



Research on the Development Dilemma and Countermeasures of Steel Circulation Enterprises in China Under the Background of Digital Transformation

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Abstract. Steel is an important material necessary for national infrastructure construction and civil construction. It is widely used. Upstream and downstream service enterprises engaged in steel production, circulation, trade and terminal use can be called steel supply chain enterprises. With the construction of a large number of domestic infrastructure and the development of real estate projects around the country in recent years, a large number of iron and steel circulation enterprises have been born. Because of its different foundations and different operating levels, the iron and steel industry is in chaos, with serious volume, lower and lower profits and more and more difficult business. With the development of national big data, Internet of things, artificial intelligence and the promotion of digital construction, it is particularly important to solve the development dilemma of steel distribution enterprises and put forward effective solutions for them. Through more than 20 years of understanding of the iron and steel industry, combined with the actual situation of the current digital transformation of enterprises, the author explored the current operating status and development difficulties of most iron and steel circulation enterprises, found out the reasons, and then put forward the development of medium and long-term development strategy, strengthen the internal construction of enterprises, the implementation of differentiation strategy and digital transformation to change the management difficulties of coping strategies.

Keywords: Steel circulation enterprises · Digital transformation · Coping strategies

1 Introduction

Steel circulation enterprises can also be called steel supply chain enterprises. The word supply chain first appeared in 1960s, and the modern definition of “supply chain” comes from the “value chain” in Michael Porter’s book *Competitive Advantage*. It believes that the value chain divides the business activities of an enterprise into basic activities (including internal logistics, production operations, external logistics, marketing, sales and service) and auxiliary activities (including procurement management, technology

development, human resource management and infrastructure management). In 1996, Reiter first proposed the concept of supply chain, which is a physical network through which products and services are delivered to a specific customer market.

As for the definition of supply chain, American Stevens believes that “the supply chain starts from the source of supply and ends at the end of consumption by controlling the flow from the supplier to the user through value-added processes and distribution channels”. According to Harrison in the US, supply chains are “functional networks that perform the procurement of raw materials, convert them into intermediate and finished products, and sell the finished products to users.” The National Standard of the People’s Republic of China: Logistics Terms (GB/T18354-2001) issued in 2001 defines Supply Chain as “the network Chain structure formed by upstream and downstream enterprises that provide products and services to end users in the process of production and circulation”. Therefore, supply chain is an Interface formed between customers and suppliers through some activities such as Plan, Obtain, Store, distribution, and Serve, so that enterprises can meet the needs of internal and external customers.

China has been the leading country of steel production in the world. As steel superpower in the world, is facing a large number of imported raw materials, excess production capacity, low product added value, market competition is intense, and a series of contradictions and problems, although the “area” in the country strategy guided by stimulating the exports, the digestive capacity, led to the development of China’s steel industry, but distance steel world powers have a long way to go. Iron and steel supply chain enterprises involve manufacturers, intermediate logistics and steel trading enterprises, and downstream processing and manufacturing industries. At present, the steel supply chain enterprise should be in the big data, Internet of things technology, artificial intelligence, block chain, building ecological system outside the association in all life, we will deepen reform of the traditional internal business systems and implementation of data can assign, fine service, explore innovation driven digital transformation in order to enhance the customer experience and enterprise value, finally obtain sustainable competitive advantage.

2 Development Status of Steel Circulation Enterprises Under the Background of Digital Transformation

Digital transformation refers to the process in which enterprises respond to environmental changes by using digital technologies to change value creation (Delmond 2017), while digital technologies refer to products or services embedded in or supported by ICT, including digital components, digital platforms and digital infrastructure. Digital transformation is generally divided into three phases, namely Digitization, Digitalization and Digital transformation. China’s “fourteenth Five-year Plan” clearly proposes to “accelerate digital development, build digital China”, enterprise digital transformation is not only an important field of enterprise management research in the digital economy era, but also has become a strategic choice that enterprises must adopt to comply with the development trend (Fig. 1).

