

Discussion on Network Marketing of China Railway Express Return Capacity Based on Planned Transport

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ABSTRACT

As the Belt and Road Initiative continues to develop, China Railway Express becomes the important way for import and export merchant to carry out trade transportation between Chinese and countries along the "One Belt and One Road". Based on the analysis of the actual operation situation of China Railway Express, this paper discusses the online marketing of transportation capacity under the planning mode of transportation. The contents include: analysing the demand for information collection, clarifying the information service function, and formulating the collection and release mechanism, so as to provide ideas for the optimization of information transmission modes and construction of transportation informatization when the China Railway Express return journey is used for import and export trade, and explore a relatively efficient and convenient way of sourcing organization, improve the operation quality of China Railway Express, promote the implementation of the "Belt and Road Initiative".

Keywords: *China Railway Express return, Transport organization, Network marketing, Demand analysis, Information collection and release.*

1. INTRODUCTION

In the context of the deepening of Sino-Russian and Sino-European trade cooperation, the China Railway Express has gradually become the main means of two-way trade interaction in response to the "Belt and Road" strategy. According to data from China National Railway Group, in the first half of 2020, there are 2194 outbound trains from China and Europe, with a heavy container rate of 99.9%; 1759 return trains, with a heavy container rate of 95.8% [1]. It can be seen that there is still a gap in the data for the return journey. Supply organization and market expansion are the bottlenecks in the development of China Railway Express.

As the China Railway Express runs through many countries, the railways of each country adopt different transportation organization methods for return transportation, for example, Germany uses a planned transportation organization method, and Russia uses an organized transportation method, which causes the return railway cargo, from different countries, is actually carried out by railways, roads, etc. and transported to the port station bordering China to reassemble first, and then form a full-axle train to travel

to different domestic urban freight stations (logistics centres).

This has caused two problems. One is that due to the re-assembly of trains at the port station, "the time of arrival at the destination is uncertain" for the cargo owner. So many goods at the port station are transported by road, such as the case at the Alashankou port station under investigation, which is not in line with the national development strategy of "road-to-rail transfer", and it also reduces the quality and efficiency of the return railway train transportation; the second is that the "rail-to-road" transportation at the port station indirectly increases the transportation cost of cargo owners, which is not conducive to the extensive business exchanges between countries along the "Belt and Road" and China.

Specific to a certain foreign cargo owner [2], trading with a Chinese company, due to the limitation of language, does not understand the China Railway Express, usually the transportation needs are reported to the local freight forwarder of the country, and the freight forwarder will complete international cargo transportation. When foreign freight forwarders choose different transportation methods to transport goods to a destination city in China, they must consider both the

transportation price and the delivery time. Therefore, the current organized mode of transportation of return trains regrouping at port stations will inevitably increase the transportation time of goods, which is very detrimental to the improvement of the transportation efficiency of China Railway Express return trains.

According to the above, this article believes that in the future return trains between China and Europe, the "planned transportation organization method" should be adopted uniformly, that is, the scheduled departure and arrival time, scheduled delivery and arrival, and transportation price, etc., so that the transportation information is transparent, and the cargo owners can choose by themselves. The right to book space in advance can achieve the goal of attracting cargo sources to the maximum. Therefore, in order to ensure the full utilization of the transportation capacity of China Railway Express return trains under the planned transportation mode, this article proposes to use network marketing to sell the transportation capacity of China Railway Express return trains. And the information collection and release business requirements, the collection and release logic mechanism and the basic functions needed for the supply organization of China Railway Express return trains are discussed, which expands ideas for smoothing information exchange channels and improving the efficiency of information dissemination.

2. COLLECTION AND RELEASE DEMAND ANALYSIS

2.1. Overall demand for transportation information

The users of information collection and release include transportation departments of enterprises, freight forwarders, and a small number of scattered cross-border transportation intermediaries that conduct trade along the "Belt and Road". The purpose of information release is to provide channels for various users to obtain information. Considering the general basic information of the transportation link [3] and combining with the main customer information requirements of the China-Europe train backhaul, it is determined that the information that needs to be collected and released mainly includes: train number, overseas departure city station, departure time, total capacity, remaining capacity, load factor, Arrival at domestic city stations, arrival time, cumulative total time, and estimated total time. Among them, the time is accurate to the minute, and the cumulative and estimated duration is in days. The capacity is measured in tons, and the load rate is the ratio of the deadweight tonnage to the total tonnage. The accumulated time and remaining capacity data need to be updated in real time, and the corresponding load factor, arrival time, and

dispatch time will change accordingly. The content of specific demand information is shown in Table 1.

Table 1. Return train demand information

Train number	Sent city (abroad)	Loading station
Sent time	Domestic city arriving	Unloading station
Arrival time	Cumulative duration	Estimated total time
Total capacity	Current remaining capacity	Load rate

In addition, considering the diversity of languages commonly used in countries along the "Belt and Road", the content of the main body of information and the operation of collection and release functions should support multilingual display, and realize the translation application in Chinese, English, Russian and German when collecting and publishing.

2.2. Business and function demand

The collection and release business needs to be guided by the flow of information and data, connecting all nodes of the chain. Combining the general information release business process and the current status of China Railway Express information communication [4], the analysis of its main business links includes: information browsing, information query, registration and login, personal account management services facing users; editing, publishing information and management account login, personal information management facing back-end administrators; system operation and maintenance personnel are responsible for the allocation of management authority as well as the operation and maintenance of accounts and interaction mechanisms of all parties in the entire system. Therefore, the realization of the entire business process of information collection and release is supported by the front-end user function and the back-end management function [5].

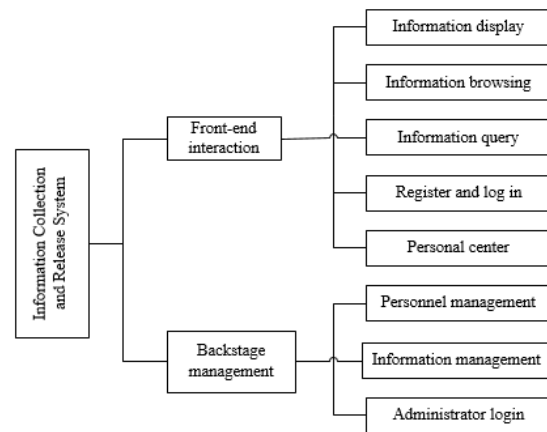


Figure 1 Business and functions requirement design

The overall functional architecture is shown in Figure 1. Front-end function settings include: hot information carousel, title catalogue display, keyword index query, user registration and login, and secondary detailed information page jump. The carousel is aimed at hotspot policies or latest operation notices. The title list displays the title and release time of various related information in a specific area of the homepage, and serves as an entrance to the second-level details page. On the second-level details page, you can view specific content related to the title or perform related operations. Users can search and browse the information through the keywords that need to consult the information. User login, registration and user personal centre modules facilitate future system expansion and information management. In addition to basic login and personal centre functions, the core functions of the backend are information management and personnel management.

(1) Information management. The information administrator logs in to the back-end with the assigned account and password. The modules include the published information management page and the published information operation page. The published information page is mainly used for information editing, such as deleting and modifying published information, adding published information, and showing published content and other data. After the operation of adding and publishing information, it jumps to the operation page for publishing information, you can edit the content of the information to be published, and save it to the draft box (to be published) or publish the information directly. After successful release, it jumps to the release information display page to view.

(2) Personnel management. Personnel management includes user information management and administrator information management. It is composed of information manager list, publishable information content, and add, edit, delete operations. The system general administrator jumps to the sub-page by adding information publishers to add publishable personnel, sets bound account numbers, passwords, personnel information, and publishable information scope, etc., and assigns publishing permissions. The information administrator list page displays all information administrators by entry, and can perform operations of adding or deleting information administrators, and it can jump to the information administrator editing page to set the specific publishing responsibility scope or authority.

3. INFORMATION COLLECTION AND RELEASE MECHANISM

3.1. The information collection and release mechanism

The information collection and release mechanism mainly has two modes: centralized and decentralized [6].

Centralized collection and release is to summarize the relevant information of each bureau and group to the person in charge of information on 95306 platform, who will publish the information to the online portal in a unified manner. This kind of information transmission mechanism takes a lot of time to summarize information, which leads to low timeliness of collected information.

