Green Supply Chain Management and Implementing Strategy

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Abstract: Green Supply Chain Management is a kind of model of sustainable development for modern enterprises, which unites the enterprises’ economic benefits, environmental protection, resource utilization and biological balance. It has great meanings to research enterprises’ sustainable development under new situations. The article expounds the definition of Green Supply Chain Management. And we believe that Green Supply Chain Management should include Green Designing, Green Production, Green Package, Green Marketing and Green Recycling. Basing on these, we propose its implementing ways, which include formulating relevant policies, building Green Resources Database actively and valuing BPR technology.

Keywords: Green Supply Chain Management; Connotation; Ways

1 Introduction

With the flying development of human society, we are facing some problems, such as exhaustion of resources, environmental pollution seriously, biological unbalance. The development of industry is in a dilemma. The problem that we all care about is how to use the limited resources to make the social and the enterprises’ benefits as much as possible. Therefore, it has great meanings in theory and in reality to unite the enterprises’ economic benefits, environmental protection, resource utilization and biological balance, and seek Green Supply Chain Management with suitable environment and resources, to promote the sustainable development of the enterprises and the society.

In foreign countries, the research of Green Supply Chain began from Green Purchasing. In 1994, Webb, L. researched the influence on the environment from a part of production. And he advised we should choose suitable raw materials according to environmental standard. At the same time, we should pay more attention to recycle. And he also proposed the definition of Green Purchasing \( ^{(1)} \). After that, the National Scientific Funds (NSF) in USA provided $400,000 financial aid to the Manufacture Research Consortium (MRC) in Michigan State University. They had an item which was called “Environmental Responsible Manufacture”. In 1996, they proposed the definition of Green Supply Chain, and Green Supply Chain Management became the important content \( ^{(2)} \). Then more and more American scientists researched the Chain. They drew the environmental factor into the model, and used the lifecycle method. They put forward the steps to implement the Chain and an ordinary designing pattern. In a word, the research achievements were remarkable in the world in the past ten years. In our country, the research of Green Supply Chain Management is in the elementary step. The research emphasizes on the introduction of definition, integrated characteristics, architecture, and the main contents. Some articles about strategy implementing are recapitulative, without quantity analysis and systemic analysis.

The article summarizes and concludes the connotation and characteristics of Green Supply Chain Management. After that, we make further efforts to expound the connotation and put forward the main implementing ways.

2 The Connotation of Green Supply Chain Management

2.1 The definition of Green Supply Chain Management

In 1996, the Manufacture Research Consortium (MRC) in Michigan State University first put forward the definition of Green Supply Chain Management. The definition comprehensively considers the environmental influence and to optimize resource utilization in the Supply Chain in manufacture industry. Now we have no generally accepted definition of Green Supply Chain. The book, The People's Republic of China National Standard Physical Distribution Terms, doesn’t include the definition.
According to reference other scholars’ opinions, we define it just as: Green Supply Chain Management can also be called Environmentally Conscious Supply Chain Management. It means we would use new ideas to biologically design production’s exploiting and designing, raw materials purchasing, manufacture organizing, distributing and supplying, consuming, and recycling. Every department in one enterprise and every enterprise in the Chain could cooperate closely, which make the whole Supply Chain system optimization in management in the external and internal environment.

2.2 The contents of Green Supply Chain Management

Green Supply Chain Management is a kind of modern management model in the whole Supply Chain Management, which considers the environmental influence and efficiency. It should keep in touch with suppliers, manufacturers, sellers, and consumers. The detail contents include: Green Designing, Green Production, Green Package, Green Marketing and Green Recycling\(^3\). The main flow is as the following table:

<table>
<thead>
<tr>
<th>Green Designing</th>
<th>Green Production</th>
<th>Green Package</th>
<th>Green Marketing</th>
<th>Green Recycling</th>
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</table>

2.2.1 Green Designing

In the whole designing process, Green Designing would consider the influence on resources and environment. It would optimize the relevant designing factors, besides the functions, quality, development cycling, and costs. All these could make the production get the lowest degree to influence the environment and consume materials. Green Designing surveys the products’ lifecycle with the idea of sustainable development. And it would be analyzed and assessed systematically at the beginning of product development, so that we could reduce the influence on the environment. The step of product development should contain 3R (reduce, reuse, recycling), without waste designing.

2.2.2 Green Production

Green Production requires the enterprises to take clean production method, take new technology, and reduce raw materials and resources, so we could realize low input, high output and low pollution. We should try our best to eliminate the environmental pollution in the producing process. The enterprises should strengthen their management, such as using the technology without waste or low waste, reforming technologies and instruments, and replacing the poisonous materials. They could reduce the wastes and the contaminations at the beginning.

