

Challenges of digital transformation: Evidence from Vietnamese enterprise

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Abstract:

Vietnamese firms confront numerous opportunities and problems as they navigate the Fourth Industrial Revolution and the COVID-19 epidemic. As a result, digital transformation is an unavoidable and objective demand and trend for the business community to remain stable and grow. This essay examines the potential and problems that Vietnamese firms face as they navigate the digital transformation process. Digital transformation, also known as digital transformation, is the process of continuously using digital technologies in the daily life of organizations and individuals. Digital transformation in businesses is often associated with business digitalization, including mobile internet applications, embedded devices, and other digital technologies and devices into the production and business activities of enterprises. In Vietnam, business digitalization is not only the application of digital technology but also the process of reforming business organizations. From the perspective of business strategy, digital transformation is basically not only related to technology but also a matter of development strategy. In addition, to achieve digital transformation, businesses need to pay attention to the use of existing digital assets, with the strong support of organizational structure and culture, the help of diverse digital platforms. However, business digitization often refers to the digitization of business infrastructure, digital transformation requires more than digitizing existing processes. As a result, the digital transformation of enterprises not only includes the digitization of infrastructure, but also the integration of digital applications in various aspects, including research and development (R&D), manufacturing, finance, and human resources.

Keywords: Digital transformation, enterprise, international integration, industrial revolution 4.0, Vietnam

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I. Introduction

Under the impact of the Fourth Industrial Revolution, digital transformation is an inevitable trend, a vital issue for countries, organizations, businesses and consumers around the world, especially in the context of the current COVID-19 pandemic. The great changes in labor productivity, demand, psychology, habits of users and new production and business models are being formed, showing the great role and impact of digital transformation on social life and all industries today. It is difficult to define exactly what business digital transformation is, because for each business operating in a field, there will be a different application process. To put it simply, enterprise digital transformation is the use of digital technology in the fields of operation of enterprises, thereby taking advantage of technology to influence changes in business models, ways of operating businesses to bring better value to businesses, adapt to worldwide technology development trends. According to Gartner - the world's leading information technology research and consulting company, the definition of digital transformation is as follows: "Digital transformation is the use of digital technologies to change business models, create new opportunities, revenue and value". Microsoft said: "Digital transformation is about rethinking how organizations bring together people, data and processes to create new value."

In Vietnam, digital transformation in enterprises is understood in the sense that the process of changing from traditional models to digital businesses by applying new technologies such as artificial intelligence (AI), big data (Big Data), Internet of Things (IoT), cloud computing (Cloud Computing) ... Change operating methods, leadership, working processes, corporate culture. Digital transformation is properly understood as an impact for people to change their working mindset and operate the apparatus, thereby finding ways to apply it to each specific activity of the business. Not only does it have an impact on the way of working, the way of corporate governance,

but it also has an impact on the culture and working environment of the business. Digital transformation for businesses is the process of strategic change of a business. Therefore, it is not simple to use a method, a model to be successful, but a planned implementation process with clear goals.

Although appearing in the middle of the twentieth century in the world, it was only when the Fourth Industrial Revolution broke out that digital transformation became popular. Digital transformation is changing the way of working and producing through the integration of digital technologies into the operations of each unit and business in order to change the way of operation, business model and bring higher efficiency and newer values. Digital transformation is also a change in the culture of units and businesses, requiring the continuous updating of new and modern things and having to accept both failures and successes brought by innovation. Digital transformation in businesses can be understood as the process of changing old models, traditional models to digital businesses, based on new technology applications, such as Big data, IoT, cloud computing,... to change operating methods, working processes and labor culture in enterprises. The goals that digital transformation businesses often aim for include: Increasing market speed, increasing competitive position, promoting revenue growth, increasing labor productivity, expanding the ability to attract and retain customers.

Vietnam is gradually building and applying a system of policies in line with the current trend of digital transformation in businesses. In addition, industries and businesses are encouraged to apply digital transformation, especially digital transformation in the fields of banking, education and communication,... At the same time, Vietnam is in the process of developing and accelerating the implementation of a national digital transformation strategy to guide digital socio-economic development. On that basis, develop digital transformation strategies in each industry, each field, and each business,... contributing to promoting industrialization and restructuring of the economy, in which the State - enterprises - universities and research institutes play a key role.

