

# Research on the Operation and Management of China's Environmental Protection Waterproof Material Enterprises based on Big Data

Qiliang Hu<sup>1</sup><sup>a</sup>, Lingfang Cao<sup>2</sup><sup>b</sup> and Mei Zhou<sup>2,\*</sup><sup>c</sup>

<sup>1</sup>*School of management, Anhui Business and Technology College, JinNing Road, Hefei, China*

<sup>2</sup>*School of Business Travel, Hefei Binhu Vocational and Technical College, FangXing Road, Hefei, China*


**Keywords:** Big Data; Environmental Protection; Green; Waterproof Materials; Operations.


**Abstract:** Today, China pays great attention to environmental protection, and China's environmental protection and waterproof material companies are no exception. While accelerating their own development, they also pay attention to environmental protection investment. Relying on big data, researching China's environmental protection waterproof material companies, and deriving the operation and management methods and influencing factors of China's environmental protection waterproof material companies, environmental and competitive conditions, unbalanced production capacity layout, and no incentives for dealer models. In this way, it puts forward suggestions for structural adjustment, improvement of production capacity layout, and improvement of the dealer model with the help of big data. In this way, we will promote the healthy operation of China's environmental protection and waterproof material enterprises, truly achieve green environmental protection products, and protect the environment.


## 1 INTRODUCTION

After the epidemic, China's economy has gradually recovered, and all industries have entered a track of gradual growth. However, the real estate industry has been affected by the country's continuous "tightening" regulation at the macro level in recent years, and its various economic indicators show that the entire real estate industry has gradually entered a state of slowing growth. (1) In the "14th Five-Year Plan", there is still a certain gap between China's urbanization rate and developed countries, which is only less than 60%. China's national policy will also focus on promoting the process of urbanization (Peng 2021). The advancement of the process of urbanization will attract a large number of people from rural to urban areas, which will inevitably stimulate people's demand for housing in the future. The country officially lifted the three-child restriction on June 1, 2021, encouraging everyone to have three children, which also shows that the demand for

houses in the future market will increase. (2) The environmental protection and waterproof industry materials are mainly driven by the demand for infrastructure and real estate investment. Due to the gradual slowdown in the growth rate of the real estate industry, the growth rate of the environmental protection and waterproof industry will inevitably be affected, and the speed will slow down. According to the big data statistics of China Construction Environmental Protection and Waterproof Industry Association, the scale of China's environmental protection and waterproofing industry will be 217.4 billion yuan in 2020, and companies with revenues of more than 20 million will achieve a total revenue of 108.7 billion yuan. The environmental protection and waterproofing industry standard has been upgraded from the previous minimum 5-year warranty period to 2019 to 20 years for roof environmental protection and waterproofing, 15 years for bathroom environmental protection and waterproofing, and 50 years for underground engineering (Nan 2021). Only

<sup>a</sup> <https://orcid.org/0000-0002-4621-048X>

<sup>b</sup> <https://orcid.org/0000-0001-9932-7721>

<sup>c</sup> <https://orcid.org/0000-0001-8157-6746>

by continuously improving its own internal operation and management capabilities can the healthy operation and development of China's environmental protection and waterproof material companies be improved, which is of great significance to the company's long-term development and environmental protection.

## 2 METHODS

### 2.1 Big Data-based Environmental Protection Waterproof Material Business Operation Management Method

Enterprise operation management includes narrow and broad sense. The narrow sense of operation management is mainly in the production management process. It mainly refers to the sorting of production process, the arrangement of production materials, the organization of production activities, etc., to ensure the quality and service of products and services. Efficiency benefits (Du 2021). In a broad sense, it covers all aspects of the business process, mainly market-oriented organizational structure design, production management arrangements, marketing model selection, and product and service management. This article discusses operation management issues from the perspective of big data, so the main characteristics of operation management in a broad sense are analyzed (Wang 2018). (1) Each company has different resources, development history, and leaders' concepts. Therefore, the company's operation and management capabilities must be personalized products and cannot be easily copied or replaced by other competitors. (2) Market competition is actually the competition of business operation and management. The higher the business operation and management ability, the higher the market's recognition and satisfaction of the enterprise, and the higher the market share. Therefore, the business operation and management ability is also the ability of the enterprise to make profits.

