

# The Role of Digital Transformation Strategy and Information Technology Capacity for Exporters in Vietnam

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## **Abstract:**

*Digital transformation and information science and technology capacity in enterprises are understood as the integration and application of digital technology to improve business efficiency, management efficiency, improve capacity, competitiveness of enterprises and create new values. This study aims to assess and analyze opportunities and challenges for business activities of Vietnamese exporters in the context of digital transformation, thereby, making recommendations to promote the performance of Vietnamese enterprises in the coming time.*

**Keywords:** *Digital transformation, information technology capacity, Vietnam*

## **1. Introduction**

Digital transformation is no longer an idea or vision in the future. This is a must to do to adapt to the digital age 4.0. On 18/5/2016, the Prime Minister approved the National Innovation Start-up Ecological Support Project until 2025; On 03/06/2020, the Prime Minister signed Decision No. 749/QĐ-TTg approving the National Digital Transformation Program to 2025, oriented to 2030, striving for Vietnam to become a digital country, in which digital transformation for businesses plays a very important role. Accordingly, Vietnamese businesses need to create their own development resilience, with the core of digitizing businesses in all aspects. Up to now, digital transformation has become a familiar concept for many businesses. Especially in the context of the Covid-19 pandemic, digital transformation is a need, a survival solution to maintain and develop.

In Vietnam, digital transformation in enterprises is understood in the sense of 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 the 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 simply to use a method, a model is already successful, but it needs a planned implementation process with clear goals.

## **2. Research Overview**

In recent years, companies in most industries have implemented a number of new initiatives aimed at improving technology, applying high technology to exploit the hidden benefits inside businesses. Important improvements in business operations affect products, services, processes as well as organizational structure and business management methods. Therefore, businesses need to establish a solid DTS. DTS with the role of integrating basic features in enterprises, increasing certainty in the production process, exploiting high technology in the process of operation and business. The management's construction of DTS aims to promote the development and integration of enterprises, change business processes, add sales channels and create a flexible supply chain. The benefits of DTS are changes and diversity in production processes, launching new products and creating useful values for businesses, increasing interaction between customers and suppliers. From these positive changes, the entire business model of the enterprise can be reshaped or improved more rationally. In light of the useful characteristics that DTS brings to the organization, research on DTS has been considered in recent times. However, DTS studies often focus on it infrastructure management, organizational functions and management

effectively to provide and implement complete business activities of enterprises. (Matt et al., 2015a)(Downes & Nunes, 2013)(Matt et al., 2015a)(Downes & Nunes, 2013)(Chen et al., 2010)

In recent years, DTS has emerged as a new trend in many studies, attracting considerable interest from governments around the world. In the world, the digital economy is considered a new focus in the competition between countries, industries and businesses. The DTS is essential for all industries. At the same time, changes in DTS are considered a quick and useful response to help businesses flexibly transform to match the trends and changes of the digital economy. Therefore, DTS is a priority strategy in the process of improving the leadership capacity of managers. Moreover, when businesses use digital technology, businesses can increase FP through automation applications. (Chen et al., 2010)(Y.-Y. K. Chen et al., 2016)(Matt et al., 2015b)(Matt et al., 2015b; A. Singh & Hess, 2020a).

Today, CDS will help businesses change their limited trade strategies; PDI, services of enterprises; changes reasonable business processes. Therefore, in the digital economy era, automation is considered an important DTS and affects management at all levels in enterprises. Based on surveys from US and UK enterprises, about 90% of leaders said that IT and technical technology promote business activities of enterprises in the long run. For businesses that have not applied CDS, the construction and deployment of DTS can be a driving force to help businesses integrate quickly, extensively enter the market, improve competitiveness, increase prior acumen and adapt to changes from the market. Specifically, the author has affirmed that this is a competitive weapon that can comprehensively affect the strategy of enterprises, competition based on technology will minimize risks when businesses miss breakthrough opportunities in business. (A. Bharadwaj et al., 2013a; S. Hess et al., 2016; Indihar Štemberger et al., 2019a; J. Sebastian et al., 2017)(Audzeyeva & Hudson, 2016; Besson & Rowe, 2012; F. Li et al., 2017; Rogers, 2016)(Bonnet et al., 2016).(Chanas et al., 2019a)(Bakos - Treacy, 1986)(Bakos - Treacy, 1986)

