

Understanding The Digital Transformation in Smes During The Covid-19 Pandemic and The Effect on Their Business Model

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Abstract

The objective of this study is to understand digital transformation in the SME business during the COVID-19 pandemic and how digital transformation affects the SMEs' business model. The COVID-19 pandemic has encouraged SMEs to have digital usage in the business which requires them to update their business model. A case study approach was adopted, and data collection involved a variety of approaches including semi-structured interviews with five SMEs. The business model of all firms should be modified to reflect digital transformation by including the way firms have done their business after the COVID-19 pandemic. This study showed that the business model for all firms should be included the evolution from their traditional business model. This paper provides a practical contribution to businesses to include the improvement of the business model to ensure that it is updated according to the digital transformation done in their business. Future studies should encourage the study of factors that encourage businesses to consider digital transformation soon where COVID-19 is not the main reason. Due to the increase in competition and the increased usage of technologies, more companies are looking forward to including digitalization and innovation in their business. So, it is important to look at the factors that would affect the increased volume of companies in digital transformation.

Keywords: Digital Transformation, Small Medium Enterprises (SMEs), COVID-19, Business Model.

Introduction

The outbreak of the COVID-19 pandemic announced by the World Health Organization (WHO) in 2019 has affected the economy worldwide. Small and medium-sized businesses (SMEs) are Malaysia's key economic drivers, however, since the COVID-19 pandemic, most SMEs have become more vulnerable than other types of businesses due to their reliance on the speed of revenue from sales. According to Digital News Asia (2021), 67% of SMEs in Malaysia reported that they are negatively affected by COVID-19 while 32% of SMEs

recovered from those negative impacts. The Control Movement Order (MCO) that the Malaysian government enforced in March 2020 had an influence on SMEs' operations, and many of them modified their business models to address changes in online consumer behaviour and basic needs to survive both the pandemic and its aftermath. Therefore, the business models of SMEs should be adapted to the changes to increase their value and economic success (Bleicher & Stanley, 2016).

COVID-19 was first discovered in Malaysia on 25 January 2020 with the first detection of a case of an individual who stayed in Singapore with travelers returning from China (Ting, 2020). As prevention steps, Malaysia's Prime Minister has announced a national lockdown and movement restriction on 18 March 2020 that are imposed on all citizens. During the lockdown and movement restriction period, all non-essential facilities are not allowed to be operated. Due to this, most of the non-essential businesses are affected including many SMEs.

The pandemic of COVID-19 has provided a negative impact on all economic sectors including SMEs as they are the most vulnerable businesses. The global business environment has become more complex especially in the SME sector to survive and continue their businesses due to limited resources and expertise. The businesses that rely on physical space such as restaurants, supermarkets, cinemas, fitness centers, and car dealers have faced difficulties in operating their businesses during the MCO and suffered losses.

The use of technology is the best solution for the sustainability of SMEs during the pandemic and due to that, some SMEs forced themselves to learn about digital businesses. The crisis of COVID-19 has become the right movement for SMEs to include technologies in their business model to improve the quality of their product and services. According to Fredberg and Pregmark (2018), there are very important for SMEs to have an entrepreneurial initiative, innovation (O'Connor, 2008), and digital innovation management (Nambisan et al., 2017) as a tool to combat COVID-19 for their survival in the future. There is proven by researchers that there is an increase in digital transformation due to COVID-19 (Kudyba, 2020; Leonardi, 2020).

The COVID-19 pandemic has become the right movement for SMEs to include technologies in their business model to improve the quality of their products and services and improved work-from-home (WFH) connectivity. The SMEs should not use the COVID-19 pandemic as a barrier for them to continue business and stay survived. The business can convert from offline stores to online purchases not only for convenience but also for the safety of its customers. Since SMEs are part of digital economic ecosystems, transformation and innovation in digital skills are needed so that business sustainability can take place during the pandemic and in the future.

Therefore, this study will focus on organizational behaviour on how the SMEs adopted the technology in their business and included them as one of the main elements in their business model. In addition to that, this research also will study whether SMEs continue using that technology or not in the post-pandemic and keep including them in their business models. This study finds the difference before, during, and post-COVID-19 in digital usage among five SMEs. This study draws upon a qualitative, explorative interview study and included the works of literature on COVID-19 and the digital transformation available. In addition, data have been collected from newspapers and digital press also included in this study.

