

The Impact of Enterprise Digital Transformation on Consumers in the Big Data Era

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Abstract: In the last decade, the worldwide production of data has reached 64.2 zettabytes, indicating that consumers around the world are entering an era dominated by big data. Many enterprises have begun to apply digital transformation strategies to their businesses as they see the bright future of the benefits that the application of big data can bring. Consequently, consumers worldwide have been greatly influenced by the growing number of digital transformation companies. This research will be processed by interviewing 30 people in groups, Group1, Group2, and Group 3. They discuss and analyze the various impacts of enterprises' digital transformation on consumers by applying pie charts. By interviewing 30 people in three different groups, there is a more positive impact of digital transformation.

Keywords: digital transformation, big data, consumer

1. Introduction

This essay is dedicated to researching the impact of the growing number of enterprises across every industry undergoing digital transformation on consumers today. The digital transformation process is how enterprises integrate technology into several or every aspect of their operations to bring about efficient information, data, and feedback to companies to improve their existing business or innovate new products [1, 2]. Better agility, improved efficiency, and ultimately new value creation for shareholders, consumers, and employees [3]. The research was processed by interviewing 30 participants in three groups. The sample company selected is a medium-sized company from China, selling mainly healthcare products to all age groups. The closure of 80% of stores nationwide during the Covid-19 pandemic has put enormous pressure on the company, which originally had more than 1,500 stores. To solve this serious problem, the CEO and supervisors of the sample company saw an opportunity to survive the Covid-19 pandemic. They then developed a digital transformation plan for the company in early 2020. They set up online stores on all mainstream social media in China, such as TikTok and WeChat, and developed their software (by the end of 2022), which cost \$5000.

The following essay will focus on the method used to gather information from different groups, analysis of responses, and discussion of research results. In addition, the summary of previous research will be shown to support the accuracy of the content, with a conclusion to this research at the end of the essay.

2. Literature Review

According to previous research on IT-enabled digital transformation, technology is only a single factor in the tasks brought about by the Covid-19 pandemic that must be addressed for businesses to remain competitive in the digital age [4]. The numerous changes in consumers' shopping behavior result from the digital transformation of firms, which aims to gather valued consumer information and data to improve their products or services and make innovations. Big data, which uses machines to make personalized supply models, to set different price levels for other groups of consumers to gain more consumer surplus (price discrimination), to gather valuable data for marketing, R&D, innovation, after-sales services, and all sorts of things to improve customer experience, boost sales, gain more competitiveness, and simplify the production process. There are five characteristics of big data: Volume, Velocity, Value, Variety, and Veracity [5]. In previous research, researchers found in a large-scale experiment that functions such as information searching, personalized recommendation, dynamic pricing, and customer services after the digital transformation brought convenience and better shopping experience over the last few years. At the same time, several factors of privacy, security, and shopping addiction have suffered consumers for a long time [6].

3. Methodology

In line with the breadth of our research question, the data in this essay are from the interviewing contents with the sample company and customers of digitally transformed companies in the current market. The strength of using the interview method in this research is that the process can be relatively flexible since participants can avoid answering questions they do not fully understand. The interviewer can gather more valuable data by asking questions based on participants' answers. Twenty-five people participated in the interview, including 13 females and 12 males, of whom 20 participants in Group 1 were separated into three different age groups: adolescents (14-18), young adults (19-30), middle-aged adults (31-50), and another 5 participants in Group 2 are the CEO, supervisor, 2 employees and 2 customers of the sample company. They have been asked questions of both firm digital transformation and the same questions as Group 1 because they can provide more comprehensive answers as they all have much experience in this field. The interview with customers aimed to gather information on how customers feel when applying big data to their daily life and how many digital firms transformed after the Covid-19 pandemic. According to the 2022 enterprise digital transformation survey conducted by the National Development Institute of Peking University and Zhilian Recruitment, 81.6% of enterprises have begun to carry out digital transformation, which has become the mainstream trend of enterprise development.

