Construction of data-driven financial performance management model based on data intelligence economy

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Abstract: The digital-intelligence economy refers to the economic system based on digital technology and information communication technology, which has the characteristics of digitalization, networking, intelligence and openness. By analyzing the limitations of the traditional financial performance management model under the background of number intelligence economy, this paper puts forward the development direction of financial performance management model under the background of number intelligence economy, and studies the selection principle of financial performance management model under the background of number intelligence economy and the reasons why data-driven model is the best development direction of financial performance management model in the future from many development directions, so as to clarify the meaning of data-driven again, and finally determine the steps of building the data-driven financial performance management model.

Key words: data intelligence economy; Financial performance management model; data-driven

I. Concepts and characteristics of data-intelligence economy

1. The concept of number intelligence economy

Digital Economy refers to the economic system based on digital technology and information and communication technology. The development of the digital economy has a profound impact on individuals, enterprises and countries. Through the digital intelligence economy, individuals can obtain more information and opportunities, improve work efficiency and quality of life. Enterprises can achieve rapid business expansion and innovative model development through digital transformation and innovation; Countries can enhance its overall economic competitiveness and promote the upgrading and transformation of its economic structure through digital intelligence economy. The digital intelligence economy also brings a series of challenges and issues, such as data privacy disclosure and security threats, digital divide, and job changes. Therefore, it is also necessary to pay attention to the social, legal and ethical aspects of digital development in order to ensure the sustainable development of the digital intelligence economy.

2. Characteristics of the digital-intelligence economy

Based on the popularization and application of computers and the Internet, the digital-intelligence economy realizes the efficient transmission and processing of information and data through digital means, and promotes the innovation and development of economic activities. Therefore, the digital-intelligence economy includes the following characteristics: First relates to digitalization, which refers to the conversion of various information and data into digital form for processing and storage. The second is networking, which connects various participants through the Internet to realize the sharing of information and resources. The third is intelligence, which refers to the use of technologies such as artificial intelligence, big data and the Internet of Things to improve the intelligence level of economic activities. The fourth is openness, which is reflected in the fact that the digital-intelligence economy has promoted cooperation and exchanges in various fields and broken traditional economic boundaries.

II. limitations of the traditional financial performance management model under the background of digital-intelligence economy

There are various models and tools of financial performance management, which are used to evaluate and manage the financial performance of enterprises. Common models of financial performance management include traditional financial indicator model, growth model, value evaluation model, cost-benefit analysis model, performance evaluation model and risk assessment model, etc. The application of these traditional financial performance management models in the background of data intelligence economy has many limitations: first, it attaches importance to and relies on historical data, while the traditional financial performance management model mainly relies on historical financial data for analysis and decision-making. However, in the digital-intelligence economy, the data is huge, fast, and contains unstructured data. Secondly, non-financial factors and non-financial values are ignored, while traditional financial performance management models mainly focus on financial results and indicators, such as net profit, market share, sales, etc. However, in the digital-intelligence economy, the performance of enterprises is affected by more factors, such as customer satisfaction, employee innovation ability, brand value, etc. The third is static analysis. The traditional financial performance management model mainly adopts static analysis method, that is, the analysis and evaluation are based on the data of a specific time point or period. However, in the digital-intelligence economy, the market and competitive environment change rapidly, and enterprises need to conduct dynamic analysis and prediction. The fourth is a high focus on short-term results. Traditional financial performance management models usually pursue short-term financial growth and profit maximization to provide immediate returns to investors. However, in a digital-intelligence economy, companies need a longer-term perspective to consider long-term competition and sustainable development. To sum up, the traditional financial performance management model has many limitations in the context of a digital-intelligence economy. In order to better adapt to the needs of the digital-intelligence economy, both the

business community and the theoretical community need to explore more flexible, comprehensive and dynamic risk assessment models, so as to more accurately identify, assess and manage risks, maintain competitive advantages and achieve sustainable development.

III. The choice of financial performance management model under the background of digital-intelligence economy

1. The principle of financial performance management model selection under the background of mathematical intelligence economy

Under the background of digital-intelligence economy, enterprises are faced with the challenges and opportunities of massive data and multi-source data. The core of the digital-intelligence economy is to discover the law and value hidden in the data through data analysis and mining, so as to provide more accurate and comprehensive support for the business decision of the enterprise. Considering the limitations of the traditional financial performance management model, the following principles can be considered when selecting the financial performance management model under the background of digital intelligence economy: First is data-driven, which means that the model has the ability to analyze and forecast by using big data and multi-source data; Secondly, comprehensive and multi-dimensional evaluation means that the model needs to be able to integrate data from multiple dimensions for evaluation, including financial data, operational data, customer data, market data, etc. The third is real-time and agile, which means that the financial performance management model needs to be able to obtain and analyze data in a timely manner, and be able to quickly adapt to the rapidly changing market environment and risks; The fourth is the ability of prediction and simulation, selecting the model with prediction and simulation ability, which can carry out prediction and analysis based on historical data and model algorithm, and provide the basis for future prediction and planning for enterprises; The fifth is flexibility and customizability, which can be adjusted and customized according to the specific needs and situations of enterprises to meet the specific requirements of different enterprises.

2. Data-driven model is the best development direction of financial performance management model in the future

According to the principle of financial performance management model selection under the background of data intelligence economy, I believe that data-driven model is the best development direction of financial performance management in the future, for the following reasons: The first is the richness of data-driven model data. In the digital-intelligence economy, data is growing exponentially. Data-driven model can use big data and multi-source data to provide a more comprehensive and accurate information basis to better understand and manage enterprise performance; The second is the real-time and agility of the data-driven model, which can acquire and analyze data in real time, prompting managers to make adjustments and decisions in a timely manner, so as to respond more nimbly to market changes and risks, and improve the adaptability to the rapidly changing market environment; The third is the comprehensive and multi-dimensional evaluation of data-driven model, which can comprehensively analyze multiple dimensions of data, including financial data, operational data, customer data and market data. The fourth is the prediction and simulation ability of data-driven models, which can build prediction models and simulation models and carry out prediction analysis based on historical data and algorithms to help enterprises make more accurate predictions and plans in the future; The fifth is the data-driven decision-making of the data-driven model, which can provide decision support based on actual data and reduce the risk of subjective bias and arbitrary decision-making. By relying on data and analysis, managers can make better decisions and reduce uncertainties and risks in decision making.

IV. The construction of data-driven financial performance model

1. The meaning of data-driven

Data-driven refers to the method of guiding and supporting decisions and actions in the decision-making and action process based on data analysis and insight. It emphasizes the discovery of valuable information and insights through the collection, collation, analysis and interpretation of data, thereby providing objective, scientific basis for decision makers. A data-driven approach aims to rely on data to the greatest extent possible, rather than based on subjective guesswork, assumptions, or experience. It focuses on the accurate collection and analysis of data to uncover correlations, hidden patterns and trends among data that reveal the nature and regularities of a business or problem. Data-driven approaches pursue objectivity and science, supporting decisions and actions through data, enabling decision-makers to more accurately understand problems, identify opportunities and challenges, develop effective strategies and plans, and evaluate and track performance.

2. Steps to build a data-driven financial performance management model

(1) Determine goals and indicators

Before building the model, we should first clarify the objectives and indicators of financial performance management, and determine the financial performance indicators that need to be concerned and evaluated. These indicators can be traditional financial indicators such as profit, revenue, cost, cash flow, etc., or they can include more non-financial indicators such as market share, customer satisfaction, etc.

Collect and collate data

Collect and collate relevant financial data and external data based on the economic background of digital intelligence. The source of data should be determined first, and the sources that need to be collected can include internal financial system, operational data system, market research data, and external industry reports, market indicators, etc. Reliability and accuracy of the data sources should be ensured. Simultaneously, collecting data should base on the identified data sources and can include exporting data from internal systems, obtaining data from third-party platforms or agencies, and conducting research and collecting raw data.

(3) Data cleaning and processing

The collected data should be cleaned, processed and transformed to ensure the accuracy and consistency of the data. This may involve steps such as data cleaning, data transformation, missing value processing, etc. This step will use data analysis and data mining techniques to discover hidden patterns, correlations and trends from financial data, such as for forecasting sales, forecasting market demand, etc., using big data analysis and data mining techniques.

(4) Indicator selection and modeling

According to the objectives and data, appropriate indicators should be chosen and relevant models and algorithms should be built subsequently. This includes machine learning algorithms, regression models, time series models, etc. According to the specific situation, researchers can choose the applicable model to build the financial performance management model. For example, machine learning algorithm, which is a kind of computer algorithm and technology, through the learning and pattern recognition of large amounts of data, enables the computer to automatically learn and improve its performance, complete specific tasks or predict future results.

(5) Model training and optimization

Use historical data to train and optimize the built model to improve the accuracy and predictive power of the model. This may involve processes such as parameter adjustment, feature selection, model evaluation, etc. It is also possible to use machine learning algorithms that are able to build models from existing data and train and optimize these models so that computers can automatically identify and apply them to new, previously unseen data. This ability for computers to learn from data has given machine learning algorithms a wide range of applications in data mining, pattern recognition, predictive analytics, and so on.

(6) Real-time forecasting and decision support

After the model is trained, it can be applied to real-time data to predict and evaluate financial performance. This helps to provide timely decision support and management advice. By analyzing historical financial data through predictive analysis methods, using time series analysis, regression analysis, and other predictive models, future financial metrics can be predicted to help make more accurate budgets and decisions.

(7) Make continuous improvement and optimization

Financial performance management model should be regularly evaluated and optimized to ensure its accuracy and effectiveness, and adjustments and improvements should be conduct according to the actual situation. Continuous monitoring and improvement is the key to building an effective data-driven financial performance management model.

In the above steps, the quality and accuracy of the data is very important. In addition, as technology evolves and new sources of data become available, models can also evolve and be optimized to adapt to changing business environments and needs.

VI. Conclusion

The rise of digital intelligence economy provides new opportunities and challenges for the construction of financial performance management model. In this digital age, enterprises need to rely on data-driven methods to achieve efficient financial performance management when facing increasingly complex and changeable market environment. Based on the concept of digital-intelligence economy, this paper discusses that the data-driven financial performance management model is the development direction of the financial performance management model in the digital-intelligence economy era, and proposes the steps of building the data-driven financial performance management model. In the future, the data driven financial performance management model can be studied in the directions of demonstration, optimization, application, modeling and policy, so as to explore the financial performance management model that is more in line with the requirements of enterprises under the background of data intelligence economy.

References:

[1] Jianzhong Xu,Jun Guan,Yan Lin. Based on the Meta analysis study on the relationship between the corporate environmental performance and financial performance [J]. Journal of management, 2018, 015 (002) : 246-254. The DOI: 10.3969 / j.i SSN. 1672-884 - x. 2018.02.011.

[2] Linna Liang, Guoqiang Zhang,Hao Li,Yangyang Yang. Research on the economic Effect of Enterprises' Digital Transformation -- Based on the analysis of Market performance and financial performance [J]. Modern Management Science, 2022(5):146-155.

[3] Xin ning Li. Based on the number of higher vocational audit professional curriculum system intellectualization university-enterprise cooperation refactoring [J]. 2021. The DOI: 10.3969 / j.i SSN. 1000-9671.2021.12.086.

[4] Yannan Wang. Design and Implementation of commercial Bank Management Accounting System based on Data Warehouse [D]. 2011.

[5] Shiying Gong. Research on Financial Performance Evaluation of Chinese Tourism Listed Companies based on DEA [D]. Jiangxi University of Finance and Economics,2020.