



The Application and Practice of Business Analysis in Market Forecasting

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Abstract. This article studies the application and practice of business analysis in market forecasting. Business analysis is a method of understanding markets and making predictions by collecting, processing, and analyzing business data. Market forecasting is crucial for enterprises to formulate marketing strategies and business development plans. This article first outlines the background and importance of business analysis and market forecasting, and then introduces qualitative and quantitative analysis methods such as SWOT analysis, PESTLE analysis, time series analysis, and regression analysis. Subsequently, the collection, processing, and visualization methods of business data were discussed. This article also explores the role of business analysis in market decision-making, including the formulation and adjustment of marketing strategies and the implementation of business development plans. Finally, this article also analyzes the challenges faced by business analysis in market forecasting and proposes solutions, including challenges in data collection and analysis, uncertainty and risk management, and the capabilities and roles of business analysis teams. By studying the application and practice of business analysis in market forecasting, this paper aims to help enterprises improve the accuracy of market forecasting and the effectiveness of decision-making.

Keywords: business analysis; market forecasting; market decision-making

1 Introduction

In recent years, market competition has become increasingly fierce, and enterprises need to formulate marketing strategies and decisions through accurate market predictions. Business analysis, as an important method and tool, plays a crucial role in market forecasting. Business analysis helps companies gain a deeper understanding of market conditions and make accurate predictions by collecting, processing, and analyzing business data. However, the application and practice of business analysis in market forecasting still face some challenges, such as difficulties in data collection and analysis, uncertainty, and risk management. Therefore, this article aims to study the application and practice of business analysis in market forecasting, and propose solutions to address these challenges.

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2 Overview of Business Analysis and Market Forecast

2.1 Concept and Basic Principles of Business Analysis

Business analysis is a systematic approach aimed at gaining a deeper understanding of various factors within and outside an organization to support informed decision-making. Its concept revolves around a comprehensive understanding of the business environment and how to maximize opportunities and respond to challenges in this environment. Business analysis not only focuses on financial data, but also includes various factors such as market trends, competitors, and internal processes. Through comprehensive analysis, enterprises can have a more comprehensive understanding of their situation. Making decisions based on facts and data is a core principle of business analysis. By effectively collecting, analyzing, and interpreting data, companies can develop smarter strategies rather than relying solely on subjective opinions. The business environment is constantly changing, so business analysis is a process of continuous improvement. By continuously monitoring and adjusting analysis methods, enterprises can more flexibly respond to market changes. The application of business analysis is not only to solve problems, but also to provide visionary insights into the future, enabling enterprises to better adapt to changing business environments.

2.2 The importance and application background of market forecasting

Market forecasting is a key component of business analysis, aiming to predict the future development direction of the market by analyzing market trends, competitive conditions, and consumer demand. Market forecasting provides enterprises with information about market trends and potential opportunities, which helps them make more targeted and forward-looking strategic decisions [2]. By gaining early insight into market trends, enterprises can better cope with competitive challenges. Effective market forecasting can help enterprises allocate resources reasonably and avoid waste. By understanding market demand and changing trends, enterprises can more accurately invest funds, manpower, and other resources to improve resource utilization efficiency. Market forecasting helps identify potential risks and challenges, enabling enterprises to take measures in advance for risk management. This early risk identification helps to reduce uncertainty and increase the company's ability to resist risks. A deep understanding of the market can stimulate enterprises' innovation awareness. By predicting future market demand and trends, enterprises can innovate their products and services more targeted to meet market demand in advance. In a fiercely competitive business environment, market forecasting has become an important tool for enterprises to gain competitive advantages, providing strategic support for sustained growth and development.

3 Business analysis methods and models

3.1 Qualitative analysis methods

3.1.1 SWOT analysis.

SWOT analysis is a commonly used qualitative analysis method used to evaluate the strengths, weaknesses, opportunities, and threats of a company or organization ^[1]. SWOT analysis can help companies understand their internal strengths and weaknesses, as well as external market opportunities and competitive threats.

In SWOT analysis, advantage refers to the favorable conditions and resources that a company has in market competition. These advantages can include the unique skills, professional knowledge, innovation ability, brand reputation, and market position of the enterprise. Disadvantages refer to the shortcomings and shortcomings of enterprises in market competition, such as a lack of key resources, low technical capabilities, and low brand awareness ^[3]. At the same time, SWOT analysis also focuses on opportunities and threats in the external environment. Opportunities refer to market opportunities that enterprises can take advantage of, such as market demand growth, new market entry opportunities, policy support, etc. Threats refer to the market competition and risks faced by enterprises, such as the emergence of new entrants, substitutes, technological changes, etc.

