Research on the Marketing Feasibility of People using Battery Exchange Blockchain

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Abstract: In recent years, the problems of greenhouse effect, global warming and environmental pollution have become more and more serious. The rise of a large number of electric vehicles has led to an increase in battery production. The number of scrapped and usable batteries is also increasing. The heavy metals in waste batteries will aggravate the problem of environmental pollution. The battery exchange station is commonly used by users. The battery in the battery exchange station is used by less people. The marketing of the battery and the secondary marketing of the useable battery achieve the maximum utilization rate, so it does not deteriorate with the increase of the display time, and finally becomes a scrap battery. In order to reduce this situation, we propose the establishment of a battery exchange platform, which can help manufacturers understand the use of each battery, carry out maintenance in time, and exchange batteries between the two places in combination with logistics. This platform can also carry out educational work, teach people the correct concept of battery exchange stations, and reduce the problem of battery scrapping in these ways. Based on the current situation of the actual region, the change of the fixed switching station to the platform marketing network can not only improve the use of batteries, but also combine with the convenience store to obtain the best access pipeline and transportation integration advantages.

1 INTRODUCTION

With the impact of environmental problems, greenhouse effect, acid rain, global warming and oil issues, the development of new environmental energy is becoming less and less. The problem of global warming has also become a key. Batteries have also become an indispensable existence in our daily life. The consumption of batteries is very large for our current life. There are many kinds, including lithium-ion batteries, lead batteries, carbon zinc batteries, zinc mercury batteries, alkaline fuel cells, etc.

The existence of batteries can be seen in all places, from people's livelihood supplies to transportation, which shows that the use of batteries in market demand has a certain impact. Lithium-ion batteries are used in mobile phones and laptops. Small and medium lead storage batteries are used in alarms, control switches, electric bicycles. The carbon-zinc battery is suitable for remote control and toys with low power (Song, 2017, Liu, 2017, Yang, 2017, Peng, 2017). Therefore, this paper will propose the concept of an online electronic trading platform of "innovative battery exchange business transaction platform", which can have an important leading and leading role for the entire society and sustainable development. Promote the realization of modernization goals for battery suppliers and consumers. This research introduces the concept of an integrated cycle of marketing management, battery exchange stations, educational services, and suppliers. Marketing includes management and strategic operation planning, analysis of the distribution of battery exchange stations and agent locations, popularization of public knowledge education, and suppliers, etc. The training of internal

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professional related personnel and manufacturers can use the data integration analysis of the platform to achieve the effect of effective deployment and recycling

1.1 Documents Related to Battery Management and Marketing Strategies

This section will discuss the following related documents such as battery safety management and marketing management strategies:

Li, Rui-Jun et al. (Li, 2019) and Chen, Li you et al. (Chen, 2019) used PSD curve analysis to integrate big data, In order to solve the problem of a large number of discarded batteries, the recycling system established can comprehensively utilize power batteries and reduce the safety accidents caused by inferior batteries on the market. They also introduced battery monitoring and the safety system of the management battery, the basic structure of the battery system is divided into six architectures. Battery monitoring, collection and storage are the timely conversion of battery module information to the main control module. State estimation, performance prediction, and repair can ensure the reliability and safety of the battery pack system. Online diagnosis and anti-theft early warning prevent system vulnerabilities, charge, discharge and precharge control, improve battery utilization and reduce maintenance costs.

Ryszard Barcik et al. (Barcik, 2013, Jakubiec, 2013) wanted to improve the inseparable relationship between logistics and marketing through this article, and focused on the four main points in the article: distribution and marketing methods, logistics and marketing, marketing logistics and logistics, and logistics marketing management. Liu Yongxiang et al. (Liu, 2011, Hui, 2011, Xu, 2011, Chen, 2011, Xu, 2011, Li, 2011) studied the difference between charging stations and battery exchange stations. The article mentioned that because most of the batteries in the battery exchange stations are charged in the exchange stations, they can also be combined with new energy sources. For example: solar power generation, wind power generation, the use of emerging energy sources can reduce the use of other energy sources. Most battery exchange stations are set up in places with a lot of people, which will affect the power grid and cause more services, so the influence of the power grid is relatively small.

Ying Wei Wang proposed (Wang, 2008). Although electric scooters are convenient means of transportation, due to the scarcity of charging stations or battery switching stations and the cost of developing decentralized charging infrastructure, electric scooters are not widely used by consumers. SUN Hua-mei et al. (S, 2006, L, 2006, H, 2006) studied the strategies of Chinese companies' online marketing and found that with the development of the Internet, the high efficiency, globalization, interactivity, economy, and individualization mentioned in the article. In China, Internet marketing has a shortage of talents, a weak sense of competition, a shortage of new products, security issues, and technical obstacles.