Digital transformation brings many benefits to businesses. When applying digital transformation, the information connection between departments in the enterprise is connected on the basis of a uniform technology system, helping problems arising in the business to be solved as soon as they occur and the operation is not congested, causing adverse impacts on the operation of the business, such as: serving customers is delayed, sales are reduced,... Participating in the digital transformation process, executives will be able to proactively and easily retrieve reports on business activities. All activities of the business, such as: employees recording sales, personnel fluctuations, customer files to learn about products will be shown on business management software, helping to manage businesses more effectively and transparently.

Digital transformation helps businesses maximize the working capacity of employees in the company. Because, the jobs with low added value, the system can automatically perform without cost, and also help employees have more time to improve their expertise, professionalism, and perform other important jobs. Digital transformation also helps managers easily evaluate the quality of work of each employee through timely reporting data. If you own a digital platform, you will be able to deploy and operate your business efficiently, accurately and with quality. Because digital management and operation solutions will increase efficiency and accuracy in business decisions. At the same time, digital transformation helps businesses improve their competitiveness with other businesses by optimizing management, costs, profits, quick interaction with customers, customer care and service policies,... Digital transformation impacts all industries, businesses and in the race towards digitalization, only the most adaptable and proactive businesses can survive and thrive.

II. Literature Review

Digital transformation in enterprises is the process of changing thinking and applying technology and digital to improve production and business efficiency, revenue growth and improve the competitiveness of enterprises. Including the use of software, applications, information systems, artificial intelligence (AI), Internet of Things (IoT), cloud computing,... to collect, analyze, and automate business and management processes. (... T. A. E. C. B. T. & 2021, 2021; Truong et al., n.d.)

The goal of digital transformation is to help businesses:

- Increase efficiency and productivity.
- Improve the customer experience.
- Expand the market and increase revenue.
- Optimize the management process.
- Leverage data and information.
- Enhance competitiveness.
- Environmental protection and sustainable development.
- Promote innovation and creativity.

There are 6 levels of digital transformation of businesses, specifically divided into the following levels: (Hai et al., n.d.; Khanh et al., 2022; V. Nguyen et al., 2023)

- Level 0 - Not yet digitally transformed: The enterprise has no activities, or has but not significantly engaged in digital transformation activities.

- Level 1 - Start-up: Businesses have started to have some small activities in the digital transformation process.
- Level 2 - Start: Businesses are aware of the importance of digital transformation, starting to have business digital transformation activities. Accordingly, these activities have also begun to bring benefits in business operations as well as customer experience.
- Level 3 - Formation: Digital transformation activities in businesses have basically formed according to the pillars in all departments, bringing practical benefits and efficiency to businesses as well as customer experience. When this level is reached, it is starting to form a digital business.
- Level 4 - Advanced: At this level, the digital transformation process of businesses has been enhanced one step further. Digital platforms, technologies, and data help optimize the efficiency of production and business activities of businesses and customer experience. Achieving this level, businesses have become digital enterprises with the main model based on digital platforms and data.
- Level 5 - Leading: Digital transformation of enterprises is about to be completed, businesses have really become digital enterprises with most business methods and models mainly based on digital platforms and data. Businesses at this level have the ability to lead and create a satellite digital business ecosystem.

A business can carry out digital transformation for many reasons, but so far, the main reason is: It is a matter of survival. It can be seen that, before the Covid-19 pandemic, an organization's ability to flexibly adapt to difficulties in terms of supply chain disruptions, market pressures, and customer expectations,... is very important. The ultimate goal of digital transformation in businesses is the survival and strength of the future, but digital transformation initiatives have brought many other benefits to businesses, including:(B. Mai et al., n.d.; N. Phuong et al., n.d.; T. Phuong et al., n.d.)

Increased efficiency and efficiency: The implementation of technologies contributes to reducing errors and accelerating the time to market. Meanwhile, business processes are improved thanks to digital technology, thereby helping to increase productivity and business efficiency.

