Big Data Analysis of the Business Model Innovation

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Abstract: As the swift technological development, it seems that the speedy changes appears in the current society. Enterprises face severe competitions, not only in products and services innovation, but also in business model innovation. In particular, an increasing amount of attention had been paid on business model innovation over the last one decade. In this way, along with the progress of data economy, big data obviously become the core assets in the business competition, such as artificial intelligent, internet-of-things,etc. This paper aims to introduce the impact of data-driven business model innovation. At the same time, based on the combination of the big data and business model innovation, Freshippo will be chosen as an example to illustrate the huge impact on the application of big data in the business model innovation. Its new online shopping format affect the business model of supermarket in the retail industry.

Keywords: Business Model Innovation, Big Data, Shopping Format.

1   INTRODUCTION

Zott & Massa (2011) mentioned that business model can be regarded as a structural template, which has an influence on the macro-management research. Meanwhile, Teece (2010) revealed that business model can be understood as a structure of the value chain, which can be connected with competitive strategy. Along with the development of digital economy, e-commerce and technology management play an essential role in current society [11]. In detail, a growing number of data can be recorded by the application of technology instead of recording it by hand. Apparently, it shortens the time of collecting data and minimize the errors of recording, which promotes the efficiency and effectiveness. Also, as the related digital technologies are applied in commercial market, e-commerce and commercial intelligent data can provide necessary information for customers. That is to say, big data can create huge commercial opportunities. However, in practice, many enterprises still face much challenges as the business model innovation, especially to the small-size or medium-size companies.

In order to adapt the digital transformation, how should the firm to exploit the business model innovation is a competitive issue that should be taken into consideration. Evans et al (2017) mentioned that business model innovation aim to enhance the market competition to add value of the products or services. In the digital economy area, entrepreneurs can take advantage of the advanced technological methods to realign their business model. Innovative change in the business model may lead to a performance outcomes.

2 DISCUSSION THE DATA-DRIVEN BUSINESS MODEL INNOVATION

2.1 Conceptual Framework of Business Model Innovation

Business model innovation can be viewed as a process of collecting, organizing and summarizing internal and external data, which can acquire the market expectation of the products, product recommendation and the identification of customer need [1]. Moreover, Wirtz, Pistoia, Ullrich and Gottel (2016) represented that many previous scholars contributed on the research of business model innovation. In fact, Amazon, Alibaba, Facebook, etc, some of the famous companies already have financed huge amount of funds in capital market. Based on the successful business model innovation, a significant competitive advantages can benefit the development of the enterprises. Obviously, the technological progress is the main component that encourage the application of business innovation.

Concerning the mainly factors that affect the business model innovation, value creation, value delivery and value capture are the mainly essential aspects. Specially, value creation can be defined as the re-engineering of the core assets and skills to create an extra values [4]. According to the combination of the data, calculation and technology, the format of value creation can be reflected as the business model innovation. By the different categories of customers, big data analysis can provide more potential business opportunities. Regarding to the value delivery, the methods and approaches should embody a significant change during the process of the business model innovation. It associates with the internal and external ecosystems. In the new commercial model, promoted innovation business steps and operating activities should be applied. Companies have to link the business model with the digital platform to enhance the efficiency to delivery the business value. Lastly, value capture represents that how can the company acquire the capacity to create the value. The acquisition of the business value constitutes with the source of the revenue, the control of costs and the creation of business value. As the reset of the commercial steps in the business activities, it promotes the companies to adjust their business model to meet the market demand. However, Giesen et al. (2007) stated that business model innovation disrupted the supply chain, business operating model and business organizations. In this context, it fails to yield significant financial performance among the various business model.
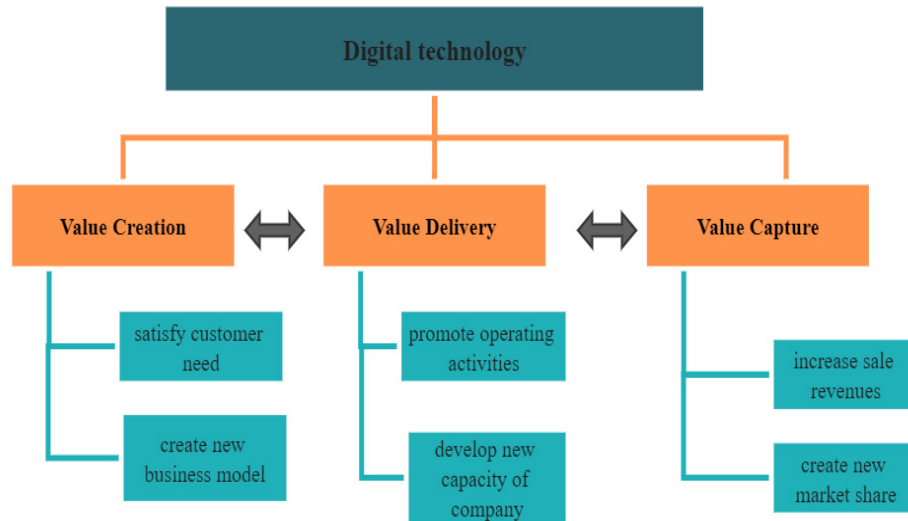
Table 1: digital technological-driven business model innovation

