



A study on current issues in the digital transformation process

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Abstract. In today's globalized market, supply chain digitization has become an increasingly important competitive advantage, and enterprises are gradually applying digitization in the supply chain process. However, at present, most of the enterprises' supply chains are facing the problem of slow digitalization process and bad effect, this paper aims to analyze how to solve the current status quo of most of the enterprises' current digital transformation is not ideal, through the use of the successful case of SF supply chain, to explore the core advantages of its successful digital transformation, to analyze the problems of digital transformation of other enterprises as well as the deep-seated reasons, so as to bring reference value for more enterprises in digital transformation and development. The analysis analyzes the problems and deep-seated reasons of other enterprises' digital transformation, so as to bring reference value for more enterprises' digital transformation. Based on the case study of SF, the advantages of SF supply chain lie in the big data analysis and prediction technology and the "Digital Intelligence Park" platform, as well as a clear digital strategy and planning, which injects a new impetus to the development of SF supply chain. China's supply chain needs to develop new management methods to respond to rapidly changing market demand, while emphasizing the development and reserve of new-generation technologies.

Keywords: digital supply chain, visibility, collaboration.

1 Introduction

Today's world has fully entered the era of digital economy, and the wide application of digital technology has profoundly affected the transformation and upgrading of traditional industries and given rise to numerous new industries, new business forms and new models. In recent years, the supply chain has also set off a wave of digital transformation, and the development of science and technology has also brought new possibilities to the supply chain.

The advantages that digitalization can bring to the supply chain are undoubtedly huge: digital supply chain can realize the intelligent processing and application of big data in the cloud among the logistics, business flow, capital flow and information flow,

and realize the global intelligent production. [1] At present, digitalization is mainly applied in the prediction of market demand, analysis and mining of logistics and transportation data, and inventory management using machine algorithms. Through the use of digitalization, communication and efficiency throughout the supply chain can be improved, enabling companies to make smarter data-driven business decisions. [2]

To stand firmly in the industry, it is undoubtedly an important strategy for enterprises to keep abreast of the times so as to seize the development advantage in the market. One of the core advantages of digital supply chain is to be able to capture customer demand more keenly and accurately, respond quickly and satisfy customers' personalized products and services, and seize the first opportunity in international market. [6] Mr. Zhao Xiande, President of China-EU Supply Chain Innovation Institute, said in an interview, "In the past, Chinese enterprises adopted a single model of producing products at low cost locally and then selling them globally, which is no longer able to meet the rapidly changing market demand and user experience, and it is difficult to cope with the supply chain risks caused by certain unexpected events." Dr. Cai Hongliang, a member of the Supply Chain Professional Committee of the China Federation of Logistics and Purchasing, also pointed out that the rapid development of information technology, coupled with the epidemic and the disruption of the original supply chain management methods and structure, both of which are catalysts for digital transformation. Most companies are thinking about how to drive their business through digitalization to gain greater profitability.

The coming of supply chain digitization is inevitable. However, the current status of supply chain digitization in most enterprises is not ideal, and the digitization process is slow and ineffective at the same time. A famous negative case of supply chain digital transformation is the "dieselgate" incident of Volkswagen in Germany around 2015. In Dieselgate, it was revealed that Volkswagen used illegal software on its diesel vehicles to manipulate the results of exhaust emission tests in order to meet environmental standards. This led to massive scandals and lawsuits, severely affecting the company's reputation and market capitalization. Volkswagen's problem with falsified emissions data on its diesel vehicles exposed the segregation and miscommunication of information within the company; there were also clearly problems with transparency and an inability to effectively monitor the true emissions data of the vehicles. These problems are only part of the story.

2 Enterprise Supply Chains in Digital Transformation

2.1 "Data silos" in the supply chain system

The biggest problem that most enterprises have is the "silo" of information. Enterprises do not have links in the data, so they can only interact with each other in the most traditional way, which leads to a significant slowdown in the data transmission efficiency of the entire supply chain system, and the upstream and downstream can not be effectively collaborated with each other. One of the core advantages of the digital supply chain is to be able to capture customer demand more keenly and accurately, quickly respond to and satisfy the customer's personalized products and services, and seize the

international market opportunities. [6] Currently, some enterprises in China have realized the significance of the application of big data, supply chain, and gradually gain a deeper understanding of the supply chain, but also actively used in the process of business operations, but by the impact of poor technology and other factors, often improper use of the phenomenon, so that the supply chain appeared to be unfavorable role. [3] And at present, some information systems data can not be shared in real time, the data can not be effectively monitored, logistics, capital flow, business processes and information flow is not fully integrated, it is difficult to make timely decisions about the company's internal business data, and can not provide executives with timely and effective data decision-making support.