Providing a large amount of information in detail: Digital transformation in enterprises allows HR teams to have access to large amounts of data in detail. Accordingly, they can track and measure various types of metrics, conversion rates, customer value, and customer satisfaction,... Not only does this allow businesses to organize data in an intuitive, clear, and accessible way, but it also allows for decisions to be made based on this data. As a result, managers can make decisions more flexibly.

Maintain the competitiveness of businesses: Digital transformation in the 4.0 revolution has become a vital issue for most businesses. Now it's no longer a choice, it's a matter of staying competitive. Businesses need to choose the right technology to meet the digital transformation process, and at the same time satisfy customers both now and in the future.

Enhance customer experience: Today's customers have many changes in expectations and purchasing trends, they require personalization, and this requires digital transformation. Personalization helps to have a better customer experience, making customers feel special to the business. Digital transformation helps analyze customer data quickly and in detail. As a result, it is possible to enhance the customer experience and expectations.(B. T. Mai et al., 2024; T. Nguyen et al., 2023; T. Phuong, 2020)

Promote connections between departments: Digital transformation allows HR teams between departments/departments in the business to communicate more easily and flexibly. By using automation management platforms, departments/departments can easily share data and information anywhere, anytime. As a result, it helps to strengthen the link between departments.

Improve efficiency and reduce costs for businesses: Digital transformation is a costly process for businesses. However, when the transformation is successful, businesses can maximize cost savings for activities. For example, virtual reality technology visually simulates new products of businesses, without having to build and produce them first. In addition, the issue of data storage is now cloud-based and can be managed by vendors. As a result, it can free up employees to focus on other tasks, bring more business value, and simplify data storage.(... T. N. I. C. on C. and & 2022, n.d.; T. Anh et al., n.d.; Development & 2022, n.d.; D. Vo et al., n.d.)

