

## Research on Quality Evaluation Model of Green Marketing Management of Grid Corporations Facing "Internet +"

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**Abstract.** This paper puts forward the "Internet +" green marketing management quality assessment model, which includes three parts: "Power Grid Corp marketing management quality evaluation system", "Power Grid Corp based marketing quality evaluation system based on big data" and "Power Grid Corp marketing management quality optimization strategy system". Expand the application of qualitative and quantitative research methods in the field of power marketing environment assessment, effectively improve the accuracy and credibility of research results; try to make full use of big data, computer, artificial intelligence technology, improve the efficiency and accuracy of power marketing environment and marketing management quality assessment. It provides guidance for electric power companies to accurately grasp the changes of marketing environment, systematically and scientifically apply the quality optimization strategy of electric power marketing management, and provide strong guarantee for improving the core competitiveness of electric power companies.

### Introduction

International research on the theory and application of power system reform and power marketing is more in-depth, especially in the United States as a typical representative. The focus of U.S. electricity market reform is "deregulation". The core link is introducing competition on the generation side. Power companies with regional monopoly are divided and reorganized according to "distribution and distribution". At the same time, competition is introduced in the wholesale market and the electricity market, and the electricity price is determined by the market. In the long-term market competition, a series of marketing strategies have been innovated. Product strategy, implementation of quality strategy, positioning strategy, customization strategy and value-added service strategy combination. In addition, the U.S. Electricity Sales Corporation pays more attention to user-centered, providing customized products and diversified value-added services for users to achieve win-win with users.

In the field of marketing management quality evaluation, there are mainly three aspects in the world: (1) market concept evaluation. It mainly evaluates the market concept of top managers in power enterprises; (2) the evaluation of the completeness of enterprise marketing system. Not only refers to the level of information accumulation of market departments, but also mainly examines whether enterprises have established cross-sectoral and open marketing information systems; (3) marketing mechanism evaluation. The marketing communication and coordination mechanism of power companies across functional departments aims at evaluating the efficiency and competitive potential of enterprises in marketing operation.

In the field of marketing management of power companies, Chinese scholars mainly focus on the characteristics of power products, and on the basis of the research on the use link, sales link and social responsibility involved in power production, mainly adopt qualitative research methods to study the macro-environment of power market, the intelligent system of power marketing, the innovation level of power marketing services, the informatization of power marketing. Power marketing environment, power marketing strategy and other aspects of research[1]. related research Key Words are shown in Fig. 1.

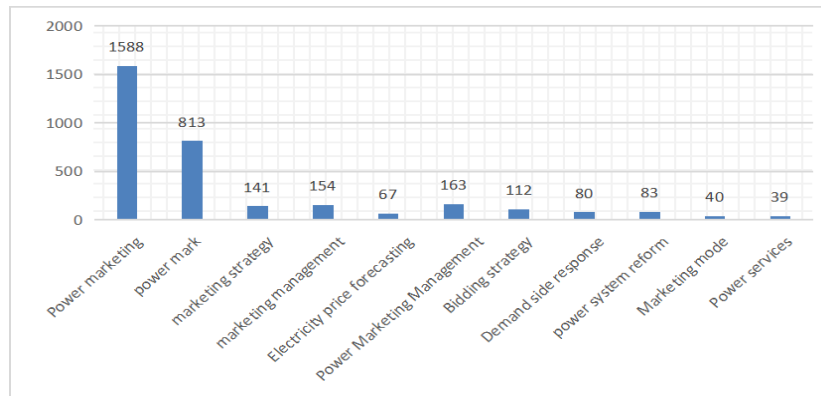


Figure 1. Distribution of Key Words in Hot Research in Recent Five Years

From the research status at home and abroad, we can see that the evaluation of marketing management quality of electric power companies has begun in the world, and more from the internal micro-environment of enterprises. However, the theoretical research on the evaluation of marketing management quality of electric power companies in China has not yet made substantial progress. At present, it only stays at the level of how to build the marketing environment of electric power companies, while the existing marketing management of electric power companies has not yet made substantial progress. How about the quality? What problems still exist? How to establish a scientific index system for evaluation? How to use big data tools to evaluate marketing management? How to change the marketing environment of Pulse Power Company from the perspective of network public opinion? How to put forward marketing management optimization strategy based on accurate, scientific and dynamic marketing management quality evaluation? These are the main problems to be solved at present[2].

### Necessity of Quality Assessment of Green Marketing Management in Power Grid Company

Since the publication of Several Opinions on Further Deepening the Reform of Electric Power System in 2015, the "fair, open, orderly, competitive and complete" power market system has been gradually improved. Under the new power market environment, the profit model of the power grid has gradually changed from the profit model of gaining the income from the purchase and sale price difference to the profit of charging the overcharge according to the transmission and distribution price approved by the government. With the introduction of competition at the power selling side, a relatively fair and standardized power market platform will gradually come into being. In this process, great changes have taken place in the macro and micro environments that power grid companies are facing in marketing management activities. Therefore, in order to improve the quality of marketing management, grid companies should carry out a comprehensive and accurate evaluation of the quality of marketing management in accordance with the requirements of the third party evaluation of the state, and then understand the difficulties and pain points of the power system reform. With the opportunity of introducing competition on the power selling side, they should uphold the concept of "Internet+", implement the "green development" strategy, and take targeted measures to comprehensively enhance the core of enterprises. Heart competitiveness, and then to ensure the continuous improvement of the company's marketing management quality[3]. Therefore, this paper has important theoretical and applied value.

**The Needs of Electric Power System Reform.** Electric power system reform brings opportunities and challenges to power grid companies, and evaluation is one of the most important means and tools to help reform, seize opportunities and face challenges directly. Through the evaluation, we can diagnose the key problems of power grid company in the process of power reform. Understanding the difficulties of the reform and concentrating the company's superior resources to break through, it has become the leading force and symbolic enterprise in the reform of the electric power system.

**The Needs of Enterprise Core Competence Construction.** From the fusion level of "Internet +" power marketing line, the company applies advanced technology such as big data, artificial intelligence, Internet of things, mobile communication and so on to evaluate the efficiency and effectiveness of marketing resource integration, marketing tool construction, marketing channel construction and marketing strategy implementation. It can guide power grid companies to improve their core competitiveness from the aspects of intangible assets construction, human resources construction, win-win culture construction and green brand construction.

**The Need of Improving the Quality of Marketing Management.** The results of marketing environment change and marketing management quality evaluation can guide grid companies to formulate strategic plans scientifically, continuously improve and innovate technology, and continuously build win-win cooperative competitor relationship in response to marketing environment change. Moreover, it has a strong guiding role in the formulation of optimization strategies such as product, pricing, channel construction and precise service, and can provide an important guarantee for the implementation of the national electric power system reform policy.

### **The Construction of Power Grid Corp Green Marketing Management Quality Evaluation System Oriented to "Internet +"**

The Power Grid Corp green marketing management quality evaluation system for "Internet +" includes three parts: Power Grid Corp marketing management quality evaluation system, Power Grid Corp marketing management quality intelligence evaluation system based on big data, and Power Grid Corp marketing management optimization strategy[4].

Table 1 Marketing Environment Index System of Power Grid Company

Macroscopic micro environment	Primary indicator	Secondary indicators
Macro environmental assessment	political	Institutional perfection
		Energy conservation and emission reduction policy
		Low carbon development policy
		Power industry policy
	economic	Economic growth rate
		Economic restructuring process
		Balance of economic development
	society	Resident income level
		Lifestyle change
		Environmental awareness
	technology	Grid investment
		Grid reliability
		Grid flexibility
		Power structure
Microenvironmental assessment	Internal environment	Company operation level
		Business concept
		Organizational structure
	Power user	Customer operation
		Customer data technology use
		Customer expectation
		customer satisfaction
	competitor	Alternative energy competitiveness level
		Competitive level of electricity sales companies
	society	Media communication efficiency
		Public opinion management
		Brand Building

**Design of Quality Assessment System for Marketing Management of Power Grid Company.** The aim of marketing management quality evaluation of power grid company is to provide scientific basis for the improvement of marketing management level and the implementation of

optimization strategy. Although the formation of marketing management quality of power grid company is closely related to the marketing process, under the background of power system reform, the market environment is changing rapidly. It is obvious that discussing marketing process management, marketing effect evaluation and marketing management quality optimization will deviate from the market and lack practical application value. Therefore, this part of the evaluation focuses on the evaluation of the marketing environment of power grid companies and the evaluation of green marketing effect of power grid companies.

