

Analysis of the Impact of Enterprise Digital Transformation on a Business Model

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Abstract: The digital transformation of enterprises optimizes their operation process, makes their marketing process tend to be precise and their production process smart, and greatly improves their competitiveness. On the other hand, it allows enterprises to enter a new environment of high-speed development of information and data drive. Digital transformation is the trend of enterprise development in the future. Exploring effective business models has become a hot issue in the field of enterprise digital transformation. In this environment, if enterprises want to adapt to new digital business models, they need to change the original value chain, and adapt and create a new business model with ecological partners. At present, most enterprises are attempting to innovate and explore the business model of enterprise digital transformation, but are restricted by many factors. Hence, they have not formed a clear and complete business model. In this context, the present study investigates three new business models in the future: the new model of a platform economy, the new model of a shared economy, and the upgraded model of digitalization plus product. In addition, the application of digital technology in these new business models and the future development direction of these new business models were analyzed.

1. Introduction

With the deepening of digitalization, traditional business models have been unprecedentedly impacted. In traditional business models, the relationship between business entities is relatively single, which leads to the limitation of the value creation model. At the same time, digital technology creates a new business ecosystem. Business entities maximize their mutual empowerment and synergy, and all partners and customers benefit from this. In order to adapt to these new digital business models, traditional enterprises need to change the original value chain, and adapt and create a new business model with ecological partners. As the number one form of productivity of digital transformation, digital technology directly promotes the transformation of the business management mode. Furthermore, it indirectly promotes the digital transformation of enterprises by influencing social governance, lifestyle, thinking concept, etc. The aggregation and popularization of digital technology and the exponential growth of data volume provides a basis for the optimization of the business process. In turn, the optimization of the business process provides material conditions for the construction of new business models in disguise [1].

Throughout history, the emergence of a new business model cannot be separated from the external environment and the development of the enterprises themselves. It is merely when an enterprise's own operating ability develops to a certain extent and is supplemented by a specific external environment would new business models take shape, and may further mature [2]. Digitalization provides a possibility for the emergence of new business models. This possibility stems from two factors: one is that digital technology improves the business capability of enterprises and enables them to grasp consumers more accurately, while the other is that the digital environment provides them with more new profit models and profit opportunities. The optimization of digital technology to the business process of enterprises lies in two aspects: the precision of enterprise

marketing and the intellectualization of enterprise production. Enterprise marketing is a process in which enterprises can create the value they want for consumers, and maintain the relationship between them, in order to obtain returns from consumers. The application of digital means makes traditional marketing become similar to a tiger that has grown wings. By connecting more dimensions and levels of data, scenes and people, it brings about the transformation of marketing mode and efficiency. In contrast, information technology has permeated into all links of the manufacturing production chain. Similar to the great impact of the first industrial revolution on manufacturing industry, digitalization is reshaping the manufacturing industry in an all-round way, forming a new generation of production mode, smart manufacturing. The process of reshaping cannot be separated from several key factors, such as "data", "calculation", "interconnection" and "smartness" [3]. Although the optimization of business process brought by digital technology provides hardware factors for the emergence of new business models, digital environment is the most important factor for this emergence. With the rapid development of information technology and data drive, enterprises have entered a new environment. They must constantly explore new ways of earning incomes, organize business activities, and locate themselves in new or existing industries. If commercial enterprises cannot effectively integrate with data-driven practice, they would face the situation of being eliminated by the industry and the times. This is precisely because enterprises have to design and implement new business models in the digital era, in which digital transformation has become a key factor in the emergence of new business models.

Generally speaking, under the background of the digital transformation of the whole industry, merely through the integration of business model innovation and technological innovation can enterprises construct new barriers to business competition. The present study analyses the construction of new business models and the role of digital technology in the formation of these new business models, and summarizes the emergence and development of these new business models.