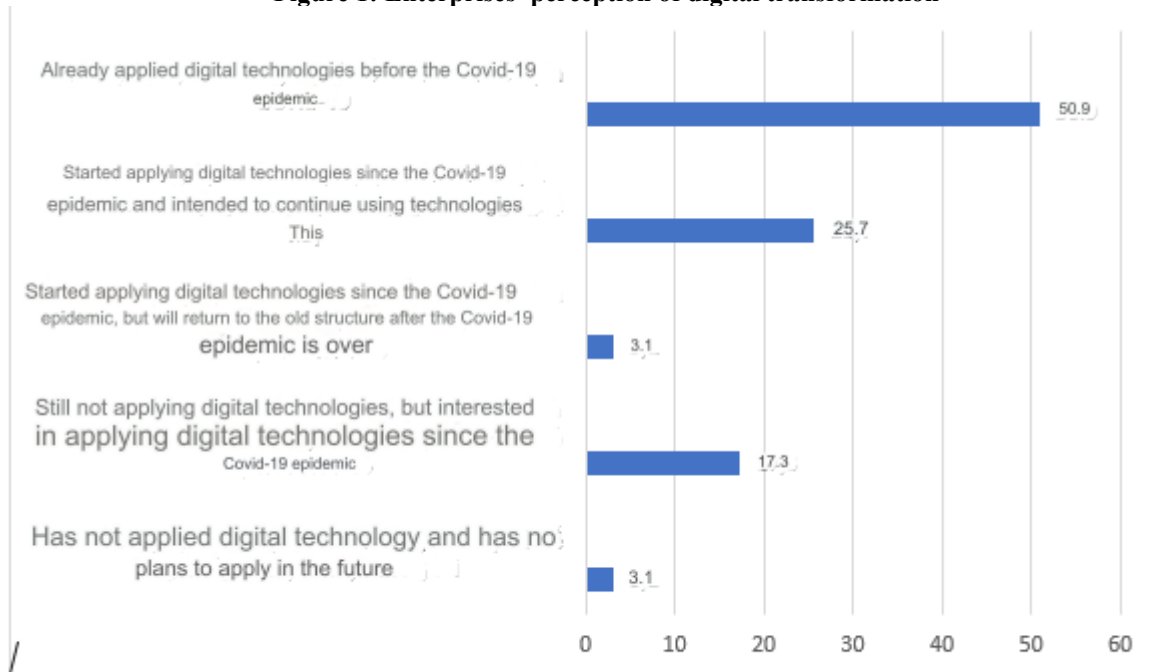
III. Results and findings

Up to now, digital transformation has become a mandatory reality for businesses to participate in order to be able to develop and avoid lagging behind. This can be seen through the fact that more and more businesses are implementing digital transformation and attaching importance to the value of business data. According to the survey results "The situation of digital transformation in businesses in the context of the COVID-19 epidemic" conducted by the Vietnam Chamber of Commerce and Industry (VCCI) in 2020, a survey of over 400 businesses, shows that Vietnamese businesses have begun to recognize and apply digital technologies in stages, such as internal management, purchasing, logistics, production, marketing, sales and payment. As the COVID-19 pandemic spreads, contact restrictions and social distancing measures have forced businesses to apply more digital technologies in their operations, especially in internal management, e-payment, and online marketing. In a short time, the proportion of businesses applying digital technologies increased rapidly compared to before, specifically

in remote human resource management, online conferences, online learning, internal approval. (Hoang et al., n.d.; Pitt et al., 2022)

In the field of internal management, cloud computing is the technical tool used by many Vietnamese businesses, with 60.6%, up 19.5% compared to the time before the COVID-19 pandemic. This is followed by online conferencing systems, work and process management systems with approximately 30% of businesses having applied these tools before the COVID-19 pandemic and approximately 19% of businesses have started using these tools since the pandemic. (Fig.1)

Figure 1: Enterprises' perception of digital transformation

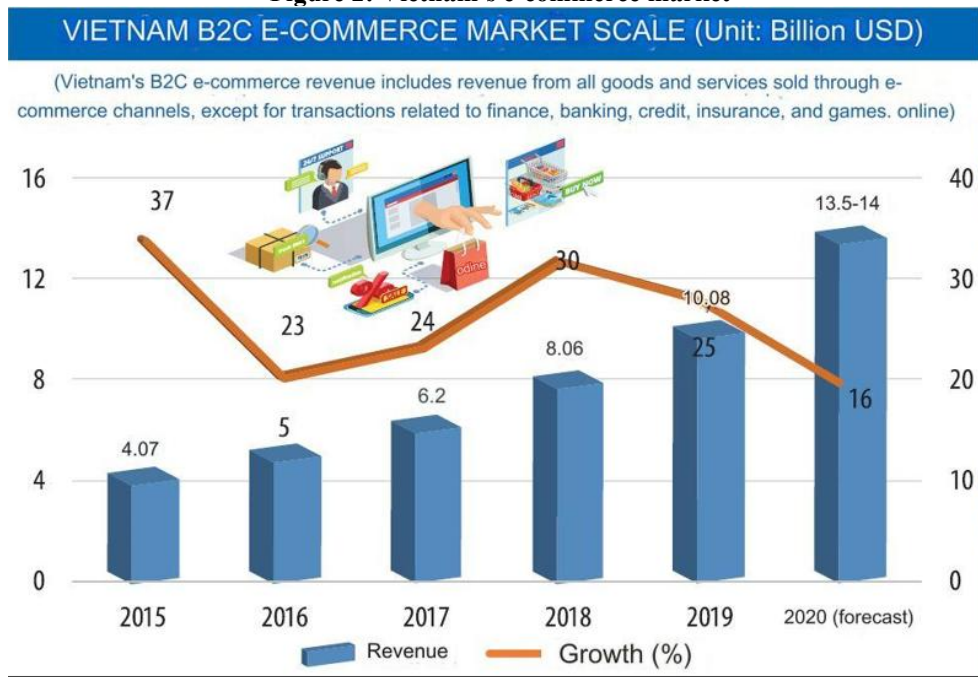


Source: VCCI and VNPT (2020)

The above survey shows great expectations of the majority of Vietnamese businesses for the digital transformation process. Up to 98% of businesses expect a change in production and business activities when implementing digital transformation, of which the largest is the ability to help reduce costs (accounting for more than 71%), help businesses limit paperwork (61.4%) put added value into products, improve the quality of products and services (45.3%). There is a clear difference between the reality of digital transformation as well as the expectation of the effectiveness of digital transformation among large-scale enterprises compared to small and medium-sized enterprises. In particular, large-scale businesses transform quickly as well as trust digital transformation. (Cuong et al., n.d.; Hoa et al., n.d.; Watkins et al., 2021)

Currently, in Vietnam, digital transformation has taken place in almost all types of businesses and at many different levels. In the banking industry, businesses have researched and implemented the initial digital transformation strategy with IoT applications that allow customers to access and use banking services, connect with other digital ecosystems on the Internet platform (Timo digital banking service of VPBank, Live Bank of TPBank, E-Zone of BIDV ...), or provide banking services through applications installed right on mobile phones (Mobile Banking...).

Figure 2: Vietnam's e-commerce market

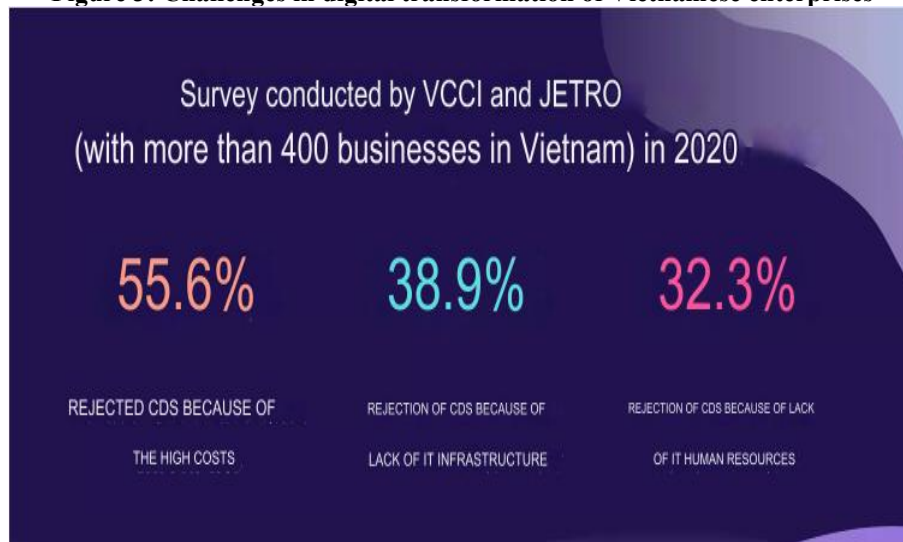


Source: VCCI, 2025

In the group of "big 4" largest banks in Vietnam, the digital transformation process also took place strongly in 2020. For example, Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank) has launched VCB Digibank digital banking application, which is a new outstanding service with uniformity of experience, ease of operation, integration of many superior security solutions. The Bank for Agriculture and Rural Development of Vietnam (Agribank) is also a pioneer in installing multifunctional ATMs (CDMs) in the card market, from there, Agribank expands to modern digital banking services, such as Autobank, online Know Your Customer (eKYC) application, etc Cardless withdrawals,... Gradually replace inefficient transaction rooms.(Finance et al., n.d.; T. H. Nguyen, 2022; D. H. Vo et al., 2024)

The rapid development of foreign technology ride-hailing services such as Grab or Uber is a lever to help form domestic ride-hailing service providers such as Be or FastGo - businesses with new operating models based entirely on technology. VinGroup has also built a unified customer management system with VinID, helping customers integrate and manage information when transacting with VinGroup in many different services such as paying household bills, electricity bills, shopping or resort services(Dan, Van Hoa, et al., 2023; Nguyen-Anh et al., n.d.; Tung Son, 2022)

Figure 3: Challenges in digital transformation of Vietnamese enterprises



Source, VCCI 2025

For businesses to successfully implement digital transformation, it is necessary to have the right information technology infrastructure - both hardware and software. Therefore, owning the right information technology infrastructure plays a very important role in meeting the increasingly strong needs of Vietnamese businesses in the short term as well as in the long term. Currently, small and medium enterprises of our country still account for 98% of the number of enterprises, but are the group facing the most difficulties in digital transformation. Although there has been awareness of the necessity of digital transformation, due to limited production capacity, the level of automation is not high, facing many difficulties in applying digital transformation. (Fig.3)