2.2.3 Green Package

Package would be no any using for consumers. It would not only pollute the environment, but also waste package materials. Green Package intends to implement Green Package Designing, optimize package structure, and reduce package materials. At the same time, it has considered to put package materials back to use, to deal with them and to recycle them.

2.2.4 Green Marketing
Green Marketing is very important in the Green Supply Chain. The marketing, which contains market research, product development, product registration, and sales promotion, should keep biological balance, and pay more attention to environmental protection. Enterprises, consumers and our society could coordinated develop. Green Marketing exists in every corner in the marketing. It is a new marketing idea and a new implementing way with sustainable development and biological balance.  

2.2.5 Green Recycling  
Green Recycling should be contained in a complete Green Supply Chain. We always recycle products and packages. Green Recycling, as a kind of physical distribution from reverse direction, represents enterprises’ development and their environmental protection images. Green Products would think about the costs of dealing with and recycling the products and some parts. We should use the lowest cost to get the highest returned value.

3 The Implementing Ways of Green Supply Chain Management

3.1 Formulating relevant policies  
Our country is a developing country, so we should pay more attention to protect the environment. Compared with the developed countries, our country’s economic development lags its plans. Although some enterprises have formulated some “Green” policies, the implementing couldn’t make us satisfied. Now we have seldom perfect Green Management Policies in the Chain. The enterprises in our country have to choose Supply Chain Management to get competitive advantages. So it is very important to formulate relevant policies of Green Supply Chain Management. When we formulate the policies, we couldn’t rush into mass action. We should choose the successful industries which have taken Green Supply Chain Management in foreign countries, the influenced industries, which with great volume of exports and always meet Green trade barriers, and some Green industries which are accepted by consumers.

3.2 Building Green Resources Database actively  
According to the framework and contents of Green Supply Chain Management, Green Supply Chain Management is varied. So it is very difficult to implement the Chain with one or several enterprises’ research and technologies. With the development of our society and the enterprises, the Chain has to meet the requirements from the outer conditions. So the government and the relevant organizations should build Green Resources Database actively. The Database should include Green Manufacture Technology, Green Transportation, Green Product Patent, Green Materials, and Green Management Technology. They could afford information and intellectual supporting to Green Supply Chain Management.

3.3 From “point” to “side”, developing step by step  
The designing and management of Green Supply Chain Management need to be adjusted and assembled with systematic and unitary perspective. It is a complex system to implement Green Supply Chain Management. The enterprises in the Chain and the society couldn’t get sustainable development. We should begin from every link, from “a point” to “a small chain”, from “a small chain” to “a long chain”, to get succeed step by step.

3.4 Manufacturers setting up “win-win” beliefs  
The manufacturers should set up strategic union with suppliers and sellers. The union benefits to recycle package, which could save producing cost and protect the environment. The central enterprises should afford trainings and technological support to suppliers and sellers. These enterprises have powerful strengths and have a plenty of money to research environmental protection. The manufacturers are the same with suppliers and sellers, because they are restricted by the environment. If one supplier is closed, for obeying the law of environmental protection, the whole Chain has to stop. So the trainings or technical supports from the central enterprises could improve the management, and ensure them safe.
3.5 Valuing BPR technology

The new Supply Chains of the central enterprises are based on their traditional Supply Chains, no matter the central enterprises begin the new Chains or improve them. The reformation needs not only the central enterprises but also the suppliers and sellers in the Chains. The globalization and the systematicness of BPR are necessary. It could make Green Supply Chain adjust to “1 E 3 C” (Environment, Customer, Competition, Change), and get optimization.

3.6 Strengthening Green Beliefs in all the staff in Supply Chain

The key to succeed Green Supply Chain Management is to set up the staff’s Green Beliefs. The top leaders should take “Green” as a part of Supply Chain. The medial leaders and grass roots should know that Green Supply Chain Management could give our society and their enterprises long returns. Every staff should work hard and take “Green” as a kind of corporate culture, setting “Green Image” and establishing “Green Brand” automatically.

4 Conclusions

Environmental pollution and exhaustion of resources are becoming seriously. Green Supply Chain Management is a sustainable developmental model after considering the above two problems. We wish it could achieve better economic benefits and social benefits. We are still facing a lot of problems to implement Green Supply Chain Management, which should be researched and reformed. Green Supply Chain Management reflects the enterprises’ Green Image, and it represents the coordinated development of modern physical distribution and the environment, which is the topic of Green Supply Chain Management in 21st century.

References