Analysis of Electronic Equipment Recycling Based on Environmental Economic Background

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Abstract. Since the reform and opening up, China's economy has achieved rapid and stable growth, especially the rapid development of the electronic industry. However, these electronic products contain many harmful chemicals. If not properly handled, they will seriously harm the ecological environment and human health. However, many enterprises lack systematic management in the process of developing logistics, and waste a lot of money and energy in logistics, especially in reverse logistics. How to reduce the problems of reverse logistics management is a problem that enterprises need to consider. Under the background of environmental protection economy, this paper studies a set of reasonable electronic product reverse logistics management scheme.

Keywords: environmental protection economy, waste electronics, the reverse logistics.

1. Introduction
With the advancement of economy and technology and the rapid development of the electrical industry, a huge amount of waste electronics is generated every year. These waste electronics contain a large amount of metal substances, such as gold, silver, titanium, lithium, mercury, lead, etc., some of which will endanger our health and the environment, if these wastes are not effectively treated, they will destroy our planet through atmospheric circulation and other means. Rejection of relevant information shows that the quantity and weight of waste electrical and electronic appliances in my country is continuously increasing. The following table 1-1 shows the volume and weight of waste electrical and electronic appliances in my country from 2015 to 2019.

Table 1. Amount and weight of discarded electronic appliances (unit: 100 million units, 10,000 tons)

| Time   | 2015  | 2016  | 2017  | 2018  | 2019  |
|--------|-------|-------|-------|-------|-------|
| Scrap quantity | 4.020 | 3.770 | 5.000 | 6.140 | 6.230 |
| Scrap weight   | 405.6 | 407.0 | 538.4 | 674.6 | 702.3 |

Scrap weight Data source: collated by Qianzhan Industry Research Institute

From Table 1-1 above, it can be seen that the number and weight of discarded electronics in my country are increasing day by day, but the number of formal electronics processing companies in my country is pitifully small. According to relevant data, in 2017, there were only more than 100 companies dealing with waste electronics in our country. In the past two years, as the country has paid more
attention to environmental issues, more and more waste electronics have been dismantled and processed. Figure 1-2 below shows the dismantling volume of discarded electronics in China from 2014 to 2019.

![Figure 1. 2014-2019 China's waste electronic dismantling volume](image)

Source: Ministry of Environmental Protection, Foresight Industry Research Institute.

It can be seen from the above figure 1-2 that the amount of dismantling of waste electrical appliances in my country is increasing. It is not difficult to see that many people are also aware of the pollution problems caused by waste electrical appliances. From these rising data, we can see that the future disposal of waste electronics The prospects will get better and better.

However, because the time for my country to develop reverse logistics is shorter than that of some developed countries in the West, many companies lack relative professionalism in recycling and disposing of waste electrical appliances, and invest relatively large expenses in reverse logistics. As far as the current situation of reverse logistics in the recycling of e-waste by Chinese companies is concerned, the cost of recycling these waste electronics is often higher than the actual benefits achieved.

Therefore, the phenomenon of input greater than output has always troubled companies. Important question. In the first half of 2019, the total cost of social logistics in my country reached 6.6 trillion yuan. Figure 1-3 below shows the total cost of social logistics in my country in the first half of 2013-2019.

![Figure 2. The total cost of national social logistics in the first half of 2013-2019](image)
Source: China Logistics and Purchasing United Network, compiled by Huajing Business Research Institute

It can be seen from Figure 1-2 that the total cost of social logistics in my country has been more than 10 trillion yuan from 2013 to 2018. This is a relatively high logistics cost compared with foreign countries. According to relevant research institutions, the cost of many Chinese enterprises' reverse logistics accounts for more than 20% of the total cost, which is undoubtedly a great burden for enterprises. The high logistics cost is mainly due to improper logistics management. Therefore, the following will analyze the problems and reasons existing in the management of reverse logistics in today's enterprises, so as to improve reverse logistics management and reduce costs.

2. Problems and causes analysis of reverse logistics management of discarded electronics in enterprises

2.1. The management lacks the understanding and research of reverse logistics
Due to the lack of knowledge and research on reverse logistics, enterprises waste a lot of money and energy in reverse logistics management. The company's reverse logistics business mainly relies on the direct and indirect resources of sales logistics. For example, the collection of waste home appliances mainly relies on after-sales service personnel, and the waste home appliances are not disposed in a timely manner. Instead, they are stacked in the comprehensive warehouse, which greatly increases the storage cost. As the management of the company does not understand the importance of reverse logistics, the company lacks relevant professional talents, cannot manage reverse logistics well and choose a reasonable model of reverse logistics, so the cost of reverse logistics is often very high.