3.1.2 PESTLE analysis.

PESTLE analysis is another commonly used qualitative analysis method used to evaluate the impact of external environment on enterprises or organizations ^[4]. PESTLE analysis can help companies understand the impact of political, economic, social, technological, legal, and environmental factors on their development and market competition. In PESTLE analysis, political factors consider the impact of government policies, regulations, tax policies, etc. on enterprises. Economic factors focus on factors such as economic growth, inflation, interest rates, and exchange rates in the macroeconomic environment. Social factors consider the impact of population structure, cultural values, consumption habits, and other factors on the market demand and brand image of enterprises. Technical factors focus on the impact of technological innovation, digital transformation, and other factors on the competitiveness and business model of enterprises. Legal factors consider the impact of regulatory changes, intellectual property protection, and other factors on corporate compliance and risk. Environmental factors focus on the impact of environmental protection and sustainable development on corporate image and sustainability. By analyzing these factors, enterprises can understand the potential impact and risks of the external environment on their business. PESTLE analysis typically includes the collection and organization of government policy reports, industry trend studies, social research, and technological innovation reports. After integrating this information, enterprises can formulate corresponding strategies and decisions to adapt to changes in the external environment and seek development opportunities.

3.2 Quantitative analysis methods

3.2.1 Time series analysis.

Time series analysis is a method of predicting future trends by analyzing time related data. It assumes that future data will be influenced by past data and attempts to find the patterns of this influence. Time series analysis is usually used to predict time related data such as sales volume, stock prices, and economic indicators. In time series analysis, commonly used methods include moving average method and exponential smoothing method ^[5]. The moving average method smooths data by calculating the average value of the data over a certain period of time and predicts future trends. The exponential smoothing rule is based on weighted averaging of data, where more recent data has a higher weight to better reflect the latest trends. The advantage of time series analysis is that it can predict future trends and is relatively simple and easy to understand. However, time series analysis also has some limitations, such as the inability to consider other possible influencing factors and the high demand for data, requiring a certain sample size and continuous data.

3.2.2 Regression analysis.

Regression analysis is a method of analyzing the relationship between independent and dependent variables by establishing mathematical models. It assumes that the independent variable has a certain explanatory power over the dependent variable and attempts to find the variation pattern of this relationship. Regression analysis is usually used to analyze market demand, formulate price strategies, and other issues. In regression analysis, commonly used methods include simple linear regression and multiple linear regression ^[6]. Simple linear regression is the process of establishing a straight line to describe the linear relationship between the independent variable and the dependent variable. Multiple linear regression, on the other hand, describes the relationship between multiple independent and dependent variables by establishing a polynomial equation. The advantage of regression analysis is that it can explore the complex relationship between multiple independent and dependent variables, and can provide the correlation and degree of influence between variables. However, regression analysis also has some limitations, such as high requirements for data, requiring a certain sample size and continuous data; At the same time, the accuracy of the regression model also depends on the selected independent variables and the rationality of the model.

4 Business data collection and processing

4.1 Data Collection Sources and Methods

There are various sources of data collection, including internal and external data. Internal data refers to data generated by the enterprise itself, such as sales records, accounting statements, etc. External data refers to data obtained from external sources, which can include market research data, competitor data, etc. There are also multiple options for collecting data ^[7]. Common methods include questionnaire surveys, ob-

servations, interviews, and experiments. Questionnaire survey is a commonly used method for collecting large amounts of data, which can be collected through online or face-to-face surveys. The observation method collects data by observing the behavior and events of the object, which is suitable for studying actual behavior and phenomena. The interview method obtains information through dialogue with the interviewees, allowing for a deeper understanding of their thoughts and perspectives. The experimental method observes the relationship between variables by controlling the experimental conditions. According to needs, different data collection sources and methods can be selected to obtain the required data and ensure its accuracy and reliability.

4.2 Data cleaning and processing

Data cleaning and processing is the process of preprocessing and converting collected data. This process includes data cleaning, missing value handling, outlier handling, variable conversion, etc. Data cleaning refers to checking and correcting data to ensure its correctness and consistency^[8]. This includes checking the integrity of data, removing duplicate data, correcting incorrect data, etc. Missing value processing refers to the processing of data with missing values. Common methods include deleting samples containing missing values, using interpolation to fill in missing values, and using mean or median to replace missing values. Outlier handling is the process of handling outliers to avoid their negative impact on the analysis results. Common methods include removing outliers and replacing them with reasonable values. Variable transformation is the transformation of raw data into a form that can be used for analysis. Common variable transformation methods include standardization, logarithmic transformation, discretization, etc. Through data cleaning and processing, the quality and accuracy of data can be ensured, providing a reliable data foundation for subsequent analysis and interpretation.

4.3 Data Visualization and Interpretation

Data visualization is the process of converting data into visual forms such as charts and graphs, in order to facilitate understanding and interpretation of data. Data visualization can display the relationships, trends, and patterns between data, helping people gain insights from a large amount of data. Common data visualization methods include line charts, bar charts, scatter plots, pie charts, etc. These charts can be used to display the distribution of data, compare data from different groups, and display the correlation between variables. Data interpretation is the analysis and interpretation of data visualization results to extract meaningful information from them. Data interpretation requires a combination of domain knowledge and statistical analysis methods to explain the trends, correlations, and other aspects of the data, and to provide relevant business recommendations^[9]. Through data visualization and interpretation, complex data information can be transformed into a form that is easy to understand and use, providing critical support for business decisions.