Reviews of DTS, indicate that the company's DTS is equivalent to a business strategy. Moreover, although the impact of digital technology development on businesses is beyond the predictability of managers, their DTS needs to be built in accordance with the business strategy. Not only that, scholars assert that DTS needs to be considered based on the organization, construction and use of digital resources to create new values for businesses. in accordance with the company's own characteristics, it is a premise for rapid changes for enterprises to fully integrate into the domestic and international markets. (Chanas et al., 2019a; Zhao et al., 2021a)(Henderson & Venkatraman, 1999)(A. Bharadwaj et al., 2013b)

In a dynamic environment, DTS acts as an indication for businesses as a blueprint for future activities for businesses towards comprehensive transformation. The digital transformation will help managers integrate, using engineering technology to efficiently and quickly carry out business activities. demonstrate business success and efficiency in the manager's decision-making process. From there, the author emphasizes the importance of building a leader's strategy at certain times that will have an impact on the FP of the business. (T. Hess et al., 2020),(Matt et al., 2015c)(Burgelman et al., 2018; Chanas et al., 2019b)

Previous studies on DTS have provided an overview of the field. However, the above studies do not provide the core meaning of DTS, there are no studies evaluating the impact of DTS on the organization's FP. To fill this theoretical gap, several studies have made a more comprehensive assessment of DTS and the effects of DTS on the FP of DN. Specifically, DTS has provided opportunities for digital businesses to take an effective approach to business operations to create new value. However, for new businesses approaching CDS, building DTS will take longer and face greater challenges than expected. Therefore, scholars affirm that DTS is always considered as a very complex economic model, containing many changes related to a series of strategies of enterprises. context of the market when applying DTS (Chia, 2004a; Jarzabkowski, 2004a; Jarzabkowski et al., 2007; Jarzabkowski & Seidl, 2008; Jarzabkowski & Wilson, 2002)(Zhao et al., 2021b; Zinder Yunatova, 2016)(Laszczuk & Mayer, 2020; Velu & Stiles, 2013).

As can be seen, there are now many studies on DTS. Much of the research on CDS is primarily focused on the field of IT or information systems. Others evaluate DTS as a part of the business strategy of enterprises. However, studies focusing on the level of corporate strategy are limited. (Gouveia et al., 2021a; Senterre et al., 2015)(Chia, 2004b; Jarzabkowski, 2004b)(S. Hess et al., 2016).

In recent years, research on the digital economy has attracted much attention from governments around the world. Because, the digital economy is considered the focus of competition between countries, industries and businesses. Currently, one of the urgent issues for businesses is the integration and use of digital technology. It can be seen that DTS is necessary for all industries and different fields. The changes in CDS are considered a strategic response to the movement trend of the digital economy, and DTS is considered a priority strategy in the process of improving the leadership capacity of managers. Moreover, when enterprises apply DTS, they can improve FP through advanced technology applications; revise limited commercial strategies of enterprises; PDI, services and business process perfection. Therefore, in the digital economy era, automation is considered an important DTS and affects senior management in enterprises. Based on surveys from US and UK businesses, the majority of leaders believe that IT and technical technology play an important role in the development and business activities of businesses in the long run. Not only that, for new enterprises approaching CDS, the construction and deployment of enterprises can help businesses integrate quickly, deeply, increase competitiveness and be sensitive to changes from the market. The author draws conclusions about DTS as a powerful competitive weapon, comprehensively affecting the overall strategy of enterprises. orders in large quantities, which need to be resolved in a short time. (Lu et al., 2015)(J. E. Hess et al., 2016).(Fitzgerald et al., 2014; S. Hess et al., 2016; Mhlungu et al., 2019; A. Singh & Hess, 2020b)(A. Bharadwaj et al., 2013c; S. Hess et al., 2016; Indihar Štemberger et al., 2019b; D. J. Sebastian et al., 2017; Tumbas et al., 2020)(Besson & Rowe, 2012; C. Li, 2013; Rogers, 2016)(Bonnet et al., 2016)(Chanas et al., 2019b)(Bakos - Treacy, 1986)

