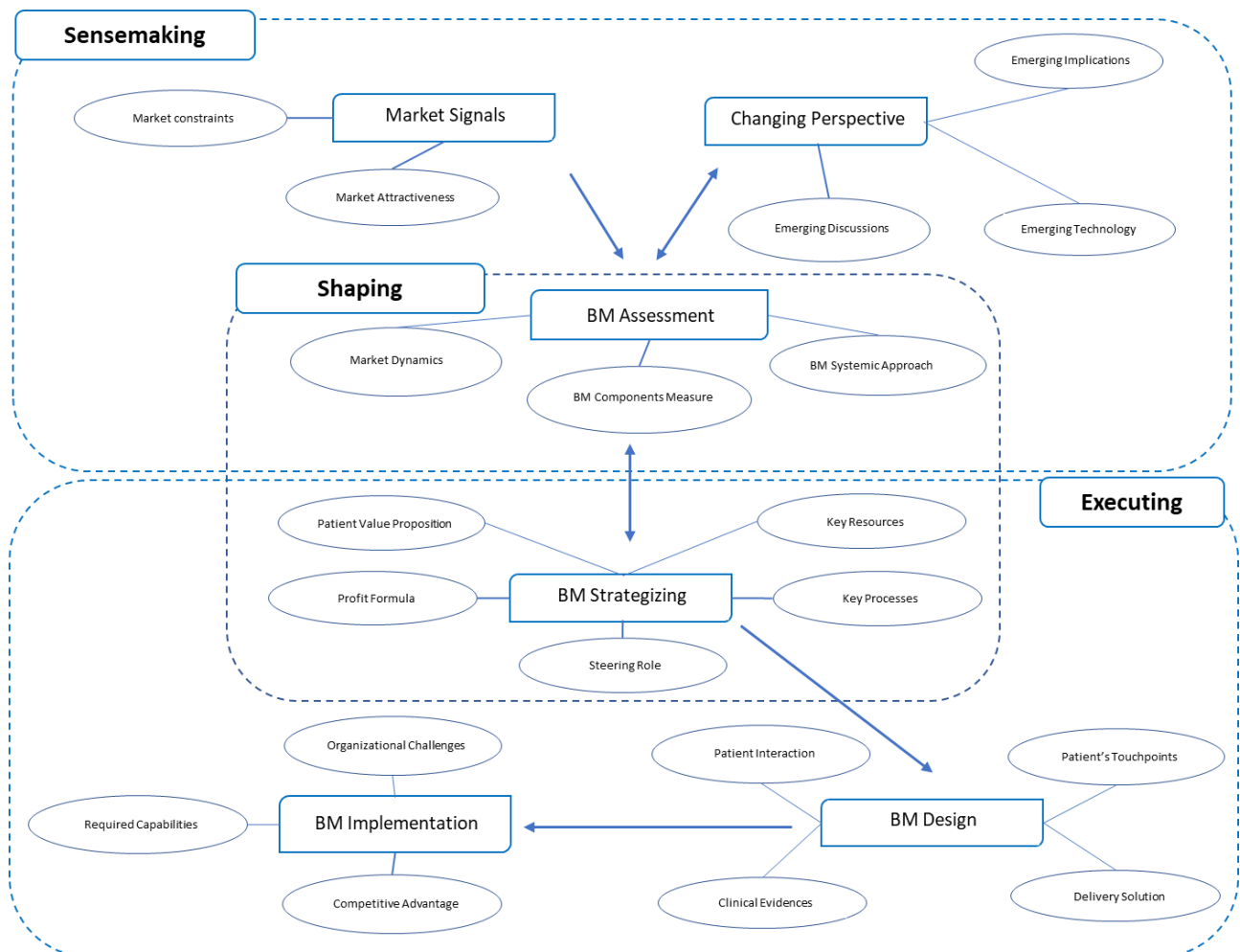


Figure 21: BM Assessment and Innovation process framework – own elaboration

4.6.1 The Sensemaking Phase

The sensemaking phase results from the interplay among three different as well as interconnected dimensions: the market signals, business model assessment and changing perspective, whose progress has been triggered and determined by specific themes.

In line with the contribution of Morrison et al. (2005), regarding the ability of the business model to prosper when consistency is achieved both internally, among its components, and externally, between the decisions taken at the components level and the conditions of the external environment, this initial phase of the overall process represents a relevant step corresponding to the moment when the MDM team started to sense a fundamental shift in the basic assumptions to compete in the diabetes market.

4.6.1.1 Market Signals

The first element considered in the sensemaking phase has been the market signals dimension supported by two main themes, the market constraints and the market attractiveness. Both themes have been able to provide inputs to understand and test the ability to maintain the organisation's relevance in the market. This approach can be considered fully coherent with Teece's indication (2010, p.191), as "a business model cannot be assessed in the abstract; its suitability can only be determined against a particular business environment or context." One element of the market constraints considered by the research informants has focused the attention on the specific nature of the diabetes market as a reimbursement-driven business, where the NHS budget largely covered the costs of the different treatments. This condition offered the opportunity for a large number of patients to have a sustainable access to the approved therapies, but, at the same time, it represented a limitation when the healthcare budgets were under pressure due to the forces described in sections 4.3 and 4.4 above. As the Commercial Executive has expressed: "*the glucose monitor business was under pressure due to reimbursement limitations in most of the EU countries led by healthcare budget restrictions.*" These restrictions were driven by the increasing number of diabetes patients and had two consequences. First, it led to the declining unit price of the strips, supported by the NHS through the tender mechanism to mitigate the impact of the increasing number of patients in need of treatment. Second, it solicited more stringent medical guidelines for type II diabetes patients to qualify for reimbursement. This situation was not easy to reverse, as the strips' declining unit price opened up the market to low-cost manufacturers, able to get access to patients for an extended period of time (in line with the tender duration, typically spanning from 1 to 3 years). As MDM decided not to compromise on quality by reducing their strips price to be more

competitive, *“the effect of the low price competitors with the constant attention of the health authorities to keep their budget under control, defined the situation where MDM were not anymore included in the formulary of products that could be prescribed by physicians,”* noted by the Marketing Manager. As explained in section 4.3, the growing number of patients affected by diabetes and its growing incidence on the total healthcare spending were both clear indicators of the lack of long-term sustainability of this model of care.

In the market attractiveness theme, the informants were focused on understanding the signals regarding the dimension and intensity of the competition among the market players. On this theme, high emphasis was given to the relative strength the different competitors could leverage to support their performance ambitions. All the different analyses converged around the fact that the competitors were operating through a similar business model, focusing on supporting the HCPs to recommend their own solutions and help patients control their diabetes. In the case of the low-price manufacturers, despite a different priority assigned to the components of the business model and a different mix of resources allocation on the touchpoints of the patient journey, the business model adopted was, in substance, quite comparable to the one adopted by the high-price players. According to the Marketing Manager comment, *“all the [competitors] use the same business model, leveraging physicians and pharmacists support and making money from the sales of strips while giving for free the meters.”* Similar considerations have been provided for the solutions offered as the devices, despite some minimal elements of differentiation, were very similar to each other, not providing any element to support a price premium in front of patients, payers and insurers. Using a comparable business model and offering an almost undifferentiated solution created the conditions for competition based on price and cost optimisation among the incumbents. This situation offered different points of contact with the strategic circumstances, often requiring to consider a new business model, like the need to defend from low-end competitors anticipating a shift in the basis of competition, as illustrated by Johnson (2010). The areas of competition have been then represented by the different initiatives focused on improving the efficiency in performing the key processes included in their business models, such as sales management, demand generation, marketing programs execution, production and supply streamline. *“All the companies were focused on cost reduction to keep their business profitable with the consequent limited investment in R&D to support potential innovation,”* as presented by the HR Executive. The Regional Executive provided a similar perspective, adducing that *“all the manufacturers were competing to defend their market share optimizing their go-to-market approach, better understanding the HCPs and pharmacy*

channel to intercept patients to be served." In summary, the market signals included in the market constraints and the degree of competition made the diabetes market quite unattractive for MDM, despite the increasing number of patients in need of treatment. In Table 9, further supporting data are included relative to the market signals dimension.

| Theme | Representative Quotations |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Market Signals |
| Market Constraints | <p>"The overall market of diabetes care at the time of the strips business paradigm was very challenging with volume growth driven by patients increase but decreasing in value due to low-price competitors entering the arena" (HR Executive)</p> <p>"MDM was always focused on delivering high quality and to guarantee the best performance of its solution to diabetes patients" (Marketing Manager)</p> <p>"The traditional business based on the strips model was under pressure due to the new low-price entrants supported by the constant budget constraints of the National Health System (NHS) around Europe" (Regional Executive)</p> <p>"The effect of the low-price competitors with the constant attention of the health authorities to keep their budget under control defined the situation where MDM, in certain territories, where not anymore included in the formulary of products that could be prescribed by physicians, unless specific and written justifications have been provided by the doctor" (Marketing Manager)</p> |
| Market Attractiveness | <p>"The companies working in the industry were mainly competing on commercial optimization, to fit the organisational profile with the changing environment" (Commercial Executive)</p> <p>"To successfully compete, MDM was focusing mainly on HCPs to drive consumption towards our SMBG solution"; "Detailing and clinical evidence about the accuracy of the MDM solution were the principle items to compete in the market" (Regional Executive)</p> <p>"In an almost undifferentiated business with big players like Bayer, Roche, J&J and Abbott and the growing presence of competitors mainly competing on price, the diabetes market presented several unfavourable aspects" (HR Executive)</p> |

Table 9: Representative quotations regarding the market signals dimension

4.6.1.2 Business Model Assessment

Three themes supported the business model assessment dimension: market dynamics, business model components measure and business model systemic approach. This part of the research has highlighted how the market signals observed by the MDM team have been interpreted using the lens of the current business model to test its level of relevance when facing the emerging market constraints.

A basic element emerging from the market dynamics theme was presented by the Regional Executive, considering that *"the main challenge of MDM at that time was to be in a growing market, driven by the increasing number of patients with the disease, with declining margins and market share."* This situation was the consequence of the elements presented in the market signals

dimension. The MDM team has considered it a crucial element to reflect on the possibility of competing in the market still leveraging the original business model or considering potential alternative solutions to improve its market relevance. As highlighted during the discussions with the Regional Executive, *“this contrasting situation was a crucial warning for the division to start thinking in a different way about how to compete in this growing business in a sustainable and profitable way.”* This challenge was also exacerbated by the contextual presence of non-compliant patients generating extra costs for their treatments (e.g. costs associated with the patients’ hospitalisation) putting even more pressure on the NHS budget and directly impacting the strips business.

With the number of patients expected to reach 578 million globally by 2030, which equals to an increase of 24.8% compared to the 463 million patients in 2019, the diabetes market has been considered very important to support the MDM’s growth ambitions as soon as a viable solution could be developed to serve this vast potential market profitably.

Regarding the business model components measuring, this task was regularly performed to understand if the extant business logic was able to deliver the expected results and detect early signals of its deterioration. This is particularly important because approaching a business model innovation attempt involves a high level of risk (Chesbrough and Rosenbloom, 2002; Johnson, 2010; McGrath, 2010 and 2013) and should be supported by “a large enough opportunity to warrant the effort” (Johnson et al., 2008, p.57). Based on these characteristics, understanding under which circumstances and when is the right moment to undertake a business model innovation process in an established organisation is crucial to increase the chances of success. With regard to the established organisation element, Chesbrough and Rosenbloom (2002, p.550) highlight the problematic nature of this innovation attempt by considering that an “heuristic logic is required to discover an appropriate business model, and an established corporation’s “sense making” task will be constrained by its dominant logic, which is derived from its extant business model.” Regarding the temporal aspect of when to start the business model innovation, embracing Nunes and Breene’s (2011, p.82) point of view that “long before a successful business hits its revenue peak, the basis of competition on which it was founded expires,” every organisation should be able to assess the “hidden curves” or detect the “fault lines,” as presented by Bertolini et al. (2015), to be in the position to develop early warnings of the market upheavals and prepare for a change.

On this theme, the research informants converged on a shared understanding of the fact that *“the business model assessment at that time was based on the single components as well as on how these components relate to each other,”* as expressed by the Regional Executive. This means

that a set of indicators were used to measure the performance of the single business model components to understand how the overall business logic was performing in addition to a systemic consideration, considering how the changes affecting one component could create an impact on the other related components.

Figure 22 includes the main indicators used to assess the performance of the single business model components:

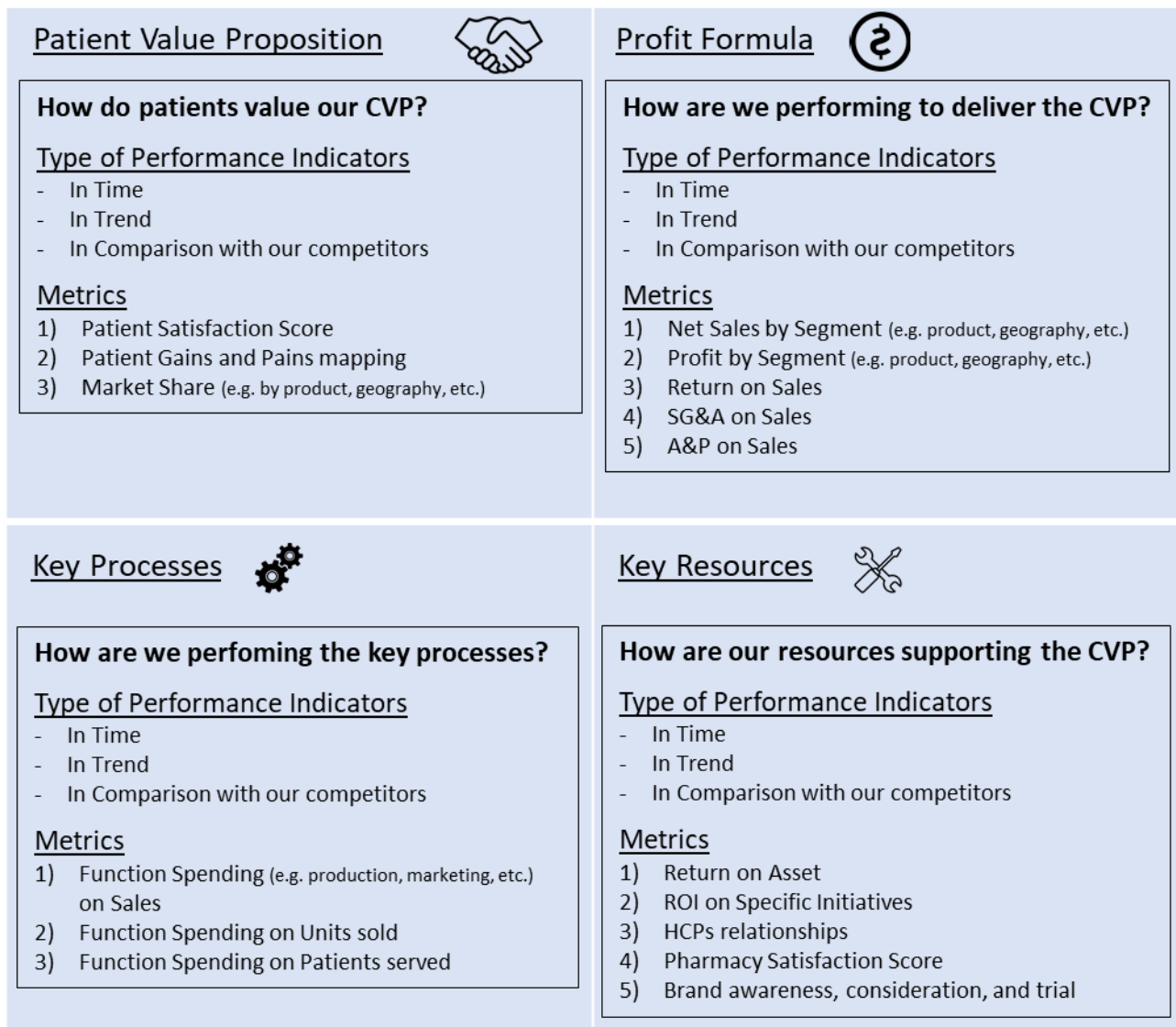


Figure 22: Business model single components assessment – own elaboration

During the conversations with the MDM informants on the way to assess their business model, the following elements emerged.

- 1) All the different single components were periodically assessed, using both internal and external sources of data as well as lagging and leading indicators.
- 2) The assessment normally has three different dimensions:
 - a. absolute assessment at a point in time (i.e. monthly, quarterly, annual assessment);
 - b. trend assessment, confronting multiple data points in perspective;
 - c. relative assessment towards an external benchmark.
- 3) Some systemic assessments were performed when the performance measure of one component was related to potential implications on other components.

Regarding the patient value proposition, MDM measured the ability to maintain its relevance for the patient through a series of indicators, such as patient satisfaction score, patient gain and pain points in comparison with the offerings of the other competitors and the market share. It is important to note that, while the market share can be considered a lagging indicator, both patient satisfaction and patient gain and pain points represent examples of leading indicators. Lagging indicators informed the organisation of the past, while leading indicators were able to provide indications of future performance. Both the indicators are important, and a balanced approach is necessary, especially during situations of a high rate of change. What an organisation was able to reach in the past does not necessarily represent a good indication of its ability to stay relevant for its patients in the future.

The profit formula has been assessed using the net sales by segment (e.g. geography areas, patient segments, etc.) as well as the profit by segment, the return on sales (ROS), SG&A (i.e. Selling, General & Administrative Expense) on sales and A&P on sales (i.e. Advertising & Promotion). All of them are lagging indicators, and, while the first two are expressed in absolute amount (i.e. sales and profit value from a specific segment in a specific period of time), all the others measure, respectively, the efficiency of transforming the sales into profit, how much spending in SG&A is necessary to deliver a unit of sales and how much investment in A&P is necessary to deliver a unit of sales.

Focusing on the key resources, the main performance indicators used have been the return on asset (ROA), the HCPs relationship, the pharmacy satisfaction score, and brand awareness, consideration and trial. The ROA can be considered a lagging indicator, while all the others are leading indicators to a different extent.

With regard to the key processes, function-specific performance indicators have been considered comparing the output with the resources absorbed by the processes performed by these functions. These outputs were the value of the sales generated, the number of units sold, or the number of patients served in a specific period of time. The functions considered were the ones indicated in the business model (design, production, marketing and sales, business development and IT) to focus on the most relevant to deliver the patient value proposition.

Monitoring these indicators had the objective of evaluating the business model's efficacy and efficiency from different perspectives. The patient value proposition and the profit formula were important to understand if the business logic was still relevant. At the same time, the key resources and key processes measures were oriented to understanding the level of efficiency in delivering the patient value proposition.

Considering all these indicators in isolation could easily drive an organisation towards a blind spot. In fact, a situation where the net sales trend presented a moderate growth paired with a declining profit margin and market share, could be fairly associated with an overall positive and sustainable situation. It was a typical situation characterised by additional competitors entering the market and incumbents forced to sacrifice part of their margins to defend their market shares.

This approach of business model assessment could support leaders to consider the situation as a mix of challenging and still favourable conditions, creating a moderate sense of urgency regarding the timing to start working on an alternative business model. It is then essential to introduce the systemic approach, to bring the inter-components link theme and include an additional perspective in the way to assess the extant business model. As registered during the conversations with the Regional Executive, *"If you only see those indicators [the single components ones], despite some deterioration in the margins as % of the net sales, the overall business was quite profitable and could have been expected to maintain such profile in the medium term."* This was probably the general understanding of the business situation by the majority of the incumbents. The Regional Executive then added, *"If you combine this reading with a broader perspective of the business model including, for instance, the customer value proposition, you can clearly see that patients were not satisfied with the solution provided, not only from MDM but from all the manufacturers."* Going beyond adopting the most familiar financial indicators and market share data, this additional point of observation offered a new perspective on the effectiveness of the business logic employed until that moment. The lack of correlation between the customer satisfaction and the financial metrics, represented one of the early signs to consider for the market

shift (Bertolini et al., 2015). This approach discussed how some considerations emerging or affecting one component of the business model could generate implications in other components, taking a system perspective in the assessment attempt (Demil and Lecocq, 2010).

The patient dissatisfaction with the solutions available in the market was mainly concentrated on the finger pricking expected to be performed several times a day, depending on the patient's health conditions and the HCPs' recommendation. Non-compliant patients meant higher risks of running in critical situations, like hypo glycemia, contributing to severe health consequences. These critical situations could easily require the hospitalisation of the patients, with additional pressure on the NHS budget and, consequently, on the market players' performance through the mechanism discussed in the market constraints theme. A non-sustainable profit formula also impacted the key resources and key processes' efficiency used to create and deliver the patient value proposition. This overall understanding of the business model could not have reached unless the single components' assessment was combined with the systemic perspective. This approach differs from the ones described in section 2.4.3 of the literature review, as the attention of the different contributions has been mainly oriented towards the individual business model components assessment.

MDM detected a warning situation through the holistic business model assessment that can be summarised as the growth paradox. The diabetes market was growing, driven by the increasing number of patients, but despite the net sales slightly growing, the margins on sales and market share declined, in line with declining patient satisfaction. Going more in depth, the volume growth was counterbalanced by a lower value per transaction, driven by the lower unit price per strip due to new low-price competitors entering the market. From a patient perspective, a lower price per strip could have been associated with a higher test frequency by the existing patients. However, this was not the case because finger-pricking was one of the most important barriers for the patients to comply with the daily frequency of the test and a constant argument for patient dissatisfaction with the available offerings. The manifestation of this paradox was the moment when the MDM team realised that the extant business model was not solid enough to move forward; its revision was needed, starting from the focus on how to deliver a stronger and compelling new patient value proposition. Using Bertolini et al.'s (2015, p.94) words, "when an industry reaches an inflection point, old ways of measuring success can lead to a sharp decline-or failure."

In Table 10, additional supporting data for the business model assessment dimension are presented.

| Theme | Representative Quotations Business Model Assessment |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Market Dynamics | <p>"This environment became favourable for low cost suppliers in a market mainly served through tenders and bids"; "Margins were clearly under pressure while volume was growing" (Commercial Executive)</p> <p>"In a business mainly driven by NHS reimbursement, patients' dissatisfaction [i.e. not compliant patient] is not only an interesting measure to understand your consumer but it is a critical indicator" (Regional Executive)</p> |
| BM Components Measure | <p>"The initial business model assessment has been done focusing on its components like value proposition, using as indicators market share and patient satisfaction, while the profit formula has been assessed considering net sales and margins. To assess the Key Resources some benchmarks have been done to compare MDM solutions to the main competitors in terms of product features, technology, external stakeholders' engagement, channel management and brand equity. Regarding the Key Processes, MDM defined clear rules to manage new projects in terms of expected ROI and strict guidelines with respect to ethics and compliance interacting with patients, HCPs and GOs (Government Officials)" (Marketing Manager)</p> <p>"Critical measures were the P&L indicators (e.g. Net Sales and Division Margin) and Market Share" (Regional Executive)</p> |
| BM systemic approach | <p>"The business model assessment at that time was based on the single components as well as on how these components relate to each other" (Regional Executive)</p> <p>"If you start to see these relationships among the different business model components, in this case the revenue model and patient value proposition, you see the strength of the current model in a different perspective compared to look at the components in isolation" (Regional Executive)</p> <p>"The lower the patients monitor their blood glucose the higher the risk of hypo glycemia causing not only risk for the patient health but also the need for hospitalization with the consistent costs associated" (Regional Executive)</p> |

Table 10: Representative quotations regarding the business model assessment dimension

4.6.1.3 Changing Perspective

The main themes supporting the changing perspective dimension have been the emerging discussions, the emerging technology and the emerging implications. In this step of the process, the MDM team used the business model assessment insights to consider how a new paradigm to compete in the diabetes market could emerge thanks to the discussions triggered by the market signals.

This reflective step of the sensemaking phase has contributed to forming within the MDM team a new perspective to think about their business model in a different and alternative way.

To actively confront the new market situation with the assessment done at business model level, the MDM team members immersed themselves in a sort of meaningful internal reflection, raising questions whose answers could be used to provide some guidelines on how to approach the emerging discussion theme. As reported by the Commercial Executive, the discussion initiated from

considerations on the combination of patient and solution, raising questions like *“how can we make our pipeline more meaningful?”* Additional elements considered in this discussion were oriented to understanding if existing solutions were already available to be considered within the organisation, even if not fully developed, to be considered. There were promising elements to consider in this direction; *“it was already available, a continuous glucose monitoring device for type I patients, representing only a small portion of the overall diabetes patient category,”* as pointed out by the Commercial Executive. The focus was on exploring new ways of reducing the patients’ pain points, as *“reinforcing the patient compliance was critical to serve more patients but to do that, the solution should be less painful compared to the current technology,”* as emerged during the discussion with the Regional Executive. MDM already served type I diabetes patients with an accurate continuous glucose monitoring device that was too expensive for a broader adoption among type II diabetes patients and with a limited user portability. Working on a simplified version of this device, originally developed for type I patients, to make it available for type II patients, could have represented an attempt of disruptive internal innovation for MDM, according to the position of Christensen et al. (2015). Therefore, the starting point of the discussion was oriented towards exploring possible internal solutions that could represent an initial point of reflection on the objective of reducing the patients’ pain points to improve their level of compliance.

The second theme tackled was focused on combining the required technology to deliver a patient value proposition able to overcome the limitations of the SMBG solution. The discussion at this point was more technical, oriented to scanning the organisation and the market about the availability of a technology to minimise the patients’ pain points. During the discussions with the Regional Executive, this point emerged as *“you need to check if you have the technology and other resources to deliver this service and which processes are critical to deliver it.”* The internal evaluation was also supported by the solutions available within the organisation as part of an acquisition realised by MDM in the first half of the 2000’s, which focused on the sensors technology development. This emerging technology was considered promising and coherent with the objective of the MDM team to craft a new and compelling patient value proposition. These sensors were considered as a viable supporting element for a new patient value proposition thanks to the possibility of monitoring the glucose in the fluids present in the interstitial skin, not anymore in the blood.

The emerging discussions and technology considerations brought the MDM team to considering the implications coming from the potential application of the ideas selected. In the

emerging implications theme, the MDM team reflected on the elements to consider and understand if the new course of action were to be pursued. The focus shifted from the technology to the new patient value proposition, with the impact the adoption of this technology could have generated to the organisation in terms of its relevance, the ability to be monetised, the different stakeholders' perspective and the speed of patients' adoption. In full coherence with the contribution of Chesbrough and Rosenbloom (2002), the business model provides the leaders of an organisation with the understanding of how to unlock the value potential of new technologies in order to convert them into profitable consumer's solutions. As clarified during the discussion with the Commercial Executive, *"MDM considered that a sensor and a reader represented an interesting concept for patients and consumers but it does not in front of payers, only interested to lower the budget spent per patient on diabetes considering the growing number of patients affected."* Suppose the sensor technology could have been positively accepted from the patient perspective as solving the limitations of the daily finger-pricking from a reimbursement perspective. In that case, this solution should have been backed up with data and evidence to start the discussion with the NHS about the potential advantages offered. This element opened up new topics related to market access and clinical trial studies that were not part of the extant business model. In addition, this approach made clear the relevance of moving the focus from the disease to the patient, fully understanding the patient perspective. Table 11 summarises some supporting data relative to the changing perspective dimension.

| Theme | Representative Quotations Changing Perspective |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Emerging Discussions | <p>"This was the time where a promising technology could have been explored to manufacture a different device" (Commercial Executive)</p> <p>"If a company could improve the patient pain points, this will help the patient and the NHS" (Regional Executive)</p> <p>"The continuous glucose monitor systems have been used by type I patients to manage their conditions and take insulin when necessary while the SMBG has been used more by type II patients" (Marketing Manager)</p> |
| Emerging Technology | <p>"MDM was already working on exploiting the new technology offered to consumers by the continuous glucose monitor" (HR Executive)</p> <p>"MDM had a very accountable continuous glucose monitoring device"; "The limitations of this device were its robustness and the fact that it was expensive, which cost ranging from \$ 1,500 to \$ 2,000" (Commercial Executive)</p> <p>"The opportunity to move the discussion forward came with the sensor technology advancement, allowing patients to measure their blood glucose through the fluids present in the interstitial skin" (Regional Executive)</p> |

| | |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Emerging Implications | <p>"As the NHS approval for the reimbursement of this new device was not guaranteed at the beginning, MDM decided to work with charity and patient associations to get access to diabetes patients" (Marketing Manager)</p> <p>"The second step was to build clinical evidence to prove that this concept generates better outcomes" (Commercial Executive)</p> <p>"This new approach DTC (direct to consumer) required to consider in an active way the patients' associations" (HR Executive)</p> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Table 11: Representative quotations regarding the changing perspective dimension

4.6.2 The Shaping Phase

During that phase, the MDM team applied the sensemaking gained in the initial phase to shape a potential new business model, involving all the components under a dynamic perspective. At that stage, two main dimensions were involved, business model assessment and business model strategising. Considering the former has already been discussed earlier as a critical dimension of the sensemaking phase, it is essential to clarify its dual role. While in the sensemaking phase, the assessment was performed to the extant business model, in this phase, the assessment has been performed on the emerging business model. In other words, the business model under construction has been tested using the market dynamics, single components and inter-components link logic performed in the sensemaking phase.

4.6.2.1 Business model strategising

The business model strategising dimension has been based on the following themes: patient value proposition, key resources, key processes, profit formula and steering role. In practice, these themes have touched the different components' content and relationships to shape a new business model. This step has been performed in line with Zott et al.'s (2011, pp.1031-1032) contribution: a "business model cannot be represented as a linear mechanism for value creation, from supplier to customers as it involves a more complex, interconnected set of exchange relationships and activities among multiple players."

The most significant change in shaping the new business model has been the move from a disease-centred approach to a patient-centric perspective, "*... a major shift has been represented by the intention to build and constantly improve a direct to consumers experience to create a solid loyalty between them and MDM,*" as admitted by the HR Executive. From a similar stance, the Commercial Executive echoed the HR Executive mentioning that "*... with this new project, we had*

started to consider the patients from a different perspective." Therefore, the JTBD shifted from supporting the patients to control of their disease to allowing them to live their best possible life despite the disease. This was ensured by providing the patients with all the information to take full responsibility for their health conditions, in a minimally invasive way. The MDM's offering to support patients with their new JTBD was a CGM solution able to minimise the pain points associated with the previous SMBG device. The patient-centric focus also triggered a change in the product concept, strongly reinforcing its service component. The massive amount of data potentially available through the sensors supporting the CGM solution represented the value-added element of the new offering to fully empower the patient to understand better how the disease affects daily life and how to consciously change behaviours regarding food, lifestyle, exercise, and stress, based on personal evidence.