Luyao Peng et al. (Peng, 2020, Duan, 2020) proposed that enterprise distribution is an activity that manages various social relations among producers, and the most fundamental purpose of distributors and consumers is to build a bridge between social relations and science. Arash Asrari et al. (Asrari, 2020, Ansari, 2020, Khazaei, 2020, Fajri, 2020) proposed that the congestion management framework network (DSO) in market smart power distribution provides a platform for cooperation between distribution and market operators (DMO) and eases data traffic operators (DTO) The congested route allows the data transmission traffic seen by market participants to be efficiently managed in the smart grid. Bo Jie, Takao Tsuji and others (Jie, 2017, Tsuji, 2017, Uchida, 2017) proposed that real-time market is the future market vision. In addition to being able to grasp customer and product information at any time, it also evaluates the rationality of market price uniformity and a pay-by-bid auction mechanism.

1.2 Research Motivation and Purpose

In today's society, with the development of Internet technology, the battery resources used by humans are becoming more and more extensive, and related batteries can also be sold on the Internet, which is very convenient. But one thing is that consumers cannot be sure whether the battery they received is from secondary use and the safety of the battery, especially because the large number of scrap batteries generated by the growth of new energy vehicles poses a threat to the environment (Yu, 2021, Dai, 2021, Tian, 2021, Wu, 2021, Xie, 2021, Zhu, 2021, Zhang, 2021, Chen, 2019), so we have established a recycling system to utilize scrap batteries, but there is still concern that some batteries will be incompletely recycled and used for secondary use. Therefore, the purpose of this research is to ensure the safety of the battery and protect the rights and interests of consumers. The battery management is combined with the vegetable ID card of successful cases, and

each battery has a resume QR code, and the characteristics of the production and sales history tracking number The production, processing, sales process, producer and other relevant information are listed one by one, and the battery ID card is created to facilitate the traceability of the quality of each battery and the past passages. In terms of purchase and sales, it can ensure the merchant's credit and consumer rights are introduced into the platform marketing network at the same time.

2 THEORETICAL AND EXPERIMENTAL DESIGN

Traditional battery charging stations sometimes have difficulty in controlling the quality and damage degree of each battery due to uneven battery use. Therefore, the concept of resource integration platform of battery switching station is proposed. The experimental flow chart of this study is shown in Figure 1. Using this platform, users can provide complete services in payment flow and logistics, use big data sorting and analysis, and provide batteries everywhere to people and enterprises through the network platform, combined with online trading, logistics transportation and market analysis. This platform can sort out battery prices in various regions, provide reasonable prices for consumers to refer to, and conduct online transactions on the platform to protect consumers' rights and interests. This platform can help manufacturers to easily control the battery usage and battery status of each battery switching station, and through this platform, people can also be taught the correct concept of battery application in the part of education.

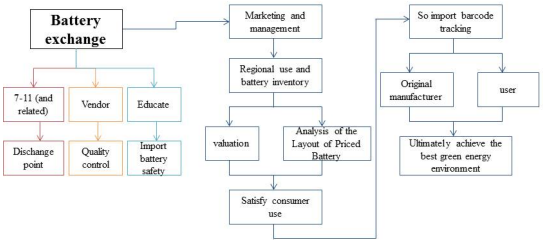

Figure 1. Conceptual flow chart of the resource integration platform of the battery exchange station.

3 DISCUSSION

This platform will be divided into four major modules for discussion, each of which will be a battery exchange platform with integrated recycling resources in four parts: marketing and management, battery exchange, education, and manufacturers.

3.1 Marketing and Management

The development of the Internet is more and more advanced, and the combination of the Internet and big data is often seen in online marketing. The purpose of establishing a battery exchange platform is to use big data analysis to integrate the battery usage on the Internet in various regions. After the usage and inventory are consolidated, it can provide consumers with battery distribution analysis in various locations. Through searching, they can find the nearest battery exchange station to operate. Through the analysis of the distribution of the platform, we can also see which places have not been set up. The subsequent establishment allows consumers to easily return the battery without space constraints. The battery switching station adopts the same method as the shared mobile power supply. It can borrow from place a and return from place B without space restrictions, so in Figure 2. It also uses the same pricing method as the shared mobile power supply and takes time as the calculation.

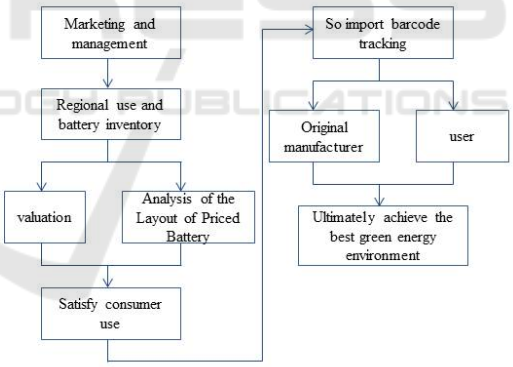

Figure 2. Marketing management flow chart.