Reviews of DTS, indicate that the company's DTS is equivalent to a business strategy. Moreover, although the influence of digital technology development on businesses is beyond the predictability of managers, the DTS of enterprises needs to be in line with business strategies. When considering aspects related to DTS, the internal activities of enterprises can be affected by the context of commercial competition and relationships with suppliers and customers. DTS is considered on the organization, construction and use of digital resources to create new values for businesses. Therefore, the application of DTS can create prospects for a digital business model, suggesting rapid changes for businesses to fully integrate into domestic and international markets. (Chanas et al., 2019a; Zhao et al., 2021a)(Henderson & Venkatraman, 1999)(A. Bharadwaj et al., 2013b)

While the DTS may indicate a digital business model for the business, it does not provide practical guidance for the business to achieve an effective CDS. In particular, currently, the difference between theoretical research and practical application of enterprises is a difficult problem, requiring more empirical research in many fields. (Lu et al., 2015)(S. Hess et al., 2016)

As can be seen, there are now many studies on DTS. Most studies on CDS mainly focus on the field of IT or information systems. Some studies have evaluated DTS as a part of the business strategy of enterprises. needs to be exploited more in the future (A. Bharadwaj et al., 2013c; S. Hess et al., 2016; Indihar Štemberger et al., 2019b; Tumbas et al., 2020)(Gouveia et al., 2021b). (S. Hess et al., 2016)

The contribution of IT to the growth of a company plays an important role in the change and integration of enterprises. The IT revolution has been perfecting the basic principles of customer service, business operations, distribution channels, product marketing and business methods at businesses around the world. Therefore, the widespread application of IT is considered as the focus of creating the capacity and acumen of enterprises, as well as a source of sustainable competitive advantages. It can be said that sustainability is an important factor in the business activities of enterprises, is the foundation to create competitive advantages for organizations and create opportunities for businesses to assert their position in the market. When organizations apply IT

effectively, sustainable competitive advantages are born, thereby helping businesses flexibly use the maximum available resources effectively. (Akgün et al., 2011; Lin, 2007; Rivard, 2007)(Y.-S. Chen et al., 2006)(Lin, 2007)(H. Akram et al., 2019; U. Akram et al., 2018)(Porter, 1980)

The use of IT to achieve competitive advantage is considered a top priority in the current era. ITC is essential for effective and responsive business management in the face of changes in the global supply chain. However, previous empirical studies have mostly evaluated ITC or the influence of ITC on FP of enterprises in theory, limited empirical studies on the mechanism of influence of ITC on FP of enterprises, especially in the context of integration in the world.(Clemons Kleindorfer, 1992; Quay et al., 2009b; Kopalle et al., 2010; Yan & Sengupta, 2011a)(Malhotra et al., 2005a; Ray et al., 2005a; Sambamurthy et al., 2003a; Wu et al., 2006a)(Ray et al., 2005a; Wu et al., 2006a)

A number of studies have shown that ITC affects the operation of enterprises through the impact of IT infrastructure, or the ability to integrate IT in business processes of enterprises. Previous studies have shown that both IT infrastructure and IT integration capabilities are flexible in business processes of enterprises, and these two factors are identified as useful itcs that are difficult to imitate in business. This is an important factor that helps the company to prosper in a rapidly changing business environment. Therefore, increased investment in IT infrastructure by companies will facilitate the circulation of knowledge through SSCs and access to employees and stakeholders. Since then, this activity helps businesses maintain competitiveness in the market. (Ray et al., 2005a; Scheibehenne et al., 2010a; T.A. Byrd & D.E. Turner, 2000)(Armstrong & Sambamurthy, 1999a)(A. S. Bharadwaj, 2000a; Ray et al., 2005a; Wade Hulland, 2004a)(M. Chen et al., 2007; Quay et al., 2009a; Schober Gebauer, 2011)