From the key resources' perspective, the discussion was around the sensor development as being able to allow the patients to monitor their blood's glucose through the fluids in the skin interstitial. Therefore, the focus has been placed on how to improve the patient value proposition reducing the patient pain points due to the finger-pricking, still ensuring a high level of accuracy. To ensure that, MDM developed a small (i.e. comparable to the € 2 coin size) and accurate sensor, whose calibration had been developed at the company level during the manufacturing process and performed under controlled laboratory settings. The factory calibration advantage consisted of eliminating the initially required blood test to align the traditional blood reading with the new fluid reading. The calibration is a process of alignment between the glucose presents in the blood and the same information read through a device and coming from the skin fluid. This technology improvement has made it possible to overcome the burdens of blood glucose monitoring through blood sample moving to a continuous glucose measurement through an enzymatic amperometric sensor measuring glucose in the interstitial subcutaneous tissue. This solution opened a totally new approach in blood glucose monitoring, allowing diabetes patients to take care of themselves differently compared to the previous experience. In a public interview published on the site masdevice.com in 2014, an MDM leader explained that *"our customers told us that the pain, inconvenience and indiscretion of finger pricking were the key reasons they weren't managing their diabetes as well as they should. Addressing these concerns has guided the development of [MDM solution] – a transformational product designed to not only remove the pain of finger pricking but also seamlessly integrate into their daily lives."*

In practice, the technology already available thanks to the CGM for type I diabetes patients was combined with the improvement in the sensors technology and portability to start building a solution to deliver the new patient value proposition. Additional resources needed by MDM to generate the new patient value proposition were also in the areas of deeper patient understanding and access to the market.

In terms of key processes, to support the new patient value proposition, a critical role was played by the following elements:

- 1) Operations to materialise all the technological improvements discussed above;
- 2) New ways of engaging with patients and HCPs;
- 3) New channel of interaction with the NHS authorities and payers to provide evidence about the CGM solution's advantages.

To generate an offering able to be affordable, high importance was assigned to operations. Comparable to the focus on the production of the previous business model, in this new setting, the economies of scale were still playing a relevant role in offering the CGM at a price able to attract a broad number of patients. Finally, patients and HCPs have been considered equally important in the new business model, compared to the much stronger position of the HCPs in the previous business logic. As expressed by the Regional Executive, *"this patient-centric change of approach required a very different mindset and competences not in-house as in the previous model the focus was the HCP."*

The profit formula theme has also been analysed to understand which options were available to get paid by the patients, under the out-of-pocket situations. The initial lack of evidence from clinical studies to clearly support an eventual outcome-based remuneration kept the discussion around the more traditional transactional approach already applied in the previous option. This was an open point to be re-evaluated at a later stage as considered by the Regional Executive, leveraging a *"different model to generate revenue that can be based on the CGM data."*

Regarding the steering role theme, the orchestration of all the considerations presented above during the business model strategising dimension has been done with the support of the MDM top leadership and global commercial team, as *"they led the discussion to highlight how the current performance was not telling all the truth about the mid-term consequences of maintaining the same competitive approach in the market,"* as exposed by the Regional Executive. Considering that the new business model cannot be planned upfront but usually unfolds in the different phases

of the innovation process (Stieglitz and Foss, 2015), leaders play a relevant role in ensuring that adequate resources and total commitment are guaranteed at the right level of the organisation. To ensure a full alignment in the different geographical areas, a steering role has also been assigned at area level to manage all the different emerging perspectives, as offered by the HR Executive *“to overcome these critical points of view, a task force of general managers, marketing and sales directors and market access has been created in every area.”* In this conceptual phase, *“the top management played a crucial role; they used the Blue Ocean approach in several workshops to really challenge the fundamental assumptions of the blood glucose monitor market at that time; their effort was directed to create an attitude and culture to review and challenge all the elements considered as given in the business by all the competitors,”* as clarified by the Marketing Manager. In the MDM case, leaders assumed the *“architect”* role in the sensemaking and shaping phases to move towards a *“moderator”* role in the executing phase, using the Stieglitz and Foss definitions (2015). Table 12 summarises additional supporting data relative to the business model strategising themes.

| Theme | Representative Quotations Business Model Strategising |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Patient Value Proposition | <p>"Under this new technology, MDM moved towards a patient-centric approach, building a solution where the patient was in charge of her own disease, supported by the HCP" (Regional Executive)</p> <p>"MDM saw the opportunity to work on the patient challenge, the pain point of pinching their fingers more times per day to check their blood level" (Commercial Executive)</p> |
| Key Resources | <p>"MDM already served type I patients with a continuous glucose monitor but its cost and usability were not ideal for a larger consumer base. Technically it was possible to work on improving the device and even to skip it later ... The real difference was in the sensors" (Regional Executive)</p> <p>"MDM invested in R&D to improve the sensors' lifespan" (Commercial Executive)</p> |
| Key Processes | <p>"Many meetings and discussions have been done to review all the components of the business model to ensure a good level of fit with each other in a way that make MDM less exposed to other competitors" (Regional Executive)</p> <p>"In this new business model, strong emphasis has also been given to legal (especially with regard to the data privacy management), finance, IT, Public Affair and Market Access, to explain the value of the new device for patients and for the Health Systems in order to get listed in the formulary for reimbursement" (Marketing Manager)</p> |
| Profit Formula | <p>"As a consequence of the previous situation [the lack of initial reimbursement] the initial launch was a direct to patient initiative requiring a cash disbursement for their treatment" (Marketing Manager)</p> |
| Steering Role | <p>"All the Regions built teams to discuss the different elements under evaluation. These teams were formed by the local general managers, regional directors, marketing, sales and market access" (Regional Executive)</p> |

"The quality of the top management using the Blue Ocean workshop was a strong element to fuel the reasoning around the new way of managing the patients under a new business paradigm, in a very different and discontinuous way compared to the other market players" (Regional Executive)

Table 12: Representative quotations regarding the business model strategising dimension

From a process perspective, the strategising process is illustrated in Figure 23 in terms of the sequence of interaction among the different business model components.

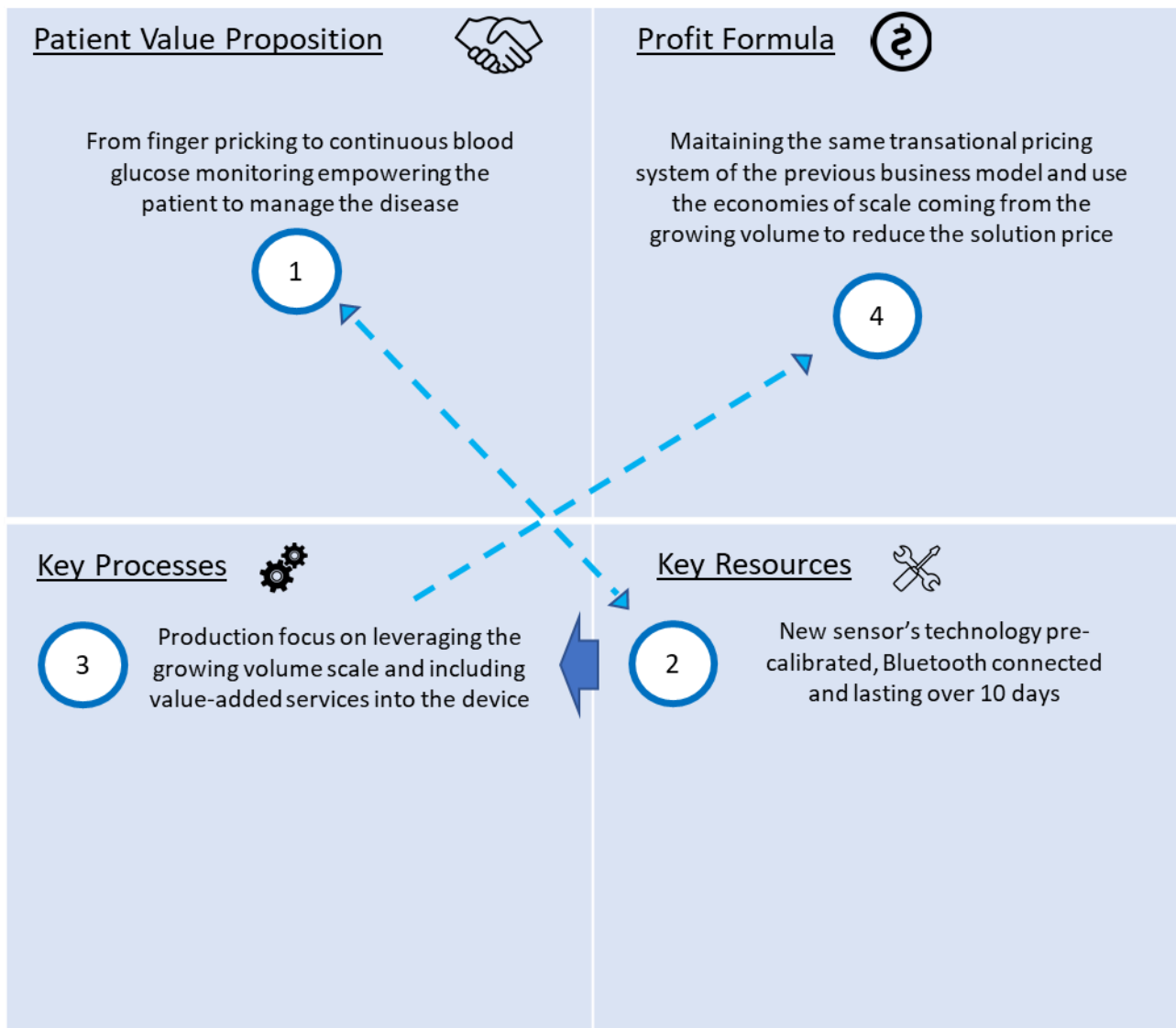


Figure 23: The Business Model Strategising process – own elaboration

The new sensor technology, a critical key resource, was considered solid enough to deliver the compelling value proposition to a patient empowered to take full responsibility for the disease, thanks to the integration of value-added services into the solution (e.g. visibility of 90 days of

recorded data and the possibility to share these data points with a physician and other care givers). This service enrichment resulted from a stronger patient-centric focus adopted by the functions performing the key processes to improve the patient understanding and integration into the organisation. The initial combination of the above three components of the business model has been completed by a profit formula, expressed by a transactional relationship selected in continuity with the previous business logic.

In this initial phase, time was allocated to discuss the initial assumptions about the different components of the new business model from different perspectives (e.g. business functions, geography, scope of responsibility, etc.) to run a “sanity check” before moving into the next phase. Consequently, patients, HCPs, R&D, and operations experts have been involved in providing their inputs and considerations to the MDM leadership team to validate the initial assumptions before moving forward along the process.

One of the critical aspects to be validated was represented by the patient’s acceptance of the new solution as a valid option to satisfy their JTBD. The results from a group of patients after having tested the new solution presented by the MDM team during the 2014 Annual European Association for the Study of Diabetes Conference (diaTribe Learn, 2014) are here below.

- 1) 93% of people agreed that the new solution is comfortable to wear.
- 2) 91% of people agreed that it is easier to check the glucose with this system compared with others.
- 3) 83% of people agreed it was painless to apply the sensor.
- 4) 96% of people agreed that the solution provides an easy and discrete blood glucose check.

These encouraging results provided the MDM team with good reassurance about the viability of the new business model. During the shaping phase, the MDM team went through an iterative process, as opposed to a linear approach, as presented in Figure 24.

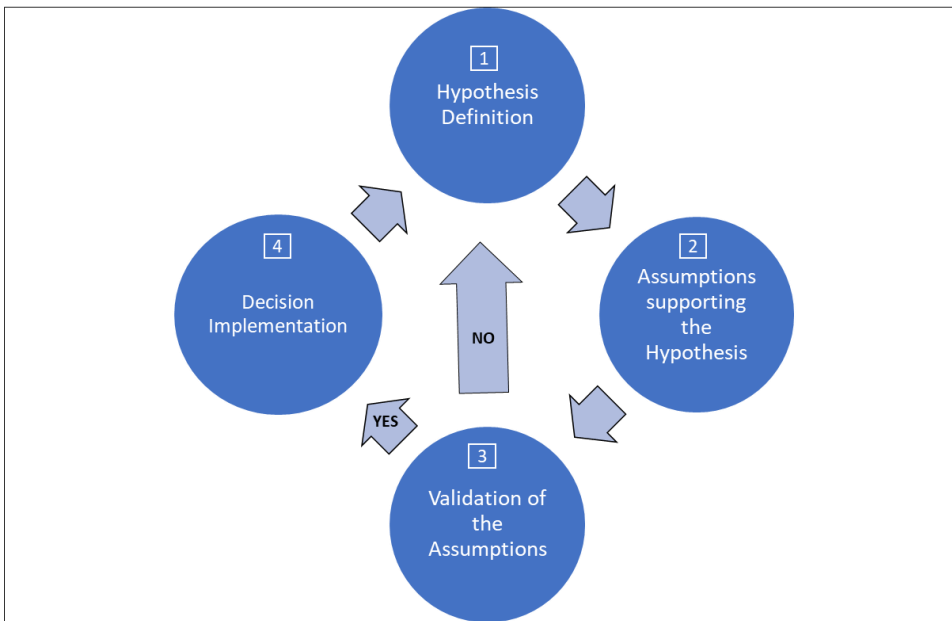


Figure 24: Iterative process scheme used in the shaping phase – own elaboration

The positive indications and feedback collected by patients represented a green light for MDM to start working on the design of the new business model. This process progression seems coherent with the “discovering-driven” approach proposed by McGrath (2010, p.248) as “in highly uncertain, complex and fast-moving environments, strategies are about insight, rapid experimentation and evolutionary learning as much as traditional skills of planning and rock-ribbed execution.” The author considers the experimentation logic as a pre-requisite for a successful business model innovation, based on the fact that in the moment of resource commitment, several elements that will turn to be “competitively important” are later not fully understood, favouring a dynamic and experimental method before defining the most appropriate model to adopt (McGrath, 2010).

4.6.3 The Executing Phase

Three dimensions have contributed to defining the executing phase: business model strategising, business model design and business model implementation.

During this phase, the MDM team moved from the frame built in the strategising step to a more detailed level of decision, regarding all the elements within the different business model components. The objective was to reach a component-specific fit and a systemic fit among the components before proceeding towards a full deployment. The strategic fit, here mentioned, was not only important for the competitive advantage but also for the business model sustainability over

time. Based on Porter's (1996) perspective, in fact, crafting an organisation's strategic positioning on activity system built on second and third-order fit, represents a solution more difficult to be decoded and imitated by rivals.

As in the case of the business model assessment dimension, the business model strategising dimension played a dual role, as part of the shaping phase, in the cognitive effort when assigning a meaning to the different components for a coherent fit, as well as in the executing phase, as a result of the iterative process adopted to implement the new business model. In fact, the design and implementation of the new business model were not activities clearly separated from the strategising step, as the MDM team frequently went back to the strategic attempt when the business logic was not coherent enough to guarantee a solid foundation. In support of this consideration, the HR Executive reported that *"in term of process, the business model transformation has been very exciting and definitely a non-linear attempt."* The following sections are expected to explain the business model design and the business model implementation dimensions.

4.6.3.1 Business model design

The critical themes grouped around the business model design have been the patient interaction, the definition of the critical patients' touchpoints, the delivery solution, and the clinical evidence.

The decision to build the new business model on a "patient-focused" approach created very different requirements for all the business model components. It raised the need to re-deploy current capabilities while developing and onboarding new capabilities within the organisation.

The first aspect discussed in the new setting was around the type of relationship in order to interact with the patient. In the previous model, this relationship was intermediated through the HCP and the pharmacist, who gave advice on managing personal health status and physically getting access to the solution, respectively. MDM deliberately decided to build a direct relationship with patients, considering the value that this new approach could potentially generate looking forward. As stated by the Commercial Executive, *"the benefit of establishing a direct to patient platform has been invaluable to in-depth understand them."* This was one of the most debated decisions along the new business model process, as expressed by the HR Executive *"MDM decided to go directly to consumers interacting and selling directly to them, overcoming all the different third-party intermediaries used to be involved to bring the product to market in the previous model."* In this new setting, the key contact was the patient because the new solution was supporting a more engaged

and active role in the decision-making regarding the most appropriate behaviour to take by leveraging the value of data points coming from the CGM. This decision was also heavily challenging the status quo, and it required an extensive review of all the elements of the business model components, as highlighted during the discussion with the HR Executive, considering that *“this change in the go-to-market approach has been discussed internally and it required a long time for the alignment to be metabolized.”*

The consequent discussion generated by the direct-to-patient (DTP) decision was around the selection of the most appropriate method of relationship. The MDM team decided to establish a digital interaction with the patients, supported by highly scientifically skilled customer service. The digital interaction was oriented to providing all the information about the new solution, gathering the patient data to start a customer relationship management (CRM) program, and selling the product. This new digital patient relationship posed relevant questions as the MDM team soon realised they did not have all the required capabilities internally. During the different conversations, the Marketing Manager expressed that *“the direct to patient interaction required a much stronger customer service, digital and e-commerce solutions than initially planned and expected.”*

Having clarified the role of the patient in the new business model, the second important theme addressed was the review of the patient journey to understand the critical patient touchpoints. Consequently, some stakeholders gained or maintained relevance, as able to bring value to the patient along the journey, while others were de-prioritised, as they were less strategic in the new business logic. In the new patient journey, HCPs continued to play a critically important role in supporting the patient in interpreting data to discover patterns and trends, and on the advice regarding change of behaviour and medication decisions. The changed aspect was represented by the fact that they had to manage a relationship with a much more informed patient compared to the previous situation.

On the other hand, the role of the distributors and wholesalers in covering the pharmacy channel, previously used to reach the patient, was considered redundant and not adding value for the patient. This aspect was clearly made evident during the discussion with the Marketing Manager, as *“in the direct-to-consumer approach, the pharmacist has not any recommending role as all the relationship is between MDM and the patient; this decision has been able to improve the MDM margins not involving anymore wholesalers and pharmacy in the value chain.”* While the pharmacy channel was still relevant for the business of the strips, for the CGM solution, it was decided to only manage the digital channel with direct contact to patients. This decision was heavily

discussed internally, among the different function leaders, as very different from the past and any other competitor in the market. The people in favour of the pharmacy channel intermediation based their arguments on the fact that for a healthcare device, the pharmacists could play a relevant and value-added role. The supporters of the new direct-to-patient approach, on the other hand, backed up their arguments with the advantages that this approach could bring to the organisation in the long term despite the possible immediate challenges to manage. Some stakeholders gained relevance in the design of the new business model, as in the case of the NHS, payers, and the associations of patients.

With the decision to disintermediate the pharmacy channel, an important theme became the definition of the delivery solution. The MDM team went through a comprehensive map of the different delivery models using the same driver as for the stakeholders' selection: the value generated for the patients. At the end of the internal discussion, the MDM team decided to manage the logistics to the patient through an external provider, leveraging their advantages in managing this aspect of the value chain as part of their core business. *"The new business model also changed the use of the channel of distribution compared to the previous strips business model; in the new approach there are two ways to get the products: (1) directly to patient from MDM digital portal, in the case of out-of-pocket situation, and (2) delivery to patient through the community pharmacies, in case of patients under the reimbursement scheme,"* as described by the Marketing Manager. In both cases, MDM established a business relationship with specialised logistics providers in different countries to serve the patient. The involvement of the community pharmacies was only a logistics decision, using them as hub to cover the last mile of the shipment, combining more patients to improve the cost structure.

Finally, the clinical evidence theme has been covered by the informants assigning a high relevance to the data available to show the advantages for both patients and NHS associated with the adoption of the CGM solution. *"As the NHS approval for the reimbursement of this new device was not guaranteed at the beginning, MDM decided to work with charity and patient associations to get access to diabetic patients"* (Marketing Manager). The objective of these clinical studies was to provide the NHS with solid support to prove that, despite the higher costs compared to the strips, the adoption of the new solution, correcting patients' behaviours and preventing expensive collateral events, like hospitalisation, could potentially save money for the NHS and improve the patients' quality of life. This was a new area to explore for MDM as, in the strips business,

reimbursement was a given element of the business paradigm. In Table 13, some additional supporting data are summarised relative to the business model design dimension.

| Theme | Representative Quotations Business Model Design |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Patient Interaction | <p>"The project was considered able to limit the negotiation power that both TPIs (third party intermediaries) and pharmacy have played in the past. This was the moment when the idea of a direct-to-consumer approach has been considered, generating a long internal discussion" (Commercial Executive)</p> <p>"Under this new technology, MDM moved towards a patient-centric approach, building a solution where the patient was in charge of her/his own disease, supported by the HCP" (Regional Executive)</p> <p>"Although the presence of different point of views, the team had the courage to explore the digital interaction that could have been established with our consumers" (Commercial Executive)</p> |
| Patients' Touchpoints | <p>"With this new decision, MDM could get closer to patients and, at the same time, reduce the power of TPIs (third party intermediaries), after the experience of the strips where the commoditization process has put pressure on MDM shoulders due to the increased competition coming from low price players" (Commercial Executive)</p> <p>"The critical decisions that have been taken around these points were: 1) external customer service to support the patient with the new solutions; 2) HCP role to support the patient to understand the data and take informed decisions to improve their life; 3) elimination of all the TPIs previously used to reach the patients, like distributors, wholesalers, pharmacy channel; ..." (Regional Executive)</p> |
| Delivery Solution | <p>"To manage the reimbursement case, MDM established a business relationship with specialized logistics providers to serve the patients, still using the community pharmacies as a final collecting point of the sensors for the patients; with this agreement these logistics providers entered the healthcare business and leveraged their expertise as delivery providers; the use of the pharmacy for the last mile of delivery was also selected to create a sort of hub where more patients could refer to collect their sensors, with some benefit for the cost structure" (Marketing Manager)</p> <p>"A critical decision taken was to have ... a solid partnership with an external logistics provider to build e-commerce capabilities and directly serve the patients" (Regional Executive)</p> |
| Clinical Evidence | <p>"To overcome these critical points of view, a task force of GMs, Marketing and Sales Directors and Market Access Directors has been created in every area" (HR Executive)</p> <p>"Solid clinical trials to show the impact of using the CGM compared to the SMBG approach in terms of quality of life, cases of hypo glycemia, risk of hospitalization, etc." (Regional Executive)</p> |

Table 13: Representative quotations regarding the business model design dimension

Figure 25 includes the interactions among the different components.

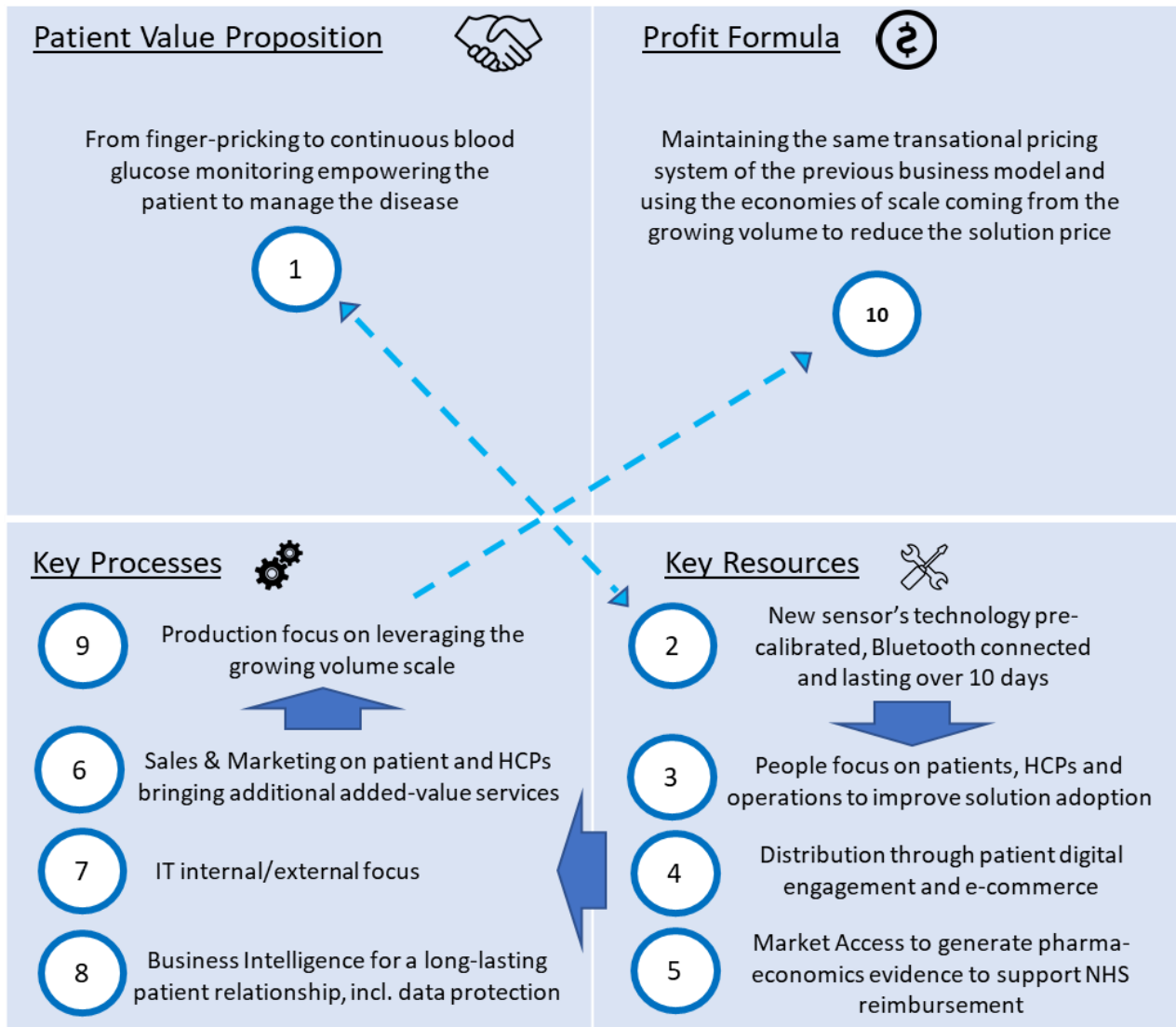


Figure 25: The Business Model Design process – own elaboration

4.6.3.2 Business model implementation

This dimension has been built on the themes regarding the required capabilities, the organisational challenges and the competitive advantage expected from the execution of the new business model. The considerations provided by the informants in this step have been the result of the preparation and final implementation of the new business model in 2014 in some markets, considered as a pilot to develop learnings to be later applied during the roll-out into the rest of the world.

As the MDM team decided to introduce important changes compared to the previous business logic in terms of patient-centricity, data relevance and clinical evidence-based reimbursement approach, several new capabilities were needed to implement the new business

model. As highlighted by different informants, the Commercial Executive confirmed some concerns: *“the big barrier was to adopt something different compared to the past and the lack of capability in interacting directly with the patients, in addition to doing/building this interaction digitally; the team needed to build expertise to unlock insights coming from this new digital interaction.”* This statement was also supported by the Regional Executive when expressing that *“the main discussions have been done in the following areas: (1) patient understanding and interaction; (2) digital engagement; (3) direct to patient approach; (4) critical touchpoints and obsolete touchpoints; (5) NHS clinical evidence for type I and type II patients; (6) NHS reimbursement; (7) Market Access.”* Based on that, most business functions have been involved in a profound re-evaluation of their ability to contribute to the execution of the new business model around the following main capabilities: patient understanding and engagement, HCPs partnership and NHS and payer interaction.

As soon as the MDM team decided to manage a direct relationship with patients by leveraging the digital channel, it became clear they needed to reinforce the organisation in its ability to match all the expectations patients may have when establishing an online interaction with a company. The other healthcare companies did not represent the benchmark but the best-in-class companies in terms of online interaction. Based on that, elements, such as the easy navigation through the website, the speed of shipment, the costs of shipment, the personal data management and security, have been the drivers to measure the ability to satisfy the patient. As reported by the Marketing Manager, *“one of the first request from the patients was the elimination of the delivery cost, initially set in UK at £8 than reduced to £5, that was considered very far from the market standard for a delivery time of about 5 to 7 days.”*

To develop such a relationship, Marketing, Customer service, Supply chain, IT, and Legal have been re-organised to bring the patient to the centre of the business discussion, also selecting a different set of indicators to measure success, like:

1. Cost per acquisition
2. Repurchase rate

The first indicator has been used to highlight the cost to acquire a new user, while the second was oriented to extending the length of use of the new solution, both of them with the intention to improve the user lifetime value.

Regarding the repurchase rate, from the first evidence, it was understood that some patients stopped using the new solution in favour of cheaper alternatives after the first three months. Thanks

to the direct connection with the patient, several initiatives have been implemented to reinforce the advantages of the new solution when approaching the critical threshold of the first three months of usage.

Customer Service was also assuming a strategic role to provide the company with access to the patient regarding how to get the maximum from the using the new solution. This service was managed through external partners in many countries to properly manage the relationship with patients in a scientifically compliant way. This was triggered by the fact that engaging with patients required having people with scientific and academic credentials in several countries, and building such a team required time and the variability of the number of headcounts to consider for a totally new solution to the market. Additionally, to ensure a seamless interaction with patients, the customer service function had to be fully integrated into the website and CRM tools.

The supply chain function went through a consistent revision in order to match the patients' requirements of the digital interaction. As per the customer service's case, the outbound supply management has been externalised in favour of best in class logistics providers.

The role of HCPs evolved towards a more personalised and fact-based advice provider, and this required MDM to reinforce its ability to manage and support the interpretation of a massive volume of data generated by the CGM solution. To support this evolution, MDM became one of the first companies to license the indications coming from the AGP report (i.e. Ambulatory Glucose Profile) combined with "traffic light" signals, as reported in Figure 26.

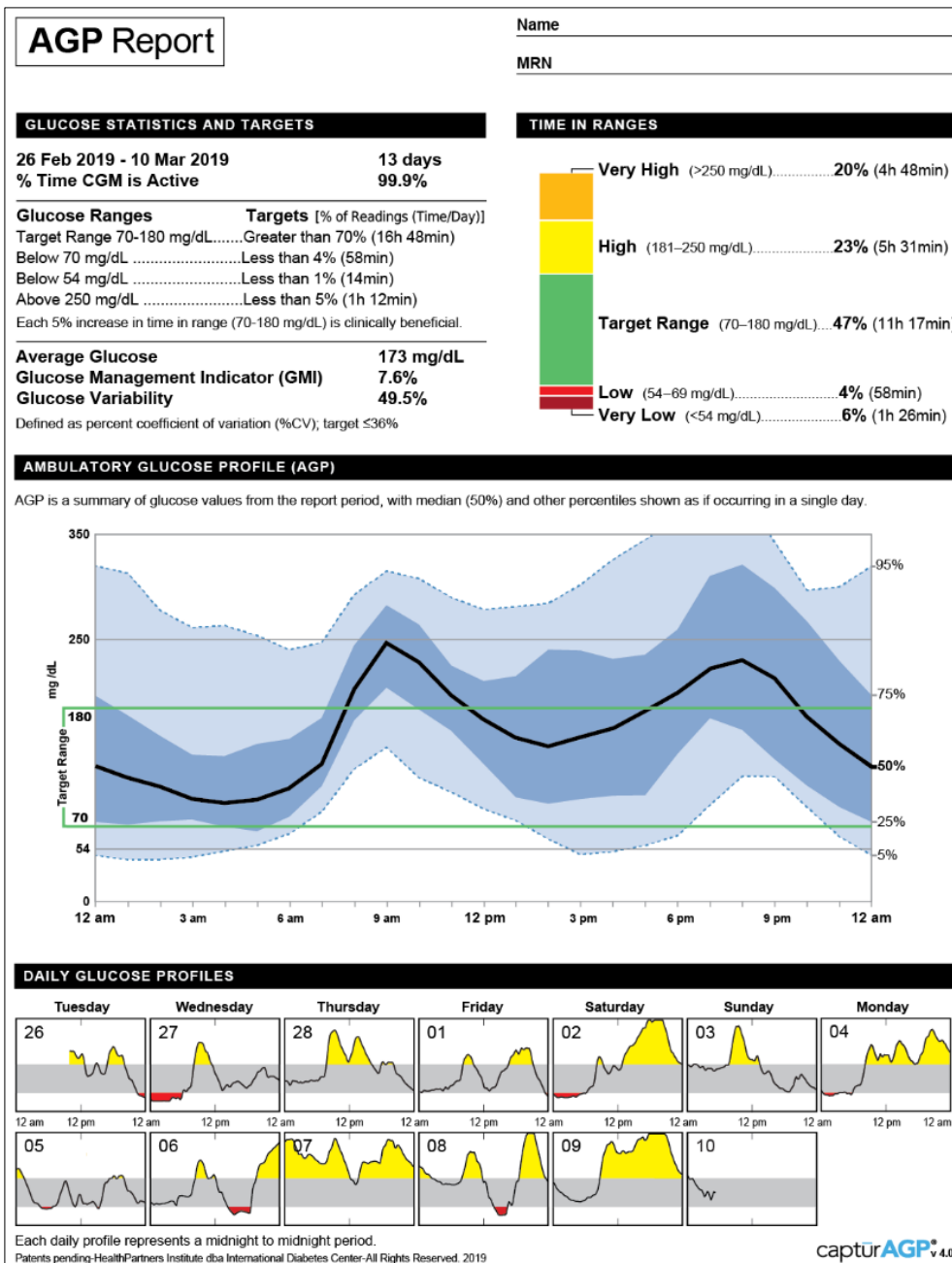


Figure 26: Ambulatory Glucose Profile – Source: <http://www.agpreport.org/agp/about>

The AGP report shows the type of information an HCP and a patient could have access to in order to develop a better understanding of what the consequences of daily decisions are and consider behaviour adjustments when required.

This approach was expected to help HCPs to interpret the dense data available and create a sort of standard approach in terms of recommendations offered from different physicians, faced with the same data gathered. “The ambulatory glucose profile (AGP) allows simpler and more confident identification of patterns, by averaging data for the modal day (itself derived from several

daily CGM traces)” (Hammond, 2016, p.S10). This decision represented a further step to reinforce the service component of the new solution compared to the product relevance.

The interaction with the NHS and the payers also became significant considering that *“the reimbursement of this new device was not guaranteed at the beginning,”* as reported by the Marketing Manager. In this context, MDM realised the need for competences associated with market access, public affairs, government affair, medical affair and pharma-economics. All these functions required clinical trial studies to provide evidence to support the advantages associated with the adoption of the new solution, despite its price. MDM was particularly active in ensuring a broad patient adoption, starting with type I diabetes patients, who could benefit from continuous monitoring of the glucose level. The CGM could have been considered effective for both type I and type II patients, especially in the case of insulin intake, while regarding the cost-effectiveness, the research published was not always reaching the same conclusions. In fact, for type I patients, the CGM was cost-effective compared to the SMBG, while there were contrasting conclusions regarding studies focused on type II patients, considering that not all of them needed insulin. As explained by the Commercial Executive, *“this new concept was hard to sell for type II patients considering the larger population involved and lighter consequences of not checking very frequently the glucose level.”* Based on that, MDM realised the importance of having a much stronger capability in the market access area.

Considering the overall process undertaken and the new competences required, the MDM organisation managed several challenges.

One of the most relevant challenges MDM had to manage was connected to the decision to run two different business models in parallel: the original one (disease-centric) while building the new one (patient-centric). Four main considerations supported the decision to manage the two business models at the same time.

- 1) For some patients, the new solution could represent an option to be combined with the old SMBG to ensure a proper period of understanding of how to manage the disease while ensuring the maximum level of accuracy in monitoring the blood’s glucose.
- 2) The new solution was not initially considered for reimbursement.
- 3) Some patients would always prefer the strips solution for reasons such as cost, habit, physician recommendation, etc.

- 4) The business of the strips represented a way to generate resources to support the development of the new solution.

Given the above necessity, the discussion was on managing the new business model in the presence of the existing one. Based on Markides's (2008, p.81) contribution, in fact, in an established organisation, "conflicts and trade-offs between the two business models make their peaceful coexistence difficult." In the case of MDM, despite the very different nature of the new business model, the patient served was the same. That situation oriented the decision towards the integration strategy, adopting a different team of people, when possible, and most importantly, a different set of indicators to measure performance. As expressed by the Regional Executive, *"to make the two different business models to co-exist, in the majority of cases the models have been managed by different teams of people having very different measures to evaluate their success."*

A second challenge was related to the management of the overall business model assessment and innovation process; as expressed by the Regional Executive, *"the process of the business model design was a long process where the top management requested the alignment among the main internal actors before proceeding. Several concept tests have been done to ensure the new solution would favourably resonate with patients, HCPs and Health Authorities. This made the process more similar to a trial-and-error approach compared to a linear and upfront clear process."* The most critical challenges emerged at the following levels:

- 1) Cognitive level
- 2) Emotional level
- 3) Organisational level

The cognitive challenge has been more evident in the sensemaking and shaping phases compared to the executing one. It was the consequence of the in-depth systemic approach to capturing the essence of how the extant business model performed and define where the stronger opportunities to start the innovation process were. Moving the discussion towards an unknown territory mostly based on the hypothesis to be validated, conceptualising under these circumstances has been considered challenging, especially when trying to fit all the elements together. It was also possible to perceive a certain dose of emotional challenge, linked to the potential mistakes associated with the exploration of the business model alternatives, especially when some decisions were considered substantially far from what MDM has always considered as conventional thinking. In one comment expressed by the Marketing Manager, this challenge emerged when the MDM team decided to

establish a direct to patient relationship, as *“the majority of the objections were on the fact that nobody took a similar decision in the past as this was one of the critical assumptions for how the healthcare business works.”* This type of discontinuity with the past required a strong alignment level within the organisation and the different steps. The MDM team created the space for discussion and confrontation before moving forward; *“engage the MDM people one by one to highlight the feasibility of the new strategy,”* as highlighted by the Commercial Executive.

In the executing phase, there was an apparent prevalence of organisational challenge, as *“the consequent activity of this assessment has been the onboarding of all those capabilities considered critical for the new model but not available internally and the consequent laid-off of the capabilities considered not any more functional to execute the new business model,”* based on the considerations of the HR Executive.

MDM was traditionally organised around a functional approach, which reflected the disease and product-centric approach. Therefore, the organisation’s design was therefore shaped with the objective of making the product available in the patients’ hands in the most efficient way. Promoting the patient at the centre of the new value proposition and reinforcing the service component created the conditions by which the traditional structure had to be combined with a project-based approach. This change has determined the necessity for different skills (e.g. patient insights), roles (e.g. digital and CRM manager), tasks (e.g. patient acquisition) and key performance indicators (e.g. patient lifetime value) to execute the new business model, in line with Rasmussen and Foss’s (2015) research on the business model innovation within the pharmaceutical industry. *“The result has been the creation of a new organisation ... fixing the plane while flying,”* as reported by the HR Executive.

A third challenge was the decision to manage the transition towards the new business model with the team in charge for the original disease-centric business logic. *“MDM managed the transition to the new business model leveraging the same organisation in place to manage a very different business model, lacking some key capabilities to successfully meet the new patients’ expectations,”* as stated by the Marketing Manager. The MDM team decided to go through the implementation process understanding, as the process practically unfolded, the required expertise they needed to onboard. The HR Executive considered that *“one of the greatest challenges has been the process of assessing the entire organisation to define the critical roles enabling the right execution of the new business model.”* The MDM approach was different compared to the experience offered by Nunes and Breene (2011, p.86), who presented high performing organisations building “surplus talent” as “they create much more talent than they need to run the current

business effectively.” On the other hand, the MDM approach of “continuously assess what skills, competencies, and organisation structures will be required to succeed in the future” was more aligned to Bertolini et al.’s (2015, p.100) contribution.

In terms of competitive advantage theme, the new business model allowed MDM to serve the patients differently compared to its direct competitors. The CGM solution was oriented to empowering the patient and helping the definition of personalised behaviour, considered helpful to support a healthy living with the disease, thanks to the physician’s advice. From this perspective, the MDM approach has emphasised prevention as compared to the treatment of the disease. The more the patients learnt about themselves, the better their life could be. This was ensured by the amount of data available for the patients and, at the same time, it represented a locking effect element for them to maintain the MDM system initially adopted. As expressed by the Commercial Executive, *“the switching costs for patients to move to a different platform will be high representing a locking effect to maintain the system initially adopted.”* MDM has subsequently worked on making this advantage even stronger through the reduction of the price. Table 14 includes additional data regarding the business model implementation.

| Theme | Representative Quotations Business Model Implementation |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required Capabilities | <p>"In term of capability gaps, in addition to the technology and e-commerce ones, there were market access, public affair, government affair and medical affair" (HR Executive)</p> <p>"The patients after few months of data gathering, got access to a huge volume of data not very easy to understand in an actionable way; this led MDM to introduce the AGP in the app and device to help both HCPs and patients to define a pattern among the multiple data points and support a data interpretation with the objective of taking informed decisions based on these data" (Marketing Manager)</p> |
| Organisational Challenges | <p>"The main challenges the team went through during this journey can be summarized as follows: 1) to proof the new strategy could work despite the limited capabilities initially available on consumer understanding, direct to consumer relationship, technology; 2) engage MDM people one by one to highlight the feasibility of the new strategy, breaking down the previous interaction with TPIs and pharmacy channel; 3) direct to patient model, where a specific team has been created to materialize that link and to generate value out of it" (Commercial Executive)</p> <p>"A second major challenge has been represented by the work in parallel of the two different business models in order to move forward gradually re-allocating resources from the strips business to the CGM model" (HR Executive)</p> |
| Competitive Advantage | <p>"The switching costs for patients to move to a different platform will be high representing a locking effect to maintain the system initially adopted" (Commercial Executive)</p> <p>"The new solution was more expensive in the short term but able to improve patient behaviour and reinforce patient compliance with the potential high benefits for the NHS budget in the mid-term" (Regional Executive)</p> |

Table 14: Representative quotations regarding the business model implementation dimension

4.7 The new business model of MDM to compete in the diabetes market

The result of the business model innovation is represented in Figure 27. As many of the elements in the business model components have changed, the new futures are reported in blue to contrast with the initial business model.

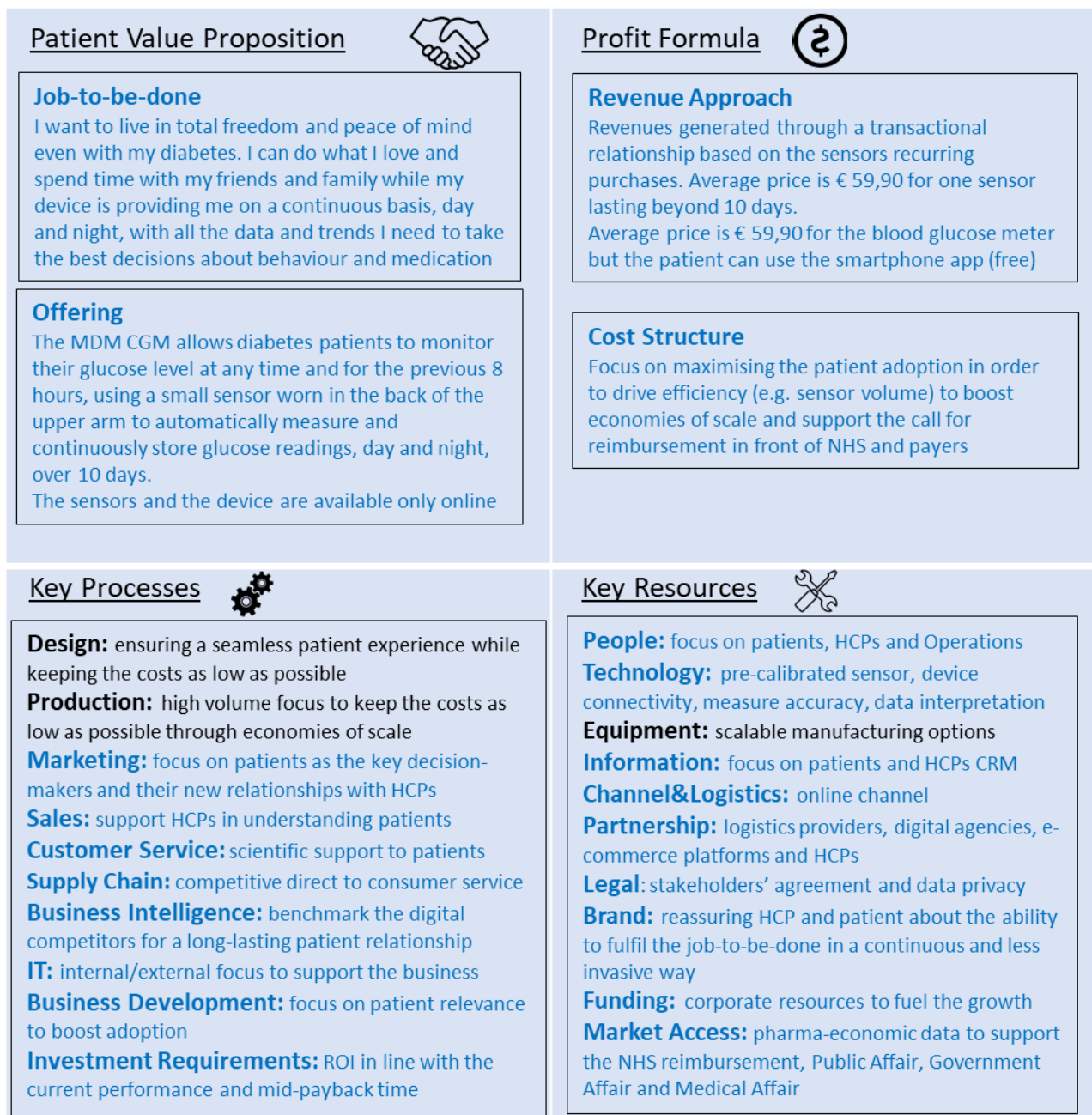


Figure 27: MDM new business model representation – own elaboration

The narrative of the new business model could be summarised as follows. Patients with diabetes want to live their best possible life despite the limiting conditions imposed by the disease. By adopting MDM's new solution, they can easily and in a minimally-invasive way continuously monitor

their blood glucose to make better decisions on food, drink, exercise, work, day by day. This solution is supported by a new sensor technology able to avoid the manual calibration through finger-pricking. Patients can access the solution through a digital channel and a specialised customer service, where information and recommendations are provided, and buy the product online.

Considering the amount of data to be interpreted, the HCP can support the patient to identify patterns and trends to make better decisions by adoption the AGP (ambulatory glucose profile).

For MDM the patient adoption is one of the measures of success in the new business logic, and the evidence from the clinical trial studies performed have the objective to support the NHS reimbursement.

In terms of revenue, both the device and the sensors are sold through a transactional approach. To ensure this patient value proposition, key resources are represented by the sensor technology, the ability to manage the data, people focus on patients, HCPs and value chain, including production and delivery. The brand equity is also relevant to clearly distinguish the MDM offer from the competition.

Finally, to accelerate patient reimbursement, market access and pharma-economics studies are very relevant capabilities. The key processes to execute the job-to-be-done are the marketing ability to manage a valuable digital relationship, leveraging the HCPs personalised data-based advice and a seamless supply chain. Improving the adoption rate is also directly linked to the device cost that could be improved through production efficiency. Table 15 provides a comparison between the MDM's initial business model and the new one.

| Key Elements | Initial BM | New BM |
|---------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Overall Focus | Disease/Product | Patient/Knowledge |
| Patient JTBD | "Living with diabetes requires me to monitor daily my blood glucose to know if I need to take medications" | "I can do what I love while getting the data I need to take informed decisions" |
| Offering | On time self-monitoring blood glucose | Continuous glucose monitor |
| Profit Formula | Transactional approach mainly on the strips | Transactional approach mainly on the sensors |
| Key Resources | HCPs relations | Patient and HCP relations |
| | Pharmacy relations | Sensor technology |
| | 3rd Party Distributors | Clinical Trial Studies |
| Key Processes | Efficient production | Efficient production |
| | HCP management | Data management |
| | Distribution management | Market Access |
| KPIs | Patient Satisfaction | Patient Satisfaction |
| | Market Share | Acquisition Cost |
| | Net Sales | Retention rate |
| | Return on Sales | Consumer Life Time Value |

Table 15: Comparison between initial and new MDM business model – own elaboration

4.8 Synthesis of the preliminary findings from the MDM case

The findings from the MDM case analysed in this chapter provides relevant elements to be used to answer the research questions stated at the end of the Literature Review (Chapter 3). In this section, a synthesis of these findings is presented, while the answers to the research questions are included in the conclusion part, in Chapter 6.

4.8.1 Business model assessment in an established healthcare organisation

The business model assessment performed by the MDM team in the period between 2012 and 2014 has been part of a broader process undertaken to understand how the extant business model was performing, considering the market environment, and whether there were opportunities for its innovation. This broader process has been summarised in a framework reported in Figure 21 and elaborated on the data gathered from in-depth interviews with four MDM informants using the Grounded Theory approach. The MDM informants were executives and managers coming from

different business functions, with different geographical scope and levels of hierarchical responsibility.

Based on this framework, the business model assessment dimension is included in the sensemaking phase, also considering the market signals and the changing perspective dimensions. More specifically, information regarding the diabetes market, considering both its constraints as well as its attractiveness, has been processed by the MDM team to perform a business model assessment, thanks to the changing perspective dimension representing the reflecting component of the overall sensemaking phase. This phase was very important for the MDM team to understand that some fundamental shifts were affecting the market creating the condition for a new business paradigm.

This assessment combined three relevant themes, market dynamics, business model components measure and business model systemic approach. The contextual consideration of these three themes in a holistic perspective has allowed the MDM team to assess the actual relevance of the extant business model, given the market environment, and generate insights on the direction to take for its innovation attempt.

While the market dynamic theme has been able to shed light on the fundamental dynamics among the elements working at the market level (e.g. key challenges and paradox, mechanisms of business access and thresholds, for instance), the assessment of the single business model components combined with a systemic assessment approach have been able to detect how some fault lines were emerging. Through the combination of these different perspectives, the MDM team was able to define that it was the right moment to explore a different business logic to compete in the diabetes market. Moreover, this holistic assessment has been able to identify the direction to take to structure the following phases of shaping and executing the new business model.

4.8.2 The transformation journey of an established healthcare organisation

The overall transformation journey MDM undertook to move from the initial to the new business model has been represented in Figure 21 and includes three main phases:

- 1) Sensemaking phase
- 2) Shaping phase
- 3) Executing phase

The sensemaking phase has represented a relevant step corresponding to the moment when the MDM team started to sense a fundamental shift in the basic assumptions to compete in the diabetes market.

During the shaping phase, the MDM team applied the sensemaking gained in the initial phase to shape a potential new business model, involving all the components under a dynamic perspective.

In the executing phase, the MDM team moved from the frame built in the strategising step to a more detailed level of decision regarding all the elements within the different business model components. The objective was to reach a component-specific fit and a systemic fit among the components before proceeding towards a full deployment.

During the shaping phase, where the business model assessment dimension has been combined with the business model strategising one, the MDM team has adopted an experimentation approach, including the following steps, as reported in Figure 29:

- 1) Hypothesis definition
- 2) Assumptions supporting the hypothesis
- 3) Validation of the assumptions
- 4) Decision implementation

The overall process has been supported by the active role of the MDM leadership team, in some situations playing the architect role, in the sensemaking and shaping phases, to move towards a “moderator” role in the executing phase.

The innovation process moved MDM towards a very different business model whose implementation required a different set of capabilities. These new capabilities have been summarised as patient understanding and engagement, HCPs partnership, and NHS and payers’ interaction.

Based on that, most business functions have been involved in a profound re-evaluation of their ability to contribute to the executing of the new business model around the above capabilities. In terms of competitive advantage, the new CGM solution was oriented to empowering the patient and helping the definition of personalised behaviour by emphasising prevention rather than the treatment of the disease. This was ensured by the amount of data available for the patients, also representing an element of locking effect for them to maintain the MDM system initially adopted.

4.8.3 The challenges faced by an established healthcare organisation

From the conversations with the MDM team and the material gathered for this research, the main challenges encountered have been the following ones:

- 1) Management of two business models at the same time;
- 2) Management of the business innovation process;
- 3) Management of the transition towards the new business model with the initial team.

Regarding the first challenge, the MDM team decided to manage the initial and the new business models in parallel for several business reasons, driven by the fact that the reimbursement of the new solution was not guaranteed at the initial stage of the introduction. To limit the potential effects of the conflicts running the business models in parallel, MDM kept the new business model under the same organisation but allocated the business responsibility to separate people, when possible, whose performance was evaluated through different indicators.

A second challenge was related to the management of the business model assessment and innovation process. The process followed a trial-and-error approach and was very different from other linear processes managed within the organisation. Along this process, the MDM team faced a series of challenges that could be aggregated at different levels:

- 1) Cognitive level
- 2) Emotional level
- 3) Organisational level

All of them were overall active in the different phases of the business model innovation process even if with a differentiated impact in every phase.

With the cognitive challenge, I have grouped all the informants' data regarding the mental efforts in integrating all the relevant information from the market generating an impact on the extant business model. Making sense of this information meant, in the end, to be in the position to define when to transform the business model and which direction to take. This challenge was prevalent in the sensemaking and shaping phases.

Under emotional challenges, I have included data regarding the personal reactions of the people involved in this innovation process at risk of losing their business credibility, social acceptance and adherence to the company values as a result of their proposals, feedback and discussions, especially during the shaping phase. As mentioned above, the business model

innovation was an iterative evolution under a trial-and-error approach more than an analytic and linear evolution. Many discussions have been done assuming this perspective, exposing people to positions quite far from those assumed in the initial business logic.

Organisational challenges have been mainly encountered in the executing phase. The decision to move towards a patient-centric organisation created different business requirements and competences to onboard as well as a new way to structure the internal organisation, combining the traditional functional approach with a project-based solution.

In the next chapter, the evidence from the MDM study is confronted with the main insights coming from the literature to reflect on the meaning, importance and relevance of the research findings. In addition, my recommendation on how to perform a business model assessment is presented, moving from a static perspective to a dynamic and quantitative one with the ambition to solicit organisation leaders to adopt a holistic business model assessment approach.

Chapter 5 Discussion

5.1 Introduction

The objective of this chapter is to compare the insights from the literature review with the evidence that emerged from my research in order to prepare the ground to answer the research questions and develop a Business Model Dashboard, supporting leaders to define when is the right moment to transform their business model. After this introduction, the chapter is structured around the considerations triggered by the theoretical framework presented in Figure 21, at section 4.6, in each of the three phases of the business model assessment and innovation process managed by the MDM leadership team.

Before delving into these considerations, it is worth briefly summarising the different elements representing the starting point of this research. All organisations are continuously exposed to changes coming from consumers, emerging technologies, new regulations and more aggressive competitors, just to mention a few of them. Under these circumstances, leaders of established organisations need to be in the position to detect the weak signals of the “inflection points,” which represent major shifts emerging from the environment and fundamental changes of the business assumptions (McGrath, 2019). Therefore, a proper assessment of their business model represents the first step to spotting these inflection points early enough and taking timely and appropriate decisions to reinvent their business logic (Bertolini et al., 2015). Despite that, several pieces of evidence show how inertia acts within organisations to protect the status quo, representing a key challenge for the innovation of the extant business model (Doz and Kosonen, 2010). In fact, organisations often fail to reinvent themselves, not necessarily because they do not have the ability to understand what is going on and take appropriate decisions, but because they wait too long before taking corrective actions (Nunes and Breene, 2011).

Based on that, understanding when is the right time to transform the business model and align the organisation to move forward represents a critical capability that leaders should master.

In effect, business model innovation is a powerful capability that has “reshaped entire industries and redistributed billions of dollars of value” (Johnson et al., 2008, p.52). At the same time, it has also been acknowledged recently that “existing business models are being exhausted faster, and long-term growth is declining, which means companies must continually generate new ideas to grow sustainably” (Bailey et al., 2019, p.4). Finally, the business model innovation should be performed ensuring a “dynamic consistency” among the different business model components

(Demil and Lecocq, 2010), but empirical evidence on how to consider the systemic perspective in this innovation journey is very limited in the literature (Schneider and Spieth, 2013; Wirtz et al., 2016; Foss and Saebi, 2017 and 2018). These considerations highlight how the business model innovation is a relevant concept for both scholars and practitioners. Based on the above considerations, my research aims to contribute as follows:

1. Providing organisations' leaders with a clear understanding of the right moment to innovate their business model using a solid and holistic approach in assessing their extant business logic;
2. Contributing to the leaders' understanding of how the business model innovation process unfolds within established organisations operating in the healthcare space;
3. Shedding light on the considerations and challenges organisations' leaders undertaking the above transition need to manage;
4. Indicating potential areas of investigation for further contributions to the business model assessment and innovation literature.

In order to realise this contribution, the research has been structured to answer the following research questions:

1. How do healthcare organisations assess their business model to define when is the right moment to innovate?
2. How do healthcare organisations manage the transformation journey from the current model to the new one?
3. What are the considerations and challenges healthcare organisations must manage along this transformation journey?

Considering the limited knowledge on this topic, I have selected an inductive investigation taking a Grounded Theory guided approach based on a qualitative interpretative perspective. The research findings presented in Chapter 4 are here discussed to understand their meaning, importance, and relevance in preparation for the conclusions included in Chapter 6.

5.2 Considerations around the Sensemaking Phase

The Sensemaking Phase of the business model assessment and innovation process framework refers to the activities the MDM leadership team has performed to detect the signals from the

environment and understand their impact on the organisation's ability to profitably serve the current consumers and attract new ones. From conversations with MDM leaders, three main dimensions emerged as critical for making sense of the changes detected in the environment: market signals, changing perspective, and business model assessment. In the following sections, the different dimensions are discussed considering the literature review contributions, on one side, and the research findings, on the other.

5.2.1 Market Signals discussion

Based on my research findings, the market signals dimension is built on two main themes: market constraints and market attractiveness. Both themes have been relevant for MDM to maintain a strict contact with the business environment by detecting the early signs of potential changes and understanding how these changes could alter the market constraints and attractiveness, representing potential risks as well as opportunities for the organisation. After examining the literature the market signals dimension could be considered as a relevant organisation capability, built on a clear and deep understanding of the mechanisms governing the market where the organisation competes. In other words, these mechanisms represent the cause/effect rules that make the market function. This relevant organisational capability can be associated, from a conceptual perspective, with the dynamic capabilities largely studied by Teece (2018, p.43) as "they can enable an enterprise to upgrade its ordinary capabilities and direct these, and the capabilities of partners, towards high-payoff endeavours." This connection seems even more solid when Teece (2018, p.43) affirms that these dynamic capabilities require the organisation to act by "orchestrating the firms' (and partner firms') resources to address and even shape changes in the marketplace or the business environment more generally." This position supports the interpretation that organisations with strong dynamic capabilities are better positioned compared to their rivals "to profitably build and renew resources, assets and ordinary capabilities, reconfiguring them as needed to innovate and respond to (or bring about) changes in the market" (Teece, 2018, p.43). Moving from a conceptual stance to a more practical approach, the organisation's leaders should be able to build the appropriate indicators to detect the changes in the fundamental aspects of a business, what McGrath (2019) has called "inflection points," Bertolini et al. (2015) have named "fault lines," and Nunes and Breene (2011) have referred to as "stalling points" building on the Olson et al.'s (2008) contribution. In this regard, the insights from the literature are coherent and fully support the findings that emerged from the study of the MDM organisation. The literature also provides an

interesting perspective by combining the use of lagging as well as leading indicators based on the type of perspective leaders are expected to employ. While the lagging indicators are an expression of the past, as they report the outcome or the consequences of activities already implemented, the leading indicators are forward-looking constructs, employed to detect things that have not yet fully materialised. The leading indicators normally measure observable elements that occur in parallel or represent antecedent factors compared to the object of analysis. McGrath (2019) argues that the object of analysis of a leading indicator currently represents only some assumptions potentially leading to relevant facts in the near future. To bridge the gap between the assumptions and facts, she recommends two activities: first, to be as specific as possible about the articulation of a situation that could potentially occur in the future; second, to define some potential warnings on the timeline by answering the following question: what would have to be true in 6, 12 and 18 months for the expected scenario to materialise? (McGrath, 2019). Using this approach, a scenario could be detected well in advance and properly monitored along with its progression, offering enough time to the leadership team to understand the potential impact direction, positive or negative, and size, limited or extensive, on the market attractiveness.

If the market constraints theme has the objective of detecting the environmental changes potentially affecting the organisation, the objective of the market attractiveness theme is to translate these changes into elements that could represent a point of differentiation for the organisation compared to its rivals. In other words, the market attractiveness theme represents the strategic translation of a fact, or expectation of it, for the organisation's relevance in the market. This means that the same fact potentially has a different impact on different organisations operating in the same market depending on the business model they have selected to compete. As a strategic approach is based on the ability to build a relative advantage over competitors, leaders should be able to understand how the changes emerging from the environment can affect their organisation compared to the impacts they can generate on the other incumbents. In the case of a market where all the competitors use almost the same business model, as emerged during the study of the MDM organisation, the healthcare budget restrictions generated similar consequences on all the actors with the consequent pressure on their unit margins. The situation became even worse as the result of the market entry of competitors adopting a low-price strategy. This situation is representative of what has been depicted by Bertolini et al. (2015), who describe the five areas business leaders should pay attention to in order to detect the fault lines, more specifically when monitoring the industry position element, to understand if other players are entering the market using a low-cost

strategy. Under these circumstances, the majority of the competitors shifted towards a price reduction and cost optimisation approach, creating the conditions for a market unattractiveness, despite the growing number of patients to treat. Through the market signals dimension, the MDM leadership team was able to understand that maintaining the same approach would not have represented a viable approach to materialising the business opportunities generated by the growing demand coming from the diabetes market. At that stage, it was still unclear how the emerging situation could have impacted the MDM business model and under which temporal assumption this would happen.

5.2.2 Business Model Assessment discussion

In the business model assessment dimension, the elements highlighted in the market signals step have been considered using the lens of the MDM business model, evaluating the implications on the organisation's relevance. This dimension has been articulated around the three following themes: market dynamics, business model components measurement and business model systemic approach.

Regarding the market dynamics theme, it is essential to clarify that it considers how the market develops over time. More specifically, it shows how the different market components relate to each other to support its development. It results from the interaction among volume, unit price, number of patients and average consumption per patient in a specific unit of time, in the diabetes market. The MDM research shows a contrasting situation, with the diabetes market in a growing trend, driven by the increasing number of patients, but with a declining margins profile and market share affecting the majority of the incumbents due to the market entry of low-price competitors. The situation was also affected by the presence of dissatisfied patients not fully adhering to their physicians' recommendations and, thus, absorbing part of the NHS budget (e.g. as a consequence of the treatments provided in the hospital) at the expense of the resources allocated to the strips business. This market dynamic clearly created a dilemma for the MDM leadership team, who was called to reflect on the opportunity to keep the extant business model or to move towards a different business logic, in order to be in the position to exploit the market potential profitably, while successfully helping millions of diabetes patients to improve their life. This reflection also includes the evaluation of performance over a longer time perspective, with the leaders confronting declining, but still positive, current financial results with the expectation, still to be proven, of stronger future performance. This situation is in line with the scenario studied by Nunes and Breene

(2011), who observed that business leaders whose decisions are mainly driven by financial performance risk to drive their organisations towards the so-called “stalling points.” These stalling points have proved to be dangerous, as the consequence for organisations waiting too long before taking actions is represented by their inability to turn the situation around. The study conducted by the two authors confirms that leaders able to go beyond the financial performance, considering other crucial aspects of their organisations, such as their relevance in the market and the distinctiveness of their capabilities with an adequate development of their talent pool, considerably increase the chances of early detection of the market shifts, supporting the adoption of appropriate actions (Nunes and Breene, 2011).