2.2 Lack of strategy development and management

Recently, an increasingly large number of research studies highlight the criticalness of the supply chain management as a means to assuring organizational success. [8]The establishment of efficient operation and scientific management of the supply chain system requires the cooperation and collaboration of all links in the supply chain in order to reap considerable results.[4] With technology facilitating information flow, a coordinated supply chain can be designed to meet the strategic, planning, and operating objectives of the educational institutions.[9]Many enterprises do not pay much attention to the strategy of digitalization of the supply chain. [4] Many enterprises do not pay much attention to the strategy of digital supply chain: in the 2021 manufacturing supply chain development research led by China Mechanical Engineering Society, the results show that only 31% of enterprises have supply chain digitalization strategy. The result shows that only 31% of enterprises have supply chain digitalization strategy. Due to the lack of a clear strategy, most frontline employees have no idea about "what problems have been solved by the digital supply chain transformation for enterprises? What new value does it bring?" These questions are not really understood, but only the implementation of the upper level of the decision-making. Only when the top and the bottom reach a consensus, can they plan the actual and specific goals and implementation paths.

3 Research methodology

The purpose of this paper is to study the problems, causes and solutions of problems in digital transformation in most of the companies, and the case study can be a good answer to the question.

This study follows its theoretical sampling principles [7], and the sample has (1) typicality: SF Supply Chain has been awarded 2022 IDC Future Digital Innovation Leader, forging intelligent and efficient supply chain services for customers across the industry by virtue of its leading technological advantages in data analytics and park management and its independent R&D strength. Therefore, Shunfeng Supply Chain is a benchmark for digital transformation of supply chain, which can be a good illustration of how it carries out digital transformation. (2) Completeness of information. This paper collects, summarizes and concludes the viewpoints through interviews with supply

chain related personnel, as well as domestic and international research literature, official personnel of SF and media reports.

4 Case Description

SF Supply Chain has a tremendous domestic logistics and transportation network, as well as digital technology advantages, such as end-to-end logistics visualization, inventory optimization, demand forecasting, and sales volume analysis. As an industry leader, it has accumulated profound industry experience, and by virtue of its leading technological advantages in data analysis and park management and independent research and development strength, it is committed to creating supply chain services that make customers in the whole industry more satisfied by reconstructing a supply chain system with high efficiency and resilience through the use of emerging technologies and intelligent big data. Mr. Wang Sheng, CEO of SF Supply Chain, said, "SF Supply Chain Digital Intelligence Door Project has brought about a change in the business model along with the progress of technical architecture. The combination of technology and business scenarios greatly improves the degree of intelligence in traditional parks, transforms one-time implementation delivery into a flexible cloud subscription model, meets the complex customization needs of large parks, and quickly covers small-scale parks with simple needs, forming a unified supply chain standard across the region, and responding to the call for building a unified national big market."

4.1 Shunfeng's "innovation-driven" technical support

4.1.1 Big data analytics and predictive technologies.

Big data analytics is the process of collecting, processing, storing, analyzing, and visualizing various data from a company using science and technology. These data contain all aspects of a company's operations, and this is the basic way to help understand a company. By using big data analytics and forecasting, SF has greatly improved in the following areas respectively:

(1) Logistics and distribution: optimize logistics and distribution operations using big data. Choose better transportation solutions through big data analysis, and use big data to arrange perfect transportation routes, and finally configure transportation vehicles according to the routes to best meet consumer demand for flexible distribution and dynamic supervision.

(2) Sales market aspect: use big data to analyze the commodity market. Through big data to analyze the consumption behavior of customers and understand the needs of the market, in order to more finely divide the customer base, and then carry out multi-channel market development. Meanwhile, through real-time big data, brands dynamically preset sales information, and SF's standardized and digitized collaborative information based on standardized and digitized information can pre-judge the peaks and valleys of the brand's sales, helping the brand to take targeted action in advance,

preemptively deploying goods, warehousing and transportation, so as to more efficiently reach the consumer, and successfully deliver commodities and experience to the user.