As a result, all respondents have gone through digital transformation in their business to fight COVID-19 and continue using those digital technologies and reflected the changes in their business model. This contributes to an ongoing scholarly study on digital transformation

among SMEs and the evolution of traditional business models to digital business models. The future study encourages researchers to further study the relationship between digital business and digital business model in the broader study by including more respondents and looking at the factors that encourage the changes (Kudyba, 2020; Dahlander and Wallin, 2020) and other longitudinal challenges and effects on digital business towards their business in the future.

The challenges faced by businesses during COVID-19 pandemic have forced most businesses including SMEs to use digitalization for them to keep continue their business and sustain themselves in the long-term period. The continuous adoption of information and technology (ICT) by businesses affected how products are produced, distributed, and consumed. Therefore, SMEs are struggling to understand the new digital technologies that kept updating and try to look at the potential risks to their businesses due to limited resources and tight cash flow.

The purpose of this study is to understand digital transformation in the SME business during the COVID-19 pandemic. This also results in how the digitalization used by SMEs transformed their businesses model before and after the COVID-19 pandemic. The main research question is broken into two sub-questions:

1. How have SMEs included digital transformation in their business during the COVID-19 pandemic?
2. How the digital transformation affects the SMEs' business model?

Literature Review

Digital Transformation

Kaplan (2010) defined digital transformation as a change that is due to or influenced by using digital technology in our life. Digital transformation, on the other hand, is defined as the use of technology with the target to improve the performance of a company (Schallmo et al., 2018). Lankshear et al (2008) explained that digital transformation is the highest level of digital skills achievement that encouraged the facilitation of innovation, creativity, and significant changes in the related fields.

In the other study, Micic (2017) stated that digital transformation is defined as the "integration of digital technology into the business that results in, changes in business operation and delivery of value to customers". It is included the usage of digital technology that can generate information, process, share, and transfer that information. Digital transformation is not only to changes in technology, but it has an impact on businesses. Therefore, digital transformation is the improvement of both strategic and value-creation elements to achieve the organization's objectives.

According to Bharadwaj et al (2013), previous studies related to the "IT-enabled transformation" by Hill and Swenson (1994); Ginzberg (1981), are focused on the dimensions part, not on the commercial and societal implications of the use and implementation of the technology. This study tries to look at the impacts of digital transformation in SMEs on the digital business model. It is important for the business to update its business model as they have included digital transformation in its business activities.

Digital transformation gives an opportunity for the business to create new possibilities through the changes in technology for a better future. The changes in the business environment require businesses to align business processes and cultural transformation through digital transformation (Orji, 2019). Therefore, businesses are crucial to

understanding how the change in technology brings changes in business models, organizational structures, processes, and systems (Hess et al., 2016).

Digital transformation during the pandemic of COVID-19 will be an advantage for SMEs where through online, they can continue doing business during the MCO by easily promoting and selling their products or services. According to Wirnasih et al (2021), digital transformation can be accomplished through four elements, including (1) making sure businesses remain competitive, (2) bringing efficiency to business processes, (3) raising customer satisfaction, and (4) facilitating business people's ability to make various strategic decisions. The digital transformation during the pandemic COVID-19 will be the best tool for SMEs where even though they are forced to shift to digitalization, at least it will improve sales and logistics.

Digital Transformation in Small and Medium Enterprises (SMEs) during the COVID-19 pandemic

SMEs are the most vulnerable especially when there are crises, therefore, it is crucial for them to be able to switch to digitalization to ensure that they are going to continue in business for a long-term period. Even though SMEs are lacking in resources, they play important roles in the economy by providing huge job opportunities, promoting technological innovation, and maintaining social stability (Gouveia et al., 2022). The COVID-19 pandemic encouraged SMEs to change their traditional business to digitalization to cope with the changes in customers' shopping behaviour and stay survived in the industry.

