

Design of luggage storage and transportation integrated scheme

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Abstract: The conceptual design of luggage storage and transportation can not only effectively solve the trouble caused by heavy luggage when passengers travel, but also integrate the vehicle distribution resources of the taxi industry on the basis of “Internet +”, so as to better realize the maximum utilization of resources. This paper studies the current situation of the luggage storage market, compares and analyzes the advantages and disadvantages of the traditional mode and the new mode, adjusts and improves the business function, innovatively increases the related business, effectively reduces the burden of passengers’ travel luggage, and solves the security problem of luggage storage transportation. The platform is committed to improving the tourism market and establishing an integrated luggage storage and transportation market.

Key words: Tourism, luggage storage, luggage transportation integration

The introduction

From the perspective of the changes in China's railway passenger traffic, in 2019, the completed railway passenger traffic of 3.66 billion people, due to the impact of the epidemic, although China's railway passenger traffic decreased rapidly in 2020, China sent 2.203 billion people by railway, but after the improvement of the epidemic, in 2021, a total of 2.61 billion people were transported, a year-on-year growth of 18.5%. At present, the epidemic prevention and control stage, the tourism industry gradually restored, holiday travel rate also gradually rise, from the total proportion of passenger transport in our country, in 2020, the railway passenger traffic accounted for 22.9% of the national passenger transportation, only ranked after highway passenger transport, located in the second, that China's railway passenger luggage service, there is a huge potential market and demand. People have the problem of luggage storage when they go out for travel or work. Heavy luggage adds a lot of burden to people's travel and becomes a difficult problem to solve during the journey. With the popularization and development of Internet technology, fast integration into the development trend of travel e-commerce, providing more personalized services has gradually become an important demand. Therefore, how to combine convenient travel with e-commerce has become a big problem.

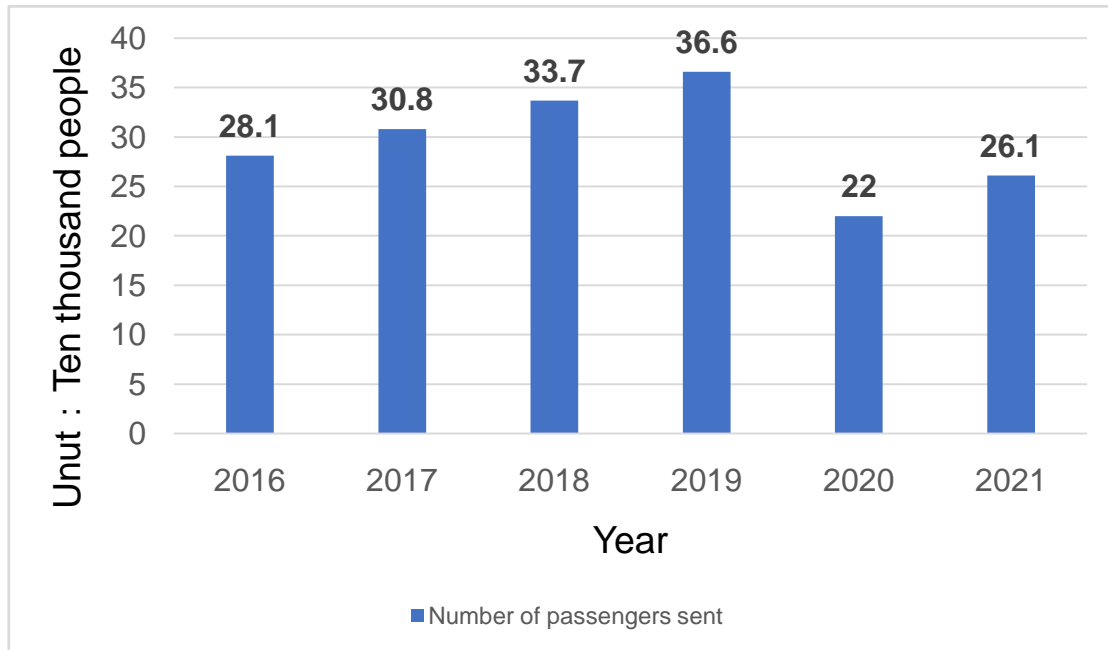


Table 1: Change trend chart of China's railway passenger volume from 2016 to 2021

Source: www.ASKCI.com, China Business Information Network

“轻存 V-store” project is a platform that combines luggage storage and luggage distribution, business cooperation marketing model. Through GPS technology and "Internet+" technology, provide users with luggage storage and transportation services. From the marketing mode of combining online and offline and commercial cooperation, the luggage storage and transportation problems during the journey are improved. This project will deeply study the development and promotion of the whole system of luggage storage and transportation, discuss how to reduce the travel burden of tourists, analyze the changes brought by the development of luggage storage and transportation, improve the sense of travel experience, and effectively promote the development of tourism.

I. Current situation and analysis of luggage storage market

1.1 Traditional self-service luggage storage services

At present, the market still relies on temporary luggage storage services provided by stations and hotels to maintain stability. Passengers with luggage storage needs choose the nearest luggage storage points at railway stations and airports, pay fees according to the storage time or the size of the luggage, and take out your luggage with the documents. Or in the hotel and other places and hotel management personnel after discussion, luggage storage service, on arrival to pick up, round trip time and labor consumption. This deposit pattern free and flexible operation, no artificial cost, but usually the baggage cannot be stored in a standard way, it is easy to take wrong baggage, miss baggage and theft of baggage, merchants provide only a hosting platform, It does not guarantee the safety of luggage in the storage process, once the above mistakes occur, they are usually not properly solved. The traditional luggage storage service has the characteristics of simple technology and small scope. It is usually operated in a specific area, which will not only increase the time cost for the group who want to move in real time and no longer return, but also make them avoid the service as much as possible in the next trip. However, the solution to the problem of how to ensure the efficiency and speed of the luggage transfer in the luggage storage

1.2 “Internet Plus” new baggage storage system

With the rapid development of “Internet Plus”, the luggage storage service is developing towards

intelligent development. If you place an order with aapplet, you can entrust your luggage to the staff of the corresponding station when you arrive at the destination and they will be delivered together with you. In the process of luggage transportation, fixed-point storage is used to place the luggage nearby and the luggage is neatly discharged after numbering, centralized storage, and management. At last, the luggage will be delivered on time which greatly facilitates customers and forms assembly line storage. The specific route greatly reduces the time cost, and the efficiency and convenience are just around the corner.

In the era of “Internet Plus” integration, the development of public transport has promoted the travel demand of the public. The number of people who choose public transport as their first choice for travel has gradually increased and luggage storage has become a big problem faced by the public. At present, the luggage storage system has been developed to a certain extent, but it is still at the preliminary stage of development. A mature system has not yet been formed to ensure the safety and effectiveness of luggage storage, realize the integration of access, and provide convenient and fast services for tourists.

II. Scheme Design

2.1 Functional analysis for different services

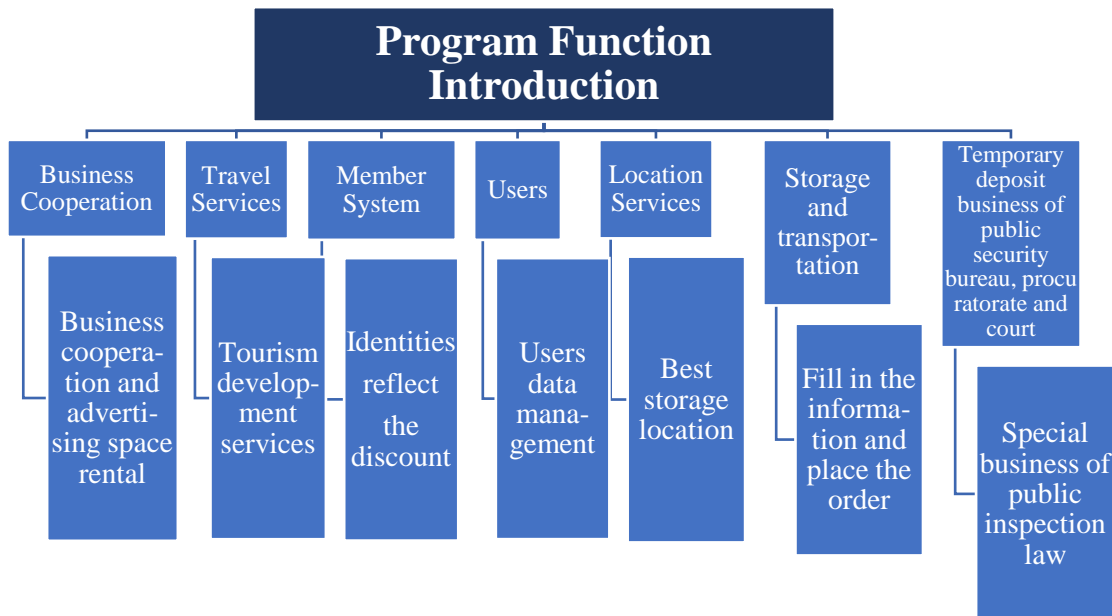


Figure 1: Introduction to program functions

2.1.1 User functions

With the consent of users, the platform can record the information commonly used by users and automatically display it for users to choose, so as to reduce the complexity of filling in information and improve user experience.

2.1.2 Positioning function

Users can view a map of nearby storage points through the location function, and can also see real-time information on the priority recommended storage points and the location of drivers and luggage.

2.1.3 Storage function

The user finds the storage point on the Mini Program or APP, then they can go to the storage and provides the storage time. The storage point will conduct security inspection and weigh the amount of luggage storage, and place an order.

2.1.4 Transportation function

Users can place orders through mini programs or APP, and they can store their luggage at point A, collect it at point B within the agreed time, and at first distribute it by the team, and then develop into a hitchhiking driver to receive orders and transport luggage on the platform.

2.1.5 Tourism service function

Users can choose their favorite travel strategies and services on the platform through the Mini Program or APP, and they can get the additional functions of discounts for luggage storage and transportation by placing an order. Or upload your own travel guide (you need to upload it 5 days in advance and agree to disclose it), the platform estimates and the user approves the platform to accept the order, and the user can also get the discount.

2.1.6 Star member function

For users who use our services for a long time, we rate users according to the number of times they use or the length of time they have purchased services, the higher the level, the greater the discount of the services that users get or the services they receive, such as 20 times free 1-time, free door-to-door pickup, free insurance, etc.

2.1.7 Insurance function

All services of the platform are equipped with insurance functions, and users can choose and purchase according to their own needs.

2.2 Solution design for different business scenarios

Passengers from the place of departure to the destination, need to go through the departure place, railway departure station, high-speed EMU, arrival station and destination and other scenarios, in the “passenger path” passengers and service providers have many contact points^[1], the following will be according to different scenarios and services for the program design.