2.2 Building Business Models by Big Data

Big data can be regarded as a competitive benefit and a forecasting for the successfully business model. In detail, the most essential characteristic of big data includes volume, velocity and variety. By utilizing the high-volume data, it is clear for decision-maker to summarize the trends of market and the customer base. Also, the main purpose of analyzing high-dimensional data is to make future prediction. Based on the different size and scope of the business, the usage of the big data analysis can justify the suitable way of business running [6]. At the same time, with the digital pace of change, business activities move away from the conventional models to more technological models, which boosts the progress in e-commerce and the design of business strategies.

Notability, current market is filled with a large amount of data, which ranges from the individuals, companies and national government. In this way, companies should create appropriate business model that matches the customer needs by contributing on the relevant external data. As the data shown in Table2, it forecasts that the China Fresh E-commerce Market Size can reach 419.83 billions in 2023.It represents a significant increase during the last 7years by the rapid development of digital technology. Moreover, according to the assortment data from many sources, a complex analysis can be conducted to create revenues for the company. The effective methods to control the costs should also be considered. By extracting the big volume data, it enables the company to capture the business opportunities and build data-based software to deal with the enterprises problems [5].

Table2: China Fresh E-commerce Market size and forecast from 2016-2023

3 IMPLICATION OF THE BIG DATA-DRIVEN BUSINESS MODEL INNOVATION

From the Internet technology perspective, artificial intelligence, big data, internet -of-thing is widely applied in China fresh market. By online delivering system, the best delivery routes and districts can be matched by the customers' orders.It can improve the delivery efficiency to large extent.

In order to illustrate the consumers' willingness of online shopping,1650 potential customers were selected to make this survey. According to the data from Table3, it indicates that 86.7% people are satisfied and very satisfied with deploying the e-commerce platform to purchase their groceries in the daily life. At the same time, as the pandemic outbreaks, fresh food e-commerce platform users increased dramatically. More fresh e-commerce platforms emerged in the market, like Daily youxian, Dingdong Maicai, Meituan, etc. In this way, the market size of China's fresh food e-commerce industry maintained a strong market position, compared with the conventional fresh food industry.

Freshippo is an example to illustrate the data-driven business model innovation in Chinese market. Freshippo is established in Mar. 2015, Freshippo is subordinated to Alibaba, which is a data-driven platform in the digital economy area. Meanwhile, Freshippo is a completely a new retail format of offline supermarkets. Until to Mar. 2021, there are more than 220 stores all around China. According to the untouched delivery, the pandemic of covid-19 boost the accelerated development of this untouched delivery format. Based on the sales data of Freshippo in 2021, it indicates that the sales revenue online is 30 percent more than the sale