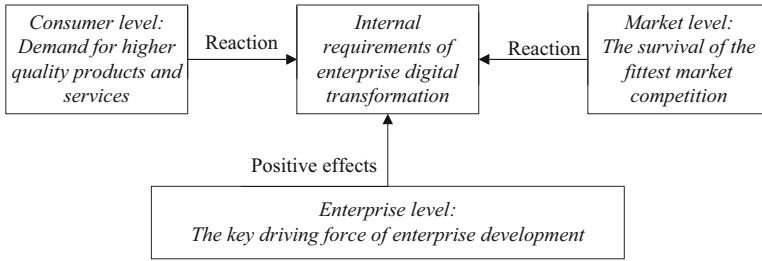


Fig. 1. The necessity of digital transformation of steel circulation enterprises

2.1 Outdated Business Thinking and Lack of Medium - and Long-Term Strategic Planning

Due to the low threshold of steel trading enterprises, how much capital can enter the market, easy to operate, for education, capital, background and no strict requirements, the number of steel traders is increasing, resulting in a serious volume in a project, between steel traders often pressure each other. Usually, as A steel supplier, they want to get A project. The price quoted by A is low, and the price quoted by B is lower than that of A. Round and round, vicious competition keeps aggravating, price war is common, and finally both sides lose without profit.

2.2 Imperfect Talent Mechanism and Serious Shortage of Digital Talents

The iron and steel industry is a traditional capital-intensive industry, and there has been a serious shortage of talent training and employment for a long time, especially the general shortage of digital composite talents who understand both business and technology. When recruiting talents, enterprises often pay attention to the business ability of applicants, or the level of their graduate schools and educational background, while ignoring the assessment of the combined ability of applicants for “business” and “technology” required for digital transformation, resulting in the awkward situation that the talents selected or cultivated by enterprises in the iron and steel industry are good at business operation but not good at technology. It also makes the iron and steel industry a serious shortage of digital talents.

There are generally few training opportunities for employees in steel circulation enterprises, and even less training in digital transformation. The digital concept, working methods and professional skills cannot be updated in time. How to formulate effective measures to alleviate the shortage of digital talents is the primary problem to be solved in the digital transformation of iron and steel supply chain enterprises.

2.3 Single Business Model, Addicted to Low Price Vicious Competition

At present, although the construction industry is shifting from the off-season to the peak season, steel demand will expand seasonally, but infrastructure investment falls back more than expected, real estate new starts continue to weaken, the expansion of the peak season construction steel demand is weak. Under normal circumstances, the steel market has “gold nine silver ten”, that is to say, with the summer past, the weather gradually faded high temperature, more suitable for construction site, therefore, there will be a large number of engineering projects, steel demand will also increase. However, from 2020 to 2022, due to the impact of the Novel Coronavirus outbreak, the economic situation suffered a setback, the market demand was sluggish and the demand for steel was greatly reduced. Moreover, due to the implementation of real estate regulation policies such as “housing is not speculation” and people’s understanding of the real estate market is gradually becoming more rational, housing prices are difficult to continue to rise, and the commodity housing market is cooling down. Commercial housing construction rate is reduced, reducing the project directly lead to reduced steel demand. Third, in terms of financing, the policy of “three lines and four files” and “borrowing new and returning old” has a great impact on housing enterprises. And the land began to implement the “two concentration” policy, so that the housing enterprises in a year only three centralized land opportunities. Therefore, the construction industry steel demand expansion power is weak, leading to more fierce competition in steel supply chain enterprises, greater pressure, digital transformation is imminent.

3 The Internal Logic of Enterprise Digital Transformation

According to nine li jin (2022), such as research findings and the “digital - data asset-like - business assets valued” the digital transformation of logic, this paper argues that the inherent logic of enterprise digital transition includes three parts, or called three phases, the first is “digital business”, namely the realization of the development of digital technology and digital support ability. This process is guided by the “one in charge”, the company’s full participation, procurement system, human resources system, business system, financial system and other subsystems to participate in data mining and processing. The second is “data assets”, the integration, analysis and processing of data. This stage is inseparable from the company’s cultivation and introduction of digital technology talents, including big data, Internet of Things, artificial intelligence and RPA, etc. Enterprises should not only attach importance to digital transformation in thinking, but also reflect it in action, so as to add wings to traditional industries. The third stage is “asset value”, that is, intelligent analysis, processing and application based on big data can help enterprise process reengineering, improve service and efficiency, make data information create value for enterprises, and truly realize the goal of digital transformation of enterprises (Fig. 2).