The element of the organisation’s performance opened the discussion around the other two themes of the business model assessment, the components measurement and the systemic approach. From the single component perspective, the MDM leaders measured the business model to understand its performance from different observation points. Based on that, the patient value proposition, the profit formula, the key resources and key processes have been assessed through indicators specifically employed to allow the organisation’s leaders to have a clear understanding of their performance. This approach has also been adopted in the business model assessment contributions provided by Heikkilä et al. (2016), Haaker et al. (2017) and Schaller et al. (2018), whereby the object of the assessment has been the single business model components. These assessment methods generate evident advantages to the organisations, allowing them to dive deep into every component with multiple indicators. At the same time, however, this approach had the practical disadvantage of presenting only part of the picture, excluding a holistic perspective of business model assessment. Back to the literature review, the VARIM framework offers a method to appraise the profitability of a business model based on five specific elements: (1) value; (2) adaptability; (3) rareness; (4) inimitability; (5) monetisation (Afuah, 2014). In contrast with the previous assessment frameworks, this method considers the business model as a whole, without focusing on its single components. If, from one perspective, this framework goes beyond the limitations of the assessment based on the single components, from another perspective, it remains at a high level of abstraction when assessing the business model, mainly by keeping a static perspective. In fact, it does not offer clear indications to leaders on when and how to strengthen or transform their business logic in. In this regard, in the MDM study, the critical element of discontinuity, in comparison with the prevalent practice and the literature contributions, is represented by the leaders’ considerations on how every business model component adjustment

could trigger changes in the other components, assuming a systemic assessment perspective. Under this approach, the components are evaluated in isolation and with regard to the potential implications generated by the other components. This broader perspective has been considered as a way to minimise the risk of developing “blind spots” within the organisation. This term has been used in my research to consider a situation leading to a specific decision that would not have been taken assuming a holistic perspective. More specifically, the assessment based on the single components approach could have triggered a decision substantially different from one based on the assessment performed by adopting a systemic perspective. Adopting the single components assessment only, the MDM leaders would have probably opted to keep the extant business model because the overall situation was challenging but still positive, even if characterised by a declining profit margins profile and market share. In section 5.5, the assessment of the extant business model of MDM using only the single components approach is reported.

The introduction of the systemic approach led the MDM leaders to consider a different course of actions on the business model to adopt in these evolving market conditions. The systemic business model approach is based on the premises of the system theory applied to the business model assessment concept. As described in section 2.4.1 of the literature review chapter, there are two foundational elements to consider: the hierarchic system and its nearly decomposable system feature. In other words, using of Simon’s contribution (1962), a system is an articulation of interrelated subsystems, structured around two different levels of interaction, among subsystems and within subsystems. Both these features can be observed in the business model concept and explain the way it works. In the MDM organisation, different components constitute the business model, whose function can only be performed if all of them contribute to the whole. For instance, key resources without proper utilization through appropriate and efficient processes could not create a patient value proposition to generate value for its patients. Observing these components, there is one level of interaction within them; for instance, composing and synchronising all the resources in a profitable way and among them, as just expressed above. If the business model performs on the basis on these characteristics, it seems appropriate to assess it considering both these dimensions, single components on one side and interrelation between components on the other. As a further step, Von Bertalanffy (1950 and 1972) affirms that for the overall system to prosper, these components should have a level of interrelation with the environment where they function. Therefore, we need to consider an internal fit and an external one to generate the expected output. This means that, as the environment changes, the organisation should be able to

detect those changes and understand if and how they can require some adaptations or a broader reconfiguration of the business model, ensuring what Demil and Lecocq (2010) present as “dynamic consistency.” In addition, these interactions create cause and effect relationships among components that require to be considered when performing the assessment of the extant business model or the assessment of a business model in front of potential scenarios, in line with the considerations expressed by Baden-Fuller and Mangematin (2013).

In conclusion, going beyond the contributions summarised in the literature review, the assessment of a business model should be managed by integrating the indications coming from the single subsystems level with the interrelation between the different subsystems levels. This proposition is fully coherent with the findings that emerged studying the MDM organisation, whose decision to develop a new business model has resulted from the adoption of a holistic perspective, considering the contribution of the parts to the system as well as the interrelations of these parts. This holistic perspective can also be considered one of the organisation’s capabilities and the main contributor to MDM’s recent growing performance in the diabetes market, compared to the other players, many of whom still use the traditional business logic to compete.

5.2.3 Changing Perspective discussion

In the changing perspective dimension, the themes playing a role have been the emerging discussion, the emerging technology, and the emerging implications. At this stage of the sensemaking phase, the MDM leaders had the opportunity to reflect on the market signals’ implications evaluated through the lenses of the business model assessment dimension. It is essential to note that the changes emerging from the environment have not been considered in an abstract way, but by adopting their business model’s perspective. This approach is coherent with the Baden-Fuller and Morgan’s (2010) contribution, whereby the business model is also considered as a cognitive construct that leaders manipulate in abstraction to generate different and alternative methods to fulfil their consumers’ expectations profitably.

This abstraction has been performed in MDM considering different elements, such as a stronger combination of patient needs and solutions, starting with what is already available and leverageable within the organisation, before moving outside the organisation to consider new and original contributions from the market. The starting point was represented by an unsatisfied and not compliant patient. As MDM was serving both type I and type II patients offering different

solutions, a potentially new option could emerge from simplifying the solution for type I patients, as soon as it minimised the patients' pain points, which represented the root cause of their low level of compliance. The picture that emerged from the discussion with the MDM informants was representative of what Johnson et al. (2008) and Christensen et al. (2015) presented as situations triggering the development of a new business model, at the convergence of the following circumstances:

1. Reaching a large group of consumers currently not fully satisfied with the market proposal;
2. An emerging technology to be exploited;
3. The interest to approach the market from an alternative job-to-be-done perspective;
4. The need to fight back against low-end competitors;
5. The opportunity to introduce a shift in the industry paradigm.

The second theme of the changing perspective dimension has been the emerging technology. In fact, the MDM team was oriented to evaluating whether the technology, available inside or outside the organisation, was able to deliver a patient proposition without the pain points of the SMBG solution. The MDM team, at that point, combined the CGM solution, already available in the organisation for type I patients, and the technology bought a few years earlier through an acquisition in the portable sensors area, in order to start conceptualising a new patient value proposition by moving the focus from the treatment of the disease to a patient-centric approach. The objective here was to develop a new solution for type II patients, the larger portion of the overall diabetes market accounting for about 90% of the total patients (IDF, 2019), serving better the patients without the associated pain points, and limiting the impacts of the low-price competitors' attack.

In the next step, the emerging implication theme, the focus shifted from technology to the way to monetise such an advancement while helping patients to have a consistently improved experience. This course of actions seems coherent with the contribution of Chesbrough and Rosenbloom (2002), who place a stronger emphasis on how to unlock value for patients and organisations by exploiting the new technology. This new solution has been considered by the leadership team as potentially useful for patients but, at the same time, as opening up a relevant point regarding access to reimbursement. This was a totally new topic for MDM, who was used to competing in a market where the strips reimbursement was accepted in the most countries. On the other hand, this new solution needed to be tested through a clinical study to prove its benefits to patients and its impact on the NHS budget, compared with existing solutions. The clinical study was

also meant to develop a totally new understanding of the patient, whose dreams and personal expectations have always been limited by that chronic disease. Around this emerging theme, the research informants clearly highlighted the new challenges MDM was asked to tackle and manage due to the consistent shift from a disease-centred to a patient-focused organisation, with new stakeholders to consider. Examples of these new stakeholders were the charity and patient associations, the medical science liaison to conduct complex clinical studies following stringent protocols, and the payers, in most cases represented by the NHS or its local representatives. These new stakeholders created the need to rethink the key resources and key processes that generate the new patient value proposition and the potential alternative ways to capture value from this new business logic.

5.3 Considerations on the Shaping Phase

The shaping phase of the business model assessment and innovation process framework refers to the activities MDM's leadership team performed to shape a new business model by applying the insights that emerged during the sensemaking phase. Two dimensions have been involved at that stage, business model assessment and business model strategising. As the first dimension has already been discussed in the sensemaking phase, the focus here is on the second dimension. Although the dual role of the business model assessment has been already clarified in the section 4.6.2, it is worth mentioning that the assessment performed during the sensemaking phase was focused on the extant business model, while during the shaping phase, the assessment was oriented towards the emerging business model. During the discussion with the MDM informants, the business model strategising dimension was articulated around the following themes: patient value proposition, profit formula, key resources, key processes, and steering role.

5.3.1 Business Model Strategising discussion

As mentioned in the previous section, in this step, all the different business model components are considered to understand their specific role in creating, delivering, and capturing value from the emerging relationship with the patients and the interrelation each of them has with the other components. This approach is in line with the business model definition I have adopted (see section 2.8), which considered as a system of interdependent components whose interaction shapes the organisation's ability to create, deliver and capture value from the relationship with its consumers.

In this strategic step, where the objective was to conceptualise the new patient value proposition to properly satisfy the emerging job-to-be-done, one critical element was represented by the concept of “fit” introduced by Porter (1996). Based on Porter’s perspective, the basic unit of competitive advantage resides in the activities the organisation leadership team decides to perform, in the way these activities are configured and, critically important, by the relationships these activities have to each other. Furthermore, the author points out that, while operational effectiveness refers to being excellent at performing individual activities, strategy is based on the combination of these activities (Porter, 1996). Embracing this perspective, strategy is the result of the reflection on the entire system of activities, where the competitive advantage is based on how the selected activities fit and are able to reinforce one another. Here below are some critical considerations about the fit concept (Porter, 1996):

1. The fit among business model components, considered as the sum of activities, is important when the unit of analysis is the entire organisation considered as a whole.
2. Fit is critical as discrete activities often have an impact on other activities.
3. Fit among activities can be generic, useful then for every organisation, or “strategic-specific, as able to reinforce the uniqueness of a position and amplify trade-offs” (Porter, 1996, p.71).

There are three different, though not mutually exclusive, types of fit supporting a holistic perspective to be considered (Porter, 1996):

1. First-order fit, based on the consistency between each activity and the organisation’s overall strategy;
2. Second-order fit, when different activities are reinforcing each other;
3. Third-order fit, when different activities are designed specifically to obtain an optimisation of the whole system.

To craft a competitive advantage and keep an organization’s relevance over time, Porter recommends shaping its strategic positioning on the activity system built on second and third-order fit, more difficult for rivals to decode and imitate. Finally, the fit among an organisation’s activities represents the basis for operational effectiveness improvements, which reinforce, in turn, the system from competitive imitation. While this approach is fundamentally focused on building a system by balancing the effectiveness with a specific efficiency level, possible changes emerging from the environment can create the conditions where adjustments in some business model components are not enough to re-establish the balance. In situations where the focus is on a high

level of efficiency, we can consider the system as tightly coupled, but less flexible, and difficult to modify in order to cope with a volatile environment. Consequently, this kind of system configuration seems to be a solid solution in the case of a stable environment, while it brings a certain level of risk in case of an environment exposed to a high degree of change. This introduces an important concept, the business model modularity, which every leadership team should consider when strategising a new business logic. Since modularity could be defined as “the degree to which a complex system can be conceived in terms of subsystems” (Aversa et al., 2015, p.159), the single component articulation “needs to be combined with a holistic overview at the system level to understand how the parts influence the whole” (Aversa et al., 2015, p.165). Strategising the business model, while considering the current and expected environmental changes, requires that the organisation’s leaders define the right level of modularity when crafting the components to reach a specific level of fit.

Going through the considerations and insights that emerged during the study of this step of the framework, the approach followed by MDM informants to selecting the components with a specific degree of internal fit represented an interesting “in vivo” observation to enrich the discussion. The starting point of their reasoning was their shift from the focus on the disease to a patient-centric approach. Based on that, the JTBD has been reformulated, allowing the patient to live their best possible life with the disease. In terms of key resources, to deliver the above JTBD in a compelling patient value proposition to minimise the pain points, inconvenience, and indiscretion associated with the SMBG device, MDM leaders combined the CGM device with the emerging sensors technology. Starting from a solution internally available, the CGM device required a complete re-engineering to satisfy the patients’ expectations. It was also reinforced with a solid service component, represented by the amount of available data, to create a clear advantage for the patients to better understand how all the daily decisions could potentially affect their lives, when living with that chronic condition. This new perspective opened up new requirements for MDM, more specifically regarding a deeper patient understanding and a stronger ability to gain access to the market with the aim of getting the solution reimbursed. As a consequence, the key processes to be developed were the following:

1. Operations capabilities, to materialise the expected technology improvements;
2. Engaging capabilities, regarding new ways of powerfully connecting to patients and HCPs;
3. Market access capabilities, developing a new channel of interaction with the NHS and local payers to provide evidence about the advantages of the new CGM solution.

The MDM leaders decided to adopt a traditional transaction-based formula to capture an appropriate part of the value created. This choice was driven by the initial lack of evidence on the ability of the new solution to support a much more innovative, outcome-based profit formula.

All these reflections have been driven by the MDM leadership team with the support of the Global Commercial Team, fully supporting Stieglitz and Foss's (2015) position about the relevant role played by the leaders during this process in securing the right time, resources, and commitment. In addition, the MDM leaders established a steering committee at Area level (i.e. EMEA, Pacific, etc.) to create the official forum for all the critical business functions in order to discuss at the operational level the different elements associated with the new business model strategising step. It is important to note that the MDM leaders acted as "architects" in the sensemaking phase to play a "moderator" role moving towards the shaping and executing phases, in line with the contribution of Stieglitz and Foss's contribution (2015).

5.4 Considerations on the Executing Phase

During the executing phase, the MDM's leadership team moved from the cognitive step, adopted in the strategising phase, to the decision and implementation step. In this phase, all the considerations done to shape a new business model have been refined and tested in real life to get feedback and proceed with the implementation step. It is important to mention that the MDM team frequently went back to the strategising step when the required fit, both at component and systemic level, was not solid enough to deliver the new patient value proposition, thus creating the conditions for an iterative process.

Three dimensions have been involved at that stage, business model strategising, business model design and business model implementation. In line with the situation described in the business model assessment step, the business model strategising step has played a role in the shaping phase as well as in the executing phase. In fact, it has been manifested as a cognitive effort in the shaping phase and as a coherence test of the overall system in the executing phase.

5.4.1 Business Model Design discussion

The themes approached in this dimension have been the patients' interactions, the definition of the patients' touchpoints, the delivery solution and the clinical evidence. These topics were analysed and discussed by the MDM team in a very granular way at that point in the process. If in the business

model strategising step, the team shaped a new patient value proposition, here the focus has been oriented towards the decisions on how to frame and manage this new patient relationship. In a changing context, where the patients started to become more informed and active in managing their disease, the design of the new business model based on a patient-centric approach represented an appropriate step for the MDM team to re-define the competitive foundations of the diabetes market, in line with the contribution of Bertolini et al. (2015). These authors, in fact, consider the consumer focus one of the five interrelated “fault lines” to be monitored by leaders as potentially representing the signal for a market shift. More specifically, the authors recommend that organisation’s leaders develop a rich and dense understanding of the consumers’ functional, social, and emotional needs that have to be satisfied, together with the frustrations they may be currently exposed to. This recommendation became even more powerful when the MDM team approached the consumer understanding point through the lens of the JTBD concept. Adopting this perspective meant to understanding “what they want a new product or service to do for them” (Ulwick, 2002, p.92). These elements, conceptualised in the previous strategic step, were dissected in the design passage at a more granular level, starting with the selection of the type of relationship to build with the patients. In the previous business model, the patient relationship was mediated by the HCP and pharmacists, who represented the key enablers to reaching the users of the SMBG device. In this new business model design, in coherence with a stronger patient-centric approach and owing to the new sensor technology, the MDM leaders decided to relate with the patients directly. This decision was probably the most discussed during the entire innovation process as it represented a strong point of discontinuity with the past. This type of approach has been used in several cases of business model innovation, creating totally new markets, like in the cases of travelling, banking, and music industries. In the case of MDM, we can consider the decision as a partial disintermediation, as the HCP maintained the advising role while the pharmacist’s touchpoint was eliminated to reach the patient. This was the effect of a second decision in the area of the patient’s relationship, and more specifically, on the adoption of a digital interaction supported by highly skilled customer service assistants and a direct-to-consumer logistics.

After completing the patient relationship approach, the consequent theme was represented by the patient’s journey and the understanding of how to define the critical touchpoints to leverage. This theme was significant, as, through a detailed analysis of the consumer journey and the selection of the critical touchpoints, the patient relationship could be reinforced day after day in a meaningful way. In the MDM case, the HCPs continued to play a relevant role for the patients, helping them in

the data analysis and interpretation to take more informed health decisions. At the same time, wholesalers and pharmacists were less functional for the new journey, while consumer-focused logistics providers, in the area of delivery solution and clinical evidence to support the CGM reimbursement, became critically important. The need to prove the value of the new solution to the NHS and local payers opened up a new area of analysis, where the objective of improving the patient's quality of life was expected to be combined with the ability to reduce healthcare costs, thanks to a more adherent patient behaviour, which was driven by a stronger understanding of themselves and enabled by the data generated from the CGM solution.

As expressed above, the design of the new business model created a situation where the MDM organisation was expected to improve or even build from scratch essential capabilities and, at the same time, to re-shape or terminate capabilities that were relevant to the strips business but were considered redundant in the new setting. This assessment has been the starting point of the business model implementation step covered in the next section.

5.4.2 Business Model Implementation discussion

The themes supporting this dimension have been the required capabilities, the organisational challenges, and the competitive advantage. Considering that most of the choices made by the MDM leadership team were in a clear discontinuity with the initial business logic, all these themes have been useful in defining a sustainable and coherent implementation of the overall new business model.

The MDM team started with the assessment of the organisational capabilities needed to successfully deliver the new patient value proposition. As the new priorities were patient-centricity, data relevance, and the evidence-based reimbursement, new capabilities gained prominence. Some of them could have developed internally, while others clearly required an external onboarding. Among the second ones, the most pressing areas to address were the digital patient engagement, the clinical study management, the build of evidence on the benefits provided by the new CGM solution, and the market access, to support the NHS reimbursement to patients. These new capabilities also required the MDM leaders to develop a new set of indicators to clearly monitor the progress made in these new areas critically important for the business model execution. For instance, in the patient engagement area, the following indicators were selected to measure success: the cost per acquisition and the repurchase rate. This aspect has been crucial as the new

narrative required a new vocabulary, in full coherence with the indications of Bertolini et al. (2015, p.94), who highlight that “once-reliable ways of measuring success can lead to a sharp decline or even failure, although your short-term results may be healthy.” Based on the experience gained from the study of one of the organisations, “Aetna realized that the industry [healthcare insurance] needed to start measuring value as a function of three factors, adopting what one non-profit advocacy group termed the triple aim: improving the experience of care, improving the health of the population and reducing costs” (Bertolini et al., 2015, p.94). A second example to illustrate this point is Adobe, which initially measured success by how many software packages it licensed. As their customers started to care more about their web traffic and revenues, Adobe switched its primary success metric to subscriptions and renewals of its new cloud-based services (Bertolini et al., 2015). In the case of MDM, the leaders moved the focus from the number of strips sold in a unit of time to measure its success, to the new patients acquired with the CGM solution in a unit of time, together with the cost associated with that acquisition.

The innovation journey presented here and in the previous sections has clearly created challenges for the MDM team to manage. One of the most relevant challenges has been connected with the decision to run two different business models in parallel: the original disease-centric one, based on the SMBG device, and the new patient-centric one, based on the CGM solution. The presence of two business models working in parallel required a certain degree of separation of the employees as well as a different set of business indicators to measure their performance, in line with the recommendations of Markides (2008).

The second group of challenges have been represented by the situations the MDM team encountered during the entire business model assessment and innovation process, at cognitive, emotional, and organisational levels. The cognitive challenges were more evident in the sensemaking and shaping phases, while the emotional challenges spanned their effects along the entire process, resulting from the “distance” the new decisions had compared with the previous business logic. Finally, the organisational challenges were prominent during the executing phase, mainly resulting from the move from a treatment-driven to a patient-focused approach.

A third challenge was linked to the MDM’s decision to manage the transition towards the new business model with the team in charge of the original disease-centric business logic. The approach adopted by the MDM leaders was in clear contrast with the majority of the contributions from the literature, whereby a new team is required to drive such change, as presented by Nunes

and Breene (2011), who affirmed that high-performing organisations usually build a “surplus talent” able to step in as new market conditions require different skills.

In terms of competitive advantage, the MDM team has been able to craft a space in the market strongly oriented towards preventing the disease rather than treating it, where the CGM solution represented the way to empower the patient to adopt a proactive behaviour. The more the patients use the CGM solution, the more they learn about themselves, creating the conditions to define the most appropriate daily routines (e.g. type of food, time of eating, exercise during the day, time and length of sleeping, etc.), thanks to the amount of data points accumulated over time. These data represent the real advantage to taking informed decisions, and, at the same time, they constitute a locking effect factor by considering the switching costs for a patient deciding to move to a new platform. This is the mechanism used by many other organisations to protect the relationship built with their consumers from the attack of potential rivals, as in the cases of the sport wearable devices sector, social media, and software industry. When MDM’s leaders decided to transform the original business model into the new patient-centric approach, the organisation was the first in the market to create and deliver a new patient value proposition able to minimise the pain points associated with the strips offer. This temporal advantage, coupled with the locking effect of a system building high switching costs for the patients eventually considering moving to a different provider, represented the heart of the competitive advantage MDM could leverage in front of the competitors in the diabetes market.

5.5 The emergence of the Business Model Dashboard for a holistic assessment

This research has analysed how an established organisation in the healthcare space performed its business model assessment to define when to start to innovate its extant business logic. It showed that three dimensions played a critical role in this process. Drawing from the literature on system theory and business model assessment and innovation combined with the research findings, these dimensions have been:

1. Market Signals
2. Business Model Assessment
3. Changing Perspective

Based on the market constraints and market attractiveness themes, market signals were important to provide inputs to the MDM team to understand and test its ability to keep its relevance in the

market. Both perspectives of constraints and attractiveness were considered in order to give a broader market perspective, including the relative strength of the main competitors.

The business model assessment, the combination of market dynamics, the single components measurement, and the business model systemic approach themes, enabled the MDM team to interpret the market signals using the extant business model lens in order to directly test how the emerging inflection points could affect the components in a systemic way.

It has been fascinating to see how relying on the single components' measurement would have created a very different interpretation of the environmental changes compared to the systemic approach undertaken.

Changing the perspective, relying on emerging discussions, emerging technology and emerging implications themes, has represented how MDM team evaluated the result of the business model assessment to develop a new business logic for competing in the diabetes market.

Using the single components' assessment approach, while the patient value proposition was representing a clear area of improvement for MDM, as well as for every competitor, the profit formula, key resources and key processes were still considered the conditions to allow MDM to maintain the original business model in order to compete in the diabetes market. In other words, adopting this partial perspective, even if some initial warnings were evident, the assessment would not have induced the sense of urgency and the organisation's alignment to start transforming the extant business model, as reported in the Figure 28.

Based on the above considerations, while the single components have been assessed explicitly by MDM, the interdependency among components has been employed. However, it remained implicit within the assessment of the components, without assuming a proper definition and a separate quantitative connotation.

Based on the above limitations and considering the contributions discussed in the literature review chapter, a Business Model Dashboard has been developed with the objective of presenting my contribution to the organisation's leaders undertaking a business model assessment.

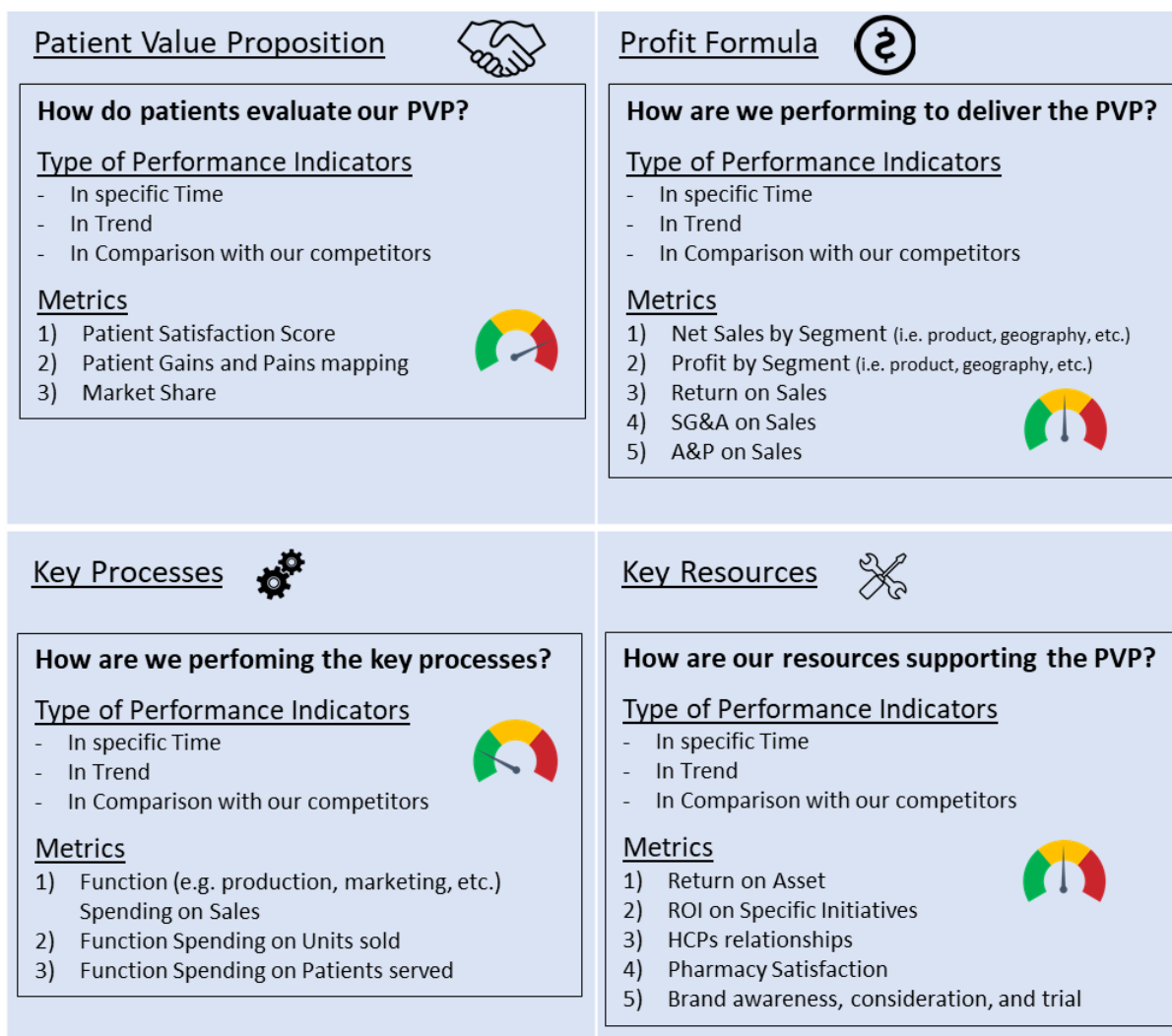


Figure 28: Business model assessment on single components – own elaboration

The Business Model Dashboard has emerged in parallel with the overall theoretical framework reported in Figure 21, with the intention to explicitly visualise and quantify how different scenarios could affect the extant business model and understand when and how to innovate it. The motivation to develop such a model relied on the intention to support leaders with a practical model able to open the discussion within the team in order to consider how changes from the environment could represent a limited or consistent implications for the business logic employed until that moment.

More specifically, in the Market Signals dimension, great attention was assigned to understanding and testing the organisation’s ability to keep its relevance in the market. I saw here the challenge of comparing different situations without having a way to measure them and objectively define under which conditions the current business model could generate what the consumers are expecting in order to define its relevance. In addition, I have realised that

organisations having an almost equivalent relevance in the market could be very different in their ability to timely change depending on the degree of integration of their business model components. In fact, when the components are connected in a tightly coupled way, they are very efficient but, at the same time, less able to be changed individually while the others maintain their original shape. The MDM leadership team has considered this aspect in their reasoning as expressed by the Regional Executive: *“the business model assessment at that time was based on the single components as well as on how these components relate to each other.”* Despite the approach followed, there was no way to measure the interdependency among components, which I thought could represent a valuable indicator for the leadership team.

Through the Business Model Assessment dimension, the MDM leaders have been able to interpret the impact of the emerging inflection points on the business model components, individually and as a result of a systemic perspective. Also, considering the complexity of the analysis to be performed by the leadership team dealing with a multi-dimension construct, the availability of a framework to crystalize the potential trajectories of the extant business model has been considered highly relevant. Through the model, the leaders could even compare the effect of different potential scenarios and define the priorities and the direction to potentially consider.

The above-illustrated dimensions have been able to provide the MDM leaders with the opportunity to consider keeping the extant profile or, conversely, starting the innovation attempt. The MDM team has been very clear in terms of the direction to take, but in the case of different situations, knowing which components were more affected by the emerging scenarios, and their connections with the other components, could represent a valuable information to guide the business model innovation process.

In practice, the Business Model Dashboard has been a way to understand the different situations, quantify and visualise them in order to fully support the discussion among the leadership team members. As a consequence, the leaders have been in the position to take informed decisions not only based on the traditional individual component measures, but also considering the overall system of interrelations among them, thanks to the holistic perspective.

The Business Model Dashboard offers a quantitative understanding of how an emerging change could affect the extant business model through a holistic assessment of three indicators: Relevance, Interdependency, and Urgency. To explain what these different indicators mean and how they can provide leaders with evidence to understand when is the right moment to innovate

their extant business models, an example consisting of two different scenarios impacting an organisation, here called Alfa, has been developed.