Digitalization is promising a lot of opportunities to businesses, and it became part of every aspect that needs to be considered for the purpose of business growth and sustainability in the industry (Subrahmanian, 2020). The SMEs can easily transform their digital usage for business performance improvement including business evaluation, networking, feedback from customers Schallmo et al (2018), transparent communication, and for fraud prevention (Yadav et al., 2018). During the pandemic COVID-19, most SMEs have used digital transformation for them to keep continue and survive in their businesses as it will incur lower costs. The significant changes caused by digitalization require the business models to be adapted to integrate the usage of digitalization and the results to SMEs' value and economic success (Bleicher & Stanley, 2016).

The comparatively heavy reliance on digital technologies by Malaysia's SMEs is one element fostering their growth. For Malaysia's SMEs, selling online is growing more and more crucial. In 2020, 63.9% of these businesses generated more than 10% of their total income from online sales, up from 47.5% in 2019. As a key response to the COVID-19 epidemic, 40.4% of Malaysian SMEs initiated or boosted their focus on online sales, which served as a catalyst for the increase in online sales (Digital New Asia, 2021).

The recent global health crisis on the positive side motivates SMEs to rethink their business opportunities, new core competencies, and better chances to stay survive in the industry. According to Wintjes (2019), to remain competitive, the traditional business should be ready to change their behaviour in doing the businesses by adding technologies in line with the customers that have changed their shopping habits and online commerce. Digital transformation is one of the strategies to improve the information technology infrastructures and the new ways of thinking about running the business. As the SMEs implemented the digital transformation, the current business model should be also updated as the organizations need to business strategies by including digital technologies.

Business Model

“A business model is a conceptual tool containing a set of objects, concepts, and their relationships with the objective to express the business logic of a specific firm. Therefore, we must consider which concepts and relationships allow a simplified description and representation of what value is provided to customers, how this is done, and with which financial consequences”.

Osterwalder et al (2005), p. 3)

“A business model describes the design or architecture of the value creation, delivery and capture mechanisms employed. The essence of a business model is that it crystallizes customer needs and ability to pay, defines the manner by which the business enterprise responds to and delivers value to customers, entices customers to pay for value, and converts those payments to profit through the proper design and operation of the various elements of the value chain”.

Teece (2010), p. 179)

An idea about how an organization generates, delivers, and captures the values of a business is referred to as a "business model." This idea of a business model must be straightforward, applicable, and intuitively simple to comprehend without attempting to oversimplify extremely complicated corporate operations (Osterwalder & Pigneur, 2010).

The changes in business approaches during COVID-19 required SMEs to reform their business model that is up to date and suitable to apply. Due to the increased use of digital transformation by SMEs during the COVID-19 pandemic, the business model needs to be adapted to reflect the digital transformation that affects the value and economic success of SMEs (Bleicher & Stanley, 2016). Re-examining the overall business model is very important but looking at each component in detail is also an effective way to innovation and renewal. According to Fitriasari (2020), reevaluating the entire business model is crucial, but innovation and renewal can also be achieved by carefully examining each of its constituent parts.

Case Study Method

Case Study Design

This study was conducted using a case study approach through a qualitative method to address conceptual research toward the digital transformation in SMEs during the COVID-19 pandemic. This study focuses on the SMEs that have gone through digital transformation in their businesses during the COVID-19 pandemic and how this changed their business models. This study has used the case study approach to examine digital transformation and changes in the business model.

Respondents' Profile

There are five respondents located in Kuala Lumpur and Selangor agreed to be interviewed.

Table 1

The details of the respondents

Respondents	Nature of business	Location
Firm 1	Bakery shop sells varieties of cakes, cookies, and brownies	Kuala Lumpur
Firm 2	Florist and gifts shop	Kuala Lumpur
Firm 3	Café sells a variety of beverages and foods	Selangor
Firm 4	Fruits stalls	Selangor
Firm 5	Clothes, kitchenware, and education courses	Selangor

Data Collection Process

This study observed and interviewed five SMEs that have faced digital transformation through the COVID-19 pandemic and required necessary changes to their business models. The data has been collected between June to August 2022, through physical and online interviews. The semi-structured questions have been used to interview the respondents on their experiences with digital transformation and changes in their business model. This strategy allows the researcher to investigate the details of digital transformation faced by the SMEs during COVID-19 pandemic and how these changed their business model.

