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A new recycling mode of WEEE under the background of "Internet +" in China

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With the technological innovation and market expansion, the update of electric and electronic equipment (EEE) is continuously accelerate. China is the largest emerging market region in the world with both global manufacturing and consuming market. Rapid economic growth, coupled with urbanization and growing demand for consumer, is expected to increase the consumption of EEE, thus increase the waste electric and electronic equipment (WEEE) rapidly in this region, posing a severe threat to the environment and sustainable economic growth. In view of the environmental impact induced by WEEE and the high residual value of the materials contained in WEEE, the research on reverse logistics and closed-loop supply chain with recovery attracts more attention. The first purpose of this study is to analyze the implementation of strategies and technologies of WEEE recovery, and mainly focuses on the current status of WEEE and corresponding responses adopted so far in China. Moreover, since 2015, "Internet+" recycling, a new recycling mode, has been developing rapidly in China. This new recycling program takes a revolution of the traditional recycling method, which implements the internet idea, technology, and mode into the way of recyclable resource recycling. Subsequently, many recycling centers have developed a dual-channel reverse supply chain by introducing online recycling channels on the basis of offline third-party recyclers (TPR). Considering the regional differences in China, it is necessary to help recycling centers to formulate pricing strategies, so as to develop cost-effective recycling technologies. To solve the problem, a pricing model of recycling centers and the TPR in a dual-channel reverse supply chain in two different regions are formulated, and a case study is used to illustrate the proposed model. The results of the study will be able to supply more information on the sustainable development of "Internet+" recycling for the Chinese government and recycling centers.

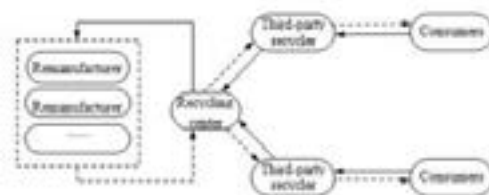


Figure 1. Depiction of the reverse supply chain in two different regions

Recent Publications

1. Li Peng, Wu Di. A Comparison Study of Stochastic- and Guaranteed-Service Approaches on Safety Stock Optimization for Multi Serial Systems [C]. 2017 3rd International Conference on Environmental Science and Material Application. 2018.
2. Wu Di, Li Peng, Chen Juhong. Pricing Models for Dual-channel Reverse Supply Chain Considering Regional Differences under "Internet Recycling" Model in China. 2017 3rd International Conference on Environmental Science and Material Application, 2018.
3. CHEN Haoxun, Li Peng. Optimization of (R, Q) Policies for Serial Inventory Systems Using the Guaranteed Service Approach, Computer

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4. Industrial Engineering, 2015 (80) :261-273.
5. LI Peng, CHEN Haoxun, Optimization of (R, Q) policies for two-level distribution inventory systems with operating flexibility, Networking, Sensing and Control, 2015.
6. Li Peng, CHEN Haoxun, Che Ada. Optimal Batch Ordering Policies for Assembly Systems with Guaranteed Service, International Journal of Production Research, 2013 (51):6275-6293.

Biography

Li Peng, born in August, 1984, a lecturer in the Department of Economics and Management at Xi'an University of Technology, China. She received her Ph.D degree in system security and optimization in 2013 from the University of Technology of Troyes, France. Her main research focuses on supply chain management, system optimization and reverse logistics. She has built a guaranteed service model (GSM) to optimize the multi-echelon inventory system, this creates new pathway for reducing the system cost and improving the customer satisfaction. Moreover, this approach is extended to optimize the reverse logistics and closed-loop supply chain..

Notes: