



**ANALYZING THE IMPACT OF COVID-19 CRISIS ON THE BUSINESS MODEL OF  
THE HEALTHCARE SYSTEM IN INDIA: A SYSTEMATIC REVIEW**

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**ABSTRACT**

In light of the current COVID-19 crisis, healthcare systems face a variety of challenges in a complex and fast-changing environment. The COVID-19 pandemic tremendously challenged governments, society, and businesses worldwide. While some industries suffered from minor consequences, the healthcare sector has suffered the most with its limited resources and sudden rise in workload. The COVID-19 crisis enforced a massive shift to the delivery of society's important services, such as healthcare services. Moreover, the lockdown has changed how health care providers will offer primary healthcare services in the future, given the new rules and regulations concerning social distancing. Given this severe and still ongoing crisis, healthcare sectors are in need to change, and further support a new business model. This paper aims to gain insights into which type of business models the healthcare system has adopted as a means to respond to the disruption. These insights regarding business models are then explored to critically review the role of innovation in the business model and redefinition of business model innovation of healthcare system during COVID-19 pandemic. The paper performs a systematic literature review on the published article and analyses the impact of the COVID-19 crisis on the business model, and proposes measures to innovate the business model in the healthcare system. The paper concludes with recommendations on alternative methods to minimize the impact.

**KEYWORDS:** *Business Model; Business Model Innovation; COVID-19; Healthcare; India.*

**INTRODUCTION**

A crisis is defined as "an uncertain or critical period or state of affairs in which a significant change is imminent" and "a situation in which a critical phase has been reached".<sup>[1]</sup> The COVID-19 outbreak has affected and led to a state of crisis in the world. The situation, however, is relatively worse in countries with poor healthcare systems and policies. Due to a rapid rise in the pandemic outbreak from region to region, this has been an intense tragedy. This pandemic has served as a harsh wake-up call to the poor health infrastructure, especially in India, as it is under unbearable strain during this time. The COVID-19 pandemic for 2019-2020 was then confirmed to hit India in February 2020, with over 10 266 674 cases and 148 738 deaths as of 30 December 2020.<sup>[2]</sup> The government of India established test centers for COVID-19 in hospitals countrywide. Even so, the centers were running out of space. In addition, adequate facemasks were available before the pandemic to meet the needs of the general public, but with an increased rate of infection and exporting them, they became scarce and expensive. During the time of the pandemic, many drugs and equipment needed ran short in the pharmacies, and the stockiest began their businesses. Dozens of patients

have contacted the administration of hospitals, but hospitals can not offer adequate medical assistance due to the lack of medical facilities.

As the COVID-19 cases in India rose, hospitals were groaning under the weight of patients. Government policies have failed due to the public's dismissive mentality, government policies have failed. Caregivers in hospitals were overwhelmed, laboratory facilities were strained, and contaminated patients overflowed into emergency rooms. Similarly, the workforce declined, ICUs became short of rooms, and healthcare costs increased. Also, basic medical services were dysfunctional, and there was a shortage of doctors and paramedical personnel. There was no advanced training provided to health professionals about the pandemic. In the region, there was a shortage of medical equipment and personnel, as well as obsolete facilities. The combination of an increasing list of COVID-19 complications and a growing shortage of COVID-19 diagnostic centers places a huge strain on India's healthcare system. In a developing country like India, pandemic outbreaks greatly challenge the healthcare system. The lack of basic health services, outdated health

programs, weak governance, and the public's insensitive approach to general preventive measures further aggravate the situation. The AHA case studies<sup>[3]</sup> highlight the dire effects on the financial wellbeing of hospitals and health systems due to the COVID-19 crisis. The report documents how health systems have been negatively impacted operationally and financially by the COVID-19 crisis.

