Study on the Informatization of the Standard of Railway Freight Transportation Service and Its Implementation Path

Zongzhen Jin*, Lili Cao, Yi Zeng, Yonghong Cheng
China national institute of standardization, Beijing 100191, China
*Corresponding author’s e-mail: jinzhh@cnis.gov.cn

Abstract: with the development of information technology, the railway freight transportation of China has made a great improvement in management efficiency and customer services. Practice has proved that standardization is an important technological means of improving management effectiveness and optimizing the service quality, with the Standard of Railway Freight Transportation Service Quality promoting railway freight transportation development. In the new era, informatization is becoming the important path to improve the standard, which can regulate the railway freight. Furthermore, some suggestions of informatization implementation path are put forward.

1. Introduction
As an important component of China's transportation system, railway freight transportation is a key link connecting social production, circulation and consumption, as well as a significant part in China's modern logistics system. After the reform on the Ministry of Railways by separating the administrative arm from the commercial arm, along with the rapid development of the freight transportation industry, the service modes and functions of railway freight transportation have been optimized continuously. However, there are still a lot of deficiencies such as non-standardized services, unclear standards of service quality and the neglect of cargo owners' rights and interests, which has long restricted the leap-forward development of railway freight transportation.

2. New challenges brought about by the development of railway freight transportation in the new era
Recent years saw the booming of e-commerce, and the continuous development of logistics industry. Meanwhile, customers' logistic demands are increasingly diversified, such as transportation within limited time, quality- and fresh-keeping transportation, "door to door" transportation, and special transportation needs with regional and enterprise characteristics. Changes in the economic and social environments have given birth to new demands for freight transportation, which cannot be met by the single-product service provided by China's railway enterprises, resulting in the loss of customers. Moreover, customers also demand for more value-added services in freight transportation service, such as one-stop processing of business and timely inquiry of cargo information. Under the current conditions, the demand for these value-added services cannot be fully satisfied, making the railway freight transportation less attractive.

The quality of railway freight transportation service refers to the extent of satisfaction of cargo owners' demand for freight transportation, which directly affects the market share of railway freight transportation and the profitability of relevant enterprises. Against this background, the comprehensive
upgrade of the standard of railway freight transportation service quality and the IT application as an important technical means will force railway operators to reform continuously, which will promote the transformation of China's railway freight transportation towards modern logistics and its sound and healthy development.

Issued and implemented in 1999, the *Standard of Railway Freight Transportation Service Quality* was formulated in an era when government function and enterprise management were not separate, the market economy was underdeveloped, and the standardization of services just begun. It could not meet the needs of the new situations, because of the following problems: i) the regulations in the standard are too detailed, directly involving the internal processes of enterprises; ii) the standard is short of some important contents, ignoring the cargo owners' concerns; iii) the standard is outdated, and do not cover the new service modes and methods.

Since the products and services of railway freight transportation are increasingly not aligned with the requirements of market development, and the current standard of railway freight transportation service quality is no longer consistent with the needs of the market, the government should revise the standard with urgency, which is very important for effective regulation. Given the new reality of the separation of enterprise management from government functions, the standard of railway freight transportation service quality should meet these new requirements: i) to fulfill the function of regulation, pay more attention to the service quality at the macro level; ii) to fulfill the function of standardization, pay more attention to safeguarding the legitimate rights and interests of cargo owners; iii) to fulfill the function of "guidance", pay more attention to promoting the healthy development of the railway freight transportation industry in the market economy.

Informatization is not only an important component of the standard of railway freight transportation service quality, but also a key factor that affects the development of modern logistics in railway freight transportation. Zhang Cheng, et.al.(2019) believed that accelerated informatization is needed for the development of railway freight transportation in the new era, so as to integrate the available resources, build a platform for sharing the railway public service information, push forward the information exchange among stakeholders, improve the logistics information system, and develop the modern online and offline integrated logistics services by applying the Internet thinking, big data thinking, Internet of Things technology and other information technologies. In 2015, Niu Zhonghai et.al. proposed that logistics informatization could optimize logistics management, reduce logistics cost, enhance the working efficiency of logistics enterprises, boost the market competitiveness of enterprises, promote the informatization of railway logistics business process, satisfy the constantly changing business process requirements of railway logistics, and improve the service quality of railway transportation.

3. Develop the informatization requirement for the new standard of railway freight transportation service quality

Modern logistics is a strategic measure that takes into account all aspects of market conditions such as manufacturing, transportation and sales, so as to meet the needs of consumers. It takes into account not only the distribution of goods from producers to consumers, but also the purchase of raw materials by producers from suppliers, as well as the transportation, storage and information needs of producers in the process of product manufacturing. Railway freight transportation needs to adopt the principles of modern logistics, which focuses on quality requirements of the core service for cargo owners, and conduct customer-oriented businesses, so as to achieve real results in the transformation and development of railway freight transportation towards modern logistics.