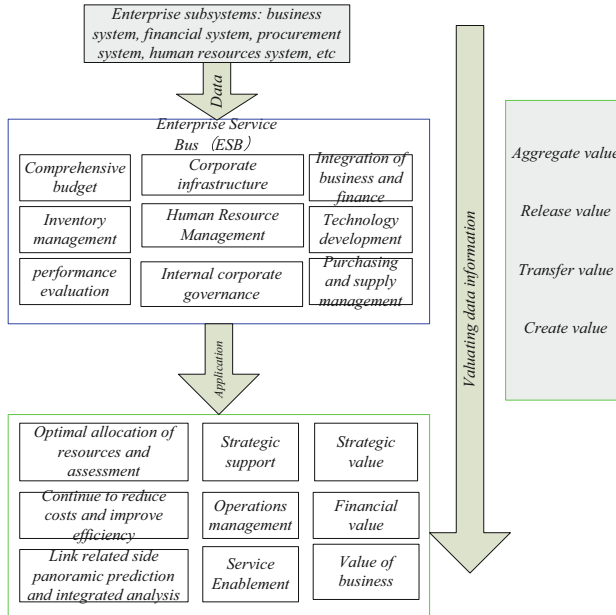


Fig. 2. Internal logic of enterprise digital transformation

4 The Development Strategy of Domestic Steel Circulation Enterprises in the New Period

Manufacturing enterprise in our country under the background of the development of high quality digital transition path of research, we have been introduced in detail to the manufacturing enterprise digital transformation of the input, the digital transition process and the output of the digital transformation (Fig. 3), the digital transformation of supply chain business enterprise of iron and steel should be conducted in accordance with the process upgrade, In the process innovation, product innovation, service innovation, model innovation, organizational innovation and other aspects to upgrade customer experience, enhance enterprise value, to create sustainable competitive advantage.

4.1 Full Participation and Joint Construction of Digital Enterprise Blueprint

Although enterprise digital transformation is a transformation process in which enterprises use digital technology to improve core business to enhance customer experience, simplify business processes or create new business models, it is by no means a simple superposition of Internet of Things, big data, artificial intelligence, 5G and other technologies, but a reconstruction of productivity and production relations. It is to transform enterprise digital R&D investment into innovation capacity and new productivity. Therefore, digital transformation is the reshaping of enterprises from the inside out, in-depth thinking and transformation from top to bottom. Digital transformation not only requires the leadership to have a clear blueprint for digital transformation planning, but

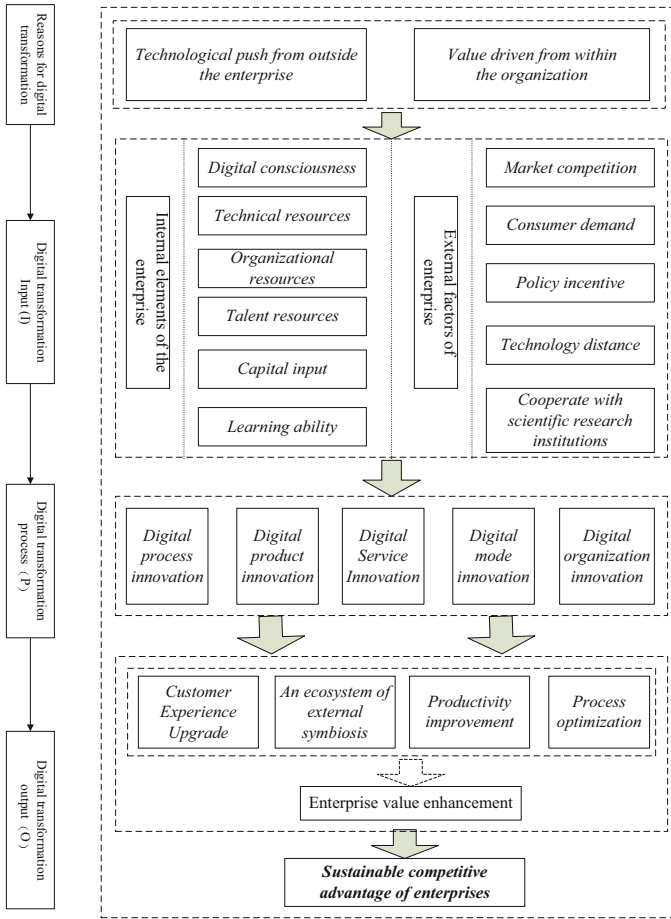


Fig. 3. The path of enterprise digital transformation

also requires the participation of all staff from top to bottom. All staff should actively participate in the process, explore ways to improve enterprise efficiency and enhance customer experience, and jointly share the results brought by digital transformation.

4.2 Change Management Ideas and Formulate Medium - and Long-Term Business Strategies to “Ensure Benefits and Promote Development”

The century-old brand never wins customers by “low price”, but by “craftsman spirit”, which includes producing high-quality products, providing refined services and creating a good reputation. Whether to “advanced technology”, “cost leadership”, or “differentiation strategy”, or “focus strategy”, also not be to formulate the strategy of “low price” (in fact, we can often see a steel trade enterprise who claims that when offer low prices, lower than his) I, want to find a way of specialization and differentiation, build their own enterprise’s core competitiveness. In the development of functional sales strategy, long-term

goals should be decomposed into mid-term goals, and then gradually decomposed into annual, quarterly and monthly goals. Indicators should not only depend on the quantity, but also on the quality of completion and average revenue. The internal logic of digital transformation refers to the realization of “business digitalization – data capitalization – asset value” through the application of digital technology, so as to achieve the purpose of data information value, and then realize the comprehensive intelligent decision-making mode, to help enterprises explore new business model and create greater business value.