2. New model of a platform economy

A platform economy is the subversive innovation of the business model. This refers to the business model, in which the supplier and demander rely on the platform to trade. A platform is the trading place (real or virtual) that connects the supply and demand sides. In 2016, among the top 10 companies in global market value, technology enterprises such as Apple, Microsoft, Google and Tencent account for half of the total. These technology enterprises are basically platform-based, which shows that the world has moved from the era of manufacturing and finance to that of a platform economy. The essence of a platform economy is to break the original industrial value chain. The value chain of a traditional economy is a linear state connecting the upper, middle and lower reaches and consumers. Based on a certain platform, a platform economy transforms the original one-way and long value chain into an industrial value ecosphere, which saves the cost and time of each link. Therefore, the "matching" function provided by platforms promotes resource sharing and open innovation, and realizes the development of business models towards being flat and decentralized.

In the digital age, a platform economy will prevail. Massive user and transaction data, together with big data analysis and the recent booming artificial intelligence, would make the matching function of the platform smarter and more efficient. It would also stimulate the emergence of new business models, such as data realization. Cloud computing architecture improves the efficiency of platform resources utilization, and makes the cost of resources utilization more transparent. Undoubtedly, the platform economy built on the basis of digitalization has already been applied in different industries, and has a profound impact on all aspects of our lives. In summary, digitalization promotes the construction of a platform economy from the following three aspects.

Digitalization provides ecology to a platform economy. The Internet has natural ecological attributes, and is the fertile soil for the formation and development of a platform economy. On the Internet platform, various individuals fully interact and constantly innovate, which promotes the

emergence of different types of market players. Furthermore, the market structure created is complex. It is not only a bilateral market, but also a three-sided, four-sided and more-sided structure.

Digitalization provides openness to a platform economy. In the information age, the informatization path of large enterprises is a closed and centralized control. However, in the digital age, the Internet platform based on the new information infrastructure and data production factors, provides the soul of open innovation to participating enterprises and individuals.

Digitalization provides a win-win to a platform economy. In a platform economy, a win-win cooperation is the key, and digitalization greatly promotes this win-win cooperation. On one hand, digitalization makes enterprises of different sizes win-win in a platform economy. In traditional transactions, large enterprises rely on the "information gap" to seize excess profits, and the information matching mechanism provided by the Internet with very low cost makes the extensive, all-round and all-weather information shared by the traders through the Internet platform significantly reduce communication costs, support large-scale cooperation among multiple parties, and promote equality among traders. On the other hand, digitization makes the boundaries between consumers and enterprises in transactions more blurred. The trend of decentralization makes consumers empowered in the platform economy and gradually becomes profit centers.

Building platform-based enterprises is an important path for traditional enterprises to overlook digital enterprises [4]. IBM predicts that in the next two to three years, the redistribution of the platform business model is expected to reach \$1.2 trillion, and has invested approximately \$420 billion. The most active industries in platform investment include the following: industrial products (+25%), electronics (+22%), automobiles (+20%), and retail (+17%). Research and development revealed that almost all traditional enterprises are building platforms or participating in the construction of platforms, 46% of enterprises are investing heavily in the construction of platforms, in which the remaining 54% of executives noted that they would have to use the platforms of other enterprises, and 57% of traditional leading enterprises are the builders or owners of these platforms.

3. New model of a shared economy

The temporary use right of idle goods is transferred by the owner, thereby creating value for both the supplier and demander. This is a shared economy. A shared economy is based on a platform, and there is no clear boundary between it and a platform economy. However, a shared economy pays attention to the temporary transfer and use of "idle" goods or services, emphasizing that consumers only enjoy the right of use, but not ownership. The essence of a shared economy is actually to integrate idle goods or offline services, and transfer the right to use these to the demanders at a certain price, which requires a huge platform for technologists, such as data acquisition, evaluation system, mobile devices, payment system and location-based services (LBS), matching the information of the supply side and demand side, in order to maximize the interests of both sides. Therefore, such platform-based enterprises do not own fixed assets, but obtain commissions after the successful matching of transactions. As Kaifu Lee put it, "the world's largest taxi supplier has no cars (Uber), the largest retailer has no inventory (Alibaba), and the largest accommodation supplier has no real estate (Airbnb)".