5 The role of business analysis in market decision-making

5.1 Development and Adjustment of Marketing Strategy

The formulation and adjustment of marketing strategies are key steps for enterprises to achieve success in the market. Business analysis can provide market information and competitive analysis, helping enterprises understand market demand, competitors, and target customer groups. By analyzing market data, enterprises can determine the optimal market positioning, target market, and marketing channels, and develop corresponding pricing, product, and promotion strategies.

Business analysis can also provide insights into market trends and consumer behavior, helping enterprises adjust marketing strategies based on market changes. By analyzing market data and consumer feedback, enterprises can adjust product positioning, improve product characteristics, optimize promotional activities, etc. in a timely manner to adapt to market demand and enhance competitiveness. The role of business analysis in the formulation and adjustment of marketing strategies is irreplaceable. It can provide market intelligence and forecasting for enterprises, guiding decision-makers to make wise marketing decisions.

5.2 Business Development Planning and Implementation

Business development planning refers to the process by which an enterprise formulates long-term development goals and strategies. Business analysis can provide data and insights to help companies understand market trends, industry competitiveness, and consumer needs, thus formulating development plans that meet market conditions ^[10]. Through business analysis, enterprises can evaluate market potential and competitive environment, and determine strategic directions suitable for their own development. By analyzing market data and trends, enterprises can understand consumer preferences and changes in demand, and determine the development direction of products and services. Meanwhile, through competitive analysis, enterprises can understand the strengths and weaknesses of their competitors and formulate corresponding competitive strategies. Business analysis can also provide an assessment of internal resources and capabilities, helping enterprises determine the resources and capabilities needed to implement business development plans, in order to ensure the feasibility and successful implementation of the plans. The formulation and implementation of business development plans cannot be separated from the support of business analysis. It can help enterprises understand the market and competitive environment, identify opportunities and challenges, and formulate corresponding development strategies and action plans.

6 Challenges and Solutions of Business Analysis in Market Forecasting

6.1 Challenges of Data Collection and Analysis

In market forecasting, data collection and analysis are crucial. However, data collection often faces challenges such as high acquisition costs, low data quality, and uncertain data sources. To address the challenge of data collection, more comprehensive and accurate data can be obtained through diverse data collection channels such as market research, social media, sales records, etc. Establish a data quality control process, including data cleaning, deduplication, validation, etc., to ensure the accuracy, consistency, and completeness of data. Obtain more data resources through data sharing with partners, suppliers, etc.

In terms of data analysis, the large amount of data, high complexity, and improper selection of data analysis methods have also brought many problems. Suitable data analysis methods should be selected based on market demand and data characteristics, such as time series analysis, regression analysis, machine learning, etc. By using visualization tools and techniques, data is transformed into a form that is easy to understand and interpret, helping decision-makers better understand and utilize the data. Maintain learning and updating of new data analysis methods and tools to respond to market and technological changes.

6.2 Uncertainty and Risk Management

An important challenge faced by market forecasting is uncertainty and risk. The development of the market is influenced by various factors, such as the economic environment, competitive landscape, consumer demand, etc., and the changes in these factors lead to uncertainty in predictions. In order to handle uncertainty and risk, it is necessary to establish flexible prediction models and strategies to adapt to market changes in a timely manner. Utilize diverse data sources to obtain more comprehensive market information and reduce dependence on a single data source. Evaluate the impact of different factors on the prediction results through sensitivity analysis, and provide decision-makers with prediction results under different scenarios.

6.3 Ability and role of business analysis team

The ability and role of a business analysis team are crucial for effective market forecasting. However, there may be challenges in the skill level, professional knowledge, and role allocation of team members. Through continuous skill training and recruitment, enhance the professional knowledge and analytical abilities of team members to cope with constantly changing market demands. Establish an interdisciplinary business analysis team, including experts in marketing, data science, business intelligence, and other fields, to jointly solve complex market forecasting problems. Strengthen communication and cooperation within and outside the team, ensure effective knowledge

sharing and information transmission, and ensure that the roles and responsibilities of team members are clear and clear.

7 Conclusion

The application of business analysis in market forecasting is not only a means, but also one of the key factors for enterprise success. By gaining in-depth insight into the market, understanding consumers and the competitive environment, enterprises can more flexibly respond to challenges and seize opportunities. In the future, with the continuous development of technology and the growth of data, the application of business analysis will become more extensive and in-depth. The application of new technologies such as artificial intelligence and big data analysis will further improve the efficiency and accuracy of business analysis. At the same time, more intelligent and automated business analysis tools will become powerful assistants for enterprise decision-making. In the rapidly changing business environment, enterprises need to continuously optimize the practical methods of business analysis to adapt to new challenges and opportunities. By establishing a strong business analysis team and continuously cultivating analytical talents, enterprises will better navigate the waves of the market and achieve sustainable business growth.

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