

# The Application and Problems of Big Data Analysis in Accounting Work

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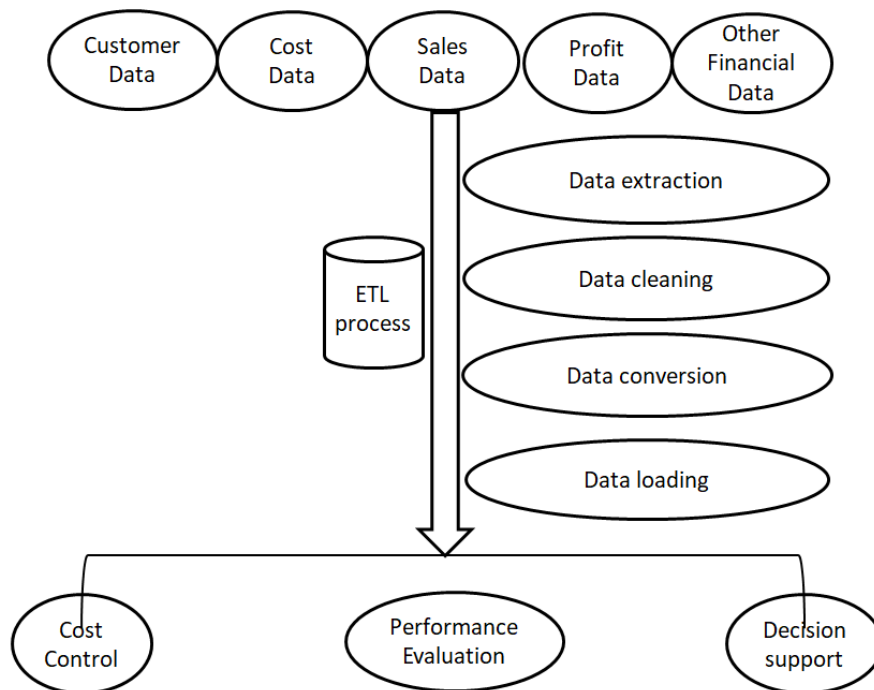
**Abstract.** Since the computer has been used in accounting work and with the current economic development, the enterprise accounting system has formed a large amount of data in the accumulation. The application of big data technology in enterprises is mainly in the R&D department, and the application rate of the finance department is not very high. In recent years, the development of big data technology and cloud computing technology has become increasingly mature, and the function of financial accounting has also gradually shifted to manage accounting. Previously under the traditional accounting method, the data that is not fully utilized by the technology can be fully explored today by relying on big data analysis. This article expounds the application of big data analysis method in modern business accounting data, and compares a series of advantages of big data analysis method with traditional analysis method. Finally, it is mentioned that in the era of highly developed Internet, there may be problems in applying big data analysis.

## 1. Introduction

The processing of accounting data has undergone four stages of development: manual processing stage, mechanical processing stage, computer processing stage and network intelligent processing stage. In the era of big data, cloud computing, and artificial intelligence as the main content, data is the product of the network, and the accounting data generated in the enterprise is becoming an important production factor. With the arrival of the era of big data and the development of the network processing stage is becoming more and more mature, big data analysis in China has been taken first by large e-commerce companies such as Ali and JD. In order to stand in the future, enterprises must follow the trend of the times, develop themselves and build an accounting big data analysis system. Big data analysis is not only a simple information processing, but also high-quality data analysis after eliminating garbage data, which explains how big data analysis can play a better role in business operations.



## 2. Big Data Analysis in the Specific Analysis Process



**Fig 1.** ETL process

### 2.1. Data Source

Enterprises produce a variety of data in their daily operations, including daily customer related information, enterprise production related costs, sales budget, profit data and other financial data. The daily customer related information, these data reflect the information of the customers in the business process, the direction of capital flow and the amount of capital flow. The costs associated with the production of enterprises, the cost of manufacturing companies in direct labor and direct materials accounts for a large part of the business, other types of enterprise cost-related data are also an important part of business operations. In a company's budget, the sales budget is fundamental to all budgets, so sales data is important to the company. Profit data is the ultimate data pursued by the company. It is affected by cost data and cost data, reflecting the quality of the business. Other financial data, such as corporate asset and liability data, also reflect the state of an enterprise in different dimensions. These data are generated by the accumulation process of the company every day, and are gathered into the data source of the enterprise.

### 2.2. ETL Analysis Process

**2.2.1. Data Extraction.** Data extraction requires a lot of research work before extraction. Since data extraction is performed from different networks, different operating systems and different databases, these data is very diversified. First of all, we must figure out how the data comes from several business systems, what DBMS is running on the database server of each business system, whether there is manual data, how large the manual data is, whether there are unstructured data, etc. The design of the data extraction can only be done after collecting this information. There are

generally two ways to extract data from a database: inventory extraction and incremental extraction.

