

Closed-loop "Recycling + Consumption" Family Life Services Ecological Chain Boosts Used Clothes Recycling

You-Fang Chen

China Lifestyle Design Research Institute, Beijing Institute of Fashion Technology,
100029, P. R. China

Email: sxychenyf@163.com

*Corresponding author: You-Fang Chen

Keywords: Used clothes recycling, Mr. Right, Recycling + Consumption, Closed-loop ecological chain of family life services.

Abstract. Used clothes must be professionally collected and sorted to be used effectively. Professional recycling can be achieved by placing recycling bins or holding promotional events, but at a higher cost and less efficient. "Mr. Right" has been co-operated with shops where residents buy daily necessities or services frequently to carry out the recycling of used clothes, and promoted the drainage consumption of residents in these places, and then formed a closed-loop ecological chain of "recycling + consumption" family life services which has overcome the drawbacks of box recycling and holding promotional activities to collect used clothes, and brought economic benefits to recycling companies, recycling outlets and users, while achieving social responsibility.

1. Introduction

The traditional self-employed recyclers are the mainstay of the recycling of waste materials in China [1]. They walk around the communities to collect various used items from the households, such as waste paper, plastic bottles, scrap metal and discarded clothes. There are large amounts of discarded clothes in the households in China [2]. According to Guo Yan [3], most residents would prefer to store clothing in the wardrobe instead of throwing away, and the price of discarded clothes offered by the recyclers is very cheap, only 40 cents per kilogram whilst throwing away will pollute the environment. The ministry of construction stipulates that waste textiles are recyclables [4]. In order to effectively deal with the discarded clothes, there should be an effective collecting, sorting system to highly reuse the discarded clothes according to the composition properties and related industry of the used clothes.

After 2012, China's discarded clothes recycling industry enters a stage of rapid development [5], and a large number of recycling enterprises and institutions have emerged in China. These enterprises and institutions mostly place recycling bins in densely populated areas such as residential areas, universities, and company gathering places [6], meanwhile, organizing related promotional activities to collect discarded clothes.

Collecting discarded clothes by recycling bins has the advantages of preventing dampness and stains, easily preventing throwing away by mistake, having higher quality of collected clothes [6]. However, enterprises or institutions have to invest a lot of money on recycling bins. On the other hand, there are a few disadvantages, such as higher entry barriers to the communities, not foreseeing the volume of clothes inside the recycling bins in time which leads to high logistics cost and waste of manpower, lower trust of the residents caused by misleading slogan on the recycling bins, and being easily damaged by others. In addition, in order to make it easier for residents to dispose the used clothing, companies or institutions usually place the recycling bins in areas with dense crowds and spacious roads. But in cities or areas with narrow roads, recycling staff must first move discarded clothes to park trucks with tricycles or trailers, which resulted in low collection efficiency and increased process safety risks [7].

Residents are easily attracted by promotional activities to take part in used clothes collection, but they still do not know where to dispose the used clothes when the promotional activities are over, so

the recycling behaviors are not continual. “Mr. Right” has solved the shortcomings of recycling bins and collecting promotional activities by establishing a closed-loop ecological chain of “recycling + consumption” family life services.

2. Establish A Closed-Loop Ecological Chain of “Recycling + Consumption” Family Life Service

“Mr. Right” is an operational platform developed by Sichuan Yingu Zhilian Environmental Protection Technology Co., Ltd. (hereinafter referred to as Yingu Zhilian) to provide discarded clothes recycling service solutions, with the Internet, IoT information technology and SAAS system developed by the company itself [8]. On April 25, 2017, Yingu Zhilian was established. Through a few months of mode exploration and trial and error, it officially launched “Mr. Right” in August 2017 which provided an efficient, user reachable, interactive, experiential, and low cost service.

The core innovation of “Mr. Right” is to create a “recycling new retail model” and establish a “recycling + consumption” closed-loop ecological chain to truly solve the problem of the last 100 meters of users’ service. In order to motivate consumers’ enthusiasm in used clothing recycling, “Mr. Right” linked the recycling with high-frequency offline consumption based on the community.

Meanwhile, “Mr. Right” applies the self-developed SAAS service system to realize the "data" and "standardization" of the recycling chain, and establish a recycling network system.

The daily life of urban residents involves eating, wearing, and various services, including groceries, food purchases, laundry, washing hoods, and sending and receiving the package. Among all these activities, some occur at high frequencies, while others occur occasionally. For example, going to the supermarket for shopping, and going to the outlet to send and receive express may be high-frequency activities, while washing oven hood, and haircuts may be low-frequency activities. In order to integrate with these consumption scenes effectively and create value for each other, "Mr. Right" cooperated with high-frequency consuming sites to carry out used clothing recycling. At the same time “Mr. Right” promoted the drainage consumption of residents in these places, and then formed a closed-loop ecological chain of “recycling + consumption” family life services.