Decentralized release refers to the decentralization of information release functions to the smallest sub-department that can assume responsibility. This type of department is often on the front line of the business and is the actual operation department of the business. It decentralizes the publishing authority through the enterprise internal network or other secure domain networks. The person in charge of the sub-department directly manages the release of demand information, which reduces the steps and time for information collection, reduces the workload of the 95306 data administrators, and is more conducive to efficient update operation and management information.

3.2. Decentralized collection and release logic

In view of the decentralized layout of China Railway Express trains information on the network and the timeliness of information updates, a decentralized delivery mechanism was chosen, that is, the person responsible for generating the information releases the information to the system as soon as possible. Among them, the platform administrator is required to assign the management authority of publishing information to different units, only he information administrator with the submission and transmission authority can publish information [7]. The platform administrator can add, delete, or modify the assigned information management authority. Each subordinate information administrator can also modify and edit personal information. All administrators have the authority to edit, modify, delete, backup data, and apply for submission within the scope of responsibility.

According to the hierarchical management system of the National Railway Group [8], the subordinate railway bureau groups that need to operate the China-Europe railway trains are required to submit the data of their respective trains to the 95306 central system library for use by the user unit. Normally, the local station is responsible for the departure and retrieval of the China-Europe trains. The data collection and submission authority is actually the access application response operation between the 95306 data manager and the data manager of each station. Authorization operations can rely on the 95306 existing data interface or set up a special data interface to establish a data submission and release channel, use the form of assigning user names and passwords to realize restriction of access personnel and access permissions, and consider using common information transmission media electronic forms as the

main tool. real-time data transmission is realized through data interactive update between background databases. Regarding the management of the application account, the user name and password assigned to each station can be directly responsible for the station master, or the responsible station master authorizes other commissioner under the condition of ensuring safety and reliability. The specific collection business submission logic is shown in Figure 2.

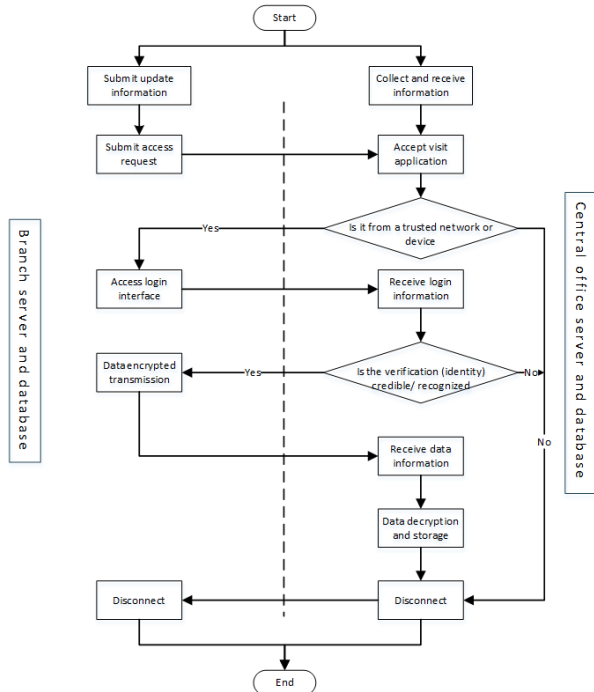


Figure 2 Information collection and submission process

4. CONCLUSION

This article starts from the actual situation of the return transportation of the China Railway Express, and considers the information-based operation network marketing method from the development perspective of the "planned transportation organization method" of the return train. With the aim of promoting the extensive and standardized development of China Railway Express return transportation, the information collection and release requirements, business functions and mechanisms are analysed and discussed. After that, it is considered to further study the dynamic bidding function of vacant capacity and the exchange module of container reservation and recovery to maximize the use of return resources of China Railway Express, in order to promote the informatization and economic operation

of the development of the "Belt and Road" strategic trade.

AUTHORS' CONTRIBUTIONS

Yue Zhang contributed significantly to analysis and manuscript preparation; performed the data analyses and wrote the manuscript;

Xi'an Sun contributed to the conception of the study.

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