



Research on Operation and Optimization Strategies of Network Freight Platform - Taking Truck Help as an Example

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Abstract. In the era of digital economy, the market competition of freight platforms is becoming increasingly fierce, and the profit model is becoming single. Exploring the upgrading and optimization direction of freight platforms is affecting the future development of freight assistance platforms. By collecting and organizing data from the Truck Help platform, analyzing the platform's business types, revenue, costs and expenses, operating profits and net profits, etc., understanding the development direction of Truck Help, and providing optimization suggestions for the platform based on this. Research has found that there are still many areas worth optimizing in the operation of the current Truck Help platform. Users have low stickiness to the Truck Help platform. Truck Help can try to reduce the supply chain to improve profitability when providing services, while upgrading the platform's technology to provide users with more intelligent freight solutions; We should also ensure the quality of logistics services on the platform, enhance industry trust, build a full ecosystem service chain, and ultimately improve user satisfaction with the platform.

Keywords: freight platform; Optimization strategy, truck assistance

1 INTRODUCTION

In recent years, governments at all levels have successively issued policies such as the "Opinions on Promoting Reform Pilots and Accelerating the Innovative Development of Vehicle free Transport Logistics", with the aim of promoting innovation and upgrading of freight platforms in the new situation. With the emergence of new technologies such as cloud computing, the Internet of Things, and big data, the freight supply chain will become increasingly efficient, transparent, and intelligent. New logistics models such as front-end warehouses, fast delivery, and integrated warehousing and distribution are constantly emerging.

At present, research on freight platforms mainly focuses on the macro level. At the micro level, most scholars also focus mainly on pricing strategies and supply-demand

matching. In terms of pricing strategy research, Li Jianbin analyzed the pricing strategy of online freight platforms from the perspectives of uncertain waybill volume[1] and multi delivery point service matching[2]. Liu Yuan[3] considered the factor of vehicle cargo matching and analyzed the value creation mechanism between users and platforms in freight sharing. On the issue of supply and demand integration, Dan Bin et al[4] analyzed the decision-making evolution process of supplier and manufacturer transaction behavior using an evolutionary game model based on third-party platform supervision. Cui Meng[5] conducted a tripartite game study on the various participants of the platform in the context of collaborative governance. Jiang et al[6] considered the fairness of interest distribution among network freight carriers and analyzed the stability of platform freight matching from a cost perspective.

This article attempts to study the current situation of freight platforms from both macro and micro perspectives, explore the business and profit models of freight platforms, and select the commonly used truck assistance among highway logistics practitioners in freight platforms for analysis, in order to find the development path of freight platforms in the digital economy era, and to assist in the innovation and upgrading of freight platforms[7].

2 RESEARCH METHODS AND DATA SELECTION

On the basis of publicly available research literature on freight platforms, and based on relevant information from the official website of freight platforms, the National Transportation and Logistics Public Information Platform, the Direct to the World Logistics Platform, and the China Logistics and Procurement Website, the content analysis method was used to study freight platforms. At the same time, referring to the mature theory of freight platform that has been studying Internet plus logistics at home and abroad, the platform of freight gang is studied from five dimensions of business model, profit model, business type, revenue and platform advantages, with a view to analyzing the operation and development of freight gang and giving the direction of platform optimization[8].

The data is selected from the report provided by the website of the Self Help Group, as well as direct access to the logistics platform and related research media, with a time span from 2020 to 2023. The business types include freight order publishing business, freight brokerage business, transaction commission business, and value-added service business. Organize and analyze the data generated by these businesses, and study the basic situation of the revenue, costs and expenses, operating profit, and net profit of the truck help platform[9].

3 OVERVIEW OF TRUCK GANG OPERATIONS

3.1 Overview of Truck Help

Truck Help is a comprehensive logistics service app tailored and developed for highway logistics practitioners, which integrates professional cargo distribution, truck buying

and selling, refueling, truck ETC, and other logistics services. The platform was officially named Truck Gang in 2011. In 2017, Truck Gang merged with Yun Man Man to form Man Gang Group, which was listed on the New York Stock Exchange in 2021.

The Truck Help platform closely connects shippers and drivers, making it a typical freight O2O platform. Truck Help has built a freight ecosystem composed of millions of shippers and drivers, and reconstructed the freight logistics supply chain. At present, the driver version of the truck assistance platform has a registered population of over 3.5 million, and the cargo owner version has a registered population of over 500000. In 2022, the transaction scale accounts for 32% of the national total, and 4220 freight matching orders have been completed. The Man Bang Group, to which the Truck Gang belongs, is one of the leading freight transportation matching and digital freight platforms in China, operating in multiple centers and serving 20% of truck drivers nationwide.