3. The Operational Mechanism of the Closed-Loop Ecological Chain of “Recycling + Consumption” Family Life Service

Through the “Mr. Right” platform to dispose of discarded clothes, firstly consumers need to register their environmental protection accounts with “Mr. Right” WeChat public account, and then they can directly make an appointment to order a delivery man to pick up the discarded clothes from their homes, or choose the most convenient contracted outlets for recycling. At present, “Mr. Right” has opened online recycling service in more than 200 cities nationally [8], and has signed offline recycling services outlets throughout Sichuan Province. Due to the low value of the used clothes, in order to improve the recycling efficiency, the lowest door-to-door recycling requirement is 5 kg, and there is no weight limit while with a signed branched recycling.

"Mr. Right" takes paid recycling. When consumers give the used clothes to "Mr. Right", he/she could obtain environmental friendly beans according to the weight which could be exchanged for groceries, Mobai bicycle vouchers, drip coupons, prepaid phone vouchers, etc or directly spend environmental friendly beans as cash at contracted outlets. “Mr. Right” set up the exchange ratio of used clothes weight to environmental friendly beans. The contracted outlets will obtain corresponding income according the used clothes weight collected. The specific recycling process is shown in Figure 1 [8].

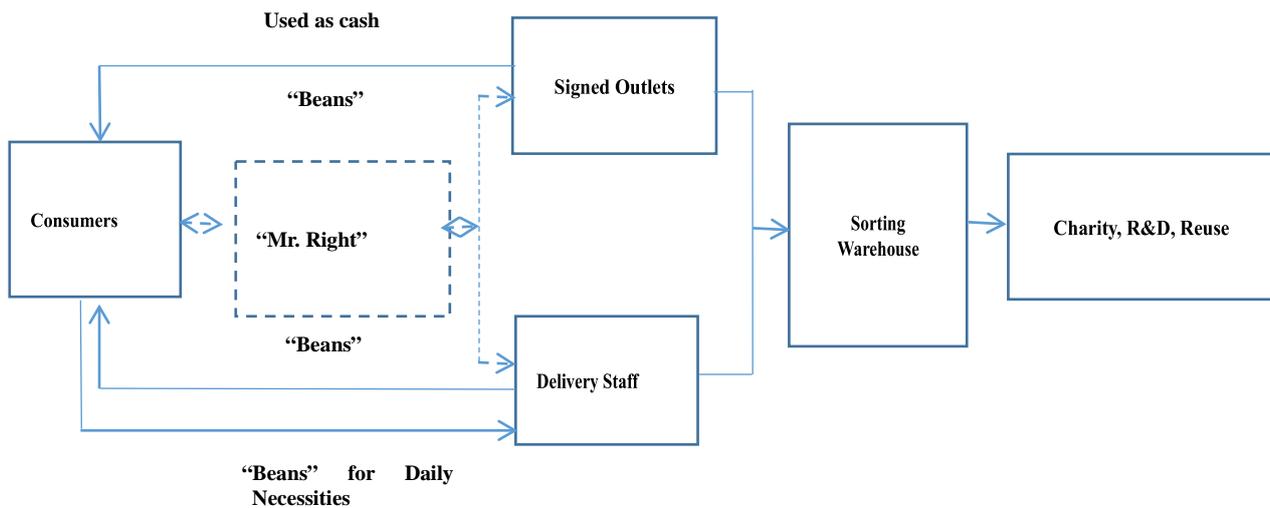


Figure 1. Recycling Process of “Mr. Right”

If the used clothes collection reaching a certain weight, “Mr. Right” will carry out effective logistics and deliver to the warehouse according to the scheduling of the platform SAAS system, and carry out professional sorting. Picking out clothes with tags on and relatively new clothes, after professional cleaning and disinfection, the clothes will be placed in the "unmanned wardrobe" set by "Mr. Right” which will be claimed free of charge by whoever needs only after filling some necessary information. The remaining clothes are sorted again. Part of them are used for new material research and development, and most of them are for reuse.

4. Benefits of Closed-Loop Ecological Chain of “Recycling + Consumption” Family Life Service

The closed-loop ecological chain of “recycling + consumption” family life service established by “Mr. Right” recycling service platform can bring economic benefits to recycling enterprises, recycling outlets and consumers, and at the same time assume social responsibility.