The business model relevance score represents a measure of the organisation’s ability to profitably serve the targeted consumers in the market. It is expressed as the weighted average calculation of the single component’s indicators, based on a 1 to 5 scale score (also supported by a consequent colour code), with 1 being low and 5 high, as reported in Figure 29.

| | weight | Score | Total | |
|---------------------------------------|-------------|-------|-------------|------------------|
| 1.0 Consumer Value Proposition | 0.35 | | 3.05 | |
| 1.1 Current Evaluation | 0.35 | 3 | | |
| 1.2 Trend Evaluation | 0.30 | 2 | | |
| 1.3 Compared Evaluation | 0.35 | 4 | | |
| Total | 1.00 | | | |
| 2.0 Profit Formula | 0.15 | | 2.40 | |
| 2.1 Current Evaluation | 0.20 | 4 | | |
| 2.2 Trend Evaluation | 0.40 | 2 | | |
| 2.3 Compared Evaluation | 0.40 | 2 | | |
| Total | 1.00 | | | |
| 3.0 Key Resources | 0.25 | | 4.00 | |
| 3.1 Current Evaluation | 0.20 | 3 | | |
| 3.2 Trend Evaluation | 0.30 | 3 | | |
| 3.3 Compared Evaluation | 0.50 | 5 | | |
| Total | 1.00 | | | |
| 4.0 Key Processes | 0.25 | | 3.20 | |
| 4.1 Current Evaluation | 0.20 | 4 | | |
| 4.2 Trend Evaluation | 0.30 | 3 | | |
| 4.3 Compared Evaluation | 0.50 | 3 | | |
| Total | 1.00 | | | |
| Gran Total | 1.00 | | | |
| | | | | Avg Score |
| | | | | 3.23 |

Figure 29: BM relevance based on the single component’s indicators – own elaboration

There are two different weighting elements to consider. The first is represented by the weight the leaders assign to the single business model components. The second reflects the importance assigned to the different types of evaluation among the current, the trend and the compared one. If the company leaders believe that their ability to stay relevant in their market is firmly based on the competence to craft a solid and compelling consumer value proposition, this component can have a relatively higher weight than the other components. For instance, in the above example, the consumer value proposition is weighted 0.35 out of 1.00, as indicated in Figure 34. Based on the same approach, the leaders of the Alfa organisation could consider that, since they operate in a

competitive market characterised by a stable revenue model with competitors adopting similar prices and cost structures, the profit formula represents a relatively low opportunity to drive the relevance score and, therefore, only a weight of 0.15 out of 1.00 can be assigned to that component. The sum of the weights assigned to the different business model components should obviously reach the value of 1.00. The second level of weight is assigned to the type of evaluation considered among the following:

1. Current Evaluation, referring to the latest score considered;
2. Trend Evaluation, based on the score trend the organisation has registered in the last three years;
3. Compared Evaluation, considering the score Alfa has been assigned compared to the performance of the main competitors in the market focusing on the same consumers.

Let us assume Alfa's leadership team of Alfa has decided to measure its consumer value proposition by involving a panel of consumers using the following questions for every type of evaluation:

1. Current Evaluation: how is the CVP perceived?
2. Trend Evaluation: how has the CVP perception changed in the last three years?
3. Compared Evaluation: how is the CVP perception in comparison with the main competitors?

In the above example, the different types of evaluation have an almost equivalent weight, summing up to the value of 1.00. The weights could be allocated differently if, for instance, the Alfa's leaders consider the compared evaluation as the most important one.

The interdependency score considers how tightly coupled the single components are to each other and it is measured as the average calculation among the different component's combination scores, based on a 1 to 5 scale, with 1 being low and 5 high. The score is assigned to every combination among the components by answering the following question: to what extent can a change in component x affects the component y? Score 1 shows a low interdependency between the selected components, and score 5 a high interdependency among the selected components. High interdependency means low modularity, as a change affecting one component is expected to have a consistent impact on the other components considered (Aversa et al., 2015). On the other hand, a low interdependency means being in a high modularity situation, where the potential change affecting one component does not necessarily require adjusting the other components accordingly. The interdependency indicator is presented in Figure 30.

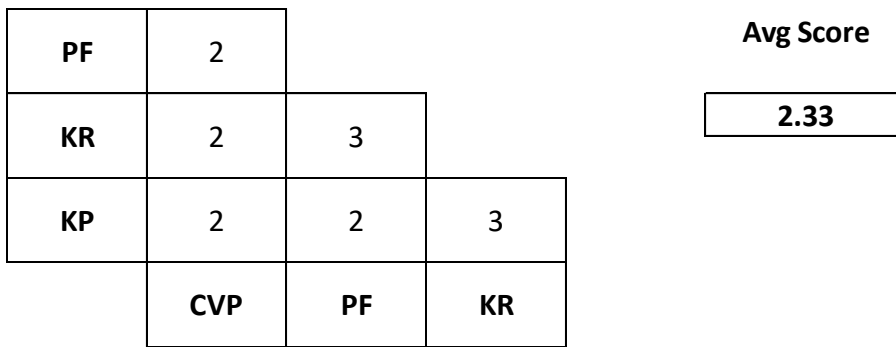


Figure 30: BM interdependency among the single components – own elaboration

As a consequence, the actual business model (Act BM) with a Relevance of 3.23 and an Interdependency of 2.33 can be positioned in the business model map as indicated in Figure 31. This represents the starting point of the assessment, where the leaders of Alfa have mapped their extant business model.

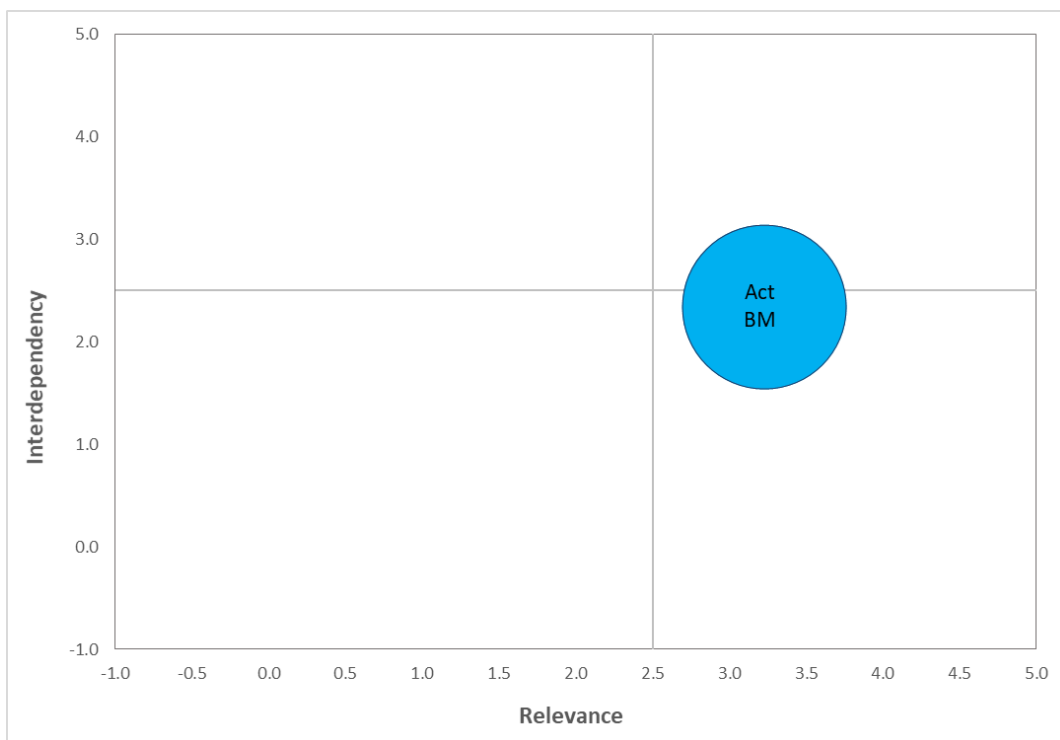


Figure 31: BM map – own elaboration

5.5.1 The impact of emerging scenarios on the extant business model

Based on what has been introduced in the previous section and keeping the same example of Alfa organisation, we can now consider the impact on the extant business model generated by the

following two different, but not mutually exclusive, scenarios I have selected for the purpose of the model simulation:

1. A new and stricter regulation on personal data management;
2. New technology, enabling consumers to record and exchange data with other users.

This assessment requires Alfa leaders to be able to scan the environment in order to be in the position to understand what types of scenarios are expected to emerge, how to monitor their development over time and to define how significant the impact could be on their organisations.

The extant business model is then compared with its versions developed through the materialisation of the different scenarios emerging from the environment in order to understand how these changes will affect the initial relevance and interdependency scores. Through the adoption of this approach, Alfa’s leaders should be able to answer the following questions.

Q1: Do these scenarios represent inflection points requiring the transformation of the current business model?

Q2: How can we understand which scenario will have the strongest impact on the organisation?

Q3: What is the urgency level these scenarios will require for the organisation’s leadership team?

Starting with the first scenario, a critical step is represented by its clear articulation in the form of key statements in order to be as specific as possible regarding the evaluation of the impact that generated from the different events characterising the scenario observed. This articulation is reported in Table 16.

Scenarion # 1 **Stricter Regulation on personal data management**

| | Key Statements | Direct Impact | Indirect Impact | Main Considerations |
|---|---------------------------------------------------------------------------------------|----------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 1 | Personal data need be stored only in EU countries | KR | PF | actually we use different organizations around the world to store these data and only some of them have presence in EU |
| 2 | Personal data need to be maintained for at least 15 years | PF | KR | the additional time of data availability needs we need to re-negotiate the agreements with our partners |
| 3 | Third Party organizations working on these data need to have their legal entity in EU | KR | PF | we actually have a global data management partner based in US to define patterns from the total amount of data collected |

Table 16: New data regulation scenario key statements – own elaboration

As indicated in Table 15, for every key statement, it is useful to preliminarily understand the most affected business model components, both directly and indirectly, together with some considerations able to highlight major changes compared to the current status.

Moving towards a quantitative approach, these three key statements need an evaluation in terms of the expected impact on every business model component, using the usual 1 to 5 scale score. This part of the assessment generates two indicators, the Adaptability score and the Impact score.

The Adaptability score is obtained as a weighted average calculation of the statements' impact on the different business model components, answering the question: to what extent can we leverage the current component considering the emerging statement? Low adaptability means that this component, as it is configured today, has an issue to be employed in case the statement materialises. This represents the expected new relevance of the business model in case the new personal data management regulation takes place.

The Impact score is obtained as a weighted average calculation of the statements' impact on the different business model components, answering the question: how much does the emerging statement impact the component? As it is configured today, high impact means that this component requires a consistent change in case the statement materialises. This represents the degree of the impact generated by the new personal data management regulation on the extant business model.

The calculation of both the above-described scores is reported in Figure 32.

| | weight | Adaptability Score | | | | | Total | Impact Score | | | | | Total |
|--------------------------------|-------------|--------------------|---|--|---|--|-------|------------------|--|---|---|-------------|-------|
| 1.0 Consumer Value Proposition | 0.35 | | | | | | 4.00 | | | | | | 2.00 |
| 1.1 Statement 1 | 0.34 | | | | 4 | | | 2 | | | | | |
| 1.2 Statement 2 | 0.33 | | | | 4 | | | 2 | | | | | |
| 1.3 Statement 3 | 0.33 | | | | 4 | | | 2 | | | | | |
| Total | 1.00 | | | | | | | | | | | | |
| 2.0 Profit Formula | 0.15 | | | | | | 2.34 | | | | | | 3.66 |
| 2.1 Statement 1 | 0.34 | | | | 3 | | | | | 3 | | | |
| 2.2 Statement 2 | 0.33 | | 2 | | | | | | | 4 | | | |
| 2.3 Statement 3 | 0.33 | | 2 | | | | | | | 4 | | | |
| Total | 1.00 | | | | | | | | | | | | |
| 3.0 Key Resources | 0.25 | | | | | | 2.00 | | | | | | 4.00 |
| 3.1 Statement 1 | 0.34 | | 2 | | | | | | | 4 | | | |
| 3.2 Statement 2 | 0.33 | | | | 3 | | | | | 3 | | | |
| 3.3 Statement 3 | 0.33 | 1 | | | | | | | | | 5 | | |
| Total | 1.00 | | | | | | | | | | | | |
| 4.0 Key Processes | 0.25 | | | | | | 3.00 | | | | | | 3.00 |
| 4.1 Statement 1 | 0.34 | | | | 3 | | | | | 3 | | | |
| 4.2 Statement 2 | 0.33 | | | | 3 | | | | | 3 | | | |
| 4.3 Statement 3 | 0.33 | | | | 3 | | | | | 3 | | | |
| Total | 1.00 | | | | | | | | | | | | |
| Gran Total | 1.00 | | | | | | | | | | | | |
| | | | | | | | | Avg Score | | | | 3.00 | |

Figure 32: BMA on new technology: Adaptability and Impact score– own elaboration

In the Alfa's example, the Adaptability Score is 2.84, representing, as already clarified, the new relevance of the extant business model impacted by the personal data management regulation scenario. On the other hand, the Impact Score is 3.17, representing an important indication to

introduce the Urgency score, covered later in the same section. The new degree of interdependency among components, based on the materialisation of the new data regulation, is the average of the scores on the different combinations, as reported in Figure 33. In this case, the question used is: to what extent can a change in component x affect the component y, as a result of the new data regulation materialisation?

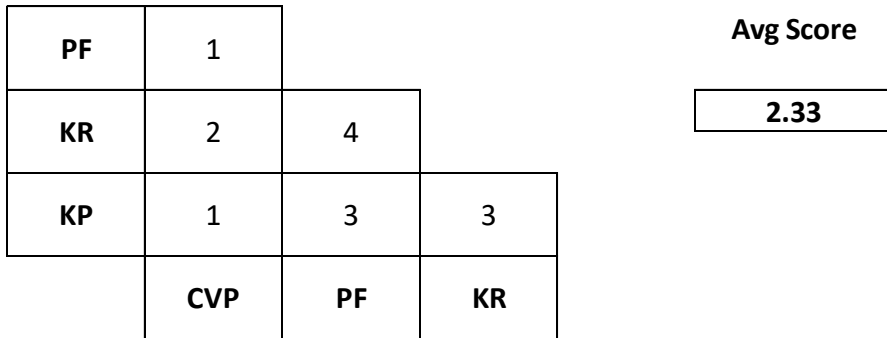


Figure 33: BM interdependency among components new data regulation – own elaboration

The new data regulation affects the extant business model (Act BM), in terms of relevance, from 3.23 to 3.00, with the same interdependency score at 2.33, moving to SC 1 New Reg (Figure34).

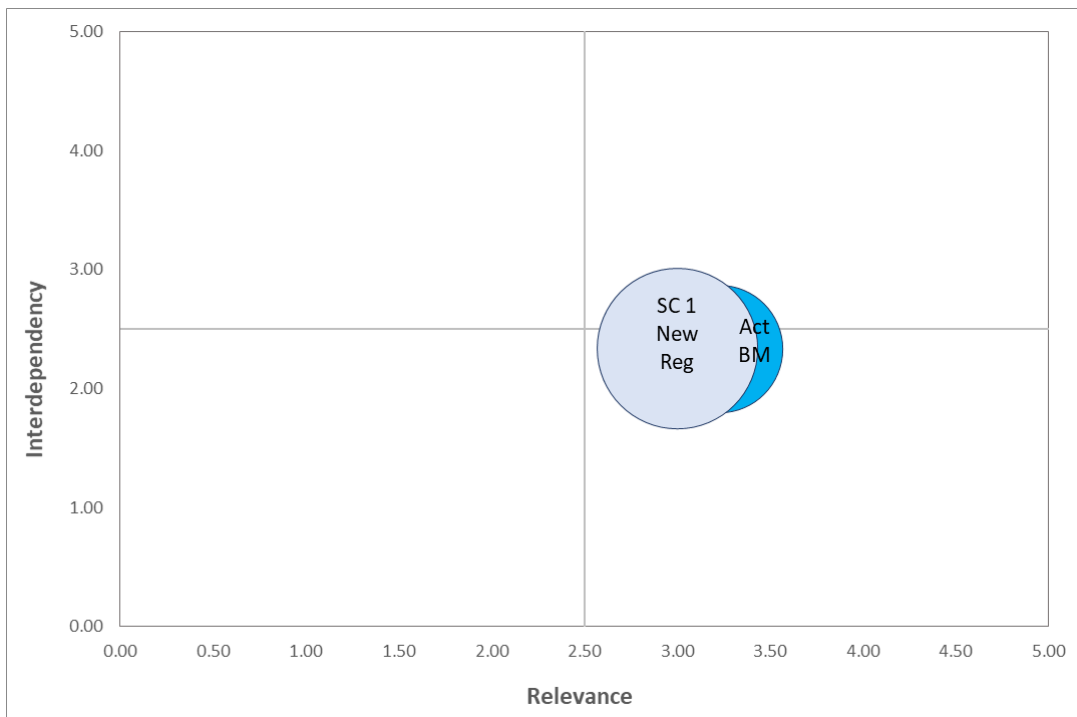


Figure 34: BM map including the new data regulation impact – own elaboration

In addition to the relevance and interdependency scores, leaders should also consider the Urgency score calculated using the Impact score, the Interdependency score, and the probability of materialisation associated with the new regulation scenario, as presented in the following Table 17.

| Scenario # | Description | Probability | 0.5 | 0.5 | Urgency Score |
|------------|-------------------------------------------------|-------------|--------|-----------------|---------------|
| | | | Impact | Interdependency | |
| 1 | Stricter Regulation on personal data management | 60.0% | 3.17 | 2.33 | ● 1.65 |

Table 17: Urgency Score associated with the new data regulation scenario – own elaboration

Impact and Interdependency are also weighted based on the importance the leaders can allocate to the different factors: in the Alfa’s example, Impact and Interdependency received a 0.5 weight each. In case of different weights between the two factors, leaders should provide a solid explanation to support it. The result is an Urgency score of 1.65, represented by the size of the bubble named Sc 1 New Reg, in the map of Figure 39. For the Act BM, the Urgency score is set at 1.0 by default as a comparative measure. In the example provided, as the extant business model is affected by the emerging personal data management regulation, it requires leaders to discuss how to manage the situation proactively. If the scenario analysed occurs, the extant business model will have a lower relevance than the current one while almost maintaining a similar level of interdependency among components associated with a certain urgency score. In conclusion, this new situation will alter the current business logic but in a way that can be considered moderate, requiring a business model adaptation rather than its innovation.

In case Alfa’s leaders consider that an additional scenario is worth being mapped to have a broader understanding of the situation, the business model dashboard will support them in the following way. Assuming a new technology, which enables data recording and exchange among users, could be soon available, the key statements articulation is reported in the Table 18.

Scenario # 2 New technology enabling data capturing and exchange among users

| | Key Statements | Direct Impact | Indirect Impact | Main Considerations |
|---|--------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | This technology requires a smaller and wearable device to perform the jtbdd | CVP | KR+PF | the current device is heavy and can be only easily used at home; to move toward a wearable device we should also look outside the organization for an OEM partner |
| 2 | as the data can help the user to change the personal behaviour, they can pay us on a subscription mode or stay on a transactional approach | PF | KR+KP+CVP | moving from a transactional to a subscription mode means the devices' value will stay in our B/S with important implication for the cash flow; what's the implications if we are going to keep both revenues streams approach? |
| 3 | the data should be elaborated to uncover patterns that lead to habits reassessment from the user | KR | CVP+KP+PF | data management and interpretation to offer valuable insights on how to change habits is not our core business, so we need to consider a partner to collaborate with |

Table 18: New technology scenario key statements – own elaboration

As for the case of the new personal data regulation the emergence of a potential new technology, articulated in specific key statements, offers a preliminary and qualitative, direct as well as indirect, understanding of the impact on the different business model components, enabling Alfa’s leaders to build a sort of cause-and-effect relationships among components triggered by this scenario. In addition, all the main considerations represent valuable insights to be used during the quantification step, reported in Figure 35, Figure 36 and Table 19.

| | weight | Adaptability Score | Total | Impact Score | Total |
|--------------------------------|-------------|--------------------|------------------|--------------|------------------|
| 1.0 Consumer Value Proposition | 0.35 | | 1.00 | | 4.66 |
| 1.1 Statement 1 | 0.34 | 1 | | 4 | |
| 1.2 Statement 2 | 0.33 | 1 | | 5 | |
| 1.3 Statement 3 | 0.33 | 1 | | 5 | |
| Total | 1.00 | | | | |
| 2.0 Profit Formula | 0.15 | | 2.00 | | 4.32 |
| 2.1 Statement 1 | 0.34 | 2 | | 3 | |
| 2.2 Statement 2 | 0.33 | 2 | | 5 | |
| 2.3 Statement 3 | 0.33 | 2 | | 5 | |
| Total | 1.00 | | | | |
| 3.0 Key Resources | 0.25 | | 1.34 | | 4.00 |
| 3.1 Statement 1 | 0.34 | 2 | | 4 | |
| 3.2 Statement 2 | 0.33 | 1 | | 3 | |
| 3.3 Statement 3 | 0.33 | 1 | | 5 | |
| Total | 1.00 | | | | |
| 4.0 Key Processes | 0.25 | | 2.34 | | 3.66 |
| 4.1 Statement 1 | 0.34 | | | 3 | |
| 4.2 Statement 2 | 0.33 | | | 4 | |
| 4.3 Statement 3 | 0.33 | | | 4 | |
| Total | 1.00 | | | | |
| Gran Total | 1.00 | | | | |
| | | | Avg Score | | Avg Score |
| | | | 1.57 | | 4.19 |

Figure 35: BMA on new technology: Adaptability and Impact score– own elaboration

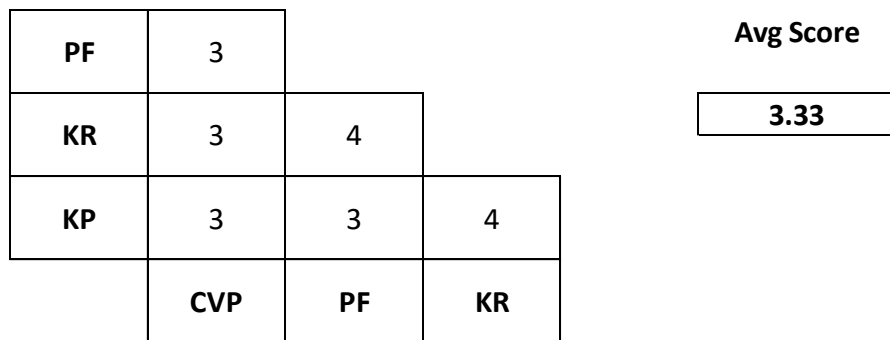


Figure 36: BM interdependency among components new technology – own elaboration

| Scenario # | Description | Probability | 0.5 | 0.5 | Urgency Score |
|------------|-----------------------------------------------------------------|-------------|--------|-----------------|---------------|
| | | | Impact | Interdependency | |
| 1 | Stricter Regulation on personal data management | 60.0% | 3.00 | 2.33 | 1.60 |
| 2 | New technology enabling data capturing and exchange among users | 80.0% | 4.19 | 3.33 | 3.01 |

Table 19: Urgency Score comparison among different scenarios– own elaboration

The emergence of the new technology affects the current business model (Act BM), in terms of new relevance, moving from 3.23 to 1.57, and interdependency, moving from 2.33 to 3.33, determining a new configuration in the map, called SC 2 New Tech, if corrective actions are not taken. In terms of Urgency score, this scenario, based on the calculation presented in Table 18, is higher than the new data regulation one, determining a bigger bubble size, as reported in Figure 37.

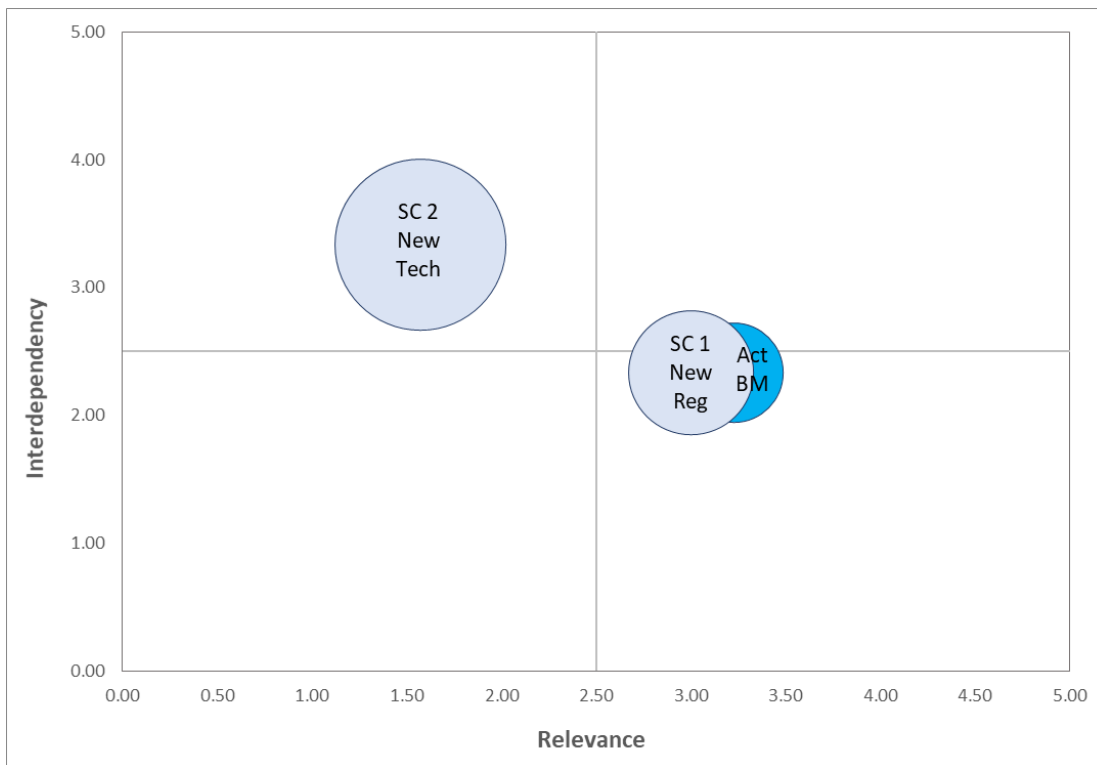


Figure 37: BM map with new data regulation and new technology impact– own elaboration

From the analysis of the new business model map, reported in Figure 42, Alfa’s leaders could consider the following evidence.

1. The two scenarios considered have an impact on the extant business model on both relevance and interdependency scores.
2. The new technology scenario could reduce the extant business model’s relevance more than the new regulation one; it requires a stronger interdependency among components, resulting in an overall higher complexity scenario compared to the new regulation one;
3. As a consequence of the above considerations, in terms of urgency, the new technology scenario score is higher than the new data regulation, urging the leadership team to prioritise actions to tackle this scenario.

4. Based on the action plan defined, the leadership team could work backwards to define the required time to start transforming the extant business model in order to be in the position to re-establish its relevance for the consumers, in case the new technology is available in the market.
5. Having articulated the scenarios through the definition of detailed key statements and thanks to the quantification of the interdependency score, the Alfa's leadership team could also start considering if and how the two scenarios could affect each other; that is, whether implementing a specific course of actions could generate positive consequences for both of them.

Based on the above considerations, Alfa's leaders should now be in the position to answer the questions posed at the beginning of the discussion.

Q1: Do these scenarios represent inflection points requiring the transformation of the current business model?

Based on the findings that emerged from the map reported in Figure 42, the new technology scenario clearly shows all the features of an inflection points, and it triggers the discussion within the Alfa's leadership team on how to manage the impact with the current business paradigm. On the other hand, considering the new data management regulation, although the change in the relevance score is evident, the situation is not driving the extant business model in a very far territory compared to its initial position. Consequently, this latter scenario potentially suggests an adaptation of the extant business compared to its innovation.

Q2: How can we understand which scenario will have the strongest impact on the organisation?

Thanks to the indications obtained by measuring relevance, interdependency and urgency, the new technology scenario seems to represent the situation with the strongest impact on the organisation, requiring its leaders to align around a common agenda: how the current business model should be innovated today to thrive in the future.

Q3: What is the urgency level these scenarios will require for the organisation?

Considering the urgency score is the result of the impact, interdependency, and selected scenario's probability to happen, from the data developed, the new technology scenario requires a stronger sense of urgency from the Alfa's leaders.

In addition, there are three aspects associated with the use of the business model dashboard worth mentioning.

1. As this approach requires the leadership team to work together on a shared framework adopting a quantitative approach, it creates the conditions to potentially reach an agreement on how to monitor the environment looking for the inflection points and if and when to start the transformation journey, thanks to the information provided by the relevance, interdependency, and urgency scores. This is in line with the idea expressed by Jeff Bezos that “it isn’t usually all that difficult to identify key trends, the hard part is knowing when to move and bringing the organisation with you when you decide to take action” (McGrath, 2019).
2. In a situation where more than just one scenario are emerging from the environment, this approach could help the leadership team to explore relationships and patterns among them in a way to understand how the selection of specific actions could generate a positive impact in managing a multi-scenario situation.
3. The fact that the new relevance associated with an emergent scenario has been built starting from the single extant business model components can represent a valuable support for leaders knowing where to start their transformative journey (e.g. consumer value proposition, key resources, etc.). Consequently, the innovation sequence should unfold based on the different components’ interdependency score;
4. The internal assessment oriented towards the business model could easily be extended to include the main competitors’ business models. This analysis could be instrumental for leaders to understand how potential environmental changes could create a different impact on the organisation’s business model compared to its competitors and define the most appropriate strategic options.

Despite the potential contributions mentioned above, the business model dashboard, in the version presented above, also has also some limitations, asking organisational leaders to evaluate the following aspects carefully.

1. It requires the leadership team to have, or to develop, a shared vision of the extant business model and a common language in order to be in the conditions to navigate through the different concepts included in the framework.

2. It is structured to manage a multi-scenario setting in a one-by-one approach in order to secure the accuracy in delivering the relevance, interdependency, and urgency scores at the specific scenario level.
3. It is based on a limited number of indicators to capture the essence out of a complex situation in order to keep the framework simple and functional in representing a variety of different scenarios.

In summary, leaders using the business model dashboard to assess their extant business model are in the position to discover how an emerging scenario is expected to reduce their business logic's relevance, by representing a warning about the future ability to satisfy their consumers. Lower expected relevance is therefore associated with the need for a high degree of transformation.

In addition, if the new model presents a high level of interdependency, this transformation will also bring a high level of complexity, as the change in one component will impact on all the other components. Therefore, a new business model with a much lower relevance, compared to the initial one, and a high level of interdependency, is expected to be associated with a high urgency score, requiring the leaders to take immediate actions to maintain the organisation in a condition to fully satisfy their consumers and keep their relevance in the market.

5.6 Preliminary validation of the Business Model Dashboard

This section includes the feedback I have gathered from MDM, as well as from other organisations, on the Business Model Dashboard in order to have an initial validation of the tool in helping leaders to define when is the right time to innovate their business models. With this aim, I have involved one leader from MDM and four leaders working in four different sectors: Social Media, Personal Care and OTC, Consulting, and Clinical Nutrition and Food Supplements.

The objective of this initial validation was not to generalise the findings coming from the MDM study, but to understand what leaders from other sectors could learn from my study and gather feedback, in order to improve the tool's ability to support organisations' leaders in creating the internal alignment for their business model innovation.

5.6.1 MDM comments on the Business Model Dashboard

The MDM leader involved in the model evaluation has considered it as *“an attempt at quantifying senior leadership decision making within a pre-defined parameter-based model, as opposed to how most companies currently do it (e.g. highest paid person’s opinion or gut feel) .”* This leader has positively contributed to the validation of the model, offering insights on how to improve it and the challenges the model has been able to manage.

Regarding the areas of improvement, one comment has been focused on the source of data to measure the different Business Model Dashboard indicators of relevance, interdependency and urgency. As expressed by the leader involved, *“my concern would be that leaders would massage the model to simply align with their pre-existing perceptions, beliefs and personal goals.”* He recommended building a systematic way to gather this information as much as possible from outside the organisation so as to provide reliable data to be examined by the leadership team in a neutral condition. On the other hand, the information that cannot be gathered from outside the organisation should be built in a way to ensure comparability over time and avoid as much as possible the influence of potential bias. I believe this is a valuable comment, totally aligned with the recommendations included in section 5.5 about using of the three different indicators. First of all, his consideration supports the selection of the indicators presented to assess the extant business model. My recommendation to avoid potential bias coming from a single perspective approach is to leverage the power of the team, including as much as possible internal people coming from different business functions as well as external and independent experts (e.g. researchers, consultants, national agencies experts, etc.), who can generate a different and contrasting point of view to the prevalent logic presents within the organisation.