**Marketing Environment Assessment of Power Grid Company.** Based on the theory of system theory, this paper combines qualitative research such as literature analysis, grounded research and quantitative research such as big data analysis, regression analysis and hierarchical analysis to study the marketing environmental impact factors of power grid companies, the construction of marketing environmental assessment indicators of power grid companies, and the marketing environmental assessment model of power grid companies. In-depth analysis of internal and external factors affecting the marketing environment of power grid, mining the driving force of marketing environment construction, building a systematic and comprehensive evaluation index system of marketing environment of power grid company based on questionnaire data and network objective data, and building a marketing environment evaluation model of power grid company based on multi-scale convolution neural network theory. The specific evaluation index system is as follows: Table 1.

**Evaluation of Green Marketing Effect of Power Grid Company.** Guided by the results of marketing environment assessment of power grid company and based on green marketing theory, the paper not only develops the evaluation index system of marketing management effect of power grid company from three aspects of traditional economic benefits, internal marketing consciousness and customer satisfaction, but also emphasizes the unity of enterprise's own interests, consumer's interests and environmental protection interests, as well as the application of green technology and green technology. Market construction, green economic contribution and other dimensions of green marketing management effect evaluation index system research. At the same time, in order to overcome the shortcomings of subjective and objective weighting methods and improve the accuracy of weights, combining subjective and objective weights to form combination weights, grey relational analysis method based on combination weights is adopted to obtain more reasonable evaluation results. The specific evaluation system is shown in Table 2.

Table 2 Green Marketing Effect Index System of Power Grid Company

Primary indicator	Secondary indicators
Economic benefit assessment	Per capita annual electricity sales
	Annual sales growth rate
	Per capita annual sales income
	Per capita annual sales income growth rate
	Electricity bill recovery
	Unit power supply cost
	Sales profit margin
	Return on total assets
Internal marketing awareness	Marketing department personnel cultural quality level
	Marketing department marketing strategy level
	Business leadership management level
	Relevant department cooperation level
Customer service satisfaction	One household rate
	Installation industry expansion report efficiency
	Inspection and maintenance efficiency
	Customer satisfaction rate
	City user power outages
Green marketing effect	Level of interest coordination
	Green technology application level
	Green market construction level
	Green economy contribution rate

**Intelligent Evaluation System for Marketing Management Quality of Power Grid Company Based on Big Data.** The quality evaluation system of marketing management of power grid company is based on a large number of field research data, as well as massive and heterogeneous network data. In order to improve the efficiency and accuracy of the evaluation, it is proposed to develop an intelligent evaluation system of power grid public marketing management quality based on large data by using large data, information processing technology and artificial intelligence technology[5].

From the data sources, the data needed for evaluation include the text and voice data obtained by field research, and the structured and semi-structured data of the financial media of the network platform. Therefore, first of all, we plan to use big data and information processing technology to integrate power marketing environment and management effect data. Then, based on the intelligent crawler algorithm, the network data resource set of power marketing environment and management effect is formed. Secondly, research on multilingual data integration method of power marketing is carried out. Using resource aggregation technology, data identification and integration method is proposed, which integrates network data resources and offline data resources, and builds power marketing environment and management effect data set. Finally, on the basis of the corresponding data sets, the advantages of breadth, depth and accuracy of data sources with different structures are excavated, and information content and data are extracted and identified to realize efficient and intelligent evaluation of the results of marketing management quality evaluation of power grid companies, which provides assistant decision support for early warning and optimization of marketing management.

**Quality Optimization Strategy of Marketing Management in Power Grid Company.** On the theoretical level, based on the evaluation system of marketing management quality of power grid company, based on the application of the intelligent evaluation system of marketing management quality, starting from the evaluation results of marketing environment and management quality of power grid company, the optimization system of marketing management quality of power grid company is constructed, the objectives and principles of optimization are defined, and the Countermeasures of optimization of marketing management quality are put forward in view of existing problems, and the implementation of the system is carried out. Safeguard measures should be established in the form of "engineering". Finally, the most solid theory, operable practice and guaranteed results of marketing management quality evaluation and optimization strategy report of power grid companies will be formed.

## Conclusion

Based on the current situation of power market reform in China, this paper proposes a targeted and operable "Internet +" Power Grid Corp green marketing management quality assessment model. Making full use of big data, computer and artificial intelligence technology, accurately grasping the changes of marketing environment, in order to improve the core competitiveness of power companies, realize the double harvest of social and economic benefits, implement the reform policy of power system, and promote the formation of fair and standardized power market.

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