2.2. Unclear cost management of reverse logistics
First of all, reverse logistics involves more departments than forward logistics. Most of the costs of forward logistics come from the transportation department and the warehousing department, while reverse logistics also includes after-sales service department and product design department. After that, the operation activities are different, and reverse logistics increases the cost of green material procurement, detection and treatment, etc., during the product redesign. These costs are not involved in forward logistics, but they play a vital role in reverse logistics, which is also a problem in the management cost of Company.

2.3. Lack of specialized reverse logistics management information system
lack of good reverse logistics information management system, in the data collection, data processing, reverse logistics enterprises is not very good logistics management information system, will not be able to timely and accurately collected reverse logistics information, in the face of recycling information, only by after-sales staff entry waste of relevant information, these information including the acquisition cost of the item, only the type of product, and for waste real quality status and no entry, so that enterprise management can't cost benefit analysis of the relevant items, more cannot be collected for subsequent product to offer help.

3. Suggestions

3.1. Improve the management's understanding of reverse logistics
Awareness and attention to reverse logistics is the key to enterprise development, enterprise managers must deeply realize the benefits of development of reverse logistics, in the company of publicity, let people know and understand the whole company to the necessity of the development of reverse logistics and reverse logistics management for professional talent, education and training in the company, especially the departments closely associated with reverse logistics, such as after-sales service and
logistics department, etc. Then the reverse logistics is separated from the forward logistics and studied and managed by a special management team.

At present, when enterprises recycle waste electrical appliances, all processes rely on internal personnel, starting from consumer recycling to waste electrical appliances, and going to after-sales service department, headquarters maintenance department and headquarters manufacturing department. Such a series of processes not only cost a lot of transportation and storage costs. Also spent time and energy and manpower, the process of complex increased a lot of unnecessary costs, companies should be in electronic waste most of their dissembling processing center in a city, to recruit professional talent, for the discarded product testing, for those who did not use value of the products to scrap processing, so that you can save a lot of transportation cost. However, with operations all over China, companies cannot simply rely on their own processing centers, or they will lose more than they gain. At this time, we should look for formal dismantling enterprises, it is understood that there are 109 formal enterprises, if we try to cooperate with these enterprises, this can be a good choice to reduce the cost of reverse logistics.

3.2. Establish an independent method of reverse logistics accounting
At present, the enterprise's accounting method is still based on the traditional way, and there is no separate record of reverse logistics. However, in order to reduce the cost of reverse logistics, it is necessary to clearly know each activity of reverse logistics and the specific cost of each activity. Only by clearly understanding the specific cost of each activity can we better reduce the cost and obtain higher economic benefits. Enterprise should put the reverse logistics spun off from the original accounting entries, and the new level of reverse logistics accounting subjects, the subjects should put all the reverse logistics activities are included, for those bad record directly to the specific which one cost cost, can use the homework cost calculation method, allocation to each homework.

3.3. Establish a special reverse logistics management information system
As is known to all, technology is the primary productive force, and a good set of reverse logistics information management system in the company will be a strong guarantee for the enterprise. It can connect the relevant departments of the enterprise, and it can quickly transmit the information of return, replacement and waste items to the department and make a quick response. This is just the basic operation of the reverse logistics management information system. The system I'm talking about here is not only the information to identify waste electronics, but also the ability to choose the most appropriate recycling and processing methods and transportation routes to reduce transportation and storage costs as much as possible. However, the enterprise lacks such a system. At present, the enterprise lacks relevant data when recycling items, and only relies on unprofessional staff to analyze the quality and quantity of items. Therefore, enterprises should establish a set of reverse logistics information management system, which is a good choice in the long-term development.

4. Conclusion
By reading the relevant information, understand the waste recycle reverse logistics in our country the status quo and the implementation of relevant laws and regulations, puts forward the problem of waste recycling in China remain small processing, non-standard processing, high cost of reverse logistics and the problem such as the imperfection of the legal documents, and then aiming at these issues on the research of the electric company, after in-depth study of the reverse logistics management does not reach the designated position, reverse logistics link problems such as too heavy and complicated, in the face of these problems, puts forward and set up their own disassembly centers and the third party cooperation measures; To solve the problem of unclear cost of reverse logistics, it is proposed to set up an independent accounting account of reverse logistics and to use activity-based costing to allocate the costs that cannot be directly determined in each link.

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