(Devaraj & Kohli, 2003a) affirmative benefits from IT infrastructure investment may not be fully realized unless IT applications are truly assimilated. In fact, as more and more organizational processes prioritize uniformity and efficiency in business processes, businesses will require determining the value received from technology applications. Recent studies are more interested in the direct impact of ITC on the FP of enterprises. Knowledge management and acumen are two important intermediate variables that help establish IT capabilities, thereby impacting the FP of enterprises. further argued that ITC often affects the FP of enterprises through increasing higher business capabilities in the current context of integration and fierce competition. (Armstrong & Sambamurthy, 1999b; Liang et al., 2007; Wade Hulland, 2004b)(Mithas et al., 2011; Pavlou & El Sawy, 2006; Rai et al., 2006; Sambamurthy et al., 2003b; Wu et al., 2006b)(Sambamurthy et al., 2003b)(Mithas et al., 2011)

In addition, the underlying mechanisms of influence of ITCs have been considered in several studies. believes that the formation of ITC can help increase the agility of the supply chain, and at the same time affect the FP of enterprises. At the same time, the acumen of SSC helps businesses to react to market changes quickly. It can be seen that both the access to knowledge and the agility of SSC are considered with an important role, having a direct impact on the company's FP in today's fiercely competitive market. Therefore, a flexible IT infrastructure can provide a platform to help companies exchange knowledge, adjust processes, and achieve operational flexibility in the supply chain, which can affect business FP in the long term. (Grant, 1996; Rai et al., 2006)(Cohen & Levinthal, 1990; Malhotra et al., 2005b; Zahra & George, 2002a)(Braunscheidel & Suresh, 2009; Swafford et al., 2006a)(Christopher, 2000; Sambamurthy et al., 2003c; Swafford et al., 2006b; Zahra & George, 2002b)(Rai et al., 2006; Saraf et al., 2007; Wu et al., 2006c)

However, due to unexpected market volatility, managers need to consider creating and changing flexible IT infrastructure systems, which is seen as an important ability that allows companies to achieve superior performance. Therefore, in the course of their research, scholars need to pay more attention to the flexible change of flexible IT infrastructure . Moreover, KQNC from previous studies indicates that an IT infrastructure can only allow businesses to maintain a competitive advantage, not the main driver of growth for businesses. Therefore, in addition to IT infrastructure, enterprises need to invest more in their ITC. (Rucker et al.,

2011)(Ray et al., 2005b; Rucker et al., 2011; Scheibehenne et al., 2010b; T.A. Byrd & D.E. Turner, 2000)(Devaraj & Kohli, 2003b; Park & John, 2010; Yan & Sengupta, 2011b)

### **3. Opportunities and challenges for Vietnamese businesses in the context of digital transformation**

#### *Chance*

The context of digital transformation brings many opportunities for businesses such as:

*Firstly*, improve the efficiency of production and business activities of enterprises.

With the help of information and communication technology (ICT), the foundation of digital transformation will add to the competitiveness of businesses, allowing companies to easily provide customers with a global presence. The Internet tends to be profitable for both large and small companies. Through its websites, small companies can also achieve a turnover like a large company which seems unthinkable in a traditional commercial environment. If you look at another aspect, when conducting digital transformation, businesses can respond very quickly to customer requests, can provide consulting services and product information on how to guide customers.

The survey results of the Ministry of Industry and Trade in 2021 show that social networks are still a channel that brings the highest business efficiency to businesses (in 2020, 37% of enterprises highly appreciate business efficiency through social networks). Followed by the website of enterprises and mobile applications are two platforms rated by businesses as bringing high efficiency at the same level (23%). On March 9, 2021, the Prime Minister issued Decision No. 316/QĐ-TTg approving the pilot implementation of using telecommunications accounts to pay for goods and services of small value (Mobile Money), which will open up many opportunities for business development and electronic payment for businesses.

Previously, in 2018, up to 88% of surveyed enterprises said that they used financial accounting software (this rate does not have much difference every year and fluctuates between 85% - 90%). In addition, software-intensive teams at a slightly higher level such as CRM customer relationship management, supply chain management (SCM) and enterprise resource management (ERP) are also starting to be focused. Digital transformation also helps businesses improve the efficiency of management activities, by deploying management systems based on digital platforms and the internet, helping businesses to make management decisions immediately, react quickly to changes in the business environment.