4.1.2 RPA technology.

RPA technology refers to Robotic Process Automation, and by utilizing RPA robots, a number of specific tasks in supply chain and logistics operations become simpler and more efficient. By utilizing RPA technology, SF has already made leaps and bounds in the following areas:

(1) In terms of order fulfillment: RPA robots can process an order in less than 2 minutes, whereas manual labor often takes up to 20 minutes on the same task. In addition to this, the RPA system can receive customer orders, check inventory, and also migrate data between different supply chain systems (e.g., TMS, WMS, and ERP). [5] At the same time, workers tend to make a lot of mistakes when performing such a large number of tasks. the RPA software robot not only improves the rate of correctness during the work process, but also relieves employees from most of their daily tasks as it can operate 24 hours a day, allowing them to focus their time and energy on the rest of their work.

(2) Logistics tracking: RPA robots can be responsible for the distribution and tracking of goods. The robot can allocate orders and configure the appropriate mode of transportation, and even track the goods, from the issuance of goods to the delivery of real-time monitoring. This can help SF in the event of cargo loss or delivery of the wrong emergency can be resolved in a timely manner.

4.1.3 The "Digital Smart Park" platform.

In addition to data-driven, SF also has a unique "Digital Intelligence Park" platform, which has front-end intelligent sensing equipment that can collect park data in a timely manner and pre-process it in the park using a 5G network; in the backend, In the background, using machine learning, big data analysis and other technologies, it completes instant intelligent processing and analysis of business logic data, and continuously optimizes the algorithms to realize the visualization and digital management of "people, vehicles, goods, fields, equipment and environment" in the logistics park.

4.2 SF's digital transformation strategy

SF had already put forward a strategic goal in 2021: to become a global smart supply chain leader in 2025 and build a digitally driven global smart supply chain chassis. But SF's digital transformation is not all smooth sailing. All technical problems are relatively easy to solve, but the most difficult problem is at the management level: employees are worried that digitalization threatens employment and thus oppose digital transformation. As for the management problems, Yufei Yang, the head of digitalization of SF Supply Chain Greater China, pointed out that "top-down" and "cultural diffusion" are necessary to complete the management unification internally, "digitalization can be promoted at scale, which requires team leaders to have the ability to manage change.

Digitalization can be promoted on a large scale, requiring team leaders to have change management capabilities, especially change management thinking, and the groups that need to be concerned include grassroots frontline employees."

5 Case Discussion

5.1 Theoretical contributions

This paper further enhances and improves the theoretical research results of digital supply chain. Most of the previous studies on digital transformation are empirical studies, less based on case studies, and most of the case studies are the positive impact of digitalization on enterprise performance and resilience, less analysis of the problems encountered in the process of digital transformation and the reasons for the problems, this paper fills this gap.

The theoretical contribution of this paper lies in the fact that by taking the successful case of SF, the distinctive management style and advanced science and technology of SF's supply chain are discussed in depth, so as to analyze the existing problems and deep-seated reasons of digital transformation. From the case of SF, it can be analyzed that in order to succeed in digital transformation, enterprises must have the following two conditions: (1) advanced and innovative technical support (2) a clear digital transformation strategy.

5.2 Practical contributions

Although at present, most enterprises have realized the importance of digital transformation of supply chain, but due to the immaturity of science and technology, coupled with the fact that most enterprises do not have the exact strategy and planning. As a representative of successful digital transformation, SF Supply Chain can serve as a revelation to other enterprises and bring reference value to more enterprises in the development of digital transformation.

6 Conclusion

In today's globalized market, the digitization of the supply chain is becoming an increasingly important competitive advantage. As a mainstream world-class logistics company, SF is a well-deserved role model in digital transformation. China's enterprises and supply chains need to learn from such a benchmark company as SF, and in this regard, the practical insights of this paper are as follows: (1) The culture of digital transformation must be popularized throughout the company, and both the top decision makers, the middle managers, and the bottom employees should have a clear understanding of the core principles of digital transformation. At the same time, we can cooperate with the human resources department to explore how to combine with the rewards and punishments, so that everyone can be more proactive with the digital transformation of the enterprise. (2) Pay attention to the application of digital technology in

all aspects of the supply chain, rather than only focusing on the visualization and management tools. For example, it can be used not only in the supply chain end-to-end to improve planning and execution through real-time business collaboration, but also in helping intelligent analytics decision-making and accurate forecasting of demand. (3) Eliminate departmental boundaries, optimize business processes, reconfigure the organization, build end-to-end business processes with controlled operations and risks, and further digitize and smarten on the basis of achieving automation and informatization. [6] (4) Strengthen the training of management and technical personnel in all operational aspects of the supply chain. For example, many employees lack the knowledge base of software development and maintenance, so adequate thinking and technical support for abnormal scenario handling will be lacking. This requires that the users are required to have a certain foundation or learning ability, so the training of talents in this area should not be neglected.

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