### 2.2 Factors Influencing the Operation of Environmentally Friendly Waterproof Materials Companies based on Big Data

Based on the analysis of big data, in the market competition in the environmental protection and

waterproofing industry, most of the customers faced are large real estate developers or state-owned investment platforms for infrastructure construction (Fang 2018). Environmental protection waterproof materials generally account for only 2%-3% of the project cost in real estate projects or infrastructure projects. If labor costs are deducted, the proportion of environmental protection waterproofing costs is even less than 1.5%. Whether the building leaks or not directly affects the product quality and corporate image of the B-end customer, so the B-end customer's sensitivity to the quality of environmentally friendly waterproof materials is far greater than the price sensitivity (Bu 2016).

Although the environmental protection and waterproofing industry is an industry with low barriers to entry, because B-end customers are highly sensitive to quality, the level of technological development and innovation capabilities of enterprises in the industry determines whether the company can meet the needs of different B-end customers for environmental protection and waterproof materials. Different requirements. The higher the level of technological development and innovation capabilities, the higher the quality standards of new products, which in turn can form a competitive advantage. Therefore, the R&D capability of the company is also one of the key factors in the business operation and management capabilities.

## 3 RESULTS

### 3.1 The External Environment of China's Environmental Protection Waterproof Materials based on Big Data

Through big data analysis, environmental protection waterproof material companies have been intensively working in the environmental protection and waterproofing industry, and they are national high-tech enterprises. Its products cover more than 100 varieties of building environmental protection and waterproofing, home improvement environmental protection and waterproofing, and have more than 200 core national patents, 2 national key new products, and 5 FM certified products.

### 3.2 Market Competition Status of China's Environmental Protection Waterproof Material Companies based on Big Data Analysis

In 2020, the top ten rankings of the top 500 environmentally friendly waterproof material brands for the top 500 real estate companies, it can be seen

that East yuhong has always been the highest, and the trend is increasing. The top three brands are East yuhong, Keshun, Hongyuan. Zhuobao ranks from the market in 2015 No. 4, with a market share of 9%. By 2020, the market will rank No. 5, with a market share of 6%. Its market competitiveness has shown a downward trend in the past two years, as shown in Table 1.

Table 1: Proportion of Top 500 Housing Enterprises' Preferred Brands of Environmentally Friendly Waterproofing Materials.

Enterprise	2015	2016	2017	2018	2019	2020
East yuhong	29%	30%	32%	25%	36%	36%
Keshun	14%	15%	20%	19%	20%	21%
Hongyuan	10%	14%	14%	19%	8%	7%
Zhuobao	9%	9%	11%	9%	8%	7%
Desheng	6%	5%	5%	9%	8%	6%
Landun	5%	5%	4%	7%	6%	6%
Yuwang	5%	4%	3%	4%	6%	5%
Yuhong	3%	4%	3%	2%	2%	5%
Daming	3%	3%	2%	2%	2%	2%
Jingyushan	1%	2%	2%	1%	2%	2%

### 3.3 Unbalanced Layout of China's Environmental Protection and Waterproof Material Production Capacity

Through big data analysis, judging from the average annual precipitation in various regions of China, the rigid demand of the environmental protection waterproof market is mainly concentrated in East China, South China, and North China. Customers in

areas with more rainfall have higher requirements for environmental protection and waterproof levels. And the more developed the customers in the developed areas, the higher the importance of environmental protection and waterproofing and the higher the brand awareness. Customers in the environmental protection and waterproofing industry will also use the supplier's supply capacity and order response speed, that is, the delivery radius, as the key selection criteria during the centralized procurement process, as shown in Table 2.

Table 2: Production capacity layout of China's environmental protection and waterproof material companies.

Enterprise	East China	South China	West China	North China
East yuhong	Shanghai, Hangzhou, Xuzhou, Wuhu, Dezhou	Guangzhou, Huizhou, Quanzhou	Kunming, Deyan, Chongqing	Beijing, Tanshang
Keshun	Kunshan, Nantong, Dezhou	Chongzuo,	Chongqing	Beijing
Yuwang	Jiujiang, Chuzhou	Qingyuan	Meishang	Xuchang
Hongyuan	Changzhou	Shaoguang	/	/
Zhuobao	Suzhou	Fushang, Huizhou	/	Tianjing

### 3.4 No Incentives for China's Environmental Protection Waterproof Material Distributor Model

The sales model of China's environmental protection waterproof materials is a "channel + direct sales" dual

model. If the distributor and the branch exist in the same city, sometimes the two will compete for the project, which not only affects the enthusiasm of the distributors, but also discourages the enthusiasm of internal employees. In terms of the sales model, in the "channel + direct sales" dual model, the channel model is divided into engineering channels and retail channels. However, in the process of setting up the

internal organizational structure, the project management network overlaps with the project channels in marketing, which is also based on the project management set up in each area. At present, the management of dealers is a traditional distribution

model, which transfers the pressure of project advancement to dealers. The amount of dealers' funds determines the size of the project to be undertaken and has a certain impact on the degree of customer adhesion, as shown in Figure 1.

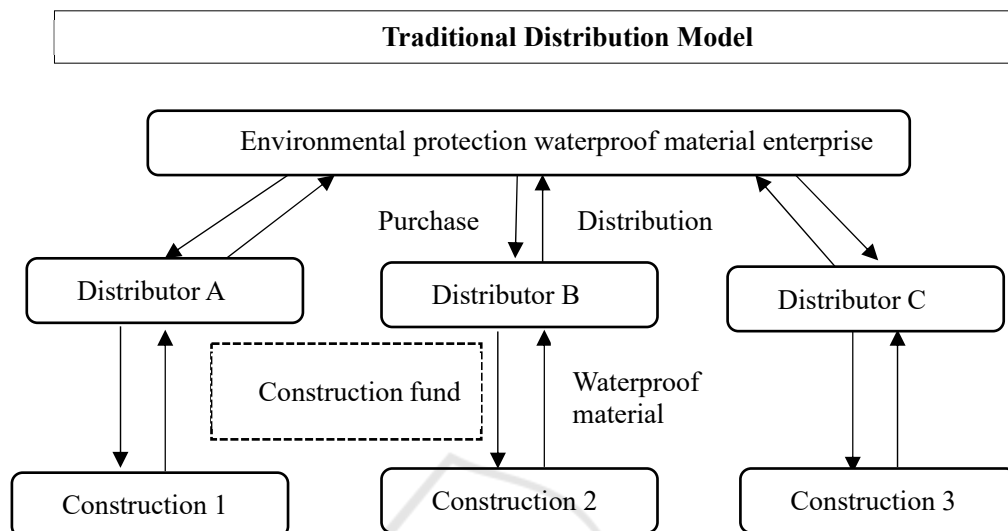


Figure 1: Traditional Distribution Model.

## 4 CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Relying on Big Data to Market-Oriented Organizational Structure Adjustment

Improve the sales model, combine the direct sales model in the marketing network with the internal engineering management of the enterprise, and integrate the engineering channels in the channels, thus establishing a multi-dimensional engineering marketing network. Through regional integration, the original engineering project network has been optimized, which is conducive to engineering channels to give play to their regional advantages on the basis of the original sales, complementing direct sales, and at the same time shift the focus of dealers to retail channels to build a civil building materials marketing network.