IV. Discussion

For Vietnamese businesses, digital transformation faces many challenges that need to be addressed for this process to be effective.(N. Anh et al., 2022; Dan, Anh Thu, et al., 2023; Vu et al., 2022)

Obstacles from technology. Digital transformation is the application of technology to all business activities carried out in the era of technology boom on the basis of the internet system, therefore, requires high levels of both technical and human resources. Meanwhile, Vietnam is still behind the world in terms of technology, has not mastered the core technologies of digital transformation and basic platform systems. Therefore, digital transformation in Vietnam is still basically using available technologies in the world.

Digital transformation requires high-quality human resources to be able to master new technologies, serve the implementation of digital transformation and that is also something that small and medium enterprises face difficulties. On the national level, each year, Vietnam needs about 90,000 human resources to develop the digital economy and digital society, while domestic information technology training programs have not met the demand.

Difficulties from invested capital. Investment in digital transformation is an investment to change, from awareness, strategy, human resources, infrastructure to technology solutions, therefore, requires large investment capital. However, having to invest heavily in finance and human resources, while not being completely sure of efficiency, as well as facing the risk of failure, has created a great barrier for Vietnamese businesses. Because of the lack of capital, many businesses think that digital transformation is a "game" of large enterprises. Because of the lack of capital, small and medium enterprises in Vietnam often choose "cloud computing" as the technology to invest the most, because it allows businesses to expand quickly when needed without having to invest a lot of capital in information technology infrastructure.(Akbari et al., n.d.; Ghi et al., n.d.; Hung et al., 2023)

Although large enterprises are not under much financial pressure for digital transformation, however, the digital transformation race among large enterprises in a strong way will cause great waste. For example, the fact that Vietnamese banks are currently implementing eKYC solutions drastically can lead to a lot of costs for all parties, instead of using this resource to support customers who only need to open one account but can use the services of many different banks.(Ha et al., n.d.; Nguyen-Anh et al., 2023; Thi Hang et al., 2021)

Challenges from the perception of the business. Digital transformation will affect the entire organization and operations of businesses, causing a lot of pressure for managers right from recognizing the importance of digital transformation for business development, financial resources to creating consensus and mobilizing the participation of a large number of employees at enterprises, about the effectiveness of digital transformation... Digital transformation must start from the change of leader's mindset, from traditional strategy and thinking to effective digital technology strategy and business thinking.(Akbari et al., 2023; Ghi et al., 2022; P. Nguyen et al., n.d.)

V. Conclusion

The Vietnamese government is increasing information on digital transformation solutions to mitigate risks. Currently, digital solutions on the market of domestic and foreign suppliers are very diverse and rich. However, to determine which solution is suitable for the conditions and needs of production and business establishments is not simple, especially for medium and large-sized enterprises, which need complex and costly technological solutions. Most businesses decide to buy solutions through the consultation of technology solution providers, so sometimes it is not reasonable and most suitable for their production and business bases, therefore, it is necessary to have agencies and organizations that act as an independent channel to objectively evaluate the advantages. disadvantages of technological solutions so that production and business establishments have enough information before deciding to choose. At the same time, these are also useful information to support businesses to provide complete their solutions. In addition, in order to create more favorable conditions for small and medium-sized enterprises to implement digital transformation, it is necessary to: Reform institutions for businesses to implement digital transformation; gradually limiting and eliminating the storage of paper documents in the business process; financial support and development of highly qualified human resources in information technology, in addition to supporting connections with partners and digital solution providers; be more proactive in participating in building Vietnam's legal framework in line with the regional and world framework on digital

technology. With the spirit of innovation of businesses today, comprehensive digitalization is an indispensable solution for businesses, especially with the Government's digital transformation policy in recent years, businesses need to be mentally and financially prepared, create a solid foundation for digital transformation in the future. Leaders and managers need to improve their expertise in digital transformation to make the right change decisions and investments for businesses.

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