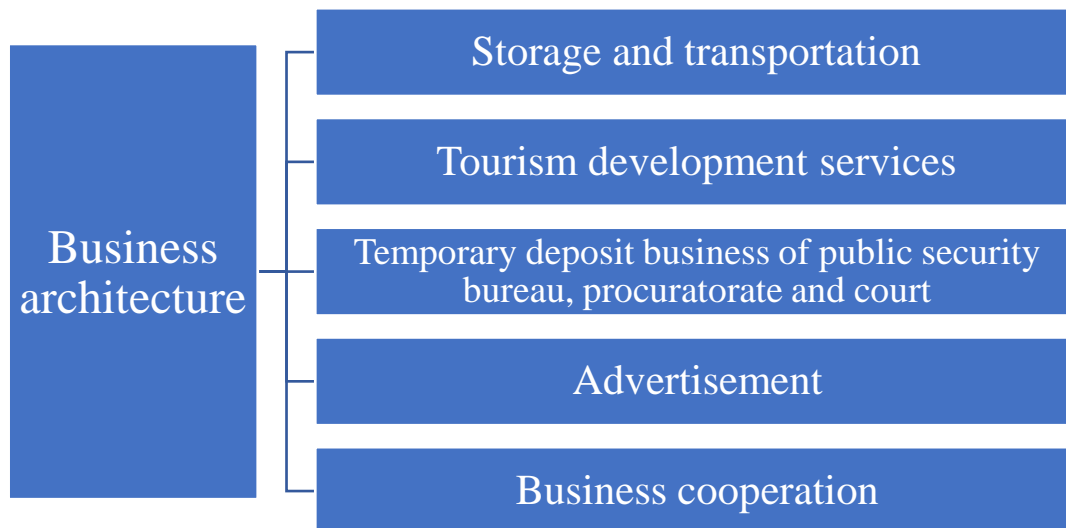


Figure 2: business structure

2.2.1 Luggage storage business

The following luggage storage services are all regulated for the safety of the items to be consigned in accordance with the safety regulations of the items to be consigned similar to the “Safe Production and Operation Specifications for Express Delivery”. If the user places an order, the user has been informed of the regulations and signed the relevant electronic certificate of guarantee.

(1) Short time storage ($0 < \text{day} \leq 1$)

Users are unable to timely dispose something, for example an express that has been delivered, fresh products, or big items that have nowhere to put for the time being. Then you can search for nearby consignment

in applet, checking whether there is an empty bin. If have, you can then fill in the types, number, size and any special requirements (whether they're precious) and roughly the pick-up time, filling out the complete order deposit. If not, you can choose another consignment or door-to-door collection to the empty consignment. When you need to take, we could delivered to the selected pickup point or door-to-door delivery, and the user can through the electronic two-dimensional code, ID card or face brush pick up.

(2) Long time storage ($1 < \text{days} \leq 365$)

Some users want to save some rental costs because they go home on holiday. They can store daily supplies in the "Mini Warehouse" and take them out after they come back. "Mini Warehouse" is also referred to as "Private Warehousing" or "Self-Serve Warehouse". We dividing large warehouses converted into many sizes of the storage room. No matter individuals, families or enterprises, they can consign furniture in this article such as household appliances, spare clothes, documents, so that you can release more space for your home or a company. The service rent usually calculated according to the length of time and the number of items^[2].

(3) Permanent storage ($\text{days} > 365$)

The vast majority of customers' storage is not valuable, just "feelings". We build a "Mini Warehouse" in order to release a story. For example, in Shanghai, there are old people who store their wife's relics in the "Mini Warehouse", looking at them regularly, and keep a miss. There are also entrepreneurial young people in order to save costs. They rent a "Mini Warehouse" near home as a warehouse, so every day to get goods, delivery is very convenient. If the "Mini Warehouse" was overdue payment (after the overdue payment of the tenant has been notified several times) will be auctioned in the form of "blind box"^[2].

2.2.2 Baggage transportation business

In the whole transportation process, users can know the real-time information and status of checked luggage in real time through the mobile client, so that can control every transportation link safely and efficiently.

(1) Luggage service delivered in the whole process (origin-arrival)

The whole-delivery baggage service expands the contents of passenger luggage service, connecting with the existing passenger baggage service, high-speed rail express service and "flash delivery" service. Users place orders through the applet before departure, and the staff picks up the goods at the door and informs the customers of the corresponding prohibitive items to remind passengers to take them out in advance. After the business is completed, the luggage will be "flash sent" to the station, and the security check of the luggage will be arranged uniformly. After that, the luggage will be directly sent to the luggage locker of the train through a special channel, and the whole process will correspond to the departure time of the user's vehicle to ensure punctual delivery. After the train arrives at the station, the staff will get on the train and collect the luggage, which will be transported to the exit through a special channel and handed over to the "flash" staff, who will deliver the luggage to the designated place (such as hotel or scenic spot) within the agreed time. The user can unlock and collect the luggage through the e-voucher.

(2) Inter-station Baggage Delivery Service (Train station/Airport entrance - Train station/Airport exit)

The service scope mainly aims at the transportation service of the city station in the province. Before entering the security check, users can check in at the service desk or smart luggage locker at the entrance of the station. The service desk will inform passengers of the prohibited items in the security check and arrange staff to carry out centralized security check on the luggage. After that, the luggage will be directly sent to the baggage storage area of the train through a special channel. After the train arrives at the station, the staff will get on the train and collect the luggage, which will be transported to the service desk or smart luggage lockers at the arrival station through special channels. Users can claim their luggage at the lockers with their e-vouchers^[3].