The MDM leader also provided a second comment to potentially improve the Business Model Dashboard regarding its ability to specifically answer the when is the right time to innovate your business model question. Based on the leader’s comment, *“I believe it provides a solid framework to evaluate current factors then compare to future scenarios within a defined process and give guidance on WHICH scenario to pursue and WHICH will provide the best potential outcome, but it could articulate WHEN to take action more strongly.”* The leader has offered, as an example to make his point, the use of a threshold beyond which the leadership team is asked to take actions. Based on his indications, when the difference between the actual situation and the scenario under analysis is greater than a defined level measured by the model’s relevance, interdependency and urgency (e.g. 30% or 50%), specific actions should be implemented. In other words, he has

recommended that the leadership team define some thresholds for the indicators measured with the objective to create a sort of automatic action to be implemented when the new scenario is assessed as substantially different from the current assumptions the extant business model has been built upon. This approach can be useful to contain the time the leadership team can discuss the impact of the emerging scenarios. At the same time, the right time to discuss the potential future business model is one of the key outcomes of the model. This discussion should allow the organisation's leaders to combine all the different perspectives to reach an agreement on the time to start and the direction to take, based on the insights generated by the assessment and the consequent discussion. I also believe that defining a specific threshold for the different indicators can be a complex attempt because comparing the scores of the different business model indicators in different scenarios, from only an internal perspective, can potentially lead to misleading decisions, without also considering the probability of emerging competitors being in the position to better match the new competitive context. In other words, a difference of 30%, for instance, between the relevance of the extant business model compared to the one in the new scenario, can be managed differently if combined with a high probability that a competitor will better satisfy the consumer in a given timeframe as opposed to a lower probability. This means that the above mentioned 30% difference can assume a different meaning based on the external conditions, limiting its ability to rigidly define when is the right time to start innovating the organisation's business model.

The model has also been considered able to generate internal alignment, as expressed by the leader's comment affirming that *"I have rarely seen any strategic/senior decisions made based on quantifiable evidence so the ability to have a common framework for all functions to operate within should hopefully level the decision-making playing field."* In effect, the model I have developed requires the leadership team to work together on a shared model based on a quantitative approach. This is based on the premise that the leadership team members share the same language and the same understanding of the extant business model, representing the starting point for the assessment of its future development.

A final comment on the model highlighted by the MDM leader is that its effective use requires *"the leadership team to develop the ability to understand and appreciate the forces at play in the business model outside of their own areas of expertise and how to act upon the information presented in it."* The MDM leader's observation started from the fact that being in a leadership position does not necessarily imply a solid knowledge of the change management topic and its

implications for the different business functions; to manage that situation, the model has been considered as a valuable resource to generate a shared vision of the future, upon which the leadership team can act. The fact that I have built the model for the leadership team and not exclusively for the team leader fully embraces this consideration as the business model represents the way the different components relate to each other in a systemic perspective to create, deliver and capture value. This was the objective of the interdependency indicator, to understand if the value generated, distributed, and captured is the result of highly connected components or low connected ones, with clear implications on the degree of complexity for the extant model innovation.

In conclusions, all the MDM leader's comments on the Business Model Dashboard have been valuable and actionable. In other words, they are useful to improve the leadership team's ability to assess the model and define the appropriate timing to start its innovation. These considerations have contributed to the validation of the model and the use of the selected indicators of relevance, interdependency, and urgency as measures able to go beyond the traditional financial indicators in order to assess the extant business model. The same indicators have been considered useful for assessing how different emerging scenarios can affect the current business model and provide the leadership team with a quantitative understanding of the time to act and the direction to take in its innovation journey. On the other hand, the tool could be improved in the area of automation, creating some thresholds to signal the moment to start specific discussions within the leadership team, and in the area of data sourcing, creating an external and reliable source of data to be balanced with the use of internal data to assess the extant business model.

5.6.2 Additional comments on the Business Model Dashboard

In addition to the comments gathered from the MDM leader, I have involved and asked for contributions from other four managers coming from different industries, Social Media, Personal Care and OTC, Consulting, and Clinical Nutrition and Food Supplements, to preliminary validate the Business Model Dashboard. As already introduced, the intention of collecting comments from these leaders was not to generalise the findings generated from the MDM case study, but to understand what executives, active in other sectors, could learn from my research and eventually provide valuable insights to strengthen the model and to stimulate further research in their specific domains.

I have divided the comments gathered into two main groups. The first summarises some commonalities expressed by all the contributors. The second includes specific comments based on the industry considered and influenced by the specific career path of every executive.

Starting with the comments shared among the leaders, the following three elements consistently emerged from the interaction and discussions I had with them:

1. A dynamic tool oriented to exploring the potential futures of the organisations;
2. A model to align the leadership team on the shared future;
3. A framework based on indicators able to overcome the limits of the financial measures.

The Business Model Dashboard has been considered an interesting tool to provide a dynamic perspective to the business model, customarily used within their organisations as a static representation of how they create, deliver and capture value. In that regard, one of the leaders declared that *“I found the model extremely interesting especially for aligning the leadership teams to consider future evolutions of their organisations based on opportunities and threats.”* The dashboard, in other words, provided a framework to understand how the current model is affected by different scenarios in a quantitative way so as to build consensus around the moment and the direction for innovation. To support the discussion and reach this alignment within the leadership team, the definition of the business model indicators of relevance, interdependency and urgency have been considered able to create a richer and forward-looking perspective. These indicators represented the opportunity to go beyond the limitations of using financial measures, which can provide a good understanding of the past, but have with a limited ability to predict the future in a fast-changing environment.

In addition to the above-mentioned shared comments, there have been very interesting individual contributions as well, presented here below.

The leader working in the Social Media industry offered valuable comments that we had discussed in the one-to-one conversation and which are summarised here below:

1. Frequency of the changes that can be considered inflection points;
2. Source of the business model components' weights;
3. Rationales for the threshold of intervention.

The first comment has been on the definition and frequency of the external changes that qualify as inflection points. This leader considered that the situations able to qualify a change in the market

as an inflection points are limited when compared to a high frequency of mid-level changes that happen much more frequently. These mid-level changes still have an impact on the organisation and require the leadership team to assess them and take actions oriented towards adapting their business model to compete more efficiently. His point was to avoid the risk of minimising the mid-level changes' impact by only focusing on the high-level changes, like the inflection points, to take decisions on rethinking the way their organisation creates, delivers and captures value from the interaction with their consumers.

The second comment discussed was about the weights the leadership team should assign to the different components of the business model, based on what I have included in section 5.5. His comment focused on the elements to consider for a realistic weight allocation. We discussed about the balance between the industry-driven considerations and the organisation specific ones that the leadership team should be aware of in order to have a meaningful conversation on this initial Business Model Dashboard set-up. Furthermore, the leader highlighted the point of the frequency for the re-evaluation of the initial weight's allocation, to keep the model able to fully reflect the changing context their organisation is part of.

Finally, a third comment has been raised on the opportunity of some threshold definition and their rationales. In line with one of the comments provided by the MDM leader, the idea of defining some thresholds to signal the necessity to the leadership team to take decisions has been considered an interesting option to reinforce the model. In addition, we discussed if these thresholds should eventually be based on the characteristics of the industry the organisation belongs to, on the specific eco-system the organisation is part of or on both these contexts. This distinction is not irrelevant as considering the industry or the organisation eco-system, potentially involving different industries, poses a strategic question to the leadership team about the context to consider for establishing the limits beyond which they need to take actions.

The leader active in the OTC and Personal Care industry proposed the three following main comments we have had the chance to discuss:

1. Adoption of the model at Business Unit level;
2. The opportunity to include the "sustainability" topic into the model;
3. The actionability dimension of the model.

Regarding the first comment, he opened the discussion with the possibility to apply the Business Model Dashboard for an independent Business Unit within an organisation active in different

businesses with different business models. He even went deeper on reflecting on model's potential application to a specific geographical territory under the same area manager responsibility. This was an interesting suggestion that has driven our conversation towards alternative options to evaluate different business model configurations for the same organisation before taking the final decision. Based on this perspective, the Business Model Dashboard could provide indications for a business model pilot to be evaluated in a limited area before the eventual scaling up to a larger territory based on its results. In this case, the leadership team commits resources towards a new business model only after confirming the stronger relevance of the business model under evaluation compared to the extant logic.

A second comment has been developed around the possibility to include the sustainability aspect as part of the model. The leader used the term in its broader connotation, considering the economic sustainability of the new business logic as well as the environmental sustainability as the consequence of how the creation, delivery and capture of the value could be achieved. During the discussion, we both agreed that environmental sustainability, in other words, the organisation's ability to take decisions by considering the perspective of their potential impact on the environment, has been captured in the model in different ways. The consumer value proposition, for instance, can be defined in a way to actively articulate how the solution developed by the organisation to help the consumer to get the job done fully integrates the request for a limited impact on the planet in terms of emissions, waste after usage and eventual recycling of the leftovers after the consumption. In that case, resources and processes should be defined in a way to satisfy that consumer value proposition, considering the impact this decision may have on the profit formula. However, when we covered the sustainability from an economic perspective, things got more complex. In fact, we realised that an eventual business model change can be necessary for the organisation to maintain its presence in the market in the long term but only able to generate a limited contribution to the top and bottom line in the short term. The move from the extant business model towards its new configuration could be not very attractive from a financial perspective but still representing a crucial step to be in the position to switch at a later stage, when a more favourable context emerges. For instance, the consumer demand under the new logic could be affected by the current technology, but as soon as the main roadblocks are removed, it will develop quickly. In a similar situation, the leadership team should be able to orchestrate a business approach where the extant business model can generate cash to be gradually invested in building the business model of the near future.

The third comment was about the model's ability to recommend specific actions, in other words, the model's actionability. We discussed about the definition of actionability and decided to adopt the narrow perspective, meaning the model's ability to provide the leadership team with a defined course of action from the extant business model to the new one as the output of its adoption. From that perspective, the Business Model Dashboard has been considered a tool able to stimulate the discussion and bring an agreement among the leadership team's members about the need to change the business logic and the time perspective to start that process. At the same time, however, the strategies to move from the extant business model to its new configuration are not provided by the model, except for the insights gained through the interdependency indicator on the relationships among the different components. The discussion around the action plan to innovate the current business model is triggered by the model, but it should be managed outside the model as potential alternatives cannot be easily reduced to a simple and straightforward solution. In other words, the model could solicit a variety of options for the leadership team to consider more than offering one specific course of action to implement.

The leader from the Consulting Industry has provided comments mainly around the leadership team's ability to efficiently and purposefully manage the process embedded in the Business Model Dashboard. More in details, she has highlighted the necessity of providing indications for using the model and streamlining the process. Here below is the summary of the comments:

1. Clear instructions on how to use the model for the members of the leadership team;
2. The completeness dimension of the model;
3. The urgency indicator to start the innovation.

Regarding the first comment, the contributor highlighted a list of improvements on the proper use of the model, including the circumstances when the leadership team should consider it, the instructions to progress from the initial steps to the complete assessment, the possibility to link the different excel worksheets to minimise the manual data entry and the associated risks of mistakes. All these recommendations have been considered helpful in providing simplicity to the understanding of the tool and saving time devoted to discussing the strategic aspects of the business model innovation.

The second comment emerged from the model's ability to consider the multiple dimensions of the business model within its operative context by providing a sense of completeness when the

leadership team is asked to assess it. This has been one of the crucial aspects I have tried to incorporate in the model from the MDM study; moving from the single dimension evaluation to a comprehensive and systemic perspective, where these dimensions are assessed individually and for the interrelationships they have with each other. Based on this perspective, the Business Model Dashboard uses not only the relevance indicator to understand the strengths of a business model, but also the interdependency indicator to highlight how strong the connections are among its different components. Through the combination of these two indicators, the assessment has gained a forward-looking approach and a systemic perspective. These essential features were not considered in case using only financial indicators. When these two indicators have been combined with the urgency indicator, the overall model has taken a dynamic perspective as the time dimension has been considered.

Finally, the third comment has been linked to the previous one by focusing on the urgency score. The leader provided insights on how to easily transform the urgency indicator into actions to be undertaken by the leadership team. The Business Model Dashboard provided indications on considering the different scenarios in terms of urgency compared to the starting situation. This represented the first step since to reach a clear timeframe, it is necessary to define the action plan in order to re-establish the desired relevance and then calculate backwards when the organisation needs to start innovating its business model. As per the considerations made to the actionability of the model, the action plan can be influenced by many different elements that are outside of the model. For similar reasons, the model cannot automatically indicate, e.g. two months or six months, before starting the business model innovation to maintain or improve the organisation's competitiveness. This element should be defined outside the model by leveraging an indication provided by the model itself.

The leader active in the Clinical Nutrition and Food Supplements Industry has provided comments in the area of strategic simulation to use the Business Model Dashboard not only as an internal tool to define when to innovate but also to understand how the competitors could potentially react. Based on his indications, here below is the summary of the comments:

1. The model's ability to provide valuable insights;
2. A strategic model to assess how different strategies could affect the current business model;
3. Business model competitive assessment.

Regarding the first comment, the leader has highlighted how the model has been able to provide a broader perspective of the organisation's business model. Thanks to the combination of the three different points of observations represented by the current evaluation, the evaluation in trend and the compared evaluation, the leadership team has been in the position to have a much deeper understanding of the different components of the business model compared to the result of the Profit & Loss and Balance Sheet analysis. The same benefit is generated by evaluating the impact the emerging scenarios could have on the business model's components, considered individually and in relationship to each other. The contributor commented that the analysis above mentioned is not very common within organisations, and when it is done, it is much less structured and solid than what the leadership team could obtain using the Business Model Dashboard to lead the discussion.

In a second comment, the leader has presented the findings of using the model to evaluate how different business strategies could create the conditions for a stronger or weaker relevance than with the extant business model. In addition, to test the business model against emerging scenarios, the leader recommended testing it against alternative strategies to understand if and how their implementation could reinforce the organisation's ability to delight its consumers. This feedback could represent an interesting area of research as it will force the leadership team to evaluate a potential strategy from the multiple perspectives represented by its business model components and their interrelations, thus contributing to a much stronger dynamic and systemic understanding.

Finally, the third comment presented by the leader has been oriented towards using the model beyond the internal assessment of potential emerging scenarios and in relationship to how competitors will be positioned in terms of relevance and interdependency if these scenarios materialise. In my considerations reported in section 5.5.1, I have included the competitive perspective to understand how the emerging scenarios could eventually reshape the industry's profile based on the different abilities of the considered organisations to innovate their business models. The leader's recommendation has been to include this strategic perspective and define the business model innovation path, not only to re-establish the expected relevance in the market, but also to overcome the eventual competitors' moves facing the same fundamental changes of the environment.

Putting together all the different comments provided by the leaders involved in the preliminary validation process of the Business Model Dashboard, I have created a summary chart where the model has been assessed against some critical drivers, as reported in Figure 38.

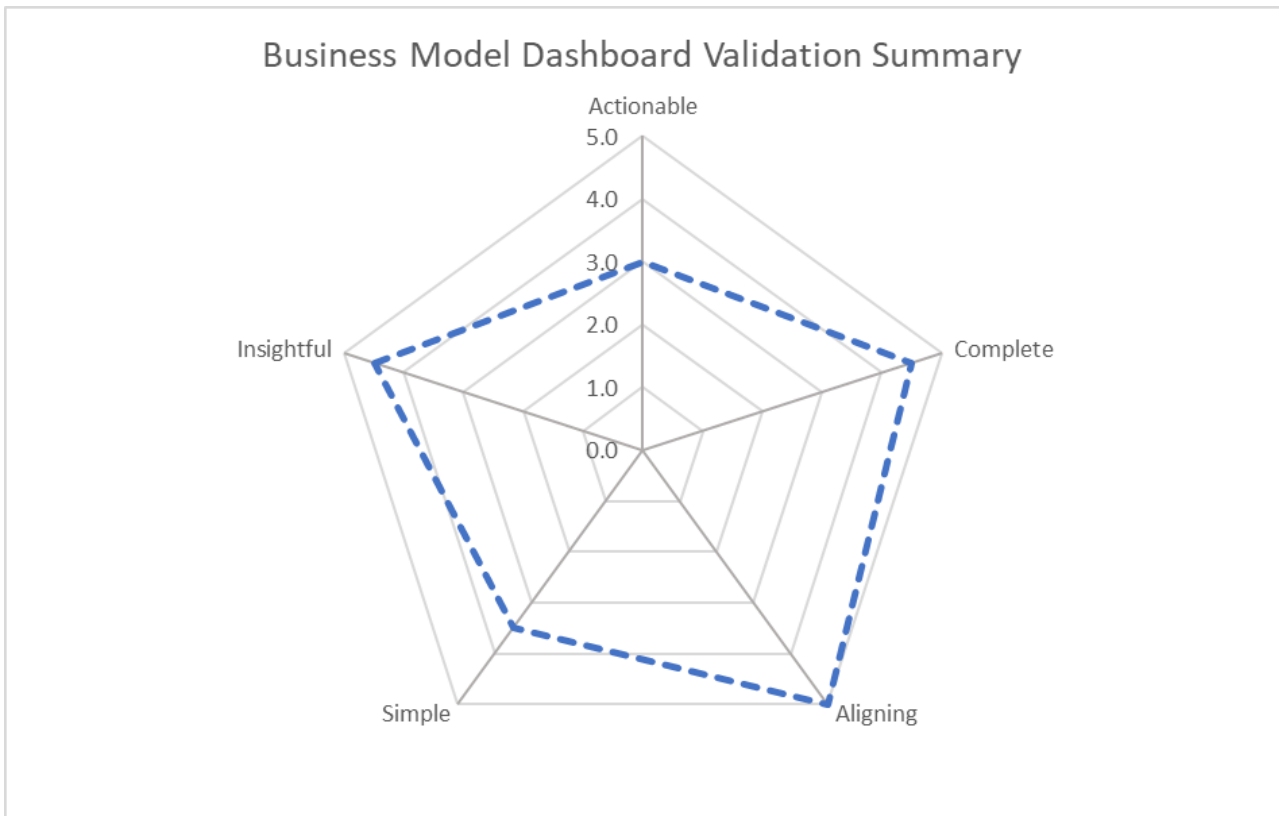


Figure 38: Business Model Dashboard validation summary chart – own elaboration

The drivers emerged from the comments gathered by the leaders involved in the validation process and have been summarised as follows:

1. Actionable
2. Complete
3. Aligning
4. Simple
5. Insightful

With actionable, I intend the ability of the model to support the leadership team in selecting a clear course of action resulting from the outcome of the business model assessment.

Complete means the ability of the system to consider the single business model components as well as their interrelations, going beyond the use of financial measures only.

Aligning is the ability the model provides to the leadership team with, so as to stimulate a discussion and generate a strategic alignment on when to start the innovation journey and how to potentially manage such a journey.

Simple refers to the ease of the model use by the members of the leadership team.

Insightful has been used to express the ability of the model to provide the leadership team with a variety of perspectives and points of observation of the organisation's business model, which are normally not adopted in other strategic discussions (e.g. the quantitative approach to assess how the extant business model is affected by an emerging scenario).

From the summary, the strengths associated to the model clearly emerged, as it has been considered insightful, able to align the different perspectives within the leadership team, and complete, thanks to the system perspective adopted in its development. At the same time, clear areas for improvements have been identified around the drivers of actionability and simplicity to create favourable conditions for the adoption of the model by the leadership team on a continuous basis.

5.7 Business Model Dashboard conclusions

Understanding when is the right moment to innovate the extant business model is particularly important for scholars and leaders. In fact, in a recent survey involving twenty-one international scholars renowned for their focus in this field, emphasis was placed on inviting further research in the "fundamental determinants of an evolutionary adjustment of business models across time" as "the interfaces and the interaction between the different business model components have not been researched much" (Wirtz et al., 2016, p.46 and p.51). On the other hand, leaders are interested in knowing how to objectively create a shared alignment within their organisations about the emerging reality to establish the appropriate sense of urgency and move forward (Bertolini et al., 2015; McGrath, 2019).

Reviewing the literature on the business model assessment, the limited examples of contributions are mostly static and focused on the single business model components without considering the degree of their interdependency.

Based on the insights that emerged while reviewing the business model literature and the evidence generated conducting my research in the MDM organisation, I have developed the business model dashboard to tackle the assessment process from a holistic perspective combining, in a quantitative approach, internal and external factors, lagging and leading indicators, and measuring the single components and their interdependency.

Despite the potential support it could represent for leaders dealing with their business model innovation, this framework should be tested with other organisations with the following objectives: to evaluate its ability to manage the complexity of the reality organisations daily face and to provide insights for its improvement and fine-tuning. At the same time, the framework represents an original attempt to step into the business model assessment domain applying the system theory perspective in a quantitative approach.

Chapter 6 Conclusions

6.1 Introduction

The objective of this chapter is to summarise my answers to the research questions formulated at the end of the literature review based on the considerations that emerged during the research discussion included in Chapter 5. Clearly stating those answers represents the opportunity to shed light on the theoretical implications implicit in the study and, simultaneously, offers the chance to cover the managerial implications connected to the business model assessment and innovation process. This part of the thesis is also devoted to summarising and reflecting on my experience as a researcher, highlighting my contribution to knowledge as well as the research limitations and providing my recommendations for future work in this area.

6.2 Theoretical implications

Over the last 20 years, the business model innovation concept has attracted the interest of scholars and practitioners, as it has proved to represent a valuable strategic option to keep market relevance for organisations operating in a highly volatile environment (Pohle and Chapman, 2006). We can see from the review of the literature though that despite the growing number of publications on this topic, “many questions have not yet been investigated,” and therefore business model innovation research “is still at an early stage” (Wirtz et al., 2016, p.48). In addition, while the larger part of the literature has been focused on the definition of conceptual and structural dimensions, minimal empirical evidence has been developed to support the efforts of organisations’ leaders to understand when is the right moment to undertake the business model innovation endeavour and how to manage this transformation journey. Finally, in a recent survey, scholars have solicited further research to understand better how the business model assessment and innovation process unfolds and how the different business model components interact in such a process (Wirtz et al., 2016).

The MDM organisation, which operates in the diabetes market, was selected based on the above assumption, motivated by a desire for a better understanding of the process taking place within an established organisation in the healthcare space, and adopting a system theory perspective. MDM represents a unique case for understanding how, in the period 2012-2014, a traditional “treatment-driven” business model was transformed into a “patient-focused” business

model. Considering the limited knowledge on this topic, I have adopted an inductive investigation taking a Grounded Theory guided approach based on a qualitative interpretative perspective, in order to be in a position to answer the selected research questions. Before entering into that part of the thesis, it is worthwhile highlighting how the two characteristics of the established organisation and healthcare space have played a role in the study.

Established organisations already have functioning business models, and after the initial set-up, where the purpose is to define the model properly, the main objective of a leadership team is to maximise its efficiency. Improving efficiency means shaping every component's profile to serve in the best possible way the other components. The expected result of this effort is a business model with tightly coupled components able to get the maximum from the resources employed at the expense of modularity. Therefore, in case the organisation under observation is operating in a highly volatile environment, the leadership team should deliberately make choices to sacrifice part of the potential efficiency in favour of the modularity that can be necessary to face challenges coming from a changing environment. This situation is peculiar to established organisations compared to start-ups that, by nature, are still defining their business models and consequently are much more oriented towards the change in case market circumstances require the adoption of a different business logic. This is also a potential reason explaining why resistance to change is high in established organisations and the consequent importance of the leadership team in securing a solid alignment around a transformation agenda. In the MDM case, the leadership team was able to lead the overall assessment and innovation process cohesively, thanks to the adoption of a common language and a shared assessment framework to detect potential inflection points.

The healthcare space element brings an interesting and specific perspective to the discussion, especially because, in the case selected, it is associated with certain forms of reimbursement, either covered by the NHS or by healthcare insurance companies. Independently from the considerations regarding the benefits organisations can have operating in a market supported by any form of reimbursement, a solid understanding of how the reimbursement budget is periodically defined and allocated to different therapeutic areas, as well as the factors affecting patient eligibility, are fundamental drivers impacting the business model. As I have reported during the presentation of the findings from the MDM study, the presence of a reimbursement scheme in the strips business required a rather different business model from the one supporting the CGM solution, where reimbursement was an objective still to be obtained.

6.2.1 How do healthcare organisations assess their business model to define when is the right moment to innovate it?

As explained in the literature review, business model assessment contributions are minimal and able to provide only a partial understanding of the overall complexity leaders are expected to make sense of. Afuah (2014) has developed a framework, called VARIM, that is expected to estimate the profitability of a business model based on the measure of five elements: (1) value; (2) adaptability; (3) rareness; (4) inimitability; (5) monetization. According to the author, “we can assess the profitability of a business model by exploring the extent to which each of these characteristics of a model contributes to profitability” (Afuah, 2014, p.26). This framework, reported in Figure 7, provides an assessment based on a quantitative approach that goes beyond the sole financial indicators. At the same time, however, it is structured on a high level of abstraction without providing indications on how to eventually transform the business model, offering a static representation of reality. Finally, the elements have been measured in relation to their monetisation power, without considering their interdependencies.

From Heikkilä et al.’s (2016) perspective, assessment can be performed through a selection of metrics able to track the performance of the different components of the business model, as indicated in Table 4. They consider both financial and non-financial metrics (predominantly leading indicators), supporting Dossi and Patelli’s (2010) findings, who consider the latter metrics able to generate learning and dialogue in relationships with external partners. They are also aligned with Melnyk et al. (2010), who propose that business renewal is better sustained through measures focused on how these outcomes are expected to be achieved, limiting the use of metrics on the intended outcomes. The Heikkilä et al.’s (2016) assessment helps leaders understand the causality and dynamic dimensions, evaluating the implications of different actions. At the same time, however, the measures are fundamentally focused on evaluating the single business model components, not considering the degree of interrelation.

Haaker et al. (2017) have developed business model stress testing combining scenario planning and business model design with the objective of supporting a strategic forecast to improve the organisation’s ability to understand and respond to environmental changes, as presented in Figure 8. Business model stress testing supports leaders in identifying some vulnerabilities in their business logic, requiring innovation and redesign. This approach offers two particularly useful elements: first, it provides a systematic analysis of the business logic’s robustness against different future conditions, and second, it can identify the more vulnerable components when considering

specific scenarios. Business model stress testing is a qualitative approach. It informs leaders if and where a given scenario can impact single business model components without providing a quantitative measure the impact the emerging scenario could generate on the overall business model, in order to define when to start its transformation.

A fourth contribution is represented by business model innovation road-mapping, elaborated by Schaller et al. (2018). Business model road-mapping has been developed as a forecasting and planning tool to detect and highlight situations requiring an adaptation of the consumer value proposition, as presented in Figure 9. The main benefit of this approach is to provide “a structured and clear view of the business model innovation process” (Schaller et al., 2018, p.7). It offers interesting insights and reflection points thanks to the inclusion of the temporal dimension. However, the framework does not clarify how a potential market threat or opportunity should be assessed at domain (i.e. business model components) and activity level, in addition to the lack of consideration regarding the interdependency among the business model domains.

The findings of the research conducted within the MDM organisation went beyond the contributions included in the literature by combining the assessment of single components with the consideration of the interdependency among components. This type of approach can be considered closer to a holistic assessment, and while the single components have been assessed explicitly by the MDM leadership team, the interdependency among components has been employed but remained implicit within the components’ assessment. This approach has been able to provide MDM leaders with a more accurate and comprehensive understanding of the potential impact generated by the emerging changes on the extant business model in order to take appropriate and timely decisions. This approach has also been able to provide a different time perspective to MDM leaders with regard to the urgency dimension to undertake a business model innovation, with a considerable impact on the relevance the organisation may reach in the market.

Based on the information in section 4.6.1, MDM leaders adopted a systemic assessment of their extant business model to define when to innovate it thanks to the interplay of the following three dimensions: (1) Market Signals, (2) Business Model Assessment, and (3) Changing Perspective. Based on the market constraints and market attractiveness themes, market signals have been essential to provide inputs to the MDM team in order to understand and test its ability to keep its relevance in the market. Both the perspectives of constraints and attractiveness have been considered to give a broader market perspective, including the relative strengths of the main competitors.

Business model assessment, combining the market dynamics, the single components measure, and the business model systemic approach themes, enabled the MDM team to interpret the market signals using the extant business model lens to directly test how the emerging inflection points could affect the components in a systemic way. It is interesting to see how relying on the single components' measurement would have created a radically different interpretation of the environmental changes compared to the undertaking of the systemic approach. Changing perspective and relying on the emerging discussions, emerging technology, and emerging implications themes, reflects the way the MDM team used to evaluate the result of the business model assessment in order to develop a new paradigm for competing in the diabetes market. The interplay among these themes is represented in Figure 39.

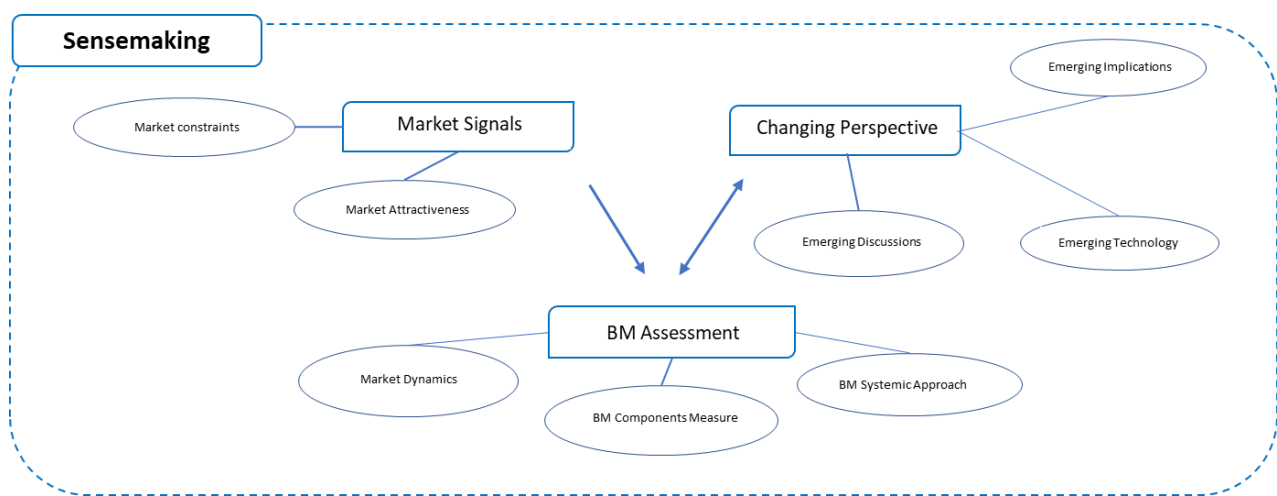


Figure 39: Business model assessment framework – own elaboration

In this regard, the MDM case offered a clear and detailed representation of the assessment process compared to what has emerged from the literature, where the attention of scholars has been mainly focused on providing supporting frameworks more than describing the activities through which the process has been developed.

In conclusion, the established organisation active in the healthcare space performs the extant business model assessment adopting a holistic perspective, combining single components with the interdependency among components. More specifically, in the MDM case, while the leadership team has explicitly assessed single components, the interdependency among components remained implicit and has been captured in single-components evaluation.