4.3 Strengthen Internal Construction of Enterprises and Do a Good Job in Recruitment and Training of Talents

The internal construction of an enterprise includes corporate culture, human resources, management forms, marketing, procurement, finance and other aspects, among which the most important is the construction of human resources. The effectiveness of an enterprise’s operation, management and functional departments depends to a large extent on the employees employed. If the enterprise introduces the staff has the ability, has the willingness, arranges the work to be able to get twice the result with half the effort. When engaged in sales work, not only can often bring new customers for the enterprise, but also negotiate the price will not be low, the later payment will be guaranteed. When he was engaged in financial work, he not only worked rigorously and carefully to ensure the clarity of accounts, but also could often solve the financing difficulties for the company. Therefore, iron and steel supply chain enterprises should first formulate a good talent strategy, do a good job in attracting, educating, retaining and employing human resources construction, human resources planning, recruitment and selection, assessment and evaluation, incentive and training, etc.

4.4 Changing Lanes and Overtaking, Actively Exploring the Digital Transformation of Steel Circulation Enterprises

Some scholars believe that enterprises’ digital transformation has three directions, namely, remolding customer experience, digitalization and intelligence of operation, and subversive innovation. The process of digital transformation is the process in which the new generation of Internet technology digitally empowers industries and enterprises. Digital operation is the most important challenge for enterprises in digital transformation. Ten years ago, when the steel trade enterprise was registered, it would generally be called xx (steel) trading company or XX material company, and now many far-sighted model enterprises will change the company name to XX supply chain Co., LTD., XX e-commerce Co., LTD. The transformation from a single trader to a supply chain operator is not only a change of name, but also a change of thinking, marketing strategy, and the determination and confidence of the company to actively combine with the new era and new things. Steel trading enterprises should not be immersed in the traditional industry stage, although there is no need to be innovative, but also need to seek innovation and change. Along with the coming of the era of big data, the enterprise can use big data real-time processing data, and artificial intelligence analysis tool to apply digital transformation in terms of strategy, marketing, operations, organization construction,



Fig. 4. Name evolution of steel circulation enterprises

business model, procurement aspects and so on, to achieve rapid innovation, find the best path to solve the problem (Fig. 4).

5 Conclusion

The advent of big data era brings new development opportunities and challenges to all walks of life. In terms of iron and steel supply chain management, enterprises can achieve digital transformation and accurate matching of big data to efficiently coordinate steel production, supply, service and procurement chains, promote the reduction of intermediate links, and realize effective supply and value-added value. In the steel trade this link, do a good steel trade enterprises not only need courage, but also need to work hard in business management. In the early stage of the establishment of medium - and long-term development strategy, it is possible to go far away and go steadily; While paying attention to competitors, we should constantly strengthen the internal construction of enterprises and make up for our own shortcomings. Only by knowing ourselves and our enemies can we win a hundred battles. In the process of enterprise development, we should pay attention to the introduction, cultivation, retention and use of talents. Talents are the foundation of enterprise development, especially the compound digital talents who understand both business and technology. Enterprises should have a place in the market, not by the price war, should be in the differentiation strategy, do “a man without I have, people have me fine”, customer as the center of the need of innovation ideas, cultivate customer loyalty by differential product, differential service, need through the large data and artificial intelligence, innovation, service innovation patterns, improving customer experience and enterprise value; The enterprise should be big and long-term, and build a “century-old enterprise”. The managers should have the entrepreneurial spirit of focusing on quality, innovation and development, and the pursuit of excellence. At present, they should actively explore the road of digital transformation, so that the enterprise constantly radiates new vitality and vitality. For many iron and steel supply chain enterprises, avoiding the red sea to swim in the blue sea is the only way out of development, grasp the opportunity to carry out digital transformation is the only way. According to the definition of Xinhua Third University, the reference path of enterprise digital transformation can be divided into four stages: digital cognition and thinking stage, digital strategic planning stage, digital implementation stage, digital promotion and reflection stage. Of course, digital transformation is a process of continuous progress, which will face numerous difficulties and challenges in capital, technology, talent, management, innovation and other aspects, requiring enterprises to have enough courage and courage.

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