revenues in 2020. That is to say, a growing number of consumers tend to choose online shopping. In this paper, a sophisticated analysis will be made to research the change of data-driven business model innovation.
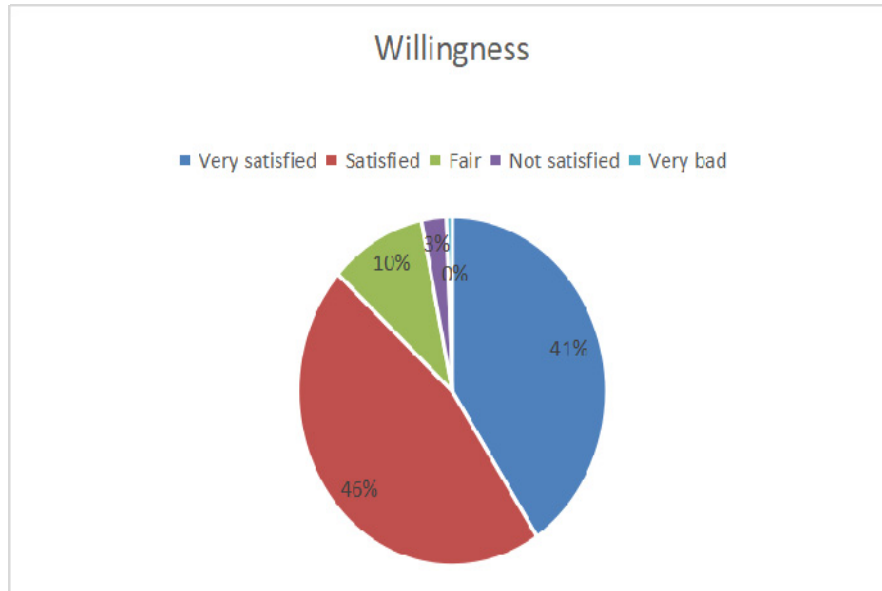

Table3: China Fresh E-commerce Consumer Introduction Willingness Survey in 2022

3.1 Technological Innovation Create Business Value

Related to the application of the online digital shopping pattern, customers can select, order the commodities and using mobile payment by Freshippo app . When the Freshippo store reaches the customer order, shopper will start to prepare the commodities and delivery to customers as soon as possible. Freshippo takes advantage of the variety of relevant sources, promotes the innovative business model, such as combing online format with offline format, positioning accurate customers,etc. In this way, the digital innovative business model can upgrade the company's market share.

Concerning the application of mobile internet, e-cloud technology, big data analysis, more enterprises prefer to choose O2O business model. As the special format of the supermarkets, Freshippo reconstruct the format by connecting the online shopping format with the offline format to satisfy the customer need and enhance the satisfaction of various customers. This reconstruction of the shopping format transfers the conventional business patterns. In this way, this advanced business pattern create entirely curious shopping experiences for customers by the new digital technology. Apart from this, this updated format break the limitation of time and space. Customers can shop around their workplace or in their apartment. It directly broadens the customers set and facilitate the customers. . Hence, using the newer business pattern can promote the creation of economic value and increase the value of the enterprise.

3.2 Data-Driven Analysis in the Business Model Dimension

Due to the shopping recording online by using Freshippo App, the internet technology can be utilized to analyze the customers behaviour, like big data analysis, cloud calculation,etc. By assorting the customers information and cloud storage, Massa and Tucci (2013) noted that it gradually transfer the business creation model and create the value added way to sell existing product. At the same time, software platform can make the best of big data and classify the target customers based on the current market situation. It can deliver the precise information to the potential customers to large extent, which differs a lot from the offline supermarkets. In this way, more efficiency information that customers tend to interest can be received.

Interesting, Freshippo has their own delivery services. Thus, it is unnecessary for customers to worry about the high volume online orders, even though the orders outbreak. In this way, Freshippo created the Self-Pick's Go service. According to the online orders, shoppers can prepare and distribute the food into the self-pick box. This service facilitates the customers around the stores to enjoy their fresh food without any contact or risks. From the Freshippo's perspective, it directly cut the labor costs. They can collect their food in the self-pick box by scanning the codes, it improves the services efficiency and brings convenient for the commuters during the peak hours. Moreover, Freshippo also provides Freshippo F2 and Freshippo mini formats. The new concept format of supermarket incurs the interest of different aged person, which addresses the customers' needs.

4 CONCLUSION

Digital innovation already become an inevitable part of the business model innovation, it can promote the value creation, value delivery and value capture of enterprises. Based on the application of internet, cloud technology and big data, the digital software platform can be deployed for various customers. As the support of the advanced digital technology, the combination of online and offline shopping patterns can promote the customer satisfaction and create higher brand value. Meanwhile, in the rapid digital area, business model can be vital factor for the sustainable development. That means the successful business model can enhance the sale revenues and increase the competition in the fierce business environment. Also, compared with the conventional business model, digital innovative business model can be more flexible and variety.

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