In this setting, the aim of this paper is to analyze the impact of the COVID-19 crisis on the business model of the healthcare system in India. The paper begins with the definition of the business model in Section 1. Section 2 provides an overview of the business model in the healthcare sector. Section 3 explains the historical overview of the origin and evolution of the concept of the healthcare business model. Section 4 describes the types of impacts of a COVID-19 crisis and the ways in which a crisis can affect the business model. Section 5 explains the role of innovation in the business model during the crisis, and business model innovation as a possible solution to disruption caused due to the COVID-19 crisis in the healthcare system is articulated in Section 6. The final section concludes with specific recommendations of sustainable business model innovation that could be used as a guide for healthcare organizations to pivot during or post the COVID-19 pandemic in India.

### 1. Definition of the business model

Health care provides citizens with essential services and is an important source of employment. Health care is a complex and heavily regulated sector in most countries. Government regulations can influence the innovative character of the healthcare sector upward or downward by changing the parameters of organizational structure or financial flows. In recent years, healthcare has been subjected to a host of pressing developments, such as the aging population and increasing lifestyle diseases. As a result of these developments, health care is expected to be dominated by market demand expansion and subsequently increased expenditure on health care. To ensure good quality of service and manage cost increase, innovative solutions are required at the government level as well as sector participants. At the same time, health care is not the only sector that is experiencing such chaos.<sup>[4]</sup> And while governments and regulators traditionally seek innovative solutions at the sector level as a whole, recent studies have shown that the business model appears to be responses to changes in underlying market conditions at the healthcare establishment level.

While in the business journal, the term 'business model' appears to be very popular, its academic and theoretical backgrounds are less well established. One of the most prominent literature streams defines the business model as the value chain structure. In literature,<sup>[5]</sup> the business model is defined as "the set of activities from raw materials through to the final consumers with the value being added throughout the various activities". The

activity system is defined as a collection of interdependent organizational operations centered on a focal healthcare establishment and includes operations undertaken either by the focal healthcare provider or by partners, clients, or suppliers. To promote economic benefits, the business models address the innovative, constructive, and continuous application of efficiency-enhancing techniques while reducing risks to the environment and society.<sup>[6]</sup>

In the literature of business models, various authors have tried to create a typology of business models and have tried to assess which models perform better than others.<sup>[7]</sup> A business model framework with the development stage of the business model where the business is forced to compete on price for affordability and availability of healthcare was presented in the literature.<sup>[8]</sup> The competitive advantage is higher if the business model is more complex. When the healthcare provider integrates its innovation operations into the business model, the two greatest levels are achieved. The business model is categorized into an efficiency-centered and novelty center.<sup>[9]</sup> Business model designs focused on new ways of generating and capturing value, such as establishing alliances, combining resources, or developing new transaction processes that are categorized as novelty-centered. Business models centered on efficiency are based on minimizing transaction expenses and generating the product/service as cost-effectively as possible. The research shows that novelty-centered business model designs have a positive impact on the performance of entrepreneurial setup in the healthcare industry.

A business model is a conceptual mechanism that incorporates a collection of elements and their relationships and allows for the expression of a healthcare establishment's business logic.<sup>[10]</sup> There are many views on which these components of the business model are, and in most definitions of the business model, the same components and frames are present. The most important elements are value creation and value capture and various sub-categories of these components. Some of the models and frameworks are very pragmatic and propose good practices for executives.<sup>[11,12]</sup> At the same time, some are more theoretically oriented and express merely general aspects of the business model construct.<sup>[13]</sup> The reason why business models are divided into frames and components like this is to make the business model simpler to comprehend and use as an instrument.<sup>[14]</sup> The framework of the business model also articulates the value proposition, identifies the market segment, defines the value chain structure and estimates the price structure and profit potential, describes the healthcare provider's place in the value network, and lastly, formulate a competitive strategy. The key components of a theoretical business model are a new customer value proposition, a value network configuration, and a sustainable revenue model. In other words, a business model can be seen as a reflection of

the organizational strategy and a point of departure for planning functional business processes. A business model's central value is its high-level and systematic view of the industry, making it an enticing tool for the development and representation of new ideas. However, the business model implementation literature and its quality assessment are minimal.

## 2. Business models in the healthcare sector

Each healthcare provider has a business model, whether the management recognizes it or not.<sup>[15]</sup> The business model's role in the healthcare system is defined as the blueprint for how the healthcare provider will operate.<sup>[16]</sup> It's a blueprint that allows the healthcare provider to develop and construct the "business structure and processes that make up the organizational and physical form of the healthcare provider". Having a clear business model increases the comprehension and sharing of the healthcare provider's business logic and brings clarity and rationality to a complex business environment. The business model plays a significant role in capturing the significance of innovation, and, therefore, the capacity to produce feasible business models is also essential for society.<sup>[17]</sup> The business model idea provides an advantageous fresh perspective of a healthcare provider's activities, as it takes a focus outside rather than inside. The definition of the business model as an activity system is a helpful theoretical lens for analyzing the recent changes when it comes to the healthcare sector.

Business models in the healthcare sector are strategies to boost the efficiency of a healthcare organization under unpredictable circumstances.<sup>[18]</sup> The Healthcare industry is continuously changing. The more relevant innovation becomes in order to position the organization on the market, the more relevant the business model is. Technology and competitive advantage can be seen as important ties between strategy, organizational processes, and innovation, allowing for better collaboration and information sharing through business networks. Several global developments, such as patient-centered care personalization, population aging, and electronic health systems, require these particular business models to be extremely scalable and respond rapidly to consumer trends.<sup>[19]</sup> However, the difficulty in creating a healthcare business model was not solely due to its dynamic and ever-changing existence.<sup>[20]</sup> The business model is also hampered by the high levels of regulation in healthcare, as well as interactions between networks and different players. In most nations, the health system is a national network that is governed and managed directly by the government or governmental agencies. In these conditions, having a business model that is appropriate for the healthcare sector appears to be extremely important since many stakeholders are looking to get the most out of the business model.<sup>[21]</sup>

Affordable and accessible healthcare is a desired phenomenon. Limited access to healthcare in synchronization with poor living conditions increases the

exposure to the disease-prone environment and adds to shorter life expectancy. One of the root causes of poor healthcare access is the cost of medical treatments and healthcare expenditures. To increase access to healthcare and to ensure healthier populations, new business models for the delivery of healthcare are needed.<sup>[22]</sup> The basic human right of hundreds of millions of people to have access to basic health care provides an unrivaled motivation for economic players to design, develop, implement, and support new health care, business models.<sup>[23]</sup> In brief, business model construct describes how healthcare providers set up and organize their business systems to compete in their markets; and while business models have traditionally been used to describe healthcare establishment-level business systems, a related set of principles and constructs have been developed to explain how healthcare providers compete and how they position their business models to provide affordable and accessible healthcare.

## 3. Evolution of the concept of the healthcare business model

The term business model has been present in scientific discussions for over seventy years now. The history of the business model concept begins with its formulation, with the first use of the term being found in the 1950s. The term can then be found time and time again in literature; however, it was initially used in a very unspecific manner. After that, the business model was regularly picked up in the healthcare setting and mainly used in the decision-making sense. In the comprehensive review of the academic literature, authors have attempted to explore the evolution of the business model concept and examined the origin and history of the business model in the healthcare context.

Relatively recently, a business model has emerged as a method for strategic and innovative management. In the '70s of the 20<sup>th</sup> century, the first steps in the direction of business modeling were made. SADT (Structured Analysis and Design Technique) had appeared according to the needs of top-management large-scale projects methodology of structural analysis and design systems. It was developed by the American Douglas Ross in 1973. One of the SADT subsets, IDEF0 (Integration Definition for Function Modeling) feature simulation methodology, had obtained an exceptionally broad illustration. In the 1980s, this direction was built on the basis of a separate CASE-technologies (Computer-Aided Software Engineering) direction program. Before that, programs designed to fix organizational problems or business modeling were divided into different groups, which were called BMS (Business Modelling Software) in the western market. In the 2000s, Business modeling, assisted by appropriate tools, slowly evolved into a distinct management approach-Business Engineering. The basic content of which is to evaluate and develop the activities of the healthcare provider by applying its business model widely generated using a process approach. At this point, the understanding comes that

business modeling is a method that lets businesses decide the correct path of change, shape the definition of change, and promote its implementation.

Although the concept of the business model first appeared in scholarly writings in the 1950s and 1960s, it was not widely used until the late 1990s. The term “business model” first appeared in an academic paper in 1957, according to an initial review of literature,<sup>[24]</sup> and, 1960, it first appeared in the title and abstract.<sup>[25]</sup> The evolution of the business model concept took place in five periods. The periods were constructed from the literature detailing the business model concepts history. The periods are (i) a *fragmented phase* of usage characterized by intermittent use of various disciplines; (ii) a groundbreaking phase of *information system and e-business* applications; (iii) a time in which the term has been expanded to *broad global applications* such as entrepreneurship and strategy; and (iv) a period of *expansion* in which it has been applied in a number of new fields. The business model now appears to enter a period of (v) *consolidation*, where the research of the business model is constructed as a coherent area.

Over the past 150 years, healthcare has developed into its present state, with decisions that have turned its primary objective of caring for the sick into an industry with increasing healthcare costs and reduced quality. In 1909, George Bernard Shaw,<sup>[26]</sup> wrote a preface on doctor’s payment for medical service stands as it does today – Fee-for-Service. Fee-for-service (FFS) payments to doctors and healthcare service provider’s charge-based payments are means for ensuring access to care and the proliferation of health services. FFS evolved in healthcare, possibly because it was the least resistant route. Without appropriate means of quality monitoring and without consistent pricing, there was very little left to build on a business model.

Healthcare is seen as a rapidly changing sector. Many global trends, such as customization, aging populations, e-healthcare, and patient-oriented healthcare, force healthcare systems to develop very flexible business models that can be quickly adapted to existing market trends. The difficulty of designing the business model for the healthcare sector, however, is not only linked to its difficult and ever-changing existence but also to its severe regulatory level. In developing countries, the healthcare system is a national system that is primarily controlled and operated by the government or government-related organizations. Having a clear business model for health care providers seems to be extremely important in these circumstances because many stakeholders would benefit from such a business model. In other words, while a business model can ensure good quality care for patients, hospitals, and the government, it should also ensure the reliability and cost affordability of the services provided. Nonetheless, given the important position of the business model for the healthcare sector, there are very few supporting and

applicable literature studies in this regard when it comes to science and academic content. Moreover, the healthcare literature focuses mainly on three main areas: healthcare management, healthcare cost and expenditure analysis, and healthcare supply chain management.<sup>[27]</sup>

While the benefits of the healthcare business model described may seem applicable to the developed economies, they can be applied elsewhere. In fact, the business models built in low-income economies may have advantages over those generated in developing countries.<sup>[28]</sup> As a result of a growing life expectancy, the aging population around the world is rising. This trend is currently higher in developed countries but is becoming a global issue, including India. One of the main implications of this trend is the health care system, where there is a desire for accessible and affordable healthcare services. To this end, healthcare services that are delivered to each individual may require improved care. Such an improvement in healthcare services depends on the effective adoption and implementation of the business model in healthcare.

#### 4. Analysis of the effect of the COVID-19 crisis on the business model

According to the World Health Organization,<sup>[29]</sup> by continuous monitoring, quarantine, awareness campaigns, and early detection, countries take all preventive measures to reduce the spread of viruses. However, due to the decentralization and fragmentation of healthcare systems in many badly affected countries, the emerging COVID-19 pandemic has a negative impact on all sectors of the economy, including India.<sup>[30]</sup>

Businesses need to be flexible in order to manage the crisis and quickly develop skills that can help them withstand the changes placed on them by the environment. It follows that if a crisis is not efficiently managed, it can have negative implications for existing business models.<sup>[31]</sup> However, a crisis may also give rise to new business models that encompass new value propositions, new capabilities, and new value demonstrations and address new customer needs. A business model might be the source of a crisis, in addition to the negative and positive impact of crises on business models, as is the case when manufacturing pollution generates environmental problems, overconsumption causes financial pressure, and ineffective capabilities contribute to unhappy customers.

The effect of a crisis on an organization’s business models is studied in the context of the dot-com crash in 2000, natural disasters, such as the tsunami in the Indian Ocean in 2004 and Hurricane Katrina in 2005, and the financial crisis in 2008. In the dot-com crash, one of the most famous examples of business models being impacted by a recession was experienced. The idea of business models evolved simultaneously with the internet in terms of popularity and interest in the 1990s.<sup>[32]</sup> As a result, when the dot-com crash impacted

the economy in 2000, many argued that the idea of the business model was to blame.<sup>[33]</sup> There is no guarantee of success in the presence of a business model, and, as such, business models should be excluded from business terms, as the business strategy of a company is still the key to its profitability. The dot-com crisis was an opportunity to take more seriously the concept of business models and to explain its intrinsic significance and its strategic distinctions. Similarly, the financial crisis of 2008 generated interest in the effects of crises, particularly in the sense of financial business models.<sup>[34]</sup> The effect of a crisis on a given organization relies on variations in the business model. For instance, it is found that the portfolio of value propositions of an organization determines its level of performance during and after a financial crisis.<sup>[35]</sup> They conclude, in particular, that “the amount of market financing and the lack of diversification in revenue sources also contributed to an increase in the realized risk of banks”. These studies usually mean that an organization needs to consider its business model and assess the effect of a crisis based on the nature of that specific business model. This also implies that a crisis’s effect is organization-specific.

Natural disasters and related crises are major subjects for businesses, especially in healthcare. While the general emphasis of these studies is the protection of people and returning to “normal”, the notion of preparedness is a more general insight from these studies - the need to establish appropriate strategies for coping with a crisis and returning to normal. In doing so, the literature stream includes insights from the risk and disaster management fields, where risk management seeks to reduce exposure to possible deviations from typical business operations (prior to a crisis), and disaster management is largely concerned with disaster management (once the crisis has hit). While disasters can not be avoided, if the healthcare sector takes a holistic approach to crisis management, their implications can be reduced. The implementation of contingency plans such as environmental scanning, forecasting, problem analysis, scenario preparation, and risk analysis helps to improve organizational preparedness. Therefore, the strength of the business model is based on the organizational capacity to be prepared for a crisis.

The COVID-19 crisis caused dramatic environmental changes that the world has not seen thus far because of its ferocity and the very short time in which it has spread all over the world. The result of the COVID-19 pandemic is different and more drastic than the conventional one, in which human creativity causes changes.<sup>[36]</sup> On the economic side, abrupt declines in aggregate demand, as well as supply, are the first consequences. Widespread business shutdowns to contain the pandemic led to a decrease in aggregate production, while a decrease in consumption and expenditure resulted in a decrease in demand. In such circumstances, businesses are more focused on how to rescue organizations from bankruptcy than on creating a

sustainable competitive advantage.<sup>[37]</sup> For this reason, business models are viewed as a suitable response to the disruptive changes caused by the COVID-19 crisis. Therefore, the critical task of analyzing business models during a crisis is underlined by the effect of crises on these models.

With the beginning of the COVID-19 crisis and its extensive economic consequences, the need to structure and map the effect of the crisis on their business models becomes important. There are six different types of impacts of a crisis described, identifying different ways in which a crisis can affect a business model or parts of it.<sup>[38]</sup>

**First, Antifragile business models** – During a crisis, this type of business model shows better performance. Some systems and business models actually improve under stress and can better realize their potential in a crisis situation.<sup>[39]</sup> After the crisis struck, certain capabilities that are deemed expensive, complicated, and unproductive before the crisis becomes essential. Examples include online and remote-access capabilities, global production, operation, and leadership, and surplus capacity in warehouses, spare parts, manufacturing, and storage. The problems relate to identifying the fact that a desirable climate is found in the business model and accelerating the business model.

**Second, Robust business models** – Robustness is the capacity of a system (a business model) during a crisis to stay in the desired operating state.<sup>[40]</sup> Many aspects of these business models are not impacted by the crisis, as are areas where the only amount and not the business model itself changes in the crisis. Volume increases in some business models (e.g., in the IT and logistics sectors), while volume decreases in other models (e.g., among facility management firms). The problems with this type are ensuring the continuation of the business (e.g., by shielding people from infection) and managing the shifts in volume (e.g., by ensuring supply chain stability and managing the human resource capacity) (e.g., by ensuring supply chain stability and managing the human resource capacity).

**Third, Adaptive business models** – In light of a crisis, certain business models need to change. They may, for example, need to address urgent healthcare needs (e.g., mask, PPE, and ventilator manufacturing). Industrial services may need to shift from on-site to remote services, and schools may need to shift from in-class training to online training. While it may be expensive and intense to adapt to the business model, the business quickly reemerges in a sustainable manner. The problems in this regard are identifying the possibilities for business model development and implementing those initiatives quickly.

**Fourth, Suspended business models** – The temporary closure of a business model with the goal of reopening it

after the crisis is another form of consequence. Examples of this type are car manufacturing lines are on hold, and the hospitality and entertainment sectors are temporarily on pause. For these business models, two main assumptions are that: (1) after the recession, and the business model will be up and running profitably again; and (2) it is easier to invest in the suspension phase than to dismantle the business and then launch a new venture. The main issues in this type of business model are to secure sufficient capital to fund the closure period and to secure access to resources, especially human resources, after the restart of the business model.

**Fifth, Aided business models** – It can rely on outside support if a business model is unable to support itself in a crisis. Governments provide extensive support services to support fragile business models, and investors provide financing to their businesses, and management teams sign support agreements with banks. In this situation, the tasks include presenting the business model as deserving of assistance, defining and applying for help, and sustaining the business model for subsequent revival.

**Sixth, Retired business models** – During the crisis, this sort of business model fails to exist as the cost of getting the business model through the crisis exceeds the expected income after the crisis. In such cases, quitting the business model and starting fresh after the crisis is more relevant. Alternatively, a business model may become permanently obsolete after a crisis, or a crisis may illustrate its outdatedness. The dilemma here focuses on coordinating an orderly shutdown and exit.

##### 5. Role of innovation in the healthcare business model during the crisis

The research on crisis management in the healthcare industry sees good approaches above all in strengthened services for the patients and the reduction of infrastructure. It is stated that the COVID-19 crisis would also affect established business models. The business model is the particular configuration of the companies approach to the value proposition, value creation, and value capture. Business model innovation is recognized as a possible solution to rebound from the recession in a recent study of the reactions of businesses to the COVID-19 crisis, which also involves businesses from the healthcare sector.<sup>[41]</sup> If a business model is innovated through major improvements in the components and/or their design, new possibilities can be explored that improve the efficiency of the organization and can support the recovery and strengthening of healthcare businesses. In times of crisis, diverging business model innovation is easier to handle.<sup>[42]</sup> Instead of using defensive pricing or organizational strategies, a crisis may be a lever for businesses to start new. Innovation in the business model provides a superior return than innovation in the process or product.

Innovation is defined as “deliberate introduction and application of ideas, products, processes, or procedures

within a group, role, or organization, new to the relevant adoption unit, with the goal, greatly benefiting the individual, group, or wider society significantly”.<sup>[43]</sup> This definition is widely recognized by experts in the field since it encompasses the three most important qualities of innovation: (a) novelty, (b) an application component, and (c) the intended benefit.<sup>[44]</sup> Innovations in healthcare organizations are often new services, new ways of working, and/or new technologies, according to this definition.<sup>[45]</sup> The intended benefits for the patient are either better health or less sickness suffering.<sup>[46]</sup> Patients’ needs, as well as the requirements of healthcare professionals and providers, are at the heart of healthcare innovation. By depending on new or current information technology, healthcare organizations can often become innovators. The universal scarcity of medical equipment and other products is further advancing the need for more healthcare innovation.

The word “healthcare innovation” refers to the introduction of a new idea, concept, service, process, or product to improve treatment, education, diagnosis, outreach, prevention, and research, with the long-term goal of improving quality, safety, results, efficiency, and cost. Healthcare innovation continues to be fueled by information technology.<sup>[47]</sup> Hospitals and other healthcare practitioners have long been able to use cutting-edge technology in medical equipment, procedures, and treatments, but communications technologies have received far less attention. Innovations in health care are associated with product, process, or structure.<sup>[48]</sup> Hospitals and other healthcare practitioners have long been able to use cutting-edge technology in medical equipment, procedures, and treatments, but communications technologies have received far less attention. Therefore, a process innovation would be a novel change in the act of providing the product, which allows a significant increase in the value given to one or more stakeholders. Typically, structural disruption impacts internal and external infrastructure, generating new business models.

The types of innovations which emerge from a crisis, connected to the kinds of assumptions that they overturn, had a trend. Overturn an expectation and the possibilities that arise from the center of an innovation archetype of a new business model.<sup>[49]</sup> A number of trends leading to sustainable business model innovation have been identified in a recent study.<sup>[50]</sup> The goal was to apply the taxonomy as a decision-making heuristic in business model creation projects, for example, by shifting from sustainability concerns to pattern groups and finally to particular patterns. A value proposition that is beneficial to both the clients of a business and other stakeholders that may otherwise be directly or indirectly influenced by the actions of an organization is at the core of a sustainable business model. There are already strong patterns in the low-touch or next-normal economy that will remain to reverse perceptions on how businesses and customers work. The crisis, as such, is, but not

necessarily necessary, a catalyst for the general business model innovation. The final decision to enact a business model innovation is responsible for a number of determining variables. The Board of Innovation.<sup>[51]</sup> identified seven trends that emerged in 2020 that are challenging in the creation of new business model innovation. These are complemented by the social patterns and predicted economic ripples found:

- Social distancing and “islandization” of economies;
- Resilience and efficiency;
- Rise of the contact-free economy;
- More government intervention in the economy;
- Mission-driven, the “triple bottom line” – profit, people and planet, or the notion that shareholder value should not be the exclusive measure of a company’s success;
- consumer behavior, changing industry structures, new regulations, market positions, sector attractiveness, new tech, access to resources;
- The COVID-19 is forcing both the pace and the scale of workplace innovation or digitization of those lagging.

#### 6. Business model innovation in the healthcare system during the COVID-19 crisis

Social distancing steps lead to fatal effects in the healthcare industry, such as the blocking of innovation. A business model innovation will not only help businesses produce profits during the crisis but also contribute to the company’s sustainable planning for the future. Therefore, healthcare establishments shall consciously and constantly grow their business model and adapt it. Additional services that can also be called up during the crisis and overcome the distance barriers imposed by the lockdown measures during COVID-19 can be provided, especially through the digitalization of the business model.<sup>[52]</sup> In the coming process, in order to be prepared for future crises, businesses make the best possible use of digitalization opportunities. Organizations consciously reduce the impact of inhibiting variables in addition to digitalization and facilitate improving variables, such as contact with patients and establishing time slots for appointments and consultations. Not only does this planning make it possible for a good business model innovation, but also for innovation.<sup>[53]</sup>

The acceptance of business model innovation has increased during the crisis sparked by the COVID-19 pandemic. This could be a catalyst for businesses to accept innovation more readily as there are more parties now linked to the use of emerging technology that can lead to the business models of companies. There are five typologies of potentially sustainable business model innovation identified in a development context of the COVID-19 economy intended to be used as a guide for businesses to pivot during or post-crisis.<sup>[54]</sup>

**First, the remote service provider** – The COVID-19 crisis has prompted a major change to provide essential services such as healthcare services and education to society digitally. Online medical consultations have

unexpectedly become a reality in many nations. This trend is predicted by analysts and consultants to go further to law services, architecture firms, and marketing & ads. Business model pivoting is the standard, from video conferencing to virtual reality and data automation, shifting distribution channels for delivery of services. Since the beginning of the crisis, videoconferencing businesses have more than doubled their market value. The next step will be to digitally re-imagine providing services, especially healthcare services.

**Second, the collaboration platform** – Although the idea of the platform is nowhere new (it was an important aspect of the sharing economy), the development of the model was catalyzed by the situation of self-isolation. A platform is a business that enables interactions between external producers and consumers, which build value.<sup>[55]</sup> The platform provides for these interactions with an open, participatory network and sets conditions for governance. The overarching purpose of the platform is to consummate matches between users and facilitate the exchange of goods, services, or social currency, thus creating value for all participants. There are a sudden gain and potential from the possibility of interaction between individuals separated by geography but linked by technology. Several viable examples, from education networks to expert collaboration, are already available.

**Third, the virtual workforce “immigration”** – The creation of new recruitment pools for talent procurement around the world, redesigning application procedures, employee involvement, resource allocations, or cross-industry re-qualification is one of the potential advantages of this crisis. Talent is becoming increasingly mobile and virtual. Many businesses now hear about reskilling on a scale.

**Fourth, the high touch digital retailer** – Due to the “low-touch” economy, retail categories that have historically needed a high-touch experience can move online because of either the consumer base or the category itself. Or common industries that are primarily online (such as grocery shopping).

**Fifth, the data visionary** – Data was already the future currency. Businesses are constantly looking at ways to exploit data, from remotely automating tasks such as tracking prescriptions instead of on-site pharmacists to monitoring remote delivery or gaining sector-level insights from analyzing mobile location data in real-time.

The platform collaboration and data are dynamic and can be viewed as critical typologies in developing the business model innovation. The widespread penetration of digital technology has exposed a platform’s key role as one of the most important traits of innovation processes and has made it the central focus of the innovation activities of many businesses.<sup>[56]</sup> Digital platforms offer new value creation, value capture, and value delivery opportunities, so organizations reinvent

their business models by value reconfiguration and disintermediation. Several organizations manage successful digital platforms, but most organizations need to find out how digital platforms can be adopted. Digital platforms are treated as a new opportunity for business model innovations in the healthcare sector to deliver remote healthcare services. These include the importance of the community of end-users/ healthcare service providers, the presence of aggregator effects, business scalability, and the possibility of unlocking new sources of value creation, the strong dematerialization of digital platforms, and their essential role in intermediating supply and demand. Adoption of the digital platform during the COVID-19 crisis is able to ensure efficient healthcare delivery. Digital platforms establishing innovation in the business model obtain benefits, such as improved collaboration between patients and hospitals and delivering high-quality healthcare services.

### CONCLUSION

From the discussion in the paper, based on a critical analysis of the impact of COVID-19 on the business model of the healthcare system, it is evident that the COVID-19 crisis required businesses to consider alternatives to business models or to find ways to deliver their services with minimal physical and secure touch. To thrive in the modern ecosystem, healthcare organizations need to be flexible and have dynamic skills that will help them respond to evolving times. From the empirical study of India's healthcare sector, it is observed that country's healthcare system, already in a fragile condition during the pre-COVID era, is adversely affected by the onset of a pandemic. These difficulties and uncertainties are further accentuated by the COVID-19 pandemic and the resulting lockdowns. If the challenges are not tackled immediately and effectively, the situation is likely to get worse for the healthcare sector in India.

The study found that the COVID-19 crisis presented opportunities for healthcare organizations to be innovative in redesigning existing business models; inventing new business models; producing alternative products and services; and/or rethinking service delivery routes and channels, and looking for strategic positions in the new ecosystem who can help them achieve these.

### Recommendation

This paper recommends the healthcare organizations develop innovation capability and adopt the business model innovation approach in providing affordable healthcare services. The role of business model innovation has become even more strategically relevant in a crisis context. Although healthcare establishments only change business models to offer accessible and affordable healthcare services and preserve liquidity, the study suggests implementing business model innovation as a response to a COVID-19 crisis that may have long-term effects. In other words, a crisis will lead to new

perspectives and profit opportunities for businesses that take advantage of the opportunity to change.

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