According to a survey by the Ministry of Planning and Investment in 2022, for businesses that are growing and have a need for digital transformation to accelerate, the biggest demand of businesses in this period is solutions for Data Analysis, Smart Reporting (BI, Big Data, Data warehouse) with 63.5% of the total number of enterprises participating in the selection survey. 60.7% of all surveyed businesses have a need for solutions for Customer System Management (CRM) and Omni Channel Sales. The other two solutions, including Enterprise Resource Planning System (ERP) and Data Security (Database & Security) have similar needs with 57.8% and 50.2% of survey respondents, respectively.

Digital transformation also helps businesses optimize processes, streamline workflows, digital processes, and automated tasks are all ways organizations can create efficiencies and especially during the covid-19 pandemic that is happening globally.

*Second*, expand the market and establish partnerships.

Digital transformation facilitates the establishment and strengthening of relationships between partners involved in the trade process. Through the network, businesses can communicate directly and continuously with each

other. As a result, both cooperation and management are carried out quickly and continuously. New customers, new business opportunities are quickly discovered nationally and internationally and there are more opportunities to choose from. The Annual Report on Southeast Asia Digital Economy (SEA) 2020 by Google, Temasek and Bain Company shows that the number of customers participating in digital platforms increased by 41% in Vietnam - the highest level in Southeast Asia today. Businesses can find 74% of new customers on digital platforms in urban areas and groups of goods and services traded via the Internet or digital platforms are also increasing in proportion and quantity. Business-to-customer (B2C) e-commerce revenue has also continuously increased sharply in the past 5 years. Specifically, if in 2016, this figure only reached 5 billion USD, by 2019, the revenue has doubled, reaching more than 10 billion USD and in 2020 it is 11.8 billion USD, with an increase of 18% compared to the previous year (according to the eCommerce white paper 2021).

*Third*, help businesses have a redirection of production and business activities based on digital platforms.

Recognizing the importance of ICT and digital transformation in the new era, the Party and Government of Vietnam are determined to promote the application of ICT in the country's socio-economic development strategies. Specifically, the Politburo adopted Resolution No. 52-NQ/TW dated September 27, 2019 on a number of guidelines and policies to actively participate in the Fourth Industrial Revolution with the overall goal of "Effectively utilizing the opportunities brought by the Fourth Industrial Revolution to promote the process of renewing the growth model, restructuring the economy associated with the implementation of strategic breakthroughs and modernization of the country; strong development of the digital economy; rapid and sustainable development based on science and technology, innovation and high-quality human resources; improve the quality of life and welfare of the people; firmly ensure national defense, security and protection of the ecological environment.

In fact, in Vietnam over the past time, the strong development of financial services such as Mobile Banking, Mobile Commerce, E – Commerce ... and service industries keep up with the Industrial Revolution 4.0... Infrastructure for digital transformation is also increasingly being improved with efforts from the Government, businesses and people. Vietnam is considered the most dynamic e-commerce market in Southeast Asia.

### ***Challenge***

In addition to opportunities, businesses also face challenges from the digital transformation context such as:

*Firstly*, the capacity and resources of Vietnamese enterprises are still limited.

Human resources in digital technology, especially information and communication technology, are still a problem that many businesses focus on but are still a challenge for Vietnamese enterprises. The survey results of the Ministry of Industry and Trade in 2019 showed that the percentage of enterprises having difficulties when recruiting workers with information technology skills still fluctuated above and below 30% and there was no big change (in 2018, 28% of enterprises said they had difficulty recruiting workers with this skill, in 2017 it was 31% and in 2016 it was 29%). According to a survey by the Vietnam Software and Information Technology Services Association (Vinasa) at Vietnam Digital Transformation Day 2020, 69% of surveyed enterprises do not know which partner to choose to implement digital transformation, 72% do not know where to start, 92% do not know how to digitally transform.

According to the Enterprise Digital Transformation Report 2021 of the Ministry of Planning and Investment, up to 60.1% of surveyed enterprises said that the barrier they face when applying digital technology is because investment costs and technology application are still high, affecting investment costs, deploy and maintain solutions for digital transformation for digital transformation.