The services provided by the Truck Help platform mainly include online services, in car services, and offline services. The services provided online mainly include the shipper app, driver app, vehicle cargo matching business, and insurance business. Offline services include new car sales and refueling services provided by over 1000 directly operated stores. The platform's after-sales service mainly provides non-stop fee ETC system, car maintenance, new truck loans, and white-collar products.

3.2 Competitive Analysis of Truck Help

Freight matching ability is one of the most fundamental and important competitive advantages of truck assistance platforms. Shippers can post freight demand orders at any time on the Truck Help app, without the need to go to the logistics park or search for carriers through intermediaries. Obtaining freight quotes is also shortened from a few days to a few minutes. The platform will automatically match freight drivers for shippers based on driver history data and credit indicators. Drivers, also known as carriers in freight business, can directly obtain orders through the truck assistance app without having to wait for several days at the logistics park, reducing the time and transportation costs for truck drivers to obtain orders. At the same time, the Truck Help has established a comprehensive freight demand allocation process through powerful intelligent matching algorithms and data analysis methods[10].

3.3 Analysis of Business Types for Truck Assistance

Freight Order Publishing Business. Order publishing business refers to the practice of allowing freight forwarders to publish a certain amount of business on the platform for free. If the specified quantity is exceeded, the freight forwarder's platform will charge a membership fee to the information publisher. The order publishing business is the starting business of the Truck Help platform. In 2022, the profit of the Truck Help order publishing business was 320 million yuan, accounting for 17% of the business, with a year-on-year growth of 10.1%; In the first quarter of 2023, the freight order publishing business of Truck Help generated a profit of 110 million yuan, accounting for 18% of the business, a year-on-year increase of 30%.

Freight Brokerage Business. The brokerage business is an end-to-end freight matching service launched by Truck Help in January 2018. As a freight broker, the Truck Help platform aims to provide higher service quality by signing transportation and platform service contracts with shippers, and signing transportation service purchase contracts with carriers. Freight brokerage business is the core business that accounts for more than half of the revenue of freight forwarders, and profits are obtained by charging shippers fees higher than those paid to drivers. The freight brokerage platform successfully earned a fee of 710 million yuan in 2022, accounting for 52% of the business and a year-on-year increase of 5.1%; In the first quarter of 2023, the economic business revenue of truck assisted freight transportation was 180 million yuan, accounting for 51% of the business, a year-on-year increase of 120%.

Transaction Service Business. Transaction service is a business launched by Truck Help, based on freight order publishing and freight economy business, to further enhance the platform's digital freight capabilities. The transaction service business began in 2020, where drivers were charged commission on specific orders. The initial three pilot cities were Shaoxing, Huzhou, and Hangzhou. Since the commission on orders was collected, the number of freight orders and platform drivers in the three cities have remained stable, indicating that the transaction service business will not have a negative impact on the platform[11]. In March 2023, the order commission collected by Truck Help from over 300 cities has reached 32.3 million yuan. In the first quarter of 2023, the profit of truck trading services was 65.5 million yuan, a year-on-year increase of 4.1%.

Value Added Service Business. The truck driver end provides insurance services, an electronic payment ETC system without stopping, real-time viewing of route conditions, traffic penalty records, nearby refueling services, truck sales, and driver credit solutions. The freight forwarder provides insurance services, transportation management systems, and credit solutions for the shipper's end. In 2022, the profit from the value-added service business of truck assistance was 354 million yuan, accounting for 21% of the total, a year-on-year increase of 12.1%. In the first quarter of 2023, the profit of value-added services for truck assistance was 121 million yuan, a year-on-year increase of 18.1%.

3.4 Analysis of the Business Situation of Truck Help

Revenue Analysis. According to the announcement released by Man Bang Group in 2023, the changes in revenue data of Truck Bang from 2021 to 2023 are shown in Figure 1. At the same time, we can see from the report that the value-added service revenue of Truck Help in the second quarter of 2023 was 165.5 million yuan, compared to 130 million yuan in the previous year, an increase of 27.3% compared to the same period last year; The transaction commission income was 277.5 million yuan, an increase of 59.48% compared to the previous year; The revenue of freight brokerage services was 474.5 million yuan, an increase of 11.65% compared to the previous year; The revenue

from freight list services was 113.5 million yuan, an increase of 7.07% compared to the same period last year; The revenue of vehicle and cargo matching services was 865 million yuan, an increase of 22.7% compared to the same period last year's 705 million yuan[12].