3.2 Discharge Point

In the battery exchange station, take Taiwan's Gogoro battery fixed exchange station as an example. In recent years, electric vehicles have been frequently used, and battery exchange stations have also established many locations in various places, causing many problems. Therefore, the comprehensive advantage is to use battery ID cards and marketing networks. Roads, places often set up at exchange points will be in communities, convenience stores, gas stations, supermarkets, parks, etc., as shown in

the battery exchange station operation diagram in Figure 3. Through this platform, it is possible to quickly search for exchange stations that are close to each other. However, because of the close distance of some nearby battery exchange stations, some people prefer to use a specific battery exchange station and let the battery of another battery exchange station. Leaving it for too long may cause damage. At this time, it is necessary to consider the maintenance and quality of batteries. Through the platform, manufacturers can know where batteries have been placed for too long, and can exchange batteries used by more people and those used by less people, so as to maintain the quality of batteries in each station.

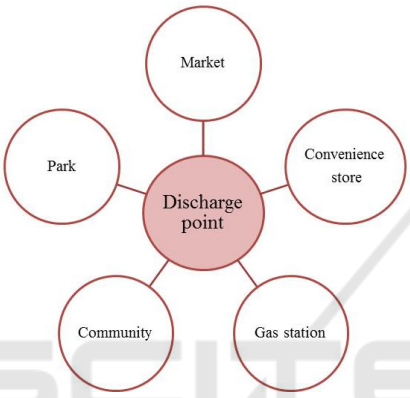

Figure 3. Operation diagram of battery exchange station.

3.3 Educate

In the process of establishing the battery exchange station, some people worry that if the battery exchange station is set close to home, they will be in a dangerous situation for a long time, and then oppose the establishment of the battery exchange station. Therefore, one of the purposes of establishing this platform is to publicize the safety inspection before the establishment of the battery exchange station to the people through the platform, as shown in Figure 4. Through battery science education, public lectures and other related knowledge of battery safety, help the platform and customers understand the relevant knowledge and technology of the battery exchange station. People who are interested in the product can learn in the training and have online tutoring with lecturers. At the same time, improve the training of professionals in the manufacturer, Improve the safety of maintenance and erection of battery charging station.

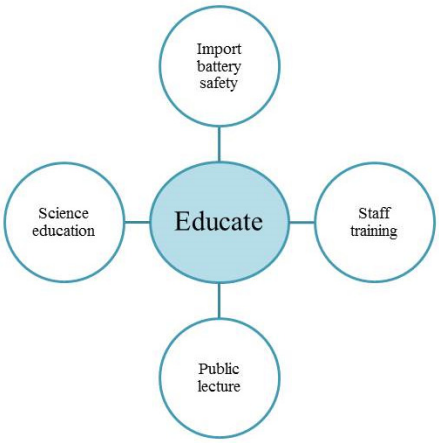

Figure 4. Education strategy platform diagram

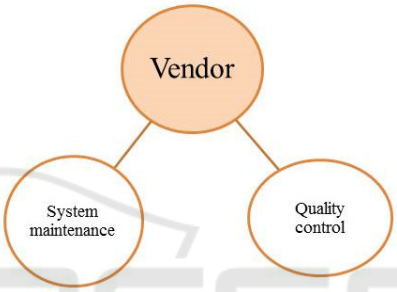

Figure 5. Vendor management strategy diagram

3.4 Vendor

The establishment of the platform combined with the manufacturers, can provide them with quality control and system maintenance functions, as shown in Figure 5. It can help manufacturers understand the battery usage and damage conditions in different battery exchange stations, do real-time maintenance and tracking, and combine logistics to facilitate battery transportation and maintenance, so as to maintain the quality and safety of batteries and improve the trust and product recognition of products among consumers.

4 CONCLUSIONS

In this study, the battery exchange station platform system has the functions of battery product production arrangement, transaction scheduling, safety traceability, financial services and knowledge education popularization. The use of Internet big data can improve the transmission efficiency of supply and demand information of battery products, improve

the production and marketing docking efficiency and accurate prediction, and form an integrated circular battery switching station platform industrial chain in combination with marketing management. Provides reasonable reference index of relevant battery use price for the place of origin, and helps battery manufacturers and downstream agent sales stores to improve their bargaining power and enhance their competitive advantage. Connect with the production and marketing of battery products, provide online trading, logistics scheduling, brand promotion and other services. In terms of production and marketing docking, battery manufacturers and downstream agent sales stores are systematically organized to conduct transaction docking activities through the "battery exchange blockchain marketing platform". Users use the platform APP to realize battery purchases and finished product transactions, so as to solve the rental, purchase and maintenance needs of the battery production process

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