Practice has proved that standardization is an important technological means of improving management effectiveness and optimize the service quality. Since the original standard is not suitable for the development of the railway freight transportation industry, it is necessary to timely develop new norms on the quality of railway freight transportation service, so as to support and ensure the standardization of service quality, the improvement of service level and the sustainable and healthy development of the industry.
The railway freight transportation service is a complete service chain, including the basic links such as acceptance, collection, transportation, delivery, inquiry, complaint and compensation. Therefore, the development of the standard of railway freight transportation service quality should be based on the service chain and learn from the relevant foreign standards of railway freight transportation service quality and China's standards of aviation, waterways and highway transportation service quality. What's more, it should comprehensively and systematically refine the service chain and put forward specific normative contents, centering on the human, financial, material and informational factors involved in the process of transportation. In the process of modern logistics, most cargo owners care about contract, information communication and etc. Drawing lessons from highway freight transportation services, the new standard of railway freight service quality should include the requirement for service contracts, so as to improve the freight services, strengthen the negotiation and agreement between shippers and carriers based on the principle of equality and mutual benefit, and establish effective communication mechanisms.

The standard of railway freight transportation service quality should follow these basic principles: i) safety: safety is the basic requirement for railway transportation, and also the primary characteristic of railway freight transportation service; ii) punctuality: punctuality is the temporal characteristic of railway freight transportation service quality, which requires high efficiency in railway freight transportation by applying effective technical facilities and management tools and making reasonable and standard operation procedures; iii) openness: openness is an issue to which the railway freight transportation industry attaches great importance, requiring railway transportation enterprises to disclose service information, service prices and types of transportation services to the public through existing channels, so as to improve the transparency of the transportation process; iv) convenience: as a key link that the railway industry pays great attention to, convenience is reflected in the simple and convenient customer procedures for satisfying transportation needs of different customers.

Along with the widespread application of information technology in railway transportation industry, the information disclosure and transparency to cargo owners—especially in the freight service area—have been improved, but their specific demands still have not been met in some links and aspects. In view of the fact that at present, in the railway transportation industry, there was no e-commerce platform directly connecting the logistics market and customers, which prevented business outlets of logistics and freight transportation from getting customer and freight information timely and accurately, Hang Jinshan (2017) put forward some informationization recommendations, such as proactively advancing the development of freight networks and upgrading freight trains and raising their speed further. Based on the status quo of information technology application and the particularity of railway freight transportation industry, it was proposed that places of business should be equipped with information service equipment and facilities, and relevant requirements be made regarding the channels for providing information and the components of information service.

With informatization as a technical means, the safety mechanism of railway freight transportation should be established and improved to achieve the safety of freight transportation in the whole process; the service information and prices should be provided to the public through multiple channels; and efficient freight transportation should be realized by timely collection, transportation and delivery, meeting the diverse business needs of cargo owners.

4. The implementation path for promoting the informatization of railway freight service

In recent years, especially after the railway freight transportation reform in 2013, operation modes of railway freight transportation in China have undergone significant changes, with continuous development of innovative measures such as full category logistics, "fixed price" management, whole process service, and railway plus e-commerce. The industry has actively promoted the development of integrated management so as to achieve closed-loop management of "door to door" transportation business through improving information systems such as railway freight e-commerce and freight invoice systems, and provide customers with efficient and speedy information service. The industry has improved the category of freight services and enhanced the ratio of direct delivery service and
punctuality, and realized the closed-loop management of the whole freight process and the information sharing and transparency in the whole freight service process.

Given the rapid development of informatization and e-commerce, and by drawing lessons from the requirements about the diversified forms of business acceptance and the supply of tailored services in the standards of highway and railway freight transportation service, an electronic information service system for railway freight transportation should be established to provide a variety of information services, and in particular, business processing on Internet, inquiries and door-to-door service should be required, so as to meet customers’ diversified service demands, improve customer experience and satisfy customers’ requirements for information service. Believing that railway freight transportation was faced with many problems in its development, such as difficulties in market expansion, poor logistics service quality, and the decline of the volume of bulk commodity, Wang Xinxin (2018) proposed to actively adopt the approach of "Internet+", establish and improve information processing mechanism, promote logistics information exchange and sharing through e-commerce, and put more effort on the collection, analysis and sorting of freight information so as to achieve informed and precise decision-making.

In order to strengthen the informatization of railway freight services, raise the rate of electronic informatization, and improve the quality of information oriented services, it is suggested to start with the following measures. Firstly, improve the information oriented system, such as establishing enterprise website to provide basic information such as enterprise profile, business scope and contact information; stipulating that the website should have the functions of service charges, transportation capacity inquiry, online order submission, freight transportation tracking query, etc.; providing manifold functions of information query services and ensure that the query results are timely and accurate. Secondly, provide full-chain information services, which includes providing information service for business acceptance such as door-to-door, mail, online and telephone acceptance; computer-assisted scheduling and optimization system should be equipped to conduct freight dispatching and improve efficiency. Thirdly, strengthen the assessment of informatization, including the disclosure of service quality supervision hotline and website; setting up informatization indexes such as rate of electronic information networking and rate of computer application.

5. Conclusion
With the rapid development of information technology, railway freight transport informatization is getting more and more high. Railway freight transport service quality has made great achievement, which informatization has played the important role in promoting Transportation facilities. By learning from other industrial transportation, some suggestions are given to railway freight transportation.

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