

INNOVATIONS IN BUSINESS MODELS PROVIDED BY TELEMEDICINE: A STUDY IN SMALL AND MEDIUM-SIZED MEDICAL CLINICS

Rodrigo Soares Lelis Gori, Universidade Vale do Rio dos Sinos
Andres Eberhard Friedl Ackermann, Universidade Vale do Rio dos Sinos
Cleber Lemes Bausch, Universidade Vale do Rio dos Sinos
Miriam Borchardt, Universidade Vale do Rio dos Sinos

ABSTRACT

This article objective to analyze the innovations in the business model provided by telemedicine in small and medium-sized medical clinics. Aiming to carry out this analysis, a thorough qualitative exploratory research was conducted based on interviews. A data collection protocol was developed with semi-structured questions for carrying through the interviews, which were performed with eligible respondents for meeting the criterion of having the experience in the management, implementation, or telemedicine business model operation. The respondents work in small and medium-sized medical clinics in the southern and northern regions of Brazil. The results show that the main innovations identified in the business models from the companies studied were the opportunity to serve new patients and offer complementary services to existing ones, as well as providing opportunities for new services and the possibility of working in networks of specialists through teleconsultation or by the partnership among specialized clinics. It is recommended as future work, the goal of conducting research on the barriers and challenges of implementing telemedicine in health care providers as well as a long-term monitoring of the impacts on the business model of companies which offer telehealth appointments.

Keywords: Business model, Health technologies, Telemedicine, Teleconsultation, Innovation in health.

INTRODUCTION

The pandemic caused by the Coronavirus (COVID-19) has become a rapidly evolving public health crisis, causing profound changes in the global scenario. In this context, the adoption of telemedicine was enabled based on the development, transference, absorption and application of Information and Communication Technologies (ICT's), along with a evolution of scientific skills (Fernandes, 2020; Bokolo, 2021).

The development of consumer-accessible technology called app industry or mobile applications, as well as a greater data coverage (internet) worldwide in recent years, has provided the possibility to curb costs in telemedicine implementation and, at the same time, improve access and quality of health care services (Bashshur et al., 2016; Liddy et al., 2019; Cottrell & Russell, 2020; Santos et al., 2020). Telemedicine has been defined as the use of ICTs to establish communication between two parties (health service providers and patients), aiming to expand health care services (Bhatia, 2021; Minayo et al., 2021). Thus, telemedicine has improved the provision of remote health care services, whether for patients, hospitals, clinics or health professionals (Von Wangenheim et al., 2012; Padilha et al., 2018; Barney et al., 2020; Katz et al., 2020).

Therefore, telemedicine complements or replaces existing products and services provided in health care area.

The consolidation of telemedicine in healthcare implies rethinking the current business models. However, the development of a business model that guarantees sustainability and the definition of value for an application in telemedicine still represents a great challenge for the parties involved (Alkmim et al., 2015; Acheampong & Vimarlund, 2015; Gonçalves et al., 2017). In their literature review, Zott et al. (2011) observed that one of the current trends in business model analysis is the growing convergence on the perceived value.

In this context, Steinhauser (2019) and Currie (2009) states that the institutional setting can affect the business model and, consequently, the diffusion of digital innovations, especially in highly regulated sectors such as healthcare. However, most business model structures do not take into account the complex and inter-organizational background and the external environment of digital innovations in the context of telemedicine (Jonagaddala et al., 2021; Spil & Kijl, 2009). According to this, the implementation of a dynamic telemedicine business model represents a challenge for managers and economists, as financial and social concerns bring up a controversial issue, the health of the entire population, which has become especially relevant in the face of worsening environmental conditions worldwide (Bashshur et al., 2016; Butneva, 2020).

In view of the above, this work is based both on the theoretical approach on the relationship between business models for technological innovations and the institutional view of the organizational environment Kukk et al. (2016) and Sterling & LeRouge (2019), as well as the development of a business model for application in telemedicine, thus addressing a research gap (Bhattacharyya & Mandke, 2021; Chen et al., 2013). Therefore, this article objective to analyze the innovations in the business model provided by telemedicine in small and medium-sized medical clinics.

Small and medium-sized medical clinics in the South and the North of Brazil were the object of this study. These clinics are of fundamental importance for the provision of health services to society. According to data from the Brazilian Service of Support to Micro and Small Enterprises – SEBRAE. They represent approximately 45% of the total number of companies that work in the provision of services in the health area (SEBRAE, 2020).

This study contributes to the literature by indicating innovations in the business model provided by telemedicine in small and medium-sized medical clinics. In addition, contributions are presented, such as the opportunity to serve new patients and offer complementary services to existing ones, as well as providing opportunities for new services.

LITERATURE REVIEW

Literally, telemedicine comes from the union of the Greek prefix “tele”, which means “outside”, with medicine, which is a science whose purpose is to maintain or restore human health. In 1997, the World Health Organization (WHO) implemented its health telematics policies, defining Telemedicine as "the provision of health services, where distance is a critical factor, by all health professionals who use information and communication technologies to exchange valid information for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and for the continuing education of health care providers, all in the interest of improving the health of patients and their communities" (OMS, 1997). In Brazil, the Federal Council of Medicine (CFM), through Resolution No. 1643/2002, defined telemedicine as the exercise of medicine in the use of interactive methodologies of audiovisual and data communication, with the objective of health education and research (CFM, 2021).

Aiming to build a business model directed to Telemedicine, it was found that studies and researches conducted with focus on business model do not present consensus about its definitions and overlap only partially (Steinhauser, 2019). However, the current research literature prevails the idea that a business model basically must present the way a business proposes value creation and delivers to its customers (Zott et al., 2011; Osterwalder & Pigneur, 2011).

Although the literature shows several perspectives of business models, this research is based on the Business Model Canvas, proposed by (Osterwalder & Pigneur, 2011) displayed in the Figure 1. Through Business Model Canvas, a comprehensive understanding of the phenomena and research evidence are sought, which makes useful for the analysis or elaboration of the business model, besides proposing a successful and appropriate arrangement for its goal.

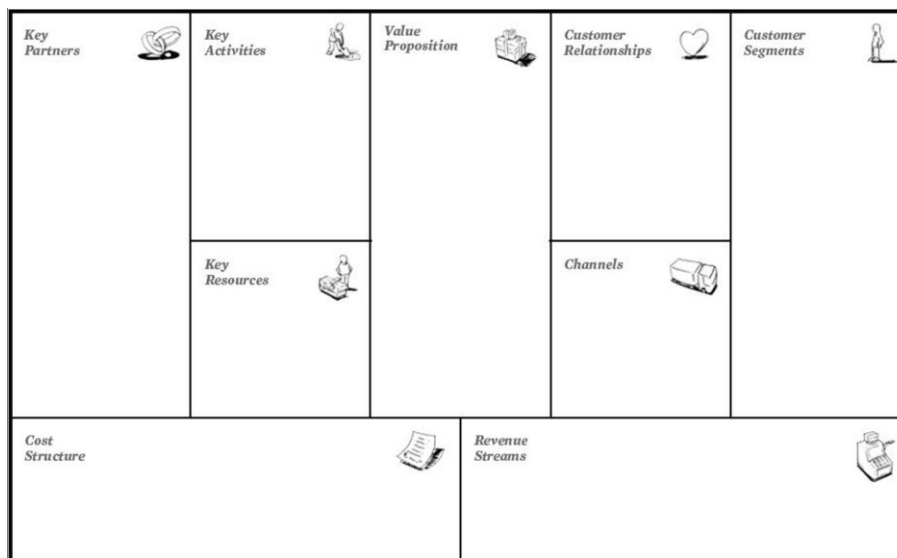


FIGURE 1
BUSINESS MODEL CANVAS ADAPTED BY OSTERWALDER E PIGNEUR STUDY

The Business Model (Osterwalder & Pigneur, 2011) Canvas is based on four main principles, and they are described as value proposition, customer interface, infrastructure management and financial aspects. These basic principles are, in turn, segmented into nine components that allow a complete analysis and representation of the interdependencies among these components, reducing the risk of neglecting important aspects that must be considered in the business model (Steinhauser, 2019). These components are outlined below, based on the authors (Osterwalder, 2004; Osterwalder et al., 2005; Osterwalter & Pigneur, 2011; Steinhauser, 2019; Minh et al., 2019).

Value Proposition

It determines which products and services create value for a specific customers segmentation. The innovative business model in telemedicine should address a real need for the population to which intend to serve and contribute significantly to the improvement of customer care service quality and access to care, speeding up the flow among different levels of care (Katz et al., 2020; Harzheim et al., 2016). The provision of health care with high-quality perceived and easier access to health care services are fundamental, characterized as

crucial aspects of value in large urban centers or in smaller locations with low population density (Steinhauser, 2019; Carvalho et al., 2019).

Customer Segmentation

It points to which groups of people or companies are intended to provide value. Clients urge quick access to a physicians and seek a highly interactive service operated by health care providers with a lot of knowledge based on experience (Minh et al., 2019).

Customer Relationships

They establish the forms of relationship that a company creates with a specific customer segmentation. Patients jointly receive telemedicine services from specialists and specific procedures (Liddy et al., 2019; Steinhauser, 2019). Another aspect to be considered is the design of software or mobile applications based on full attention of customers' needs, which provide to the user and service teams a connection with direct channel, sensitivity to different contexts, awareness of multiple perspectives and orientation into the current scenario. Furthermore, the health care providers must be focused on the attention in the prevention of errors, failures and other sources of conflicts, having an adequate understanding of the target customers and the upkeep of competitive advantage in the services provided (Minh et al., 2019).

Channels

They indicate the ways in which companies communicate and reach their customer segments, with the intention of delivering a value proposition. Patients are reached by internet and video conferencing technological resources (Steinhauser, 2019; Harzheim et al., 2016). The channels are in two types, online and offline (Minh et al., 2019). The online channel performs online marketing and collaborates with media companies to provide better medical information and public health awareness. The offline one is based on workshops and meetups to promote the increase of public awareness about health care.

Main activities

These are the most important actions that a company should perform in order to create value and provide good performance to its business model. They are considered essential activities to carry out marketing campaigns and actions to support the community in which the company is inserted. The coordination of different activities among stakeholders as pharmacies, clinics, families, patients and health care providers as well as the use of Big Data must give important information to partners and decision makers, aiming to develop a culture of information sharing and information management to boost business performance (Minh et al., 2019).

Key features

They define the essential assets to create value and enable the functionality of the business model such as human resource, infrastructure, technology, and others. The main resources for the provision of telemedicine activities are IT infrastructure, the health care providers, stakeholders such as call center collaborators, outsources, business partners and the hospital staff support (Steinhauser, 2019). Assets such as facilities, qualified professionals

and a parent company play an essential role in shaping the resources of the telemedicine platform, contributing directly to the marketing and sales for the business (Minh et al., 2019).

Key Partners

They represent the network of partners and suppliers who provide the necessary support and help to the operation of the business model. The links with institutional agencies such as health care operators, government bodies, associations, higher education and research institutions, among others, are important because they influence the configuration of the entire business model, providing support besides financing and a solid value proposition in order to a better quality, safety and access to care, as well as meeting a real need coming from the customers' demand (Steinhauser, 2019; Gomes et al., 2018).

Cost Structure

These are all the operational costs related to this business model. The main costs include payroll, hardware and software, and IT technical support. On the other hand, there is cost savings through the management of receivables, which compensates for the longer reimbursement period for telemedicine services regarding cash flow (Steinhauser, 2019).

Revenue Streams

This is the monetary value that a company generates for each customer segment served. The revenue stream can come from different sources such as healthcare providers, customer group services, individual customers, and family membership cards. Reimbursement Policy is a crucial factor in establishing a sustainable business model that is in line with planned cash flows (Steinhauser, 2019).

Thus, the diffusion of a digital innovation will only occur successfully if the business model for this innovation provides solid opportunities for creating and capturing value (Zott et al., 2011; Teece, 2010; Teece et al., 2017).

METHODOLOGY

Aiming to analyze the innovations in the business model resulting from the adoption of telemedicine, and how the model has adapted, a Qualitative Exploratory Research was conducted, based on interviews. It seeks to deeply understand the theme and, when conducted appropriately, is rigorous, consistent and allows recommended ways to find answers from important questions (Tomaszewski et al., 2020; Yin, 2010).

At first, a literature review was conducted in two of the main databases, Scopus and the Web of Science, in order to support the proposed study. Conducting the results towards the purpose of the research, the term "telemedicine" and other terms familiar to the topic, known as: "health, ehealth, telecare or telehealth", in addition to the term "business model" were applied to complement the direction of the study. The investigation was limited in articles reviewed by peers as well as the areas of business, engineering or multidisciplinary. As a final selection criterion, a partial reading of scientific articles was performed to identify a possible relationship with the research. Thus, articles with high relevance were selected which support the justification of this research.

Based on the study of this literature, a data collection protocol was developed, with semi-structured questions for conducting the interviews, a technique most used in the empirical qualitative work process (Minayo & Costa, 2018). The interviews lasted an average of around 50 minutes each. Eleven (11) semi-structured interviews were carried out. The

selection of respondents met the criteria adopted in the study by Minayo & Costa (2018), which were: having experience in the management, implementation or operation of telemedicine so that they could present different perspectives on the subject. Regarding the number of interviews, the amount is adequate and is in agreement with Eisenhardt (1989), who suggests between four and ten interviews. Due to the coronavirus pandemic and the lockdowns, the interviews were conducted online, thus ensuring the safety of everyone involved. Respondents work in small and medium-sized medical clinics in the South and North regions of Brazil.

Thereafter the interviews transcription was performed to record and analyze the information of the answers from the survey related to the business model from the perspective of telemedicine. Other factors had been taken into account as the barriers, the main drivers for the business, and the impact of telemedicine on the institutional environment (Steinhauser, 2019, Minh T et al., 2019; Tomaszewski et al, 2020; Yin, 2010).

The data collected from the interview's transcriptions were analyzed separately and structured, evidencing important aspects and the main determinants for each corporation and its business model, as well as its importance in value creation. Afterwards, the information was synthesized in a table and crossed to extract the essential content to the study. It was also analyzed patterns, similarities and differences in the determinants of the total value, performing new comparisons with the literature studied, through these interactions it is possible to increase the consistency of the study and foster the internal validity (Steinhauser, 2019).

RESULTS

Telemedicine had already been discussed in all medical clinics under the study before the COVID-19 pandemic, it was an emerging trend and was fueled by the health crisis. In the value proposition for all the respondents, telemedicine brings to the patient advantages related to displacement, mobility, agility, practicality and allows the physicians to optimize their schedule and punctuality, because it reduces delays caused by traffic issues in large cities. It also allows the offer of an additional modality of consultation by teleconsultation and supports customer loyalty considering practicality and flexibility in service.

The value added through telemedicine makes it possible to reduce or eliminate patients' travel time to clinics in many appointments. There is a convergence among all respondents regarding innovation and modernization in the medical service, where the value is perceived through the patients under this new health care service. So, all the health care providers highlighted that at first, the focal point was not financial return but the advantages for the patients. However, there was an increase of 15% to 25% in the number of consultations in the clinics surveyed, which provided a social value and a market differentiation.

Among the key activities, all the interviewees stated that telemedicine allowed professionals to treat patients from different locations. This finding corroborates the study by Schwamm (2014), where the author points that the use of telemedicine makes easier access for people with limited mobility or who live far from the health care centers. It is important that all those involved in the health service process will be able to deal with the particularities of telemedicine in relation to the traditional model. The cost dimension of each consultation via telemedicine, according to the report of interviewee 5, should be rethought in terms of costs to the patients with the possibility of having a reduction fee between 10% and 15% compared to the traditional consultation.

Health care service providers are one of the most important key resources in the implementation and operation of telemedicine especially physicians. Newly graduated

physicians are very focused on teleconsultation and that requires little training for them. There is great adherence with doctors who want to fill their downtime with teleconsultation services. According to interviewees 2 and 3, physicians increase their income by each consultation, so the teleconsultation allows a greater number of visits in the same period of time than in relation to traditional approach. Another key feature pointed out by respondent 2 was the investment for the development of the teleconsultation system and the acquisition of technological resources such as camera, microphone, software, hardware, and training. Emphasizing that the Return of Investment (ROI) was also reached in approximately six months.

Across all clinics, it was necessary to include a QR Code and the digital signature of all physicians to perform the teleconsultation and generate an online medical prescription. Infrastructure and IT are resources which have posed risks and hurdles to a feasible operational process for all respondents, especially regarding legislation involving data security and privacy of the patients besides medical record data protection. The delivery of the service depends on external factors such as a suitable internet signal and a reliable computer network based on cloud service for all the stakeholders. For respondents 3, 9 and 10, the key resource pointed out the investment in digital marketing campaigns with the purpose of disseminating the telemedicine service as an optional form of medical care.

The teleconsultation format promotes more job opportunities throughout the entire chain of researched clinics, including doctors, IT professionals, back office and operational teams, etc. According to all interviewees, it promotes digital integration in a large part of the healthcare industry, such as pharmacies, health operators, medical checkup clinics and partners. Digital platforms are used to connect physicians from different medical specialties by videoconference. It is a network of connected physicians who offer consultations in the form of telemedicine, which allows to offer complete medical services adding value and innovation. Consequently, it increases financial gains for the stakeholders and offers affordable fees for patients.

Teleconsultations demand the use of online and cloud platforms that bring different experts by videoconferencing from specific ones (GoClin or MS Teams) to the most accessible ones such as WhatsApp, Zoom, Facetime, Google Meet. The respondents 1, 3, 8 and 11 state that support on medication and treatments through message applications, e-mails or phone calls are well known online tolls of practicing telemedicine. Healthcare Insurance Providers and Medical Care Groups that have consultations by telemedicine use dedicated and specific platforms for appointments, patient monitoring, medical records, and online prescription. Thus, they are offered with specialties that do not require doctor intervention or health examinations.

Specialists such as psychologists and psychiatrists showed great adherence to teleconsultation. For all respondents, the patients who belong to Generation Z usually seeks services with telemedicine and Millennials or Generation X are open to teleconsultations. Since Telemedicine has been considered to be a new business model, the current patients and new coming patients need to be informed and oriented about teleconsultations. When opportunities for improvement are perceived, processes must be reviewed and updated. Appointments, Referrals to other specialists or Medical Testing Referrals are also very important in customer relationships. As reported by respondent 2, in several cases the justification for not going to face-to-face consultation is that people do not allow their elderly parents to leave the house fearing COVID contamination, respiratory diseases or reduction of immunity. According to the interviewees, many elderly patients waited for the end of the COVID pandemic to revisit the medical clinics in person.

Telemedicine enabled a reduction of approximately 20% in variable operating costs and increased the cost of the monthly fee of the business management system by around 20%

with the addition of the teleconsultation system. In all the clinics studied, regarding the company's cost structure, it was necessary to adapt the Brazilian banking online payment system (PIX), credit card and reimbursement guides from health plans and health operators to teleconsultation. The payments were all digitized and they must be cleared from the service confirmation as well as the release of the amounts paid.

The revenues generated by telemedicine, in general for all respondents, come from commercial agreements with health operators, individuals and health business plans. This bussines model has improved and streamlined the reimbursement process. In all cases, the migration from physical payment to digital payment methods can be seen. However, it caused a greater need for the confirmation of the teleconsultation itself to avoid fraud and tampering, which requires a crossing of data base information, biometric measures and video recording from scheduling to the generation of an online prescription to the patient. Telemedicine increased between 10% to 40% the billing process of consultations in the medical clinics surveyed in this study.

The main innovations in the business model of the health clinics studied in this research was due to the increase in telemedicine, and they are presented in Figure 2 of the canvas separated by blocks.

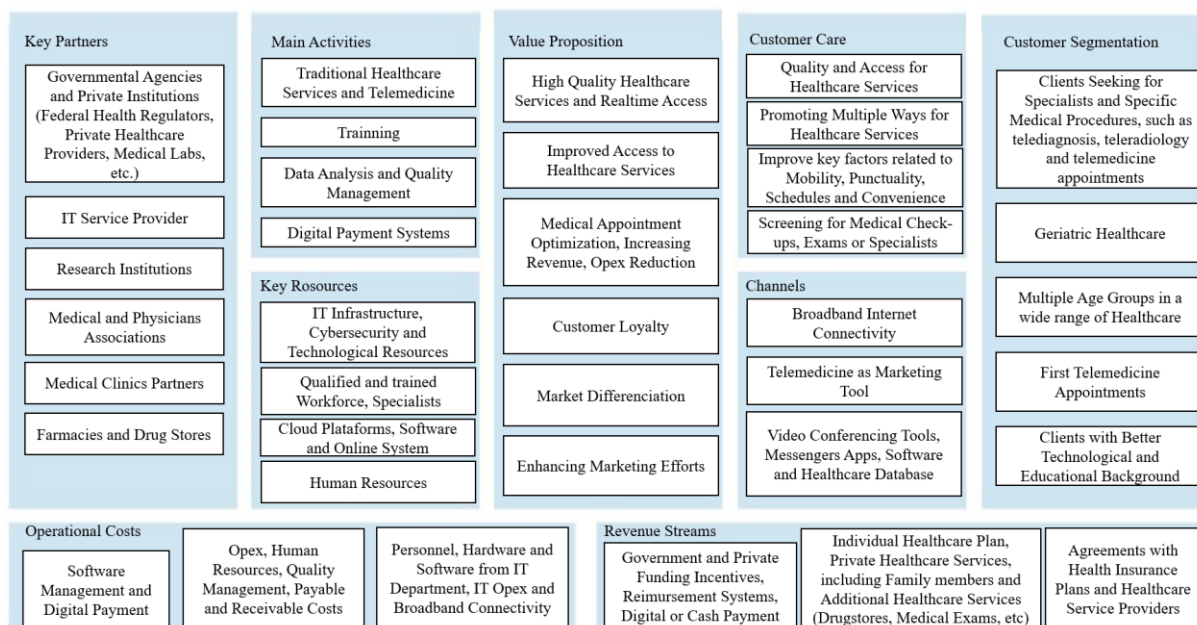


FIGURE 2
BUSINESS MODEL CANVAS FOR TELEMEDICINE ELABORATED BY THE
AUTHORS BASED ON OSTERWALDER E PIGNEUR RESEARCH

DISCUSSION

The business model using telemedicine offers a perception of a high quality healthcare provision and easy access to healthcare services (Steinhauser, 2019). The results of the Santos et al. (2020) and Minayo et al. (2021), research demonstrated the importance of home care in mental, psychological and psychoanalytic health, as fundamental factors to help find a more positive interpretation of the treatment. This research contributes to the literature and management practices by identifying the flexible combination of online and offline technologies, in order to take advantage of the available technologies and operational resources existing in the medical clinics. Thus, those factors benefit the user and add value to

the stakeholders, which corroborates the above in the literature (Minh et al., 2019; Martins et al., 2019).

Teleconsultation mainly targets patients with limited access to specialized health services or who have difficult access (Steinhauser, 2019). An important aspect is to consider physicians who are looking for work in complementary hours and with reasonable salaries (Minh et al., 2019). This study showed that direct communication with patients and users of medical service platforms provides an entire care proposal with the quality of service and increased safety for the client (Gonçalves et al., 2017; Gomes et al., 2018). The results indicate that marketing initiatives and efforts to support the dissemination of services are considered key activities to provide important information to business partners through information management and Big Data along with other stakeholders including pharmacies and medical partner clinics. Such aspects are relevant to decision makers based on information sharing and analysis about the business performance (Minh et al., 2019).

On the other hand, as opposed to the one exposed in Steinhauser (2019) and Minh et al. (2019), the cost structure and the period of reimbursement for telemedicine services regarding the cash flow remained similar to the traditional consultation. Finally, the costs arising from the acquisition and development of a new management system, including marketing initiatives and the transition from the traditional business model to the online one gave a quickly return of investment and, in some cases, apportioned in monthly fees or medical appointments through the teleconsultation online platforms.

CONCLUSION

The COVID-19 pandemic quickly imposed profound changes in healthcare services, driving the adoption of telemedicine. This research highlighted the existing demand and a new market to be explored by teleconsultation services. Medical clinics which adopted teleconsultation had the opportunity to assist new patients and offer complementary services to the previous ones. It also provided opportunities for new services to be offered and the possibility of acting in specialist networks by teleconsultation online platforms or by business agreements with other medical groups and hospitals.

It is advisable to extend this survey to a larger number of respondents, as well as in other locations and different regions. It is important to conduct studies and research on the barriers and challenges for the implementation and management of telemedicine across health operators. Hospitals that offer a diverse and different specialist structure are also recommended. This will provide a deeper insight into telemedicine business model and its different applications.

Another opportunity for further research and studies is associated with the long-term monitoring and validation of the impacts on the business model as well as the operational and financial performance of the companies which offer teleconsultation. It will provide an analysis of the results of telemedicine business model, and it will be possible to identify the adequate strategic approaches and operational changes coming from the adaptation for this new business model.

REFERENCES

Acheampong, F., & Vimarlund, V. (2015). Business models for telemedicine services: a literature review. *Health Systems*, 4(3), 189-203.

- Alkmim, M.B., Marcolino, M.S., Figueira, R.M., Sousa, L., Nunes, M.S., Cardoso, C.S., & Ribeiro, A.L. (2015). Factors associated with the use of a teleconsultation system in Brazilian primary care. *Telemedicine and e-Health*, 21(6), 473-483.
- Barney, A., Buckelew, S., Mesheriakova, V., & Raymond-Flesch, M. (2020). The COVID-19 pandemic and rapid implementation of adolescent and young adult telemedicine: challenges and opportunities for innovation. *Journal of Adolescent Health*, 67(2), 164-171.
- Bashshur, R.L., Howell, J.D., Krupinski, E.A., Harms, K.M., Bashshur, N., & Doarn, C.R. (2016). The empirical foundations of telemedicine interventions in primary care. *Telemedicine and e-Health*, 22(5), 342-375.
- Bhatia, R. (2021). Telehealth and COVID-19: Using technology to accelerate the curve on access and quality healthcare for citizens in India. *Technology in Society*, 64, 101465.
- Bhattacharyya, S.S., & Mandke, P.V. (2022). Study of awareness, adoption and experience of telemedicine technology services; perspectives during coronavirus (COVID-19) pandemic crisis and associated economic lockdown in India. *Journal of Science and Technology Policy Management*, 13(4), 788-811.
- Bokolo, A.J. (2021). Application of telemedicine and eHealth technology for clinical services in response to COVID-19 pandemic. *Health and Technology*, 11(2), 359-366.
- Carvalho, A.G.R.D., Moraes, A.P.P.D., Carvalho, A.C.P.D., & Silva, A.A.M.D. (2019). Quality assessment of adult intensive care services: application of a tool adjusted to the reality of low-income countries. *Revista Brasileira de Terapia Intensiva*, 31(2), 138-146.
- CFM. (2002). Resolucao N° 1.643, De 7 De Agosto De. Brasil.
- Chen, S., Cheng, A., & Mehta, K. (2013). A review of telemedicine business models. *Telemedicine and e-Health*, 19(4), 287-297.
- Cottrell, M.A., & Russell, T.G. (2020). Telehealth for musculoskeletal physiotherapy. *Musculoskeletal Science and Practice*, 48, 102193.
- Currie, W. (2009). Contextualising the IT artefact: towards a wider research agenda for IS using institutional theory. *Information Technology & People*, 22(1), 63-77.
- Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Fernandes, D.R.A., Lima, S.M.L., & Chagnon, R.P. (2020). Contribuições do modelo Fatores Críticos de Sucesso para análise da gestão de Parcerias para o Desenvolvimento Produtivo de um laboratório oficial. *Cadernos de Saúde Pública*, 36, e00059219.
- Gomes, R., Padilha, R.D.Q., Lima, V.V., & Silva, C.M.F.P.D. (2018). Avaliação de percepções sobre gestão da clínica em cursos orientados por competência. *Ciencia & Saude Coletiva*, 23(1), 17-28.
- Gonçalves, M.R., Umpierre, R.N., D'Avila, O.P., Katz, N., Mengue, S.S., Siqueira, A.C.S., & Harzheim, E. (2017). Expanding primary care access: a telehealth success story. *The Annals of Family Medicine*, 15(4), 383-383.
- Harzheim, E., Gonçalves, M.R., Umpierre, R.N., da Silva Siqueira, A.C., Katz, N., Agostinho, M.R., & Mengue, S.S. (2016). Telehealth in Rio Grande do Sul, Brazil: bridging the gaps. *Telemedicine and e-Health*, 22(11), 938-944.
- Jonnagaddala, J., Godinho, M.A., & Liaw, S.T. (2021). From telehealth to virtual primary care in Australia? A Rapid scoping review. *International Journal of Medical Informatics*, 151, 104470.
- Katz, N., Roman, R., Rados, D.V., Oliveira, E.B.D, Schmitz, C.A.A, Gonçalves, M.R, & Umpierre, R.N (2020). Access and regulation of specialized care in Rio Grande do Sul: the RegulaSUS strategy of TelessaúdeRS-UFRGS. *Ciencia & Saude Coletiva*, 25(4), 1389-1400.

- Kukk, P., Moors, E.H., & Hekkert, M.P. (2016). Institutional power play in innovation systems: The case of Herceptin®. *Research Policy*, 45(8), 1558-1569.
- Liddy, C., Moroz, I., Mihan, A., Nawar, N., & Keely, E. (2019). A systematic review of asynchronous, provider-to-provider, electronic consultation services to improve access to specialty care available worldwide. *Telemedicine and e-Health*, 25(3), 184-198.
- Martins, M., Lima, S.M.L., Andrade, C.L.T.D., & Portela, M.C. (2019). Access and effectiveness inpatient care indicators and economic crisis: analysis based on the Brazilian Unified Health System data, Brazil and Southern Brazil states, 2009-2018. *Ciencia & Saude Coletiva*, 24(12), 4541-4554.
- Minayo, M.C., & Costa, A.P. (2018). Fundamentos teóricos das técnicas de investigação qualitativa. *Revista Lusofona de Educacao*, 40(40), 11-25.
- Minayo, M.C.D.S., Mendonça, J.M.B., Sousa, G.S.D., Pereira, T.F.D.S., & Mangas, R.M.D. N. (2021). Support policies for dependent older adults: Europe and Brazil. *Ciencia & Saude Coletiva*, 26, 137-146.
- OMS. (1997). A Health Telematics Policy. World Health Organization. Geneva, Switzerland.
- Osterwalder, A., Pigneur, Y., & Tucci, C.L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems*, 16(1), 1.
- Osterwalder, A. (2004). The business model ontology a proposition in a design science approach (Doctoral dissertation, Universite de Lausanne, Faculte des hautes etudes commerciales).
- Osterwalder, A., & Pigneur, Y. (2020). Business model generation: inovacao em modelos de negócios. Alta Books.
- Padilha, R.D.Q., Gomes, R., Lima, V.V., Soeiro, E., Oliveira, J.M.D., Schiesari, L.M.C., & Oliveira, M.S.D. (2018). Principles of clinical management: connecting management, healthcare and education in health. *Ciencia & Saude Coletiva*, 23(12), 4249-4257.
- Santos, V.T., & Minayo, M.C.D.S. (2020). Mães que cuidam de crianças dependentes de tecnologia em atendimento domiciliar. *Physis: Revista de Saúde Coletiva*, 30, e300406.
- Schwamm, L.H. (2014). Telehealth: seven strategies to successfully implement disruptive technology and transform health care. *Health Affairs*, 33(2), 200-206.
- SEBRAE. (2020). DataSebrae - Total de Empresas Brasileiras.
- Shaimieva, E.S., Butneva, A.H., & Gumerova, G.I. (2020). A business model of Russian e-health based on process integration of industry 4.0: the development of indicators for information communication. *Academy of Strategic Management Journal*, 19(6), 639-639.
- Spil, A.A., & Kijl, B. (2009). E-health Business Models: From pilot project to successful deployment. *IBIMA Business Review*, 1, 55-66.
- Steinhauser, S. (2019). Network-based business models, the institutional environment, and the diffusion of digital innovations: Case studies of telemedicine networks in Germany. *Schmalenbach Business Review*, 71(3), 343-383.
- Sterling, R., & LeRouge, C. (2019). On-demand telemedicine as a disruptive health technology: qualitative study exploring emerging business models and strategies among early adopter organizations in the United States. *Journal of Medical Internet Research*, 21(11), e14304.
- Teece, D.J., & Linden, G. (2017). Business models, value capture, and the digital enterprise. *Journal of Organization Design*, 6, 1-14.
- Teece, D.J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2-3), 172-194.

- Tomaszewski, L.E., Zarestky, J., & Gonzalez, E. (2020). Planning qualitative research: Design and decision making for new researchers. *International Journal of Qualitative Methods*, 19, 1609406920967174.
- Tuan, M.N.D., Thanh, N.N., & Le Tuan, L. (2019). Applying a mindfulness-based reliability strategy to the Internet of Things in healthcare—A business model in the Vietnamese market. *Technological Forecasting and Social Change*, 140, 54-68.
- Von Wangenheim, A., de Souza Nobre, L.F., Tognoli, H., Nassar, S.M., & Ho, K. (2012). User satisfaction with asynchronous telemedicine: a study of users of Santa Catarina's system of telemedicine and telehealth. *Telemedicine and e-Health*, 18(5), 339-346.
- Yin, R.K. (2010). Estudo de Caso: Desenho e Métodos. 1-173.
- Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of Management*, 37(4), 1019-1042.

Received: 12-Jun-2023, Manuscript No. ASMJ-23-13692; **Editor assigned:** 13-Jun-2023, PreQC No. ASMJ-23-13692 (PQ); **Reviewed:** 27-Jun-2023, QC No. ASMJ-23-13692; **Revised:** 03-Jul-2023, Manuscript No. ASMJ-23-13692 (R); **Published:** 07-Jul-2023