*Secondly*, businesses' awareness of digital transformation is still weak.

In many Vietnamese enterprises, the application of technology, especially information and communication technology in corporate governance activities, is still very limited, many business owners are not fully aware of the role of technology in corporate governance in the context of the digital economy with increasingly fierce competitive pressure. A special feature is that in the past 3 consecutive years, tax declaration is still the most used online public service and accounts for 88% of the total number of enterprises participating in the survey, followed by business registration services (accounting for 51% and up to 9% compared to 2017). Other online public services such as procedures for issuing electronic certificates of origin, customs declaration all have a very low level of use of enterprises.

According to a survey by the Ministry of Planning and Investment in 2022, there are many difficulties in changing business habits and practices of enterprises are also barriers that businesses face, accounting for 52.3% of surveyed enterprises. Switching arguments will change workers' habits and ways of working. Some businesses have applied software but employees and employees do not apply, or only partially apply, causing the digital transformation goal of enterprises to not achieve the set goals.

*Third*, there are still many apprehensions in the application of information and communication technology to business activities.

The explosion of the digital economy also puts Vietnamese businesses in front of many challenges, including legal issues, cyberattack safety about ensuring user privacy. According to statistics of kaspersky security firm, in 2017, 35.01% of Vietnamese Internet users were likely to be attacked by cyberattacks, ranking 6th in the world. The Vietnam Computer Incident Response Center (VNCERT) said that there were a total of 10,000 cyberattacks targeting Vietnam's Internet in 2017, causing a loss of VND 12.3 trillion.

*Fourth*, the legal system regulating this field is overlapping and incomplete.

The legal system is lacking, has not caught up with the strong development of information and communication technology, or overlaps, leading to low efficiency. That affects the determination to convert to the digital economy of enterprises in general and corporate governance activities in particular are more or less affected.

### **Recommendations, recommendations**

Based on the above-mentioned shortcomings and challenges, the article proposes solutions to promote the performance of Vietnamese enterprises in the coming time, including:

#### ***For state management agencies***

- Creating an environment, enhancing propaganda, promoting support for digital transformation enterprises: Vietnam needs to focus on building a foundation and institutions for digital economy business models, including amending and supplementing legal regulations for industries with many new business models such as e-commerce, digital finance, digital banking... Institutional reform to attract investment for digital technologies in the fields of investment in the direction of creating maximum favorable conditions for capital contribution, share purchase, merger and acquisition of digital technology enterprises... It is necessary to create the necessary legal framework and environment to promote digital transformation and support businesses to develop.

- Support enterprises to improve human resource quality: Strengthen training and development of human resources for digital transformation. Organizations and individuals are encouraged to invest in training institutions. Strengthen the type of training of experts, technicians, vocational training, 3-party joint training model (enterprises - institutes, schools - state management agencies).

The issue of training human resources to form a team specializing in e-commerce, network security, information technology, communication preparing for digital transformation is a key factor determining the success of the digital economy.

- Digital transformation infrastructure development: To succeed in digital transformation, there must be a strong enough infrastructure to meet the requirements of applications. The Government needs to focus on building and developing digital infrastructure to meet the requirements of information exchange, digital infrastructure using advanced technologies, ensuring information safety and security. State management agencies at the central and local levels must be connected to the Government's wide area network and broadband Internet, capable of providing public services, and socio-economic development goals, gradually building e-government.

### ***For businesses***

- Proactively transform corporate governance in the context of digital transformation. Vietnamese enterprises need to determine that in the context of digital transformation and the ongoing industrial revolution 4.0, if enterprises do not change themselves to catch up with the trend, they will fall behind and bounce off the increasingly fierce competitive environment.

- Adjust business development strategies in the context of digital transformation. It is necessary to have a specific roadmap from planning and implementing in stages in terms of technology and human resources to suit the situation of enterprises.

- In addition to recognizing the importance of digital transformation and corporate governance by digital technology, it is also necessary to have a deep determination and implementation to be able to let the whole management apparatus of the enterprise operate well to achieve the sustainable development goals of enterprises.

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