Regarding the processual aspect, three main themes play a critical role: market signals, to keep the focus on the business environment and its emerging changes; business model assessment,

to evaluate market signals using the extant business model lens; and changing perspective, metabolising the insights emerging from business model assessment to develop a new business paradigm. While market signals offer inputs to the business model assessment, the relationship between the latter and changing perspective is more bidirectional, based on the following explanations:

1. From business model assessment to changing perspective: the evaluation of the potential impact of market signals on the extant business model offered the opportunity for MDM leaders to change their perspective on how to compete in the market;
2. From changing perspective to business model assessment: the emerging implications, as part of the changing perspective, have been re-assessed through the business model lens to keep the discussion adherent to the market and organisational reality.

Finally, the assessment has been performed considering internal and external measures, captured through lagging and leading indicators, based on the type of changes under observation.

6.2.2 How do healthcare organisations manage the transformation journey from the current model to the new one?

The transformation journey of an extant business model can be approached from at least two different perspectives: the process through which the leadership team moves the organisation towards a stronger market relevance, and the nature of the approach followed to develop and implement that process. With regard to the business model innovation process, the literature is quite heterogeneous and can be mapped around two main dimensions: the degree of abstraction on one side, and the trade-off between design and operation, on the other.

Based on the first dimension, some contributions are built around a few macro phases, as Lindgardt et al. (2009) presented, considering the three steps of uncovering opportunities, implementing a new business model, and building a platform. Others, as in the case of Pramataris et al. (Wirtz and Daiser, 2018), are much more detailed, as expressed by their ten activity-oriented steps. Following the second dimension, from one perspective, the design-oriented contribution of Voelpel et al. (2004) is structured in four steps: (1) sensing the potential for change in the customer area; (2) sensing the impact of technology; (3) sensing the potential for value system and organisational configurations; (4) sensing the potential economic feasibility of the new model. From a different observation point, Amit and Zott (2012) present six operationally focused steps: (1)

analysing customer needs; (2) business model content innovation; (3) business model government innovation; (4) value creation of the new model; (5) revenue model definition; (6) launching the new model.

Considering the highly differentiated positions presented above, Wirtz and Daiser (2018) propose the following generic steps with the objective of synthesising multiple positions in literature:

1. Analysis: starting from the extant business model to move towards the external environment factors like consumers, competitors, technology, regulations, etc.;
2. Ideation: where different business model ideas are generated, focusing on the customers the organisation is oriented to serve;
3. Feasibility: where different assumptions on the external environment are considered looking for an alignment with the internal elements and their interdependencies;
4. Prototyping: including the analysis and development of alternative business model innovation approaches and development of several detailed concepts;
5. Decision-making: evaluation and selection among the different business model innovation design alternatives developed in the previous step, to start testing the approach selected;
6. Implementation: where the execution plan is defined, communicated and assigned, in terms of responsibility, for a step-by-step realisation;
7. Sustainability: including all the activities of monitoring and adaptation of the process, in case needed, to secure the expected growth coming from the new competitive advantage built in the new business model configuration.

Other scholars have used a different perspective for grouping the different activities performed in homogeneous areas, as in the case of Frankenberger et al. (2013). Compared to the previous contribution, the main difference resides in the starting point, here represented by the eco-system, while in the Wirtz and Daiser's (2018) case, it is represented by the extant business model. The second element of difference is represented by the granularity of the stages described. Frankenberger et al. (2013), described the process using the following four stages:

1. Initiation: starting from the analysis of the eco-system;
2. Ideation: where new ideas have been created;
3. Integration: referring to the building of the new business model;
4. Implementation: focusing on the realisation of the new business model.

Looking at the evidence coming from my study, the business model assessment and innovation process implemented by the MDM leaders has been structured around three main phases, summarised below:

1. The Sensemaking Phase
2. The Shaping Phase
3. The Executing Phase

At a more operational level, each phase has been detailed in dimensions, and then further articulated in specific themes, offering a granular representation of how the process has unfolded. Below is a comprehensive account of the process, while the complete framework is reported in Figure 21.

The sensemaking phase has been the result of the interplay among three different and interconnected dimensions such as market signals, business model assessment, and changing perspective, whose progress has been triggered and determined by specific themes. This initial phase of the overall process was a relevant step corresponding to the moment when the MDM team started to sense a fundamental shift in the basic assumptions about competition in the diabetes market.

The shaping phase, based on the business model assessment and business model strategising dimensions, took the form of the cognitive effort the MDM leadership team collectively performed. Their aim was to conceptualise a potential new business model bridging the insights from assessing the extant business logic, evaluated under the lens of the emerging environmental changes, with their initial validation performed touching all the business model components.

In the executing phase, the MDM team's objective was to reach a component-specific fit as well as a systemic fit among the components before proceeding towards a full process deployment. The strategic fit, here mentioned, was not only crucial for the competitive advantage but also for business model sustainability over time. Based on Porter's (1996) perspective, crafting an organisation's strategic positioning on an activity system built on second and third-order fit represents a solution more difficult for rivals to decode and imitate.

The overall process analysed during the study seems close to the Frankenberger et al.'s (2013) contribution, whereby the different stages, or phases, have been broken down and articulated in specific activities performed by the MDM leadership team, in the sensemaking and shaping phase, and by the functional and operative teams in the executing phase.

Regarding the nature of the approach adopted to perform the process under analysis, the literature seemed to converge towards an iterative connotation, with almost all the studies sharing the same conclusions (Frankenberger et al., 2013; Stampfl, 2016; Wirtz and Daiser, 2018) or presenting a blend between linear and iterative characteristics (Sniukas, 2015). On this aspect, the findings from the study are coherent with the position assumed by the majority of the contributions in the literature, as the overall assessment and innovation process can be considered as mostly iterative. In fact, if we consider the nature of the shaping phase, for instance, the interplay among the different steps adopted by the MDM team, it clearly shows an experimental approach based on the following passages, as reported in Figure 24:

1. Hypothesis definition;
2. Definition of the assumptions supporting the hypothesis;
3. Validation of the assumptions;
4. In case of positive validation, the decision has been implemented while in case of no validation, the leaders went back to the hypothesis definition.

In conclusion, an established organisation active in the healthcare space manages the transformation journey as a complex and iterative process based on an experimental approach. This process is quite different from more predictable product, process, and organisational innovation, and requires a clear “trial and error” mindset by the leadership team. Despite this peculiar nature, the process is based on a series of phases, each of them articulated in actions that can be summarised as follows:

1. Sensemaking Phase: actions to detect the emerging changes from the environment and understand how they can affect the extant business model;
2. Shaping Phase: actions to metabolise the eventual changes of the environment to be in the position to conceptualise a viable and sustainable new business model;
3. Executing Phase: actions to move from the concept to the execution of the new business model, validating every assumption before moving forward.

6.2.3 What are the considerations and challenges healthcare organisations must manage along this transformation journey?

Regarding the challenges that organisations face during the transformation journey, in reviewing the literature, Frankenberger et al. (2013) can be considered as particularly useful. The authors, in

fact, have associated different challenges with the specific stages of the transformation process. Based on their research, during the initiation stage, the two challenges receiving most of the attention by leaders were: (1) understanding the different needs of the players interacting with the organisation, and (2) the identification of the change drivers potentially affecting the extant business model. In the ideation stage, the most cited barriers have been: (1) the ability to overcome the dominant logic ingrained in the current business model; (2) the difficulties to think in terms of business model, and (3) the lack of specific tools and methods to support business model generation. During the integration stage, the authors reported as main challenges: (1) the lack of systemic mindset within organisations, considering that the change of one element of the business model generates implications for the others, and (2) the growing complexity in managing the relationships with external partners as a consequence of the requirements of the new business logic. Finally, in the implementation stage, two considerations have captured the attention of researchers: (1) the internal inertia to change, especially when the current business model still performs positively, and (2) the ability of the organisation to adopt an experimentation approach. Despite the adoption of a different perspective, Sniukas (2015) reached a similar conclusion, summarising the business model innovation challenges as belonging to the following three clusters: 1) cognitive, 2) behavioural, and 3) emotional.

During my research, the MDM leadership team went through several challenges partially overlapping with the contributions summarised in the literature review. One of the most pressing challenges in MDM was the need to manage two different business models at the same time: the original one, focused on the disease treatment, and the emerging one, built around the patient. More specifically, the decision to pursue a dual business model strategy generated the following considerations to be solved by the leadership team: (A) the level of integration of the two different business models; (B) the selection of different and specific performance indicators. Regarding the first element, the MDM leaders opted for partial separation of people within the organisation to manage the two business models. On the other hand, while, regarding the second element, a totally new set of indicators was defined to manage an emerging business mainly focused on the patient adoption rate of the CGM solution, compared to the original business model focused on delivering the maximum of efficiency. This approach is aligned with the recommendations provided by Markides (2008) regarding the presence of different business models operating within the same organisation at the same time.

The second group of challenges was clearly associated with the different phases of the overall business model assessment and innovation process. In line with what is observed in the literature, MDM informants have focused their attention on three different levels of challenges:

1. Cognitive level
2. Emotional level
3. Organisational level

The cognitive challenge was more evident in the sensemaking and shaping phases. It was generated by the fact that the leadership was called upon to adopt a systemic approach to thinking about how the business model was to be redefined in an unknown territory affected by the emerging changes from the environment. On the other hand, the emotional level was noted when the leaders were asked to take decisions in an unfamiliar context, decisions which were often far from what MDM had always considered as conventional thinking and associated with a high level of risk failure. The decision to change the overall go-to-market strategy, and the decision to consider the patient, not the disease, at the centre of the new strategy, represent two clear examples. To lower this barrier to change, the MDM team created the space to support the required discussions and confrontations among the different perspectives before taking the final decision. During the executing phase, the prevailing challenges were associated with the implementation dimension and thus affected the organisational level. The nature of the challenge at that level was determined by moving from the disease-centric approach to the patient-centric focus, thanks to the knowledge available through the CGM solution. In the first approach, the objective was to make the device available in the patient's hands in the most efficient way thanks to the advice of the HCPs, while the new approach required the integration of the original product-based structure with a project-based approach. This shift created the need for different skills (e.g. patient insights), roles (e.g. patient digital engagement), tasks (e.g. patient acquisition), and key performance indicators (e.g. patient lifetime value) to execute the new business model.

The third group of challenges for the MDM team was represented by the decision to manage the transition towards the new business model, leveraging the same team in charge for the original one. Only after the initial implementation of the new model did the MDM team have a clear understanding of the different skills and competences needed to properly assess how the current organisation matched the new expectations. This approach is different from the indications coming from the literature, where organisations are typically asked to realign their competences before implementing the new business model (Nunes and Breene, 2011). Based on further discussion with

the MDM informants, although this approach brought some inefficiencies, the leadership team decided only after having a clear understanding of the required skills and competences to succeed under the new business logic.

In conclusion, the considerations and challenges organisations active in the healthcare space are required to manage during their transformation journey can be clustered into three main groups:

1. Potential dual business model execution challenge;
2. Business model assessment and innovation process challenges at the following levels:
 - A. Cognitive level
 - B. Emotional level
 - C. Organisational level
3. Challenges associated with the gradual adjustment of competences only after a clear organisation assessment, based on the emerging requirements.

6.3 Managerial implications

In addition to the theoretical implications, the findings of this research have implications for organisations' leaders and practitioners, in full coherence with the expectations of a DBA study (Bareham et al., 2000).

The articulation of the managerial implications can be performed by improving their level of relevance and accuracy, starting with the summary of the findings that emerged from the MDM study:

1. The assessment phase, when performed adopting a holistic perspective, is critical for defining the right time to innovate the extant business model and to provide the direction this transformation journey should take.
2. The Business Model Dashboard developed using a holistic approach has the potential benefit to internally align the leadership members around a shared transformational agenda.
3. Business model innovation should be undertaken provided that the expected advantages for the organisation are evident and big enough to justify the level of complexity to manage.
4. Business model innovation should be combined with all the other innovation approaches on product, process and organisation, in a coherent and structured way.

5. The opportunity for an organisation to keep high its relevance in the market depends on its leadership ability to consistently scan the environment to detect potential inflection points early enough to make timely and appropriate decisions.
6. An in-depth understanding of the job a patient/consumer is trying to get done opens several opportunities to craft a compelling value proposition and shape a new business model.
7. Building and developing an experimental mindset within the organisation is functional to manage the iterative nature of the business model assessment and innovation process.
8. The leadership team plays a crucial role in managing the business model assessment and innovation endeavour by allocating the appropriate resources, steering the iterative process and creating the space for discussion.
9. Building a strategy to manage in advance all the different challenges the leadership team can encounter along the process, minimises the inertia risks associated with this innovation endeavour.
10. Having a clear understanding of the different phases, dimensions and specific activities to be performed creates the conditions to build a shared and aligned agenda within the organisation.
11. The transformation journey requires leaders to develop a new set of performance indicators to monitor progress and measure success.

Based on the above findings, leaders can consider the following implications in the daily activity within their organisations.

A first implication leaders should evaluate is the importance of developing and sharing a common language across the organisation to foster the understanding of the business model concept, its assessment, and innovation. Starting from a shared base represents a determinant condition for challenging the extant business model and upgrading because of the changes emerging from the environment. Understanding the internal dynamics of a business model as well as the external elements, whose periodical changes can create the conditions for its adjustment, or the need for its complete transformation, requires equipping every member of the organisation with the knowledge and power to generate an impact. This type of assessment should be performed periodically (e.g. monthly), led by a dedicated person within the organisation, and its results should be presented during the business reviews usually scheduled by the leadership team.

A second implication concerns the leadership team's ability to create the space for experimenting with alternative business models in parallel with the exploitation of the extant

business model. Not being under pressure to create a new business logic allows the organisation to test and learn different operative set-ups to serve the consumers. This space can be created, for instance, through the adoption of the Business Model Dashboard to assess the extant business model against the emergence of different scenarios and to define in a timely way the right moment to trigger its innovation. This implication can be considered counterintuitive, as typically organisations tend to push efficiency to the limit to improve investment returns at the expense of experimentation with different business models. Often, there will be new business models creating opportunities to serve current consumers better and even attract current non-consumers. The experimental mindset can be considered useful in different situations dealing with an environment subject to frequent changes. Building a new business model, for instance, is initially based on assumptions that need to be validated along the way, and the linear way of thinking could represent an obstacle to dealing with the iterative nature of the new process. This mindset is also favoured by the adoption of a “trial and error” approach where leaders should feel comfortable with potential mistakes and failures associated with assumptions later disconfirmed by different facts.

A third implication is the acknowledgement of the critical role played by the leadership team along the entire process when an organisation is involved in business model innovation. Also in this case, that consideration can be counterintuitive as in the case of product and process innovation, leaders are often involved at the end of the process when they provide their final perspective, while, in the case of the business model, their involvement is required from the beginning and along the full sequence of different steps. Leaders are important for creating the space to perform this ambiguous innovation process by aligning the whole organisation at every step to avoid stretched moves that can determine potential disengagement on the part of employees. To pursue their role, the leadership team should manage the process through a broader perspective position, more than using a detailed and sequential planning method, by considering the potential challenges that may occur in each specific phase of the process. Leaders are also expected to develop a new and specific set of indicators to measure success compared to the original metrics.

6.4 My personal learning from the DBA journey

This section includes my reflections on the learning journey I have undertaken since the first class in Manchester in October 2015. More specifically, I have reflected on how the DBA program has influenced my way of learning and, consequently, my behaviour in the professional setting, thanks

to the combination of the scholar-practitioner roles. The DBA journey has represented for me a challenging as well as rewarding experience. During this journey, I believe I had the chance to strengthen my critical thinking, build a healthy scepticism and become more aware of the power associated with the adoption of “different lenses” to observe, analyse, and understand any phenomenon.

In the critical thinking realm, I have understood the importance of the personal philosophical perspective clarification and articulation as a base to develop valuable knowledge in daily practice. The way we see the world is a determinant starting point for defining what is happening around us. The concept of methodology and how to use it in daily practice has represented one of the most intriguing achievements of this journey. Thinking about the questions we would like to answer and selecting the most appropriate approach to supporting them in the face of different opinions, has had a profound implication in how I have started practising my profession since I began the DBA program.

A second area I have had the opportunity to learn about is the curiosity required to check and spot potential connections among the different concepts at stake. In fact, practising with data analysis guided by the Grounded Theory approach, the different coding levels, and the memoing and reflecting activities have created links among the different categories helping to generate the broader theoretical framework. This approach is quite interesting when applied in the professional world as it can open up a deeper and more insightful level of understanding of the phenomena under analysis so as to ultimately improve the organisation’s performance.

The third learning practice I have developed is linked to the usefulness of different and higher levels of reasoning, from basic facts to more abstract concepts. This is also a particularly interesting skill as at the higher and abstract level, as you can compare concepts and make sense of them, their implications and their impact in a more strategic way. This approach, for instance, has been helpful to solve an issue that could not have been solved from a more basic perspective.

Regarding healthy scepticism, I have started to challenge the information and assumptions used in the professional world by different people to support their recommendations and decisions. In my experience, if this approach is properly introduced and explained to the team, it represents a critical ability to be applied in many discussions. It has the benefit of clearly separating what we know from what we assume and of building a robust base for the latter. This approach has the

advantage of clarifying the level of risk associated with the different business decisions and helping to create a diversified source of information to support the different action plans.

Finally, a relevant learning habit I have developed is connected to the adoption of different and even contrasting perspectives to the analysis and investigation of the business phenomena. Using different lenses has helped the overall understanding of the situations the team is facing and creation of potential avenues for their solutions. The solution is often not strictly linked to the problem, and this approach has helped the team in powerfully making sense of different situations.

In conclusion, the DBA endeavour has not only been a remarkable academic journey towards understanding better the phenomenon of the business model assessment and innovation: it has also been an invaluable source of insights particularly helpful if used in professional settings to manage daily challenges and improve my organisation's performance.

6.5 Contribution of the research

The expected contribution from the answers to the research questions was expressed at the end of the literature review, in Chapter 2. The present section aims to reflect on the extent to which I have made that contribution, while the next section covers all the limitations associated with my research.

The present research contributes to the literature, as well as to practitioners by providing empirical evidence of how an established organisation active in the healthcare space conducted the assessment and innovation process of its extant business model. In addition, the study contributes to the stock of conceptual business model knowledge through the adoption of the system theory perspective by considering the role played by single components and their interaction to represent its dynamic consistency (Demil and Lecocq, 2010). In effect, both these aspects, the lack of studies based on empirical evidence and the limited contributions regarding "the interfaces and the interaction between the different business model components," have been considered by different scholars as limiting aspects of the current literature (Wirtz et al., 2016, p.51).

To support leaders within their organisations in performing the assessment and innovation of their business models, a comprehensive framework has been developed, reported in Figure 21 of section 4.6, highlighting the different phases of Sensemaking, Shaping, and Executing, the associated dimensions and specific activities to be considered in such an innovation endeavour. In

order to successfully execute this process, the critical role played by the leadership team has been stressed, especially in setting the agenda, allocating the resources and creating the space to discuss, in the attempt to transform their organisation's business model in a rapidly evolving environment. During the different phases of this process, the specific considerations and challenges the leadership team has been asked to cope with and solve are here summarised. The need to manage two different business models in parallel, the ability to deal with cognitive, emotional, and organisational challenges, and the initial implementation of the new business model leveraging the team's capabilities used to manage the original business model have been described in section 4.6.3.2. The healthcare space has been covered and integrated into the study, especially regarding the role of patients, HCPs, and national health systems. These players and their interactions represent one of the critical elements that differentiate the healthcare space from all other sectors.

Additionally, based on the contributions included in the literature and leveraging the evidence that emerged from the research, a Business Model Dashboard has been developed to support leaders in the assessment of their business model to understand the right moment to innovate, as reported in section 5.5. This new assessment framework provides holistic and quantitative support to leaders of established organisations in the healthcare space, who are asked to detect the weak signals of the "inflection points" that alter the fundamental aspects of their business (McGrath, 2019). This is particularly relevant as it has been demonstrated that organisations able to detect these environmental shifts early enough are better positioned to take timely and appropriate decisions to reinvent their business models and thrive (Bertolini et al., 2015).

6.6 Research limitations

As mentioned in the previous section, there are limitations associated with this study that need to be considered. First, the business model assessment and innovation framework has been developed from the in-depth study of one organisation active in the healthcare space. More specifically, the selection of MDM was based on its presence in the diabetes market, representing a unique case of transition from the traditional "treatment-driven" business model towards a "patient-centric." Considering the time constraints associated with the DBA program, it was not possible to increase the number of established organisations active in the healthcare space and involved in this specific transformation journey to be investigated. Despite the amount and richness of the data investigated, the diversity of the informants involved in the data gathering and the secondary data

used to triangulate from the result of the interviews, the findings of this research could be further enhanced through additional studies.

Second, the selection of the organisation for conducting my research was facilitated by the fact that I worked in a different division of the same mother company of MDM. This could represent a potential source of confirmation bias, which I have minimised, however, through the adoption of the following strategies: (1) the data gathered have been fragmented in incidents adopting a line-by-line approach, as recommended by Strauss and Corbin (Locke, 2001), and reported in the Appendices B1, B2, B3, and B4, for every research informant, and in Appendix C, in a summary scheme; (2) the different voices of the informants have been kept alive and accessible along with the entire research, reporting their representative quotations recorded during the different phases of the assessment and innovation process, in Chapter 4; (3) the consolidation of the higher conceptual categories was the result of theoretical sampling performed till its saturation, engaging some informants in multiple interview sessions, as reported in Table 6, to fully clarify concepts, passages, and explanations on the process.

Third, the adoption of the Grounded Theory guided approach brought some tensions - as for any other alternative research method selection - potentially affecting its credibility, mainly regarding the required balance the researcher should be able to maintain between the following contrasting aspects: (1) total data immersion while ensuring personal thinking; (2) data fit during the naming phase while adopting a creative abstraction from them; (3) avoiding adopting an existing theory perspective too early while cultivating a solid theoretical sensitivity. To minimise these tensions, I have adopted the following strategies. In Chapter 3, I have presented how I used the analytic techniques to perform the iterative process of data coding, incidents comparison, categories development, and memo writing that represent the fundamental elements supporting the theoretical framework, as reported in Appendix D and Figure 20. In Chapter 4, I have provided a detailed description of the link between the data gathered, the concepts developed, and the overall theory presented. Despite the adoption of the above strategies, the approach followed in that study could still represent a source of limitations.

Finally, a fourth limitation is connected with the robustness of the Business Model Dashboard presented in section 5.5. Although the promising preliminary feedback collected from MDM and four additional leaders working in sectors different from healthcare, the framework must be further tested to fully appreciate its ability to drive the leadership agenda in the attempt to keep their organisations' relevance in the complexity of the real world. Despite this and the other

limitations mentioned above, however, the framework received an initial validation from leaders working in different sectors, in addition to healthcare, and represents the first step into the business model assessment domain by applying the system theory perspective in a quantitative approach.

6.7 Further research avenues

Based on the prior discussion of the research limitations and the contribution to knowledge, there are several possible avenues for further studies that can be considered. Future research can be conducted by adopting alternative research designs as well as by exploring the topic from different research perspectives.

- From a research design perspective, as soon as additional data from other organisations undertaking their business logic innovation becomes available and the consensus around the business model concept increases, a more positivistic approach could be considered to confirm the theoretical framework that emerged during the qualitative studies.
- Future research could also consider different sectors from the healthcare space, here selected, with the objective of understanding if similar findings can also be reached in different industries.
- As organisations are becoming more externally integrated with other players to execute their business models successfully, the assessment and innovation process could take a broader perspective, by investigating its dynamics and challenges at the eco-system level, rather than a single-organisation focus.
- Based on the nearly decomposable systems concept, one of the two main themes supporting Simon's contribution to complex systems, there are two different levels of interaction: on one side, the interactions among subsystems and, on the other side, the interactions within subsystems (Simon, 1962). While, in my research, I have focused the attention on the interactions among subsystems, represented by single business model components, future research could be oriented to the study of the interactions within these subsystems and the mechanisms through which they can impact the overall system.
- As presented in the literature review, section 2.3.3, the business model concept has been built on several theoretical foundations. Among them, dynamic capabilities have registered a growing interest in recent years. As a consequence, investigating how dynamic capabilities

interact with system theory, here adopted, could represent an interesting perspective for better understanding the process needed to deliver business model innovation.

- Some of the challenges outlined during the study have been of a cognitive or emotional nature. Several pieces of evidence showed how inertia, coming from different sources, acts to protect the status quo, representing a key challenge for business model innovation (Doz and Kosonen, 2010). Researchers able to identify the personal and group mechanisms unlocking these limiting factors could create the conditions for a more open and participative approach within organisations.
- As building and developing an experimental mindset is functional to managing the iterative nature of the business model assessment and innovation process, leaders could benefit considerably from studies oriented towards discovering the organisational capabilities and personal attitudes that can create the conditions to apply this cognitive approach successfully.
- Considering the crucial role of the leadership team in managing the business model assessment and innovation endeavour, an organisation's leaders could be highly interested in knowing how to assemble the most impactful team, depending on the specific situation the organisation is facing regarding its transformation journey.

To conclude, I believe the findings reached through this research can motivate other scholars to investigate further this fascinating and crucial strategic topic and support leaders in improving the relevance of their organisations operating in a rapidly evolving environment.

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Appendices

Appendix A – Interview Questionnaire

Questions to drive the discussion on the business model assessment and innovation process

Part I: before moving to the new business model

1. How was the market and company situation in the previous industry paradigm?
2. Can you please summarise the basis for the competition at that time?
3. What were the main challenges the Diabetes Division was facing at that time?
4. How was the division trying to manage the tensions within this industry paradigm?
5. Which indicators did you select to raise the awareness around the challenges in progress?
6. How was the Division considering its ability to create, deliver and capture value at that time?
7. If and how scenario planning did play a role in envisioning a potential future to follow?
8. Who was in charge to highlight the dissatisfaction with the status quo?
9. How did the different departments contribute to managing this challenging period?
10. What was the role of corporate to drive the discussion in search for a new paradigm?

Part II: the process to change from the old to the new business model

1. What were the triggers able to highlight the need to move to a different business model?
2. How did you assemble the team to discuss that topic?
3. Which measures did convince you about the urgency to move to a different model?
4. Which kind of risk assessment did you run to consider alternative scenarios?
5. How did you assess the extant business model? Did you consider the different parts of it or going for a more holistic approach?
6. What was the role of the patient to develop the new business model? Which role did technology play in this discussion? How did the people competences enable or block the new business model development process?
7. How did you practice and learn from the new business model before leaving the old behind?
8. What were the different steps the Division follow in developing the new model? For example, was it a try-and-error approach or a linear process?
9. Who was in charge to lead the development of the new model? Was it a 100% internal job or you went outside to fill potential gaps of knowledge and competencies? How did you protect your ideas from competitors?

10. Why did you believe this model has been developed in your organization and not in other competitors? What made you special in term of the environment to come up with this new model to take care of diabetes patients?
11. How did you measure success? How did you set up goals ambitious enough to move the overall organisation to adopt the new model?
12. What were the mistakes made along the business model innovation process? What did you learn from those mistakes?
13. Which competencies were more important in developing the new business model? How did you build/reinforce them along the way?
14. How does business model innovation have been combined with product and organisational innovation?
15. Which relationships did exist between the old and new business model?
16. How did you prototype the new business model?
17. What drivers and barriers, both internal and external, did you encounter along the way?
18. What performance indicators did you assign to the new business model? How did you select those indicators and set the respective goals?
19. What will be the next steps for the future business model innovation?
20. How did you manage the transition between the old and the new model? How did you ensure the work in parallel with the two models for a period of time?

Part III: the implementation of the new model

1. What challenges did you get at the moment of sharing and communicating the new business model to the entire Division?
2. How did you manage these challenges?
3. What was the role of the local affiliates in facilitating the change of mindset moving from the old to the new business model?
4. What did you learn from the development process of the new business model? What did surprise you and what did not?
5. Which competencies have been more important in implementing the new business model? How did you build/reinforce them along the way?
6. Where did the new model create the highest value comparing the value creation, delivery and capturing aspects?
7. How did the external environment and regulations shape the way of implementing the new model?