The data collection process from this study was used to facilitate the recording and documentation of the results. This study describes SMEs through the chronology of digital usage before, during, and after the COVID-19 pandemic and how it will change their business model. Analysis of the case is important to represent and understand the case in detail (Creswell and Poth, 2016).

Data Coding and Interpretation of Findings

To analyse the data, this study used an interpretive approach from interviews and observations. According to Creswell and Poth (2016), to determine the evidence at each phase of the case's evolution, the case study needs to have multiple sources of data. Therefore, this study focuses on answering the research objectives.

Similar data has been grouped into code and analysed to determine how the event occurred according to the setting. Next, the coding schemes are compared with the literature review to help further understand the process. The triangulation method has then been used to ensure that the data collected matches the interview results.

Results and Discussion

Case Study

The data collected in this study are collected through interviews and some observations. The respondents are selected based on the two criteria which are SMEs, have operated before the COVID-19 pandemic, and have used digitalization in running their business during and after the COVID-19 pandemic.

Table 2

Digital transformation in respondents' firm (Designed by author, 2023)

Variables	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
Digital business environment before COVID-19	No	No	Yes Retail POS system	No	Yes Online sales
COVID-19 pandemic impact on business digital transformation to firms	Yes Social media included Instagram and Facebook	Yes Social media included Instagram, WhatsApp, TikTok, and Facebook	Yes Social media included WhatsApp	Yes Social media included WhatsApp and Grab	Yes Social media included Instagram
Continue digital transformation after the COVID-19 pandemic	Yes	Yes	Yes	Yes	Yes

Conceptual Framework Development

A business model describes how the business creates the products, delivered them to the customers, and captures values. Business Model Canvas initially proposed by Alexander Osterwalder in 2005 consisted of nine "building blocks" of the business models design template. The nine components are included value propositions, customer segments, channels, customer relationships, revenue streams, key activities, key resources, key partnerships, and cost structure.

The value propositions in the Business Model Canvas refer to products or services offered to customers and how they can be unique from their competitors. Customer segments refer to whom the products are made while the channels are how the products can be delivered to customers and after-sales services if any. Customer relationships refer to the relationship established with specific customer segments, revenue stream shows how the company generated its cash flows and key resources refer to the needs to make a business work. While key activities answer the questions of what activities need to do to make the business activities, key partnerships refer to partners collaborating for some companies and cost structure describes all costs incurred to operate the business activities.

Alexander Osterwalder's Business Model Canvas is a simple method that business organisations can use to assess, modify, or reform a company's or SME's business model, leading to the creation of a new business model that is more acceptable and appropriate for the application. This study used the business model developed by (Osterwalder and Pigneur, 2010). There is four components integrated business model highlighted by Osterwalder and Pigneur which are

1. Customers
2. Value propositions
3. Infrastructure
4. Cost/revenue structure

<p>Key Partners</p> <ul style="list-style-type: none"> • Who are our key partners? • Who are our key suppliers? • Which key resources are we acquiring from partners? • Which key activities do partners perform? 	<p>Key Activities</p> <ul style="list-style-type: none"> • What key activities do our value proposition require? • Our distribution channels? • Customer relationships? • Revenue streams? <p>Key Resources</p> <ul style="list-style-type: none"> • What key resources do our value proposition require? • Our distribution channels? • Customer relationships? • Revenue streams? 	<p>Value Propositions</p> <ul style="list-style-type: none"> • What value do we deliver to the customers? • Which one of our customer's problems are we helping to solve? • What bundles of products and services are we offering to each customer segment? • Which customer needs are we satisfying? 	<p>Customer Relationships</p> <ul style="list-style-type: none"> • What type of relationship does each of our customer segment expect us to establish and maintain with them? • Which ones have we established? <p>Channels</p> <ul style="list-style-type: none"> • Through which channels do our customer segments want to be reached? • How are we reaching them now? • How are our channels integrated? 	<p>Customer Segments</p> <ul style="list-style-type: none"> • For whom are we creating values? • Who are our most important customers?
<p>Cost Structure</p> <ul style="list-style-type: none"> • What are the most important costs inherent in our business model? • Which key resources are most expensive? • Which key activities are most expensive? 		<p>Revenue Streams</p> <ul style="list-style-type: none"> • For what value are our customers really willing to pay? • For what do they currently pay? • How are they currently pay? • How would they prefer to pay? • How much does each revenue stream contribute to overall revenues? 		