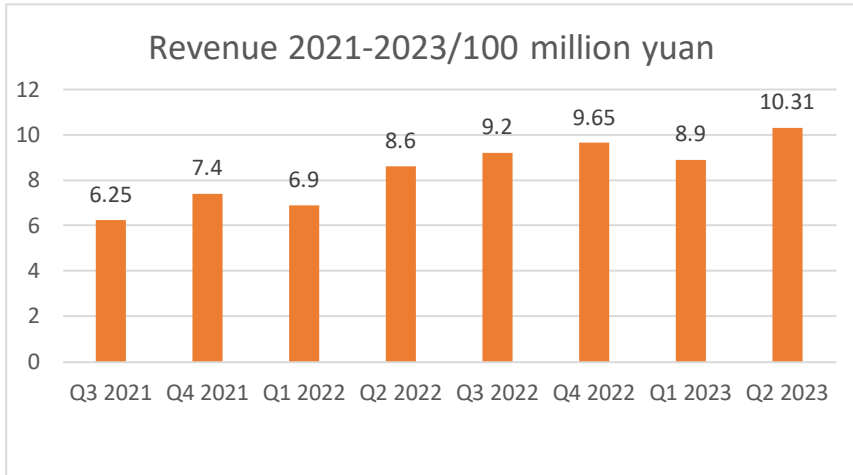


Fig. 1. Revenue of Truck Help from 2021-2023

Cost and Expense Analysis. The cost and expense changes of the truck assistance platform from 2021 to 2023 are shown in Figure 2. The costs and expenses consist of costs, sales and marketing expenses, management expenses, and research and development expenses. The cost and expenses of truck assistance in the second quarter of 2023 were 867 million yuan, a slight increase compared to the previous year; The cost is 487.5 million yuan; The R&D expenses were 112 million yuan, compared to 108 million yuan in the previous year, an increase of 3.7% compared to the same period last year; The management expenses were 101 million yuan, a decrease of 41% compared to the same period last year; The sales and marketing expenses were 141 million yuan, an increase of 43.9% compared to the same period last year.

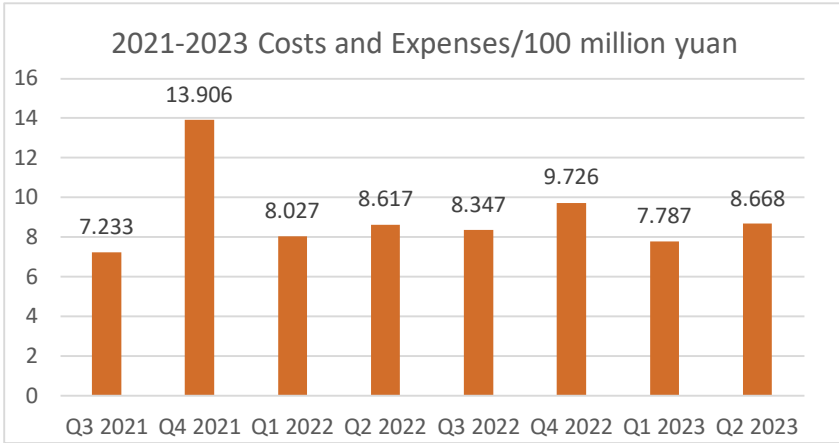


Fig. 2. Cost and expense situation of truck assistance from 2021 to 2023

Operating Profit Analysis. Profit is a key indicator to measure whether a platform can survive in the market. Through data collection and organization, the operational profit changes of Truck Help from 2021 to 2023 are shown in Figure 3. As shown in the figure, the operating profit of the freight truck group in the second quarter of 2023 was 167 million yuan, and the operating loss in the same period last year was 23.2 million yuan. The operating profit margin was 16%, and the profit margin has been increasing year by year.

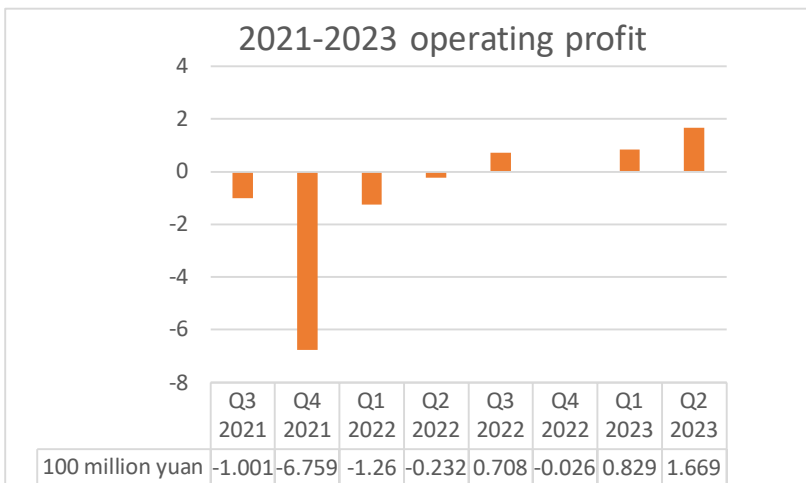


Fig. 3. Operating Profit Situation of Truck Help from 2021 to 2023

Net Profit Analysis. According to the collected data, the net profit changes of Truck Help from 2021 to 2023 are shown in Figure 4. The net profit of Truck Help in the second quarter of 2023 was 304.5 million yuan, compared to 6.35 million yuan in the