Customers in Group 1 were asked 6 main and 2-3 questions based on their answers to gather more profound information on enterprise digital transformation's positive and negative impacts. The 6 main questions were:

Q1. Do you choose online shopping or offline shopping more in your daily life; Q2. When did you start using online shopping APPs? (If participants answer online shopping on the last question); Q3. Do you think you have had more negative or positive effects when merchants collect your information through big data and make personalized push and price changes on your store interface; Q4. How do you think the evolution of consumption habits in China has affected your shopping experience? Q5. What shortcomings do you see in the current consumption pattern? Q6. What improvements would you like to make?

To gather the views of the sample firm, three main questions were asked to the participants in Group 2, and a further 2-3 questions were asked to obtain further information from the responses. The three main questions were:

Q1. Why did the company choose to implement the digital transformation strategy? Q2. Has digital transformation brought competitiveness to the firm? Q3. How can digital transformation bring benefits and convenience to customers?

The results will be presented by summarizing participants' responses and analyzing the data with the support of research references made in recent years (2019-2023) to ensure the accuracy of the content. Includes several pie charts and bar charts to illustrate the number of individuals affected by digital shopping from the start of the Covid-19 pandemic (year-end of 2019) to 2023.

4. Result

This study analyzes the various impacts of enterprise digital transformation on consumers by gathering data from 30 people through one-to-one interviewing. To ensure the accuracy of the interview results, five participants were asked the same questions as Group 1 participants after the analysis process, and the results of the Group 1 interview are relevant to Group 3 interview. The Fig.1 illustrates the proportion of participants who shop online or go to grocery stores. 97% of the 30 participants choose to shop online, which is in today's society.

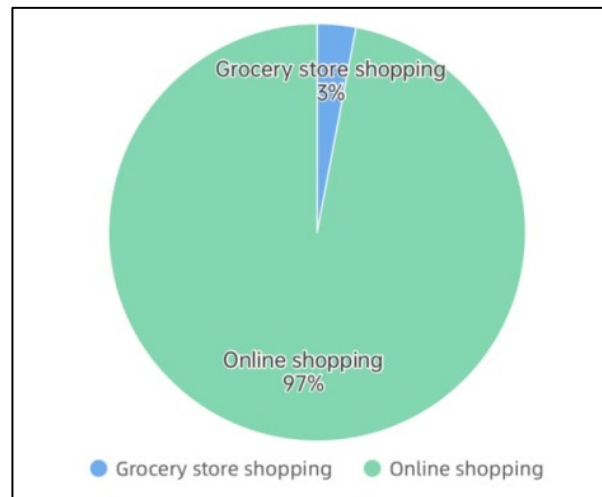


Figure 1: The proportion of two different shopping methods.

This means that digital transformation influenced most people in late 2019, the beginning of the Covid-19 pandemic. Firms have begun to transform every process, from R&D to after-sales services digitally, to gather information and data, using big data and cloud computing technology to send feedback to the company, which can be applied to make improvements and innovations. Before the pandemic, digital transformation focused more on the customer experience [7].

As shown in Fig.2, on top of this, 53.3% of participants felt that the digital transformation of enterprises has more strengths than weaknesses, such as online food ordering applications and after-sales service applications designed for car or electronic device owners. Also, in online shopping applications, take Amazon as an example, the price of goods is always cheaper than in grocery stores because the costs of production, labor, and operation are relatively low. It not only allows people to compare the price of homogeneous products to have more choices and maximize their benefits but also becomes such a convenience to shop anywhere they are located, distance is no longer a problem.

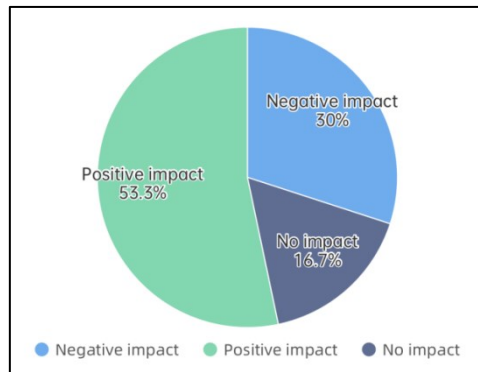


Figure 2: The proportion of different impacts brought from digital transformation to customers.