Figure 1: Source: Osterwalder & Pigneur (2010)

A previous study done on the business model has repeatedly cited similar elements which are value offering, value proposition, value creation, profit, customers, strategy, resources process, and cost structure (Tonder et al., 2020). According to Matt et al (2015), value offering elements included the value proposition responsible to position the business in the market while value creation indicates the business resources and how the value offering will be one of the core competencies of the business that focus on the organizational structure, distribution channels, internal activities, and value chain (Matt et. al., 2015). These are all included as per components suggested by Osterwalder and Pigneur that were used in this study.

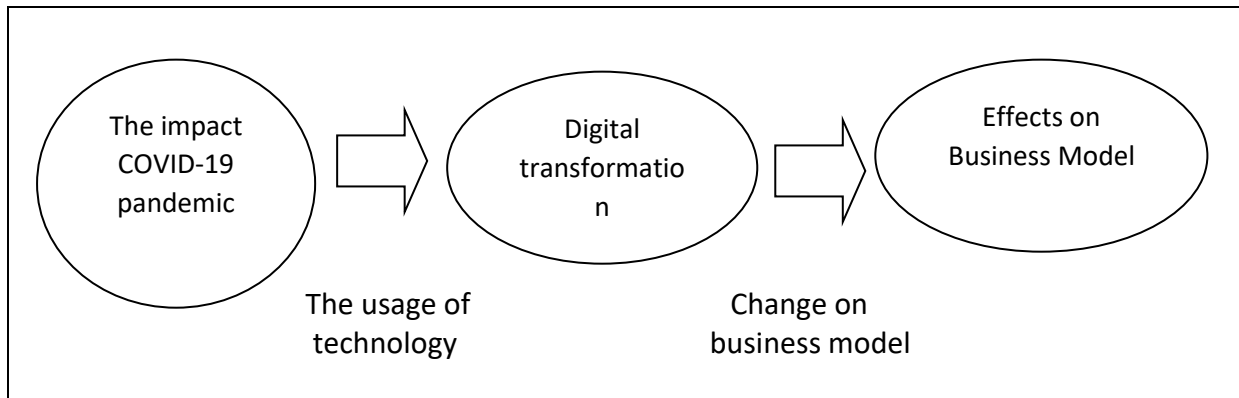


Figure 2: Proposed Conceptual Framework (Designed by author, 2023)

Discussion of Findings

This paper has identified the usage of technologies before the pandemic and the impact of technologies on SMEs’ business after the COVID-19 pandemic. This study reveals that all the firms transforming into digitalization to continue survival during and after the COVID-19 pandemic. Before COVID-19, only Firms 3 and 5 used digitalization in their business including online sales and marketing through social media. While Firms 1, 2, and 4 have not used any digitalization before COVID-19. The COVID-19 pandemic has changed the way firms do their business through digital transformation and increased their incomes.

Firm 1 said: “Before the pandemic, we only had a physical store. So, during the pandemic, we opened social media accounts for our business such as Instagram,

and Facebook. And surprisingly, our sales increased after opening the social media accounts.”

“During the pandemic, we decided to fully concentrate on online services and shut down our physical shop. We used the Grab application to handle our delivery of products to customers. This is also reduced our operating costs. Other Apps used during the pandemic included Instagram, TikTok, and Telegram” Firm 2.

Firm 4 said: “I continued my business from home during the pandemic. I was wondering to lose my incoming profits for no reason. So, I just continued my business from home and did door-to-door delivery. This helps me a lot during the pandemic and helps me survive”.