### 4.2 Relying on Big Data to Improve Production Capacity Layout with Distribution Radius

The optimization of the organizational structure of China's environmental protection and waterproof

material enterprises has avoided the plethora of institutional personnel, stimulated the enthusiasm of distributors in various places, and also helped to release more energy to expand the layout of the enterprise's production capacity. Considering the distribution radius of the company, increase production bases in East China, Central South and Northwest China. As the current industry standards are improving, all kinds of small environmental protection and waterproofing companies are gradually being eliminated. You can take advantage of brand and technological innovation to acquire or merge small and medium-sized environmental protection and waterproofing companies in the proposed investment area. This can achieve low investment, short time, and rapid improvement of production capacity layout.

### 4.3 Relying on Big Data to Improve the Dealer Model with Incentives as the Guide

Improve the dealer model, shift from the past cooperation model to the partnership model, that is, the dealers who have been approved by the company will jointly invest in the establishment of an industrial investment company in a certain proportion. After the establishment of the new company, when the project

needs to be advanced, it will provide more favorable credit conditions to reduce the financial pressure on the dealers.

The partnership-style distribution model, with equity as the link, embodies the concept of revenue sharing and risk sharing, and provides dealers with a

higher level of cooperation platform, effectively strengthening the enthusiasm of dealers, and reducing the direct sales process and channels of the company. The possibility of conflict in sales, as shown in Figure 2.

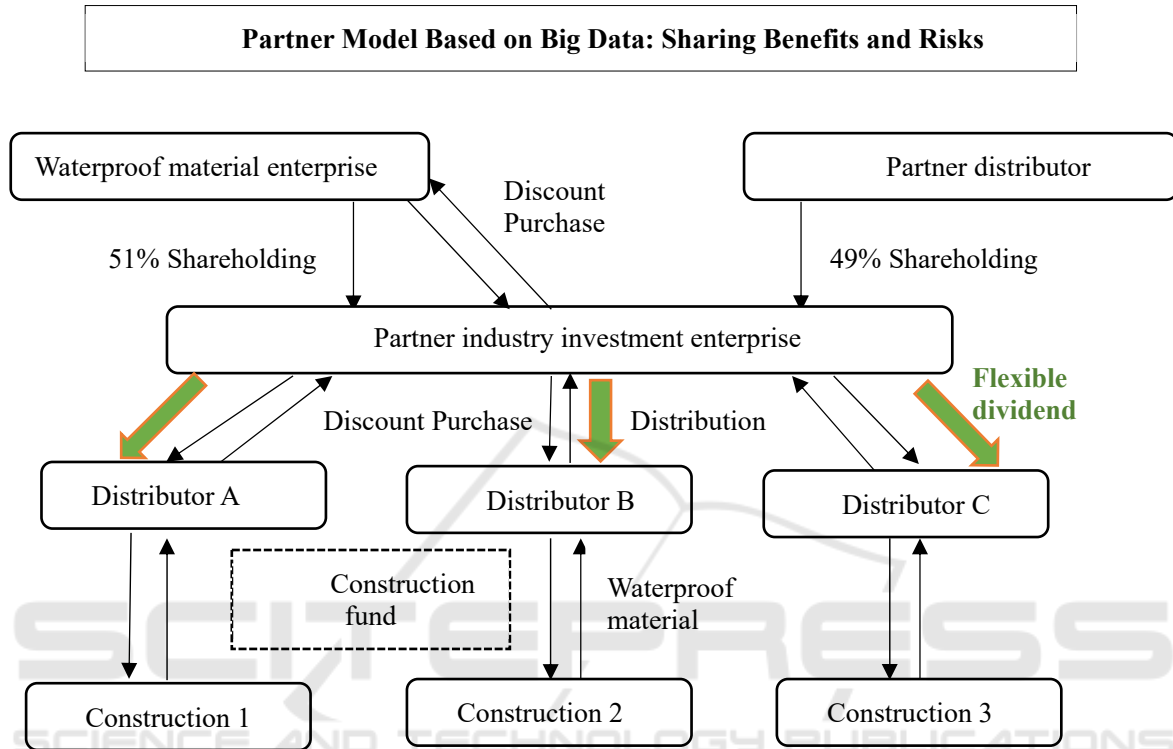


Figure 2: Partnership Dealer Model.

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