same period last year; The adjusted net profit was 361.5 million yuan, an increase of 170.8% from 133.5 million yuan in the same period last year. The truck group is expected to have a revenue of 1.08 billion to 1.1 billion yuan in the third quarter of 2023. As people's consumer confidence gradually recovers, the demand for freight transportation will increase, and the transaction volume and profit of truck assistance platforms will also gradually increase[13].

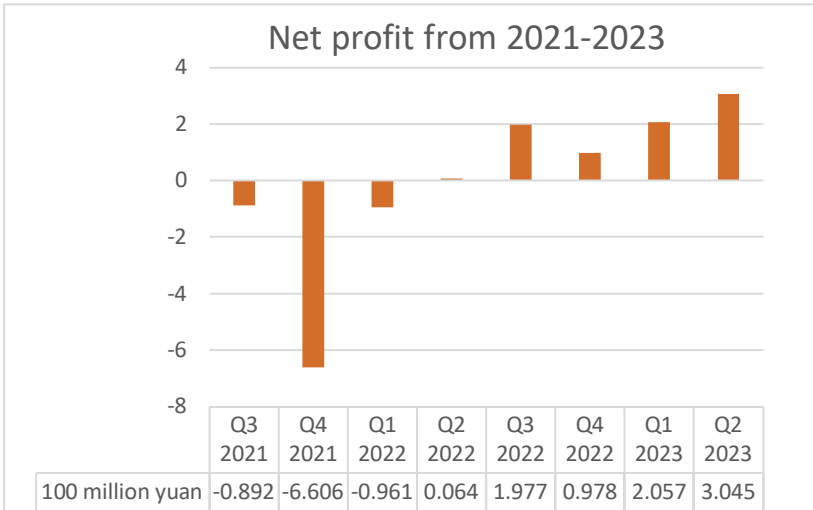


Fig. 4. Net profit situation of truck assistance from 2021 to 2023

4 OPTIMIZATION STRATEGY FOR TRUCK OPERATION

4.1 Reduce Supply Chain and Improve Profitability

Truck Help should strive to create a platform for direct communication between trucks and drivers, reduce freight intermediaries and other third-party freight agents, and help drivers plan lower cost transaction processes. According to statistics, if a freight business has multiple supply links, the shipper needs to pay additional fees that account for 9% -16% of the total freight, and the time and transportation costs that the carrier needs to spend will also increase. The platform reduces the freight process and sets transaction rules, which not only reduces the transportation costs of drivers and shippers, but also improves the revenue of the freight platform and promotes the efficiency of social material exchange.

4.2 Ensuring the Quality of Logistics Services and Enhancing Industry Trust

As a platform for communication between shippers and carriers, the freight forwarder should always keep track of the business dealings between both parties, establish a mechanism for dividing responsibilities when both parties generate business, and retain historical data as a basis for resolving conflicts. Appropriately increase the amount of platform deposit collection to ensure the implementation of responsibilities between both parties. At the same time, as a trading platform, Truck Help should not pay any freight fees to drivers in advance when the freight business is not completed. A special business conflict resolution section should be established to provide full day consultation services for both drivers and shippers, as well as other decision-making advice services that occur during the completion of the transaction process[14].

4.3 Building a Comprehensive Ecological Service Chain to Improve User Satisfaction.

The truck assistance platform should actively carry out full cargo ecological services for shippers and carriers, such as expanding the scope of post vehicle services, providing high-speed rescue, second-hand car sales and other services; And provide various insurance services to protect the interests of shippers and drivers. With the goal of meeting the diverse needs of users, addressing industry challenges, improving the comprehensive service capabilities of the platform, and making it open to all platform users. Pay attention to user feedback and suggestions after order completion, actively promote the implementation of business improvement, and increase user participation in platform construction.

5 RESEARCH CONCLUSION

The platform is an important medium for shippers and drivers to complete transactions. Good platform services can not only attract more users, but also increase platform revenue. The emergence of truck assistance and other freight platforms has changed the traditional situation of high freight costs, difficulty for shippers to find drivers, and low carrier income. Through the research on the operation of the freight gang, it can be found that the third-party logistics platform has huge economic benefits. The frequency of the use of the freight platform by drivers and cargo owners depends on the service quality provided by the platform. At the same time, with the development of new technologies, the service content of Internet plus+logistics is still worth exploring.

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