Digital transformation has led the business to experience changes in some elements of the business model. Therefore, the business model of all firms needs to be modified to reflect digital transformation by including the way firms have done their business after the COVID-19 pandemic. This study showed that the business model for all firms should be included the evolution from their traditional business model. Digital transformation has affected the firms in a few ways including:

1. Value created by the firms using digital transformation. This is included the changes in the key resources of all firms where they are used technologies to deliver their business and stay connected with the customers. This new business model will also affect the value propositions of all firms by having businesses on 24/7 and having a broader connection with the customers. In this study, the results showed that all firms have increased their value through a digital transformation where the firms can connect with the customers easier than before the digital transformation especially Firms 1, 2, and 4 which have just started using social media during the COVID-19 pandemic.
2. Key resources of all firms changed by having online distribution which is easier for the customers to gain all the information and latest update related to the firms and purchase the products online at any convenient time. Firms 1, 2 and 4 have added new resources of social media to their business while Firms 3 and 5 have added more digital platforms to their business during the COVID-19 pandemic.
3. Customer segments became broader using technologies by the firms and have closer relationships with the customers. Any complaints can easily be communicated by the customers online and it will reduce the response time by the firms. All Firms 1, 2, 3, 4 and 5 have broadened their customer segments through digital transformation.

It resulted that all the respondents have used the technologies in their businesses during the pandemic and continued to do digital business and added it to their business model. The pandemic COVID-19 has become an opportunity for firms to change their business model by including digital transformation which has benefitted them in the long term.