Appendix B1 – Comparing incidents to each category: Informant # 1

| # | Data Fragment | Working Category I | Working Category II |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| 1 | SMBG market under pressure | Declining attractiveness | Deteriorating Outlook |
| 2 | Declining strips' price | National Health System budget constraints | Deteriorating Outlook |
| 3 | Market structured in tenders and bids | National Health System budget constraints | Deteriorating Outlook |
| 4 | The incumbent organisations compete on commercial optimisation initiatives | Declining attractiveness | Deteriorating Outlook |
| 5 | The incumbent focus was on go-to-market approach, HCP understanding and pharmacy channel optimization | Declining attractiveness | Deteriorating Outlook |
| 6 | The main MDM challenge was to compete in a growing market, driven by the increasing number of patients, with a declining % margins | Market Dynamics | Business model assessment |
| 7 | This paradox was a crucial warning to start thinking in a different way about the way to compete in the market | Market Dynamics | Business model assessment |
| 8 | To measure how well the business model was allowing MDM to compete in the market, the single business model components as well as the relationships among components have been considered | BM Inter-Components measure | Business model assessment |
| 9 | KPIs as the Net Sales and Division Margins have been connected to patient satisfaction to understand the interrelations among components | BM Components measure | Business model assessment |
| 10 | The patients were not satisfied with the solutions offered by all the manufacturers | BM Components measure | Business model assessment |
| 11 | In a business mainly driven by NHS reimbursement, patient satisfaction is a critical indicator to be understood | Market Dynamics | Business model assessment |
| 12 | Patient dissatisfaction means non-compliant patients with impact on the business | BM Inter-Components measure | Business model assessment |
| 13 | The patient dissatisfaction was driven by the finger prick activity to perform several times per day | BM Inter-Components measure | Business model assessment |
| 14 | With less tests per day compared to the recommended level, the risk to undetect cases of hypoglycemia increases | BM Inter-Components measure | Business model assessment |
| 15 | Hypoglycemia is associated with several consequences and can require patient hospitalisation with high costs associated | BM Inter-Components measure | Business model assessment |
| 16 | These costs will create additional pressure on the NHS budget | BM Inter-Components measure | Business model assessment |
| 17 | At the end, dissatisfied patients means low compliance and more pressure on the NHS budget in a situation with a growing number of patients to be treated | BM Inter-Components measure | Business model assessment |
| 18 | If you start to consider these relationships among components of the business model, its strength is different compared to regarding these components is isolation | BM Inter-Components measure | Business model assessment |
| 19 | Improving the patient compliance removing the pain points of the current solution could have represented a change of paradigm for the business | BM Inter-Components measure | Business model assessment |
| 20 | The challenge was to have a technology able to remove the patient pain points in addition to the eventual other resources and processes to deliver it | Emerging technology | Changing Perspective |

| # | Data Fragment | Working Category I | Working Category II |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------|
| 21 | The Top management and the Global Marketing Team were in charge to lead the discussion on how rethink the competitive approach | Steering Role | BM strategizing |
| 22 | The quality and contribution of the top management was very important to fuel the discussion around new and discontinuous ways of managing the business, also using the Blue Ocean approach | Steering Role | BM strategizing |
| 23 | All the Regions built local teams (GMs, Regional Directors, Marketing, Sales, Market Access) to discuss how to consider all the new elements potentially associated with a different business model | Steering Role | BM strategizing |
| 24 | As many businesses were based on tenders, the declining prices could be the factor of losing a tender with severe implications in the local P&L for a long period of time, eg 1 to 3 years | Declining attractiveness | Deteriorating Outlook |
| 25 | The emerging sensor technology was the first check point to allow patients reducing their pain points through the interstitial skin measure | Emerging technology | Changing Perspective |
| 26 | MDM has presence in type I patients with a CGM device but it is expensive and bulky | Emerging Discussions | Changing Perspective |
| 27 | Focus on the sensor technology as the real element to help the patient | Emerging technology | Changing Perspective |
| 28 | Working to eliminate the pain points moves MDM towards a patient-centric approach | Patient Value Proposition | BM strategizing |
| 29 | The patient-centric approach required a different set of capabilities and mindset | Patient Value Proposition | BM strategizing |
| 30 | The main discussions have been done on these points: 1) Patient understanding and interaction; 2) Digital engagement; 3) Direct-to-patient approach; 4) Critical touchpoints and obsolete touchpoints; 5) NHS clinical evidence for patients; 6) NHS reimbursement; 7) Market Access. | Required Capabilities | BM Implementation |
| 31 | The new business model required different capabilities especially in the following fields: consumer marketing, supply chain, market access, legal, finance, e-commerce, customer service | Required Capabilities | BM Implementation |
| 32 | MDM decided to outsource the Customer Service to support the patients with the new solution | Patient touchpoints | BM design |
| 33 | HCPs were much more exposed to support the patients to understand how to use the data gathered with the new solution | Patient touchpoints | BM design |
| 34 | All the TPIs have been eliminated as not generating added value in the relationship with patients | Patient touchpoints | BM design |
| 35 | MDM establishes a solid partnership with an external logistics provider to build their own e-commerce capability | Logistics Solution | BM design |
| 36 | Clinical Trials got a high importance to justify the use of CGM compared to the SMBG | Clinical evidence | BM design |
| 37 | These clinical trials were focused on both type I and II patients, separately | Clinical evidence | BM design |
| 38 | MDM decided to maintain the two different business models working in parallel | New Challenges to manage | BM Implementation |
| 39 | The strips business model was important for two reasons: 1) the CGM was not reimbursed at the beginning; 2) some patients would stay on the SMBG approach or combine the CGM with SMBG | New Challenges to manage | BM Implementation |
| 40 | Under the new setting, the role of the patients' associations become very important to really understand how these patients live with the disease | Patient touchpoints | BM design |

| | | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------|
| 41 | From HR's perspective, one of the greatest challenges was to assess the entire organisation to define the critical roles enabling the right execution of the new business model | organisational Challenges | BM Implementation |
| 42 | The new business model was based on an empowered patient able to take responsibility of her/his health conditions | Patient Value Proposition | BM strategizing |
| 43 | To support both patients and HCPs, MDM launched the AGP to support them in the data interpretation | Patient touchpoints | BM design |
| 44 | The CGM with a constant data gathering was better suited to detect special situations (eg hypoglycemia) that could be unnoticed with the SMBG | Patient Value Proposition | BM strategizing |
| 45 | The new business model design process was long and required an alignment among the different levels of the organisation | New Challenges to manage | BM Implementation |
| 46 | This process was a sort of trial-an-error approach compared to a linear one | New Challenges to manage | BM Implementation |
| 47 | In the implementation phase, the organisation was highly affected by the changes necessary to implement the new business model | New Challenges to manage | BM Implementation |
| 48 | Growing relevance was assigned to Market Access with the objective of explaining to the payers the advantages of the new solution compared to the SMBG one | Required Capabilities | BM Implementation |
| 49 | As the new solution was more expensive in the short-term, Market Access and pharmaco-economics studies have been developed to highlight the savings coming from a more compliant patients in the mid-term | Required Capabilities | BM Implementation |
| 50 | Different KPI's have been introduced to measure the progress in the new business model, like the patient adoption and retention and the payer reimbursement acceptance | organisational Challenges | BM Implementation |
| 51 | These indicators have been considered able to highlight in advance the level of health of the new business model | organisational Challenges | BM Implementation |
| 52 | To make the two different models to co-exist, separate teams normally manage the business using different indicators | organisational Challenges | BM Implementation |
| 53 | The old business model is managed ensuring the highest level of efficiency while the new model is devoted to increasing the number of patients adopting the solution | organisational Challenges | BM Implementation |
| 54 | Maintaining both teams motivated represents a challenge for the management as the new business model is clearly the one absorbing resources to grow | organisational Challenges | BM Implementation |
| 55 | In the future, potential evolution of the new business model can be seen in the collaboration with companies for the insulin injection or changing the Profit Formula actually based on a transactional approach and not on patient outcome | Further potential business model improvements | |
| 56 | In some countries, the NHS is working on HTA protocols to understand the contribution of the new technology to the healthcare system | New Challenges to manage | BM Implementation |

Appendix B2 – Comparing incidents to each category: Informant # 2

| # | Data Fragment | Working Category I | Working Category II |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------|
| 1 | SMBG market under pressure | Declining attractiveness | Deteriorating Outlook |
| 2 | Reimbursement limitations in many countries | National Health System budget constraints | Deteriorating Outlook |
| 3 | Declining strips' price | National Health System budget constraints | Deteriorating Outlook |
| 4 | Restriction for patients to be qualified as type II patients | National Health System budget constraints | Deteriorating Outlook |
| 5 | Favourable environment for low-costs manufacturers | Declining attractiveness | Deteriorating Outlook |
| 6 | Market structured in tenders and bids | National Health System budget constraints | Deteriorating Outlook |
| 7 | Growing number of competitors | Declining attractiveness | Deteriorating Outlook |
| 8 | The incumbent organisations compete on commercial optimisation initiatives | Declining attractiveness | Deteriorating Outlook |
| 9 | Declining margins in a volume growing market | Declining attractiveness | Deteriorating Outlook |
| 10 | Some organisations decided to abandon the diabetes business | Declining attractiveness | Deteriorating Outlook |
| 11 | Internal question: how do we make our pipeline more meaningful? | Emerging Discussions | Changing Perspective |
| 12 | Different players but similar solutions | Declining attractiveness | Deteriorating Outlook |
| 13 | Importance to leverage economies of scale to stay competitive | Declining attractiveness | Deteriorating Outlook |
| 14 | MDM faced a reduction in volume due to low-cost manufacturers' competition | Declining attractiveness | Deteriorating Outlook |
| 15 | Potential new technology available to be considered but expensive and with no reimbursement | Emerging Implications | Changing Perspective |
| 16 | Continuous Glucose Monitoring for type II patients | Emerging Discussions | Changing Perspective |
| 17 | MDM has presence in type I patients with a CGM device (Navigator) but it is expensive and bulky | Emerging Discussions | Changing Perspective |
| 18 | Initial attempt to reduce the cost of the Navigator device | Emerging Discussions | Changing Perspective |
| 19 | Focus on the pain points of the patients, especially the finger prick several times per day | Patient Value Proposition | BM strategizing |
| 20 | Acquisition of a start-up to exploit the body fluid measure through sensors | Emerging technology | Changing Perspective |
| 21 | Focus on the sensor technology | Emerging technology | Changing Perspective |
| 22 | Sensor lifespan from 5 to over 10 days | Emerging technology | Changing Perspective |
| 23 | Combination sensor and reader represents an interesting concept for patients | Patient Value Proposition | Emerging technology |
| 24 | Combination sensor and reader does not resonate with NHS, interested in lowering the spending per user to manage the increasing number of patients | Emerging Implications | Changing Perspective |
| 25 | ADC recognises the importance of providing clinical evidences and potential savings coming from the new concept to the NHS | Clinical evidences | BM design |
| 26 | Clinical studies to support both type I and type II patients | Clinical evidences | BM design |
| 27 | Type II patients require a stronger patient understanding considering they will operate in an out-of-pocket condition | Clinical evidences | BM design |
| 28 | Increasing focus on Market Access | Clinical evidences | BM design |
| 29 | Internal questions: 1) how do we launch the new solution? 2) What is the role of TPIs in this launch? 3) What do we know about our patients? 4) What is the role of the pharmacy as a point of contact with our patients? | Emerging Implications | Changing Perspective |
| 30 | New patient-centric perspective | Patient Value Proposition | BM strategizing |

| # | Data Fragment | Working Category I | Working Category II |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------|
| 31 | Limiting the power that TPIs and the pharmacy channel had in the past | Patient touchpoints | BM design |
| 32 | Direct-to-patient approach in discontinuity with the past | Patient Value Proposition | BM strategizing |
| 33 | Internal debate regarding the direct-to-patient approach | Patient Value Proposition | BM strategizing |
| 34 | Digital interaction with patients | Patient Value Proposition | BM strategizing |
| 35 | Internal tension driven by the lack of capabilities to manage the patient relation through the digital channel | Patient Value Proposition | BM strategizing |
| 36 | External acquisition of digital capabilities | Patient Value Proposition | BM strategizing |
| 37 | New business models have been evaluated to create and deliver value to patients | Patient Value Proposition | BM strategizing |
| 38 | The direct-to-patients platform has been considered invaluable for an in-depth patient understanding | Patient Value Proposition | BM strategizing |
| 39 | The combination of the huge amount of data points (glucose measurement) with the direct-to-patients interaction really represent the step change for the new business model | New Competitive Advantage | BM Implementation |
| 40 | The new business model was expected to help the corporation in the future | New Competitive Advantage | BM Implementation |
| 41 | The eventual switching costs for patients to move to a different platform represent a locking effect to stay with the system adopted | New Competitive Advantage | Changing the rules of Competition |
| 42 | Internal discussion: proof the new strategy could work (concept test in Germany) | organisational Challenge | BM Implementation |
| 43 | Internal discussion: engage with MDM people, one by one, to highlight the feasibility of the new strategy | organisational Challenge | BM Implementation |
| 44 | Internal discussion: new team with a direct-to-patient focus has been created | New Challenges to manage | BM Implementation |
| 45 | Product differentiation | New Challenges to manage | BM Implementation |
| 46 | Direct-to-patient relationship via digital platform | New Challenges to manage | BM Implementation |
| 47 | By-passing the TPIs and pharmacy channel | New Challenges to manage | BM Implementation |
| 48 | Bulding new capabilities to create this new direct-to-patient interaction | New Challenges to manage | BM Implementation |
| 49 | Business model evolution has been a learning-by-doind attempt, emerging as we took decisions | New Challenges to manage | BM Implementation |

Appendix B3 – Comparing incidents to each category: Informant # 3

| # | Data Fragment | Working Category I | Working Category II |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------|
| 1 | SMBG market under preasure | Declining attractiveness | Deteriorating Outlook |
| 2 | Declining strips' price | National Health System budget constraints | Deteriorating Outlook |
| 3 | Volume growth driven by patient increase | National Health System budget constraints | Deteriorating Outlook |
| 4 | Different players but similar solutions | Declining attractiveness | Deteriorating Outlook |
| 5 | Price competing business | Declining attractiveness | Deteriorating Outlook |
| 6 | Favourable environment for low-costs manufacturers | Declining attractiveness | Deteriorating Outlook |
| 7 | The incumbent organisations compete on commercial optimization initiatives (eg cost reduction, R&D investment reduction, etc.) | Declining attractiveness | Deteriorating Outlook |
| 8 | New technology for MDM to improve patients quality of life | Emerging technology | Changing Perspective |
| 9 | MDM should maintain the focus on strips business to fuel the growth of the sensor business | organisational Challenges | BM Implementation |
| 10 | The organisation transformation to move towards the new business model has been done with the original team despite some capability misalignments | organisational Challenges | BM Implementation |
| 11 | Business model transformation process has been very exciting and a non-linear one | New Challenges to manage | BM Implementation |
| 12 | One critical capability to develop was a faster time to market | Required Capabilities | BM Implementation |
| 13 | Another key challenge was the direct-to-patient relationship capability | Direct Patient Interaction | BM design |
| 14 | The intention was to build a solid and loyal relationship with patients | Direct Patient Interaction | BM design |
| 15 | MDM decided to manage the two different business models in parallel | organisational Challenges | BM Implementation |
| 16 | MDM decided to disintermediate the TPIs previously used to directly serve the patients | Patient touchpoints | BM design |
| 17 | Internal discussion on the new go-to-market approach implemented in the new direct-to-patient business model | Patient touchpoints | BM design |
| 18 | Long time allocated to build consensus with the local GMs before taking the final decisions about the new business model | Steering Role | BM strategizing |
| 19 | Several gaps have been highlighted during the different discussions with the local GMs, especially in the areas of patient understanding and technology management | Required Capabilities | BM Implementation |
| 20 | The new direct-to-patient strategy required a much stronger and active collaboration with the patient associations | Required Capabilities | BM Implementation |
| 21 | The new approach has created internal debate and opposition from people more inclined to the previous model considered less risky | New Challenges to manage | BM Implementation |
| 22 | Active role of the Legal Department asked to check all the requirements to safely implement the new business model | Required Capabilities | BM Implementation |
| 23 | To manage all the new requirements, a task force at Area level has been created with the support of GMs, Marketing & Sales and Market Access | Steering Role | BM strategizing |
| 24 | The task force has the objective of explaining to every MDM employee the advantages of the new business model | Steering Role | BM strategizing |
| 25 | The task force used the cross-fertilization approach of sharing success stories to build confidence and best practice to follow | Steering Role | BM strategizing |

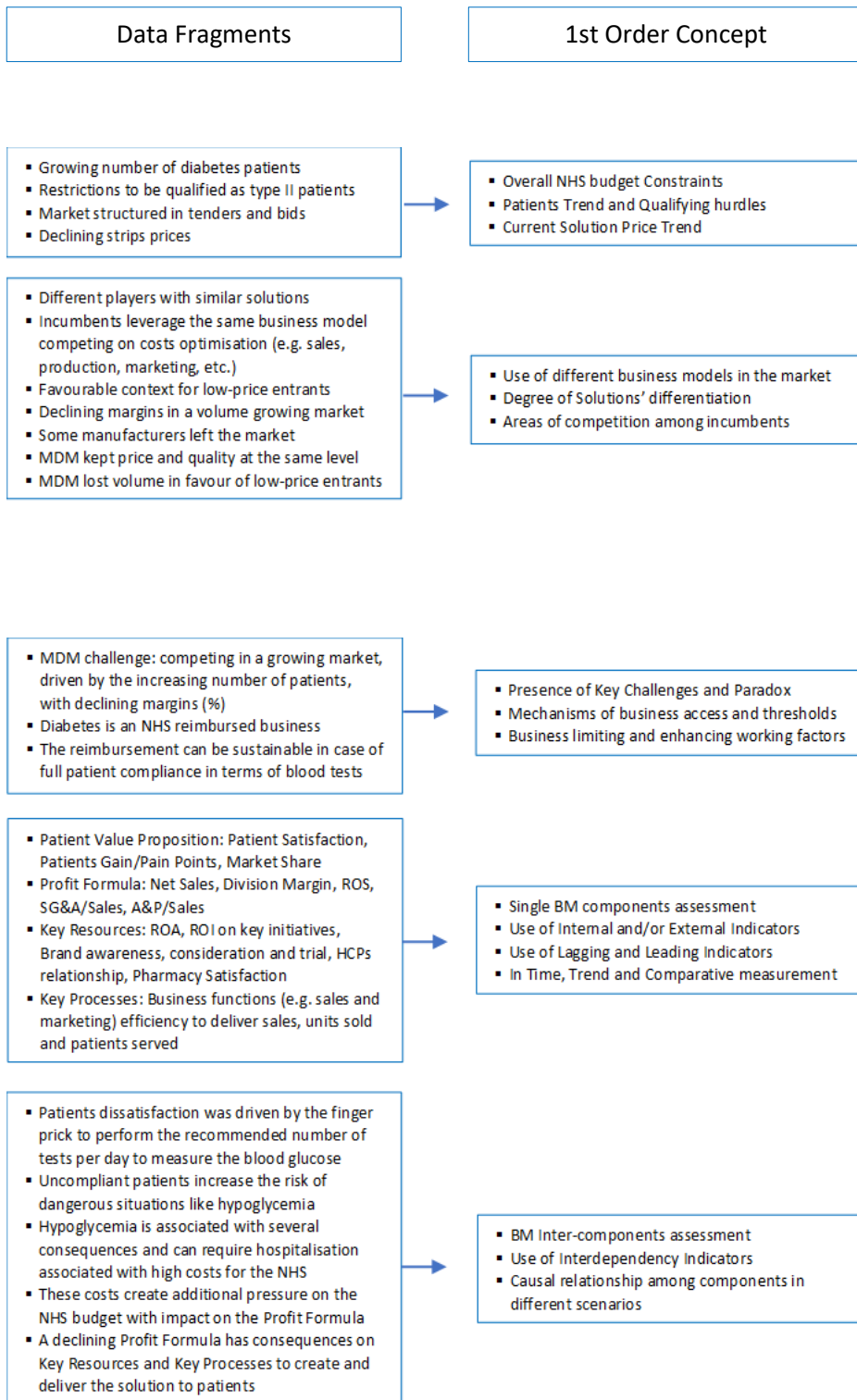
| # | Data Fragment | Working Category I | Working Category II |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------|
| 26 | It took about 6 months to get the majority of consensus among the different people of the Diabetes Division | Steering Role | BM strategizing |
| 27 | In this period, the leadership role was determinant to build consensus towards the new business model | Steering Role | BM strategizing |
| 28 | The three priorities managed by MDM have been: 1) go-to-market approach; 2) how to get reimbursement; 3) how to fill the gap of capabilities to implement the new business model | New Challenges to manage | BM Implementation |
| 29 | MDM has managed this phase thanks to a very disciplined approach in terms of: A) Communication; B) Engagement; C) Training | New Challenges to manage | BM Implementation |
| 30 | After the organisation's alignment, it was to time to reshape the organisation starting from the Customer Service department | New Challenges to manage | BM Implementation |
| 31 | The Customer Service direct-to-patients has been outsourced to learn how to professionally interact with patients in a compliant way | Patient touchpoints | BM design |
| 32 | Other capabilities to be developed were e-commerce, Market Access, Public Affair, Government Affair, Medical Affair | Required Capabilities | BM Implementation |
| 33 | Most of these expertises were functional to prove the better outcomes using the new solution and open the door of reimbursement | Required Capabilities | BM Implementation |
| 34 | From HR's perspective, one of the greatest challenge was to assess the entire organisation to define the critical roles enabling the right execution of the new business model | New Challenges to manage | BM Implementation |
| 35 | The consequent activity was the onboarding of the critical capabilities the organisation did not have and the laid-off of the capabilities not any more functional to execute the new business model | New Challenges to manage | BM Implementation |
| 36 | The result was the creation of a new organisation ... "fixing the plane while flying" | Business model evolution process | |
| 37 | Mistakes have been done in manufacturing (forecasting) and e-commerce: these could have been solved earlier onboarding people from outside instead of leveraging internal skills | New Challenges to manage | BM Implementation |

Appendix B4 – Comparing incidents to each category: Informant # 4

| # | Data Fragment | Working Category I | Working Category II |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|
| 1 | All the incumbents use the same business model: leveraging physicians and pharmacy to support the sales of strips while giving the meter for free | Declining attractiveness | Deteriorating Outlook |
| 2 | The competitive mechanism was based on market share gain via: 1) strips price; 2) features of the meters | Declining attractiveness | Deteriorating Outlook |
| 3 | Favourable environment for low-costs manufacturers | Declining attractiveness | Deteriorating Outlook |
| 4 | MDM maintained both price and quality high to protect the equity and margins | Declining attractiveness | Deteriorating Outlook |
| 5 | MDM lost part of the volume as a result of the low-price competitors and stricter budget constraints of the NHS | Declining attractiveness | Deteriorating Outlook |
| 6 | MDM has presence in type I patients with a CGM device but it is expensive and bulky | Emerging Discussions | Changing Perspective |
| 7 | The type II patients were served by the SMBG | Declining attractiveness | Deteriorating Outlook |
| 8 | The new technology was expected to help type I patients with the following order: 1) Pediatric patients; 2) Adult patients | Emerging Discussions | Changing Perspective |
| 9 | The extant business model assessment has been done focusing on its components (CVP, Profit Formula, Key Resources and Processes) using both leading and lagging indicators | BM Inter-Components measure | Business Model Assessment |
| 10 | For the implementation of the new business model a longer pay-back was considered to include the time necessary to get the reimbursement from the NHS | New Challenges to manage | BM Implementation |
| 11 | In the initial period the new solution was not reimbursed, so MDM decided to work in collaboration with Charity and Patients Associations | Emerging Implications | Changing Perspective |
| 12 | In this initial period, the new solution required a cash disbursement from patients; this approach required a stronger direct-to-patient interaction based on Customer Service, Digital and e-commerce capabilities | Emerging Implications | Changing Perspective |
| 13 | These capabilities gaps were stronger than planned at the beginning | Emerging Implications | Changing Perspective |
| 14 | One of the patients' complaints was the delivery costs initially set at 8 £ then reduced to 5 £ for a 5 to 7 days of delivery time | Logistics Solution | BM design |
| 15 | The organisation transformation to move towards the new business model has been done with the original team despite some capability misalignments | New Challenges to manage | BM Implementation |
| 16 | MDM decided to launch the new solution in parallel in all the 7 main markets in Europe | organisational challenge | BM Implementation |
| 17 | During the initial direct interaction with patients, new requirements and questions emerged even if not planned: about 10% to 15% of patients got some skin reactions after the application of the sensor | Patient touchpoints | BM design |
| 18 | The main areas of adjustments in the new business model implementation have been: 1) Customer Service; 2) Forecasting, considering the very different solution compared to the past; 3) Pricing, especially with regard to the shipping costs; 4) Digital, CRM and e-commerce; 5) HCPs interaction; 6) Pharmacy interaction. | Required Capabilities | BM Implementation |

| # | Data Fragment | Working Category I | Working Category II |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------|
| 19 | In the new business model the relationship with HCPs changed: from total control of patients' decisions to patients' advisors | Patient touchpoints | BM design |
| 20 | Under this new HCPs relationship, MDM became responsible to address all the questions regarding the new solutions (through the Customer Service) and the HCPs dedicated their effort in providing advice to patients based on the data collected | Patient touchpoints | BM design |
| 21 | The patients, after few months of data gathering got a huge amount of data not very easy to understand in an actionable way | Patient touchpoints | BM design |
| 22 | With the intention to support the data understanding, MDM introduced the AGP (ambulatory glucose profile) to help HCPs and patients to define patterns among the data and drive their interpretation to take informed behavioural decisions based on data | Patient touchpoints | BM design |
| 23 | Under the new business model, two different channels were activated to receive the products: 1) directly to patients from MDM digital portal, in case of out-of-pocket; 2) delivery to patients through community pharmacy in case of reimbursement. | Logistics Solution | BM design |
| 24 | In the direct-to-patients approach, the pharmacy channel has not any role as in the past; this decision streamlined the value chain and reduced all the TPIs to reach the pharmacy (eg wholesalers, distributors, etc.) | Patient touchpoints | BM design |
| 25 | MDM established a business partnership with UPS to leverage its delivery expertise; UPS served the patients using the community pharmacy as a collecting point to manage the last mile to improve its cost structure | Logistics Solution | BM design |
| 26 | The decision to remove TPIs from the value chain has been one of the most discussed elements of the new business model: the decision has been considered as too discontinuous in the healthcare business where nobody was adopting a similar approach | Patient touchpoints | BM design |
| 27 | The top management played a critical role in endorsing the new business model; they used the Blue Ocean approach to challenge the fundamental assumptions of the SMBG | Steering Role | BM strategizing |
| 28 | Strong emphasis has been given to the following aspects for the execution of the new business model: legal, data privacy, finance, e-commerce, IT, Public Affairs, Market Access | Required Capabilities | BM Implementation |
| 29 | The objective of providing the NHS with solid evidence on the improvements for patients using the new solution became very relevant to get the reimbursement | Clinical evidences | BM design |
| 30 | Consumer Marketing and CRM were also critical to establish the digital interaction with patients; the measures used to monitor the progress were: 1) minimise the cost per acquisition; 2) maximise the re-purchase rate. | Required Capabilities | BM Implementation |
| 31 | Potential avenues for further improvements can be represented by: 1) real continuous monitoring vs the current swap option; 2) artificial pancreas, where insulin can be injected based on the data gathered; 3) cost reduction of the current solution to get access to the huge opportunity of the type II patients | New Challenges to manage | BM Implementation |

Appendix C – Comparing incidents to each category: Summary Scheme



Data Fragments

1st Order Concept

- MDM has a CGM for type I patients but with solid limiting factors as price and usability
- MDM Internal Questioning:
 - How can we have more meaningful pipeline?
 - Can we develop a CGM for type II patients?
 - Can we reduce the price of type I device?

- Internal meaningful questions:
 - How can we have a more relevant pipeline?
 - Can we leverage any existing solutions?
 - Which pain points can we tackle?
 - From which component can we start?

- Focus on the sensor tech got from acquisitions
- Sensor technology to measure body fluids
- Sensor tech can reduce the patients' pain points

- Focus on the tech we can have access to/acquire
- Critical benefit of this technology in JTBD terms
- How can tech reduce the patients' pain points?

- New technology to be developed under a no reimbursement initial status
- No reimbursement means patients should pay the new solution out-of-pocket, requiring stronger patient understanding capability
- Potential interest from patients to reduce pain
- Growing relevance Patient Associations to really understand how patients live with diabetes
- Limited initial interest from NHS focused at reducing the treatment cost/patient in a situation of growing number of patients

- New technology relevance check
- New technology monetisation challenges
- New technology payer shift
- New technology penetration boost

- Crafting a new job-to-be-done moving from a disease-focused to a patient-focused approach
- The new job-to-be-done minimises the pain points associated to the SMBG solution
- The CGM solution was better suited to deliver the new job-to-be-done to patients
- The CGM empowered the patient to take full responsibility of how to manage her/his health

- New JTBD from disease to patient focus
- PVP minimises patients' pain points
- PVP leverages product/service combination
- PVP empowers the patients to take full responsibility of their health

- The emerging sensor technology was expected to reduce the patients pain points through the skin interstitial glucose monitoring
- Sensor lifespan increased beyond 10 days

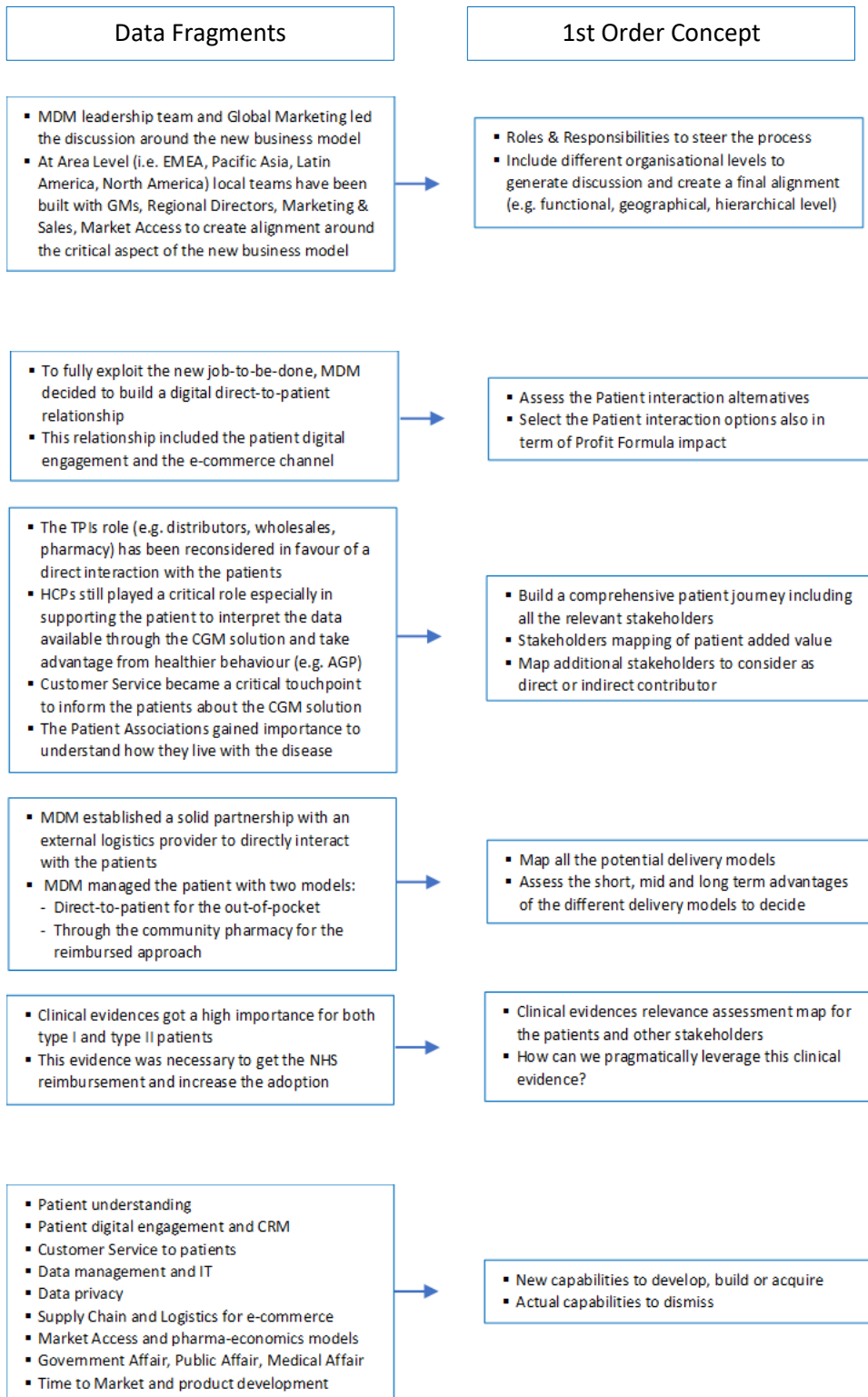
- How technology supports the new PVP
- Actual Key Resources use or re-deployment
- Additional Key Resources required

- Focus on production to get advantages from economies of scale
- Designing a patient experience including value-added services (e.g. AGP)

- Production thresholds for economies of scale
- Actual Key Processes use or re-deployment
- Additional Key Processes required

- Keep the same transactional pricing system
- Generate clinical evidences to get the reimbursement as soon as possible to expand the new CGM solution adoption among patients

- Profit Formula options to boost patient adoption
- Implications of different Profit Formula adoption



Data Fragments

1st Order Concept

- Validation of assumptions before moving forward to business model implementation
- Engage with MDM people, one by one, to highlight the strength of the new strategy
- The initial implementation of the business model has been performed with the original team
- Assess the entire MDM organisation to define the crucial roles to implement the new BM
- MDM implemented the new business model in 7 EU Countries to learn before moving forward
- MDM # 2 BMs worked in parallel with different teams, where possible, and different KPIs

- Combination between huge amount of data from CGM and direct-to-patient interaction
- High switching costs for patients in the system

- Validate the assumptions before moving ahead
- Build consensus
- Assess organisation to define the crucial roles
- Clear roadmap with checkpoints
- Governance rules in case 2 BMs work in parallel

- Map the competitive advantages to leverage
- Define how these advantages can be protected
- List new competitive advantages to build

Appendix D – Integrating categories towards 2nd Order Themes