However, another group of people thinks firms' digital transformation brings more negative effects on their shopping experience. Participants were concerned about their privacy. Some companies collect customer information, such as phone numbers or email addresses, and sell it to other agencies for digital marketing to increase revenue. This leads to customers receiving advertising emails or messages frequently. Still, it doesn't have too much impact on customer purchase intention as people rarely or never click on advertising emails and messages. In addition, nearly half of the participants explained that the pictures in online stores always mislead customers by using filters or photo shops. Sometimes, the products people receive from merchants are of low quality, fake, or appear extremely different from the advertising pictures. Customers will have to communicate with customer service to return for a refund, which is time-consuming, and sometimes they have to pay the carriage expense. Apart from that, 20% of participants reckon that the digital transformation of the payment methods, which people start to pay with WeChat and Alipay, leads to unrestrained consumption.

On the other hand, five people believe that the company's digital transformation does not have too much or any impact on their shopping habits, especially the CEO and supervisor of the sample company, who earn a higher level of income than all other participants, think when they are facing the price discrimination, they will choose not to compare the price as it is time consuming.

Above all, participants were asked to suggest what they want firms to improve and innovate.

Four participants agreed that the rapid digital transformation of the past four years had created so many challenges for seniors. Three participants agreed that the process of many things after digital transformation, such as QR codes for transport tickets and online bill payments, has become more complicated.

Regulatory departments should strengthen patent and product management in online stores, as the current regulatory system needs to be more formalized. As shown in Fig.3, a survey conducted by the Social Survey Center of China Youth Daily with 2005 respondents in 2022 shows that 46.5% of respondents had purchased fake goods online, and 27.2% were curious to know whether the goods they bought were genuine. Skincare products, make-up, clothing, shoes, hats, and electronic products were commonly cited as fakes [8].

5. Discussion

Research has found that the impact of enterprise digital transformation on consumers is more positive, and most negative impacts can be avoided to some extent. In most industries, the foresight of business leaders saw the opportunity to survive the Covid-19 pandemic, making them realize the importance of digital transformation at the right time. According to the research "Make the Leap, Take the Lead" conducted by Accenture, companies with leading technology grow twice as fast as

most companies in the same field. Recently, due to continued investment in digital technology, they are growing five times as fast as companies that have not yet transformed [7].

Interview results show that people have been positively influenced by the technology and innovation brought about by digital transformation over the past four years. The changes in most industries after digital transformation have become such a convenience now. Consumers can easily make an online purchase and have more choices of products at different prices and quality levels that suit their tastes. This is because the invention of big data combines three types of data: structured, semi-structured, and unstructured. Firms use it to gather consumer information, data, suggestions, customer habits, and many other things that can be used in different areas, such as machine learning projects, predictive modeling, and other advanced analytics applications [9].

On top of this, several suggestions exist to improve the current condition of the online shopping industry. The government and regulatory department should spare no effort to protect the rights of patent owners, especially in Chinese society, which can stimulate innovation.

Besides, there is an increasing demand for online fitting of clothes, make-up products, shoes, and many other types. Online product testing technology is still immature, but many brands are already doing trial runs. One of the best examples of firm digital transformation: is Chanel. Chanel has launched a lipstick color test application for customers called LipsScanner. This solved one of the biggest problems for online shopping customers. Users can upload any photo, select any area in the photo for scanning, and quickly find a lipstick or lip glaze matching the block's color from more than 400 Chanel lip products [10].

6. Conclusion

The research aims to explore the impact on consumers of digital transformation over the past few years. There has been numerous research on the effect of digital transformation on society, different industries, business management, and many other things. Still, more research is needed about the impact of digital transformation on customers.

By interviewing 30 people in three different groups, there are more positive influences brought by digital transformation. On the one hand, lower costs, personalized recommendations, long-distance shopping, after-sales services, and more choices are the main attractions of today's shopping patterns. On the other hand, due to the insufficient protection of consumers' privacy, and security, shopping addiction has been suffering consumers for a long time. The process of necessary things after digital transformation, such as QR codes for transport tickets and online bill payments, has become more complex for seniors.

The research has some limitations in that the interview data could be more. The participants come from the same country: China, which has well-developed transportation and online shopping systems. Therefore the range of responses from participants could have been much higher. The questionnaire investigation method is recommended since the number of respondents could be higher, and the result could be more accurate.

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