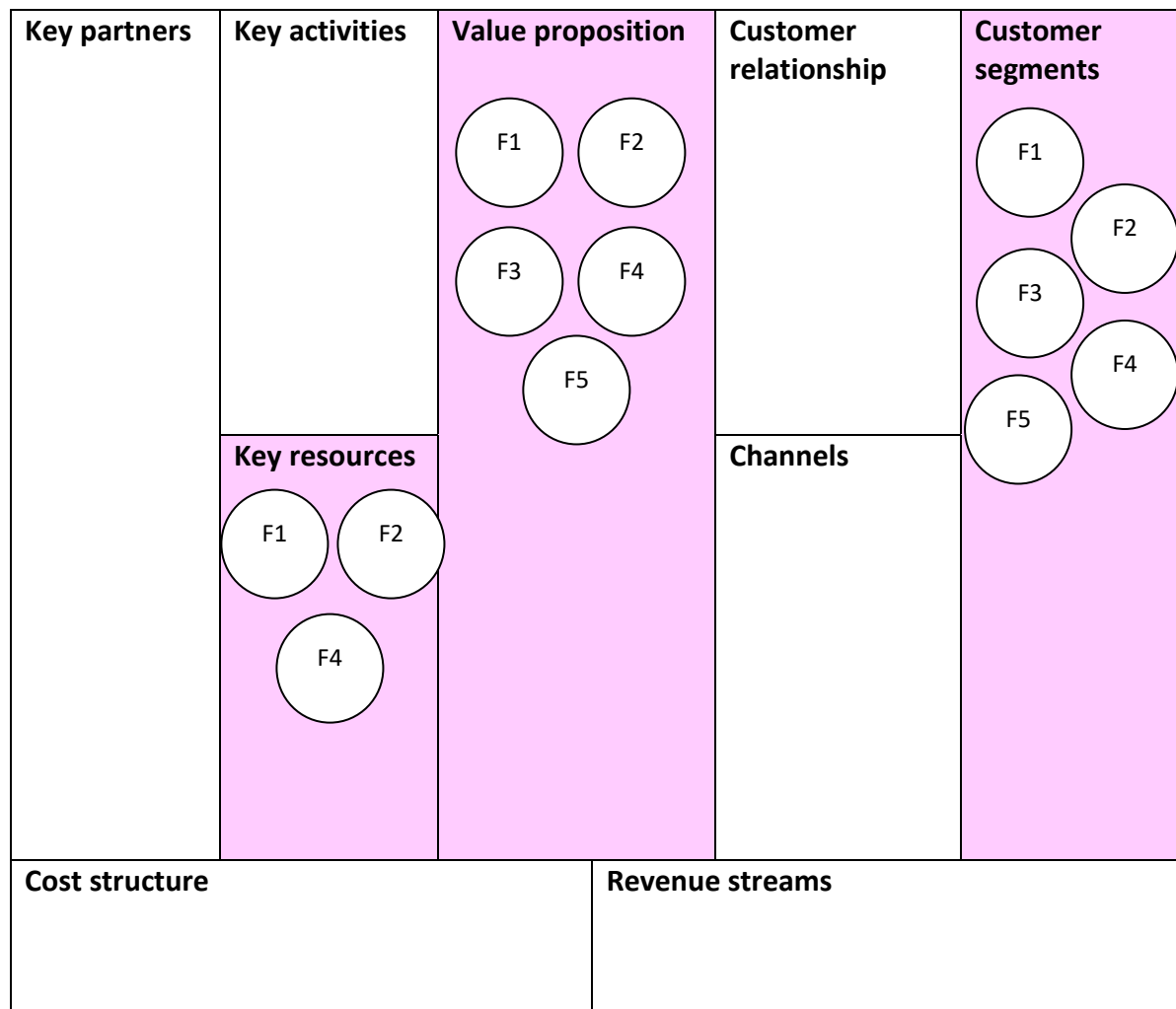


Figure 3: The effects on Business Models by the Firms (Designed by author, 2023)

Conclusion

Digital transformation has influenced all firms in this study to amend their business model accordingly during the COVID-19 pandemic to include the changes in ways of doing their business. This study shows that all firms have included digital transformation including online sales and online marketing through social media platforms. Through digital transformation, all firms have improved their value in business, changed the key resources online, and broaden their customer segments.

This study has shown that digital transformation has influenced all the firms (Firms 1 to 5) during the COVID-19 pandemic to survive in the industry. The digital transformation used by the firms included the online business platform, online marketing through social media, and delivery to the customers. Due to the digital influences in all firms, those digital transformations affect the business model to also be updated where it influenced the changes of the firm key resources (online platforms), broaden customer segments (national and international), and increased its value (businesses are mobile and available 24/7).

The pandemic of COVID-19 has been a reason for firms to include digital transformation in their business to survive in the industry. Therefore, digital transformation became important to SMEs during the MCO when physical shops are not allowed to be operated. This study has shown that COVID-19 affected SMEs including digital businesses, and directly required changes to their business model. In this century, businesses are included the

digital transformation not only by using computerization but it more by how they interact their business with digital technologies by also transforming the business model and the process to be in line with the business objectives.

This study shows that the expansion of business operations through digitalization will also lead to the ability to create a new service. This will require the firms to change their business models which to be included value creation in terms of products, services, and processes. Thus, this paper provides substantial implications for SMEs to include the improvement of the business model to ensure that it is updated according to the digital transformation done in their business.

Future studies should encourage more research to study factors that encourage businesses to consider digital transformation soon where COVID-19 is not the main reason. Due to the increase in competition and the increased usage of technologies, more companies are looking forward to including digitalization and innovation in their business. So, it is important to look at the factors that would affect the increased volume of companies in digital transformation.

References

- Aldianto, L., Anggadwita, G., Permata, A., Mirzanti, I. R., Williamson, I. O. (2021). Toward a business resilience framework for startups. *Sustainability*, 13, 3132.
- Baxter, P., and Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, vol 12 no. 4, pg 544-559.
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., and Venkatraman, N. (2013). Digital business strategy: Toward a net generation of insights. *MIS Quarterly*, vol 37, issue: 2 pp 471-482.
- Bleicher, J., Stanley, H. (2016). Digitalization as a catalyst for business model innovation a three-step approach to facilitating economic success. *Journal of Business Management*, No. 12, ISSN 1691-5348.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative Inquiry & Research Design: Choosing among Five Approaches*. Los Angeles, CA: Sage Publications.
- Fitriasari, F. (2020). How do small and medium enterprises (SMEs) survive the COVID-19 outbreak? *Jurnal Inovasi Ekonomi*, Vol. 05, No. 2, Page 53-62.
- Fredberg, T., and Pregmark, J. E. (2018). Organization renewal through entrepreneurial initiatives: when the seed changes the soil. *Research on Organizational Change and Development* vo. 26, pp 99-126.
- Gouveia, F. D., Mamede, H. S. (2022). Digital transformation for SMEs in the Retail Industry. *International Conference on Industry Sciences & Computer Sciences Innovation*. Published by Elsevier B.V. 10.1016/j.procs. 2022.08.081.
- Hasin, H., Jamil, A., Johari, Y. C., & Kasim, E. S. (2021). COVID-19 and its impact on Small and Medium Enterprises: Evidence from Malaysia. *International Journal of Academic Research in Accounting Finance and Management Sciences*, 11 (11), 719-739.
- Hess, T., Benlian, A., Matt, C., and Wiesbock, F. (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive*, 5(2), 123-139.
- Hill, N. C., & Swenson, M. J. (1994). The impact of electronic data interchange on the sales function. *Journal of Personal Selling & Sales Management*, 14 (3), 78-87.
- Wintjes, J. P. (2109). The development of a strategic omnichannel strategy for fashion retail brands : the case of Tommy Hilfiger / *Jan Philipp Wintjes*. Heriot-Watt University.

- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, united! The challenges and opportunities of social media. *Business Horizon*, 53, 59-68.
- Leornardi, P. M., Treem, J. W. (2020). Behavioral visibility: A new paradigm for organisations studies in the age of digitization, digitalization & datafication. *Organization Studies*. Vol 41, Issue 12, pp 1601 – 1625.
- Dahlander, L., and Wallin, M. (2020). Why Now is the time for “Open Innovation”. *Innovation Harvard Business Review*.
- Matt, C., Hess, T., and Benlian, A. (2015). Digital transformation strategies. *Business and Information Systems Engineering*, 57(5), 339-343.
- Ljubisa, M. (2017). Digital Transformation and Its Influence on GDP. *Economics, Sciendo*, vol 5 (2) pp. 135-147.
- Nambisan S., Lyytinen K., Majchrzak, A., and Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly* Vol. 41, No. 1, pp 223-238.
- Orji, C. I. (2019). Digital business transaction: towards an integrated capability framework or digitalization and business value generation. *Journal of Global Business & Technology*, 15(1), 47-57.
- Osterwalder, A., and Pigneur, Y. (2010). Business model generation: a hand-book for visionaries, game changers and challengers. *John Wiley & Sons, Hoboken, NJ*.
- Osterwalder, A., Pigneur, Y., Tucci, C. L. (2005). Clarifying Business Models: Origins, present and future of the concept. *Communication of AIS*. Vol 15.
- Muthuraman, S. (2020). Digital business models for sustainability. *Gedrag & Organisatie Review*. ISSN: 0921-5077, p. 1095 – 1102.
- Stephan Kudyba (2020). COVID-19 and the acceleration of digital transformation and the future of work. *Information Systems Management*, Vol. 37, Issue 4, pp 284-287.
- Teece, D. J., Pitelis, C. (2010). Cross-boarder market co-creation, dynamic capabilities and the entrepreneurial theory of the multinational enterprises. *Industrial & Corporate Change* 19(4). Doi:10.1093/icc/dtq030.
- Ting, S. W. D., Carin, L., Dzau, V., & Wong, T. Y. (2020). Digital technology & COVID-19. *Nature Medicine*, Vol 26 (458-464).
- Tonder, C. V., Niewenhuizen, C., Schachtebeck, C., Bossink, B. (2020). A framework for digital transformation & business model innovation. *Journal of Contemporary Management Issues*. Vol. 25, No. 2, pp.111-132.
- Wirnasih, Indriastuti, M., & Fuad, K. (2021). Impact of COVID-19 on digital transformation and sustainability in small and medium enterprises (SMEs): A Conceptual Framework. *In Advances in Intelligent Systems & Computing: Vol. 1194 AISC*. Springer International Publishing. http://doi.org/10.1007/978-3-030-50454-0_48.
- Yadav, N., Gupta, K., Rani, L., & Rawat, D. (2018). Drivers of sustainability practices and SMEs: A systematic literature review. *European Journal of Sustainable Development*. Doi:10.14207/ejsd.2018.v7 n4 p.531.