4.1. Recycling Companies Attain Cost Saving

Since used clothes are difficult to degrade, they used to be incinerated or landfilled, so they must be placed in special recycling bins or recycled manually. At present, the common iron recycling bins are roughly at about 1,000 yuan each in China, and recycling bins made with better materials or with other functions are thousands of yuan each(Interview with the manager of Shanghai Green Source Industry by the author in July 2017.). If it is purely manual, the recycling cost will be higher as the minimum wage increases and the price of fuel rises.

The “Mr. Right” service platform is used to reserve the reservation in advance, and the recycling staff do not have to wait, saving labor costs; the lowest weight of used clothes collection must be 5 kg, which improves the recycling efficiency. When consumers choose to go to the outlet to deliver discarded clothes, Yingu Zhilian will not have additional expenses because these outlets are already there.

4.2. Consumers Make Effective Use of Living Space, Gain Certain Income and Achieve Social Responsibility

Nowadays, housing is expensive in the city in China, and the living area and storage space are limited. With the consumption upgrading and the popularity of fast fashion, people are accelerating the renewal of clothing. If left the used clothes pile up in the wardrobe, consumers will find that there are lots of clothes in the wardrobe, but lack of suitable clothes to wear. These used clothes have become chicken ribs, if simply throwing away, they will pollute the environment. "Mr. Right"

helps to solve the painful points of many families.

Different from collecting used clothes by recycling bins and some charity institutions, “Mr. Right” takes paid recycling. In addition to obtaining certain remuneration, consumers can also enhance their sense of social responsibility, protecting the environment, using effectively and saving resources when disposing used clothes.

4.3. Recycling Outlets Get Consumption Drainage, Revenue Generation by Collecting Used Clothes

The outlets that have signed contracts with “Mr. Right” are mainly supermarkets selling groceries, some are laundrettes, and some are express delivery outlets. These outlets are mostly service-oriented businesses, and their businesses have peak and downside period. The owner can earn more income by increasing a business to collect used clothes effectively using the leisure time. Meanwhile, the owner can gain draining the consumption of the store without extra labor, water, electricity, rent and other costs.

4.4. Reduce Urban Waste

“Mr. Right” collects used clothes that may be thrown into the trash can, allowing the people in need to wear them again or reusing them effectively after sorting. All these activities save original resources, and reduce urban waste discharge, protect the environment, and benefit the country.

5. Conclusions

By using the Internet and IoT information technology, “Mr. Right” has created a closed-loop ecological chain of “recycling + consumption” family life services which integrating social forces, allowing residents and convenience supermarkets to participate in the recycling of used clothes actively, not just relying on recycling companies. It is a new way of used clothes recycling industry in China.

6. Acknowledgment

This work was supported by Study on the Present Recycling Condition and Recycling Model Discarded Garment in Beijing Based on the Classification of Renewable Resources (15JDJGB010), as well as sponsored by Study on the Recycling of the Discarded Garment and the Resource and Benefit System in Beijing - Tianjin - Hebei Cooperation (PXM2016_014216_000022), and by Study on the Cultivation and Education of Green Consumption in Beijing Residents' Clothing (SZ20171001209). This work was also supported by Research on Self-recovery and Reuse Mode of Used Clothes of Brand Apparel Companies in Beijing Based on Environmental Responsibility (16JDYJB035).

7. References

- [1] Guo, Yan, Recycling and Reuse of Textile Waste[J], Renewable Resource and Circular Economy, 2013. Vol. 6. No.1: 28-30.
- [2] Gu, Mingming, Tang, Shijun, Current Situation and Developing Direction of Textile Waste Comprehensive Utilization[J], Renewable Resource and Circular Economy, 2012. Vol. 5, No. 1: 27-29.
- [3] Guo Yan. Researching on the system construction of the residents' old clothes collecting and recycling in Beijing and Shanghai [J]. Renewable Resource and Circular Economy, 2014. Vol. 7, No. 3: 29-33.
- [4] Ministry of Construction. Classification of urban domestic waste and its evaluation criteria [Z]. <http://www.cn-hw.net/html/8/200612/875.html>.

- [5] Guo Yan. Research on the recycling and reuse system and system construction of waste textiles in China [J]. *China Fiber Inspection*, 2018 (2): 41-43.
- [6] Chen Youfang. Recycling waste textiles based on recycling bins [J]. *Woolen Textile Technology*, 2016(1): 69-72.
- [7] Hao Shuli. Analysis on old clothes recycling and reusing system of Shanghai [J]. *Renewable Resource and Circular Economy*, 2015. Vol. 8, No. 5: 22-24.
- [8] <http://m.shouyixiansheng.com/instructions>.