(3) Short baggage service (origin - train station/airport entrance or train station/airport exit - arrival)

The service scope is mainly the luggage transportation service within the municipal scope. Users place

orders through the mini program before departure, and the staff will pick up the goods and inform customers of the corresponding prohibited items in advance and remind users to take them out in advance. After the business is completed, the luggage will be sent to the station by “flash”, and the security check will be arranged uniformly, and then the luggage will be sent to the designated place. The user can claim the luggage with the electronic certificate.

(4) Optional mixed service

Self-selected hybrid service is a combination of the above three services. Users can choose the service they need from beginning to end, and the process is the same as the above service.

2.2.3 Tourism service business

In the whole transportation process, users can know the real-time information and status of checked luggage in real time through the mobile client, and safely control every transportation link.

(1) Introduction version

Travelers plan to travel to a place, through the applet to choose the appropriate platform on the travel guide or platform has passed their own travel guide. Then choose the entire baggage care service order. The staff will pick up the goods and inform the passengers in advance of the corresponding prohibited items, reminding passengers to take out in advance. After the baggage security check is completed, the luggage will be transported to the user’s next residence point, and the next day, the goods will be picked up and then transported to the next place, and repeat until the end of the service.

(2) Baggage version

The passengers place the order through the applet before departure, and the staff will pick up the goods at the door and inform the customers of the corresponding prohibited items in advance, reminding the passengers to take them out in advance. After the baggage security check is completed, the luggage will be sent to the designated place of the customer. If the place is the cooperative merchant’s place, it can be directly deposited and waiting for collection. If not, you need to choose the nearest storage place of the cooperative merchant, and the customer needs to go to collect the luggage by himself. Customers can go to the designated place to collect their luggage by e-voucher.

2.2.4 Public Inspection Law temporary control business

At present, the public security organs, procuratorial organs and courts have been in charge of the management of the property involved. Some scholars ^[4] combined with judicial practice, it is proposed that the scale of custody places of public security organs should be larger, while that of procuratorates and courts can be smaller. If we can give full play to the power of science and technology through science and technology, and make overall management, litigation costs can be reduced. By integrating the resources of the public security organ, the procuratorate and the court, an independent property management center is established outside the three organs, the property custody function of the three organs is stripped off, and it is handed over to an independent and specialized management agency, which can ensure the effectiveness and neutrality of the property management agency. A more thorough solution is to establish a unified and centralized custody institution for the property involved in the entity that is neutral and spans the specialized organs. To establish an inter-agency custody institution and realize the operation mode of the connection between the special agency and the information platform of the institution, the first step is to rationally locate the ownership of the institution and straighten out its relationship with the public inspection law and other special agencies. Secondly, centering on the handling of the property involved in the lawsuit at different stages, the scope of the function of the institution should be clarified, and a series of institutional norms and even procedural rules should be formulated for it. At the same time from the virtual supporting construction of a special information management platform, the public inspection law and other special organs of their own internal handling. system

involved in the property part of the platform docking, information to push, to ensure the security of the property information involved, unobstructed, fast^[5]. Finally, the platform will carry out transport storage temporary management services according to the procedures stipulated in the public inspection law.

III. Conclusion

Today, as a comprehensive industry, tourism has become the third industry in China, with a strong driving force, it not only promotes rapid development at home and abroad, but also the important channel of national income generation. However, when people go out to travel or work, there is a problem of luggage storage. Heavy luggage adds a lot of burden to people's travel, which has become a difficult problem to solve during the trip, which greatly reduces the quality of people's play and affects people's mood when they play. With this platform, people can place an order through a applet and entrust their luggage to the staff of the corresponding station when they arrive at the destination, and their luggage will be delivered at the same time. In the process of luggage transportation, the fixed point storage. is used to place the luggage nearby, and the luggage is neatly discharged after the number, centralized storage and management, and timely delivery, which greatly facilitates customers and forms the assembly line storage. This not only improves travel experience, but also effectively promotes the development of tourism.

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