The impact of digitalization on a shared economy is embodied in three aspects: First, reconstruct user experience. The precise matching of information between consumers and providers promotes users to obtain their ideal services in a very short time. Second, reconstruct value creation. A shared economy makes the original idle goods or offline services into online trading products through digital means, and fully releases the value. Third, reconstruct the connection. For each kind of service or commodity, there are many buyers and sellers waiting for the connection on the platform, which improves the success rate of the transaction. A shared economy has permeated into transportation, housing, knowledge, health care, education and other fields [5].

However, at present, most shared economies are on the consumption side. For example, Airbnb is a sharing platform for personal housing resources, and Uber is a sharing platform for personal vehicles. A real shared economy is formed from the consumption side, which extends and drives the

structural changes of the production side. According to the Report of China's Shared Economic Development 2018, China's shared economy maintained a high growth rate of over 40% in 2017, and new sharing modes began to emerge in the fields of manufacturing, agriculture and pension. Especially in the manufacturing sector, the shared economy exhibited a good momentum of development. For some specific manufacturing industries, it also can allow small and micro enterprises use the world's top technology and machine tools at the right price through the "shared manufacturing" mode.

4. Upgraded model of digitalization plus product

In addition to the platform economy and shared economy, which are the means to systematically change the business model, digitization also upgrades and evolves by combining traditional physical products, thereby forming a new business model, and realizing the perfect integration of digitization and physicalization [6]. For some industry enterprises, which mainly adopt the physical form, these are exploring approaches to determine their own strategic transformation in the increasingly digital era. It is obviously not feasible to start digital transformation from "zero". On the contrary, most enterprises begin to find the secret of digital transformation by providing interactive websites, better customer services, or better customer experience, and cultivate corresponding basic operational capabilities, such as online channels or digital supply chain tracking. A simple formula is used to describe the relationship between digital and physical products and the new products formed: IOT technology plus products equals smart hardware.

The upgrading of traditional physical products with the Internet of Things technology to better meet the needs of end-users is only a small step in the innovation of business models of the Internet of Things, which is the initial goal. The Internet of Things products have a strong ability to collect data. By using the collected data without violating the privacy of customers, they can further develop a subscription mode, asset sharing mode and other business models. In addition to the Internet of Things, the innovation and upgrading of a business model by digitalization is also reflected in the transformation of the traditional business model brought about by R&D and the application of technology.

A business model is, to a large extent, the "leverage" that enterprises can turn their behavior into profits. However, for traditional enterprises, it is not enough to change business models to realize digital transformation, because all enterprise internal systems (investment strategy, resource allocation rules, incentives, etc.) are designed to support existing business models, which are different from the needs of digital business models. In contrast, limited by the existing value chain, it is difficult to break the long-term stable relationship with customers and partners, and it is also difficult to adapt to the new relationship brought about by value creation in the digital economy. Therefore, it is merely by defining the future direction of enterprises, changing internal performance indicators and creating opportunities for partners can traditional enterprises reform and implement new digital business models, and realize digital transformation [7].

5. Conclusion

With the advent of the digital age, and driven by the development of digital technology, great changes have taken place in social form and market rules, which determines that the digital transformation of enterprises is the inevitable result of the development of the times. At present, digital transformation has gradually changed from prosperity to maturity, and digital transformation has gradually expanded from an Internet technology industry to a traditional industry. The emergence of new business models is the future trend of digital transformation, which brings both advantages and risks to enterprises. When enterprises are facing the digital environment, building a new business model and new business barriers are fundamental to ensure their survival in the digital era. The present study considers three existing forms of new business models: creating a platform economy model with value ecological innovation, creating a shared economy model with high

transparency of Internet information, and an upgraded model with the Internet of Things as the driving force to create a digital plus product. Each new business model considers the use of digital technology and other models that the model may evolve into. The new business models created by digital transformation causes enterprises to redefine customers, provide special products and services, change the path of providing products/services, change the income model, change the support system for customers, and develop unique value network. In the face of the emergence of new business models, enterprises can occupy a place in the digital age only when they adapt and learn as soon as possible.

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