2.2.2. *Data Cleaning.* The primary purpose of data cleansing is to translate the specific representation of data in the source system into a representation of the target system and to eliminate technical and semantic differences between multiple source systems. The task of data cleaning is to filter the data that does not meet the requirements, and pass the filtered result to the required department to confirm whether it is directly filtered or corrected. Data that does not meet the requirements are mainly three types of incomplete data, erroneous data, and repeated data.

2.2.3. *Data Conversion.* The task of data conversion is mainly to deal with inconsistencies in the extracted data, inconsistent data conversion, data granularity conversion and calculation of some business rules.

2.2.4. *Data Loading.* Data loading is to load the data extracted from the source system and cleaned by the data. The loading data is divided into data loading of automatically generated dimensions, manual maintenance of dimensional data loading, data loading of slowly changing dimensions, loading of fact table data, and then initial generation of aggregated tables.

### 2.3. Data Application

2.3.1. *Cost Control.* Big data analysis plays an important role in budgeting, and cost budgeting is an important part of budgeting. The production budget includes production budget, direct material budget, direct labor budget manufacturing cost budget, etc. Big data analysis can combine previous years' data and make an objective cost budget based on this. It can also find out the irrationalities in the data, and then trace the source of the abnormal data to ensure the cost optimization.

2.3.2. *Performance Evaluation.* There are many forms of assessment for the performance appraisal of enterprises. Regardless of the performance evaluation method, the analysis and evaluation are based on various business data of the enterprise. Compared with traditional analysis, big data analysis can not only use the basic data to make analysis more quickly, but also meet the expectations of enterprises in terms of accuracy.

2.3.3. *Policy Support.* Big data analysis is widely used in various decisions, and enterprise decision making is one of them. Most companies today face confusing data in decision-making, and these difficulties are areas where big data analytics excels. Establish a complete big data analysis system, which can quickly process massive accounting data and help managers make correct decisions.

## 3. The Advantages of Big Data Analysis in Application

### 3.1 Effective Use of Data

The above mentioned enterprise customer transaction data, enterprise cost data, enterprise sales data, corporate profit data, etc., the analysis under the traditional method requires a lot of manpower

and material resources. Big data analysis can quickly analyze the entire picture of the object being analyzed in the face of millions of data. And can quickly reflect abnormal data during the analysis process. For example, if the change in procurement cost is too large, the company can analyze whether the cause of the cost change is reasonable, thereby achieving the purpose of cost control. Big data analysis can find a series of problems in the company's annual report. When comparing the annual report data with the previous year's operating conditions, it can objectively review the monetary funds of the year, find out the discrepancies between the monetary funds and the book funds, the accounting is not standardized, the tax evasion and tax evasion. The big data analysis process can also objectively and effectively evaluate the analyzed data. Most of the calculation methods used in big data analysis are simple and easy, and there are no other factors in the analysis process. The analysis results are mechanical but objective.

### *3.2 Information Processing in a Timely Manner to Solve the Problem of Lag*

The traditional financial data analysis is represented by the quantitative profit analysis and the financial ratio analysis method. The workload is large and the distance data takes too long to generate data lag. Big data analysis is relatively easy to use in front of huge data, and the analysis of financial data is accurate and rapid. This is a major feature of big data analysis. While data analysis is timely and rapid, big data analysis can also discover more effective information contained in operational data and enrich the valuable database.

### *3.3 Increased Data Processing Accuracy and Efficiency*

In the age when big data analytics were not being used, financial staff needed to spend a lot of time on data analysis predictions. Once the calculation of the data is wrong, the calculation and work of the entire system will not be carried out correctly. For example, the variable cost between the fixed cost and the variable cost of the enterprise is difficult for traditional financial workers to analyze, and it is also prone to errors. Big data analysis can do the job well, and the mixed cost is decomposed and analyzed one by one, which improves the efficiency of analysis and improves the accuracy. Big data analysis is better and faster than traditional data analysis methods in terms of enterprise breakeven points and balanced scorecards.

### *3.4 Strengthening Information Forecasting Ability*

Through the analysis of the large amount of data collected, the company is accurate to each customer's purchase behavior and consumption data. Big data analytics can predict sales more accurately, allowing companies to improve their marketing capabilities and their marketing strategies.

The enhancement of information forecasting ability means that the preparation of budget statements can be more precise. One of the characteristics of big data analysis is to use the model to summarize and analyze a large amount of data to predict the possibility of future events. In the analysis of the annual accounting statements for the year, big data analysis can make an accurate budget more accurately.

### *3.5 Cost Control is more Transparent and Effective*

The cost of traditional manufacturing companies can be divided into manufacturing costs and non-manufacturing costs, including direct manual, direct labor, financial and sales expenses. Controlling cost expenditure is an important issue for enterprises. How to ensure the best cost and the

minimum cost of production under normal and effective operation is a long-standing problem. Big data analysis can be specific to each of these costs, thus refining the problems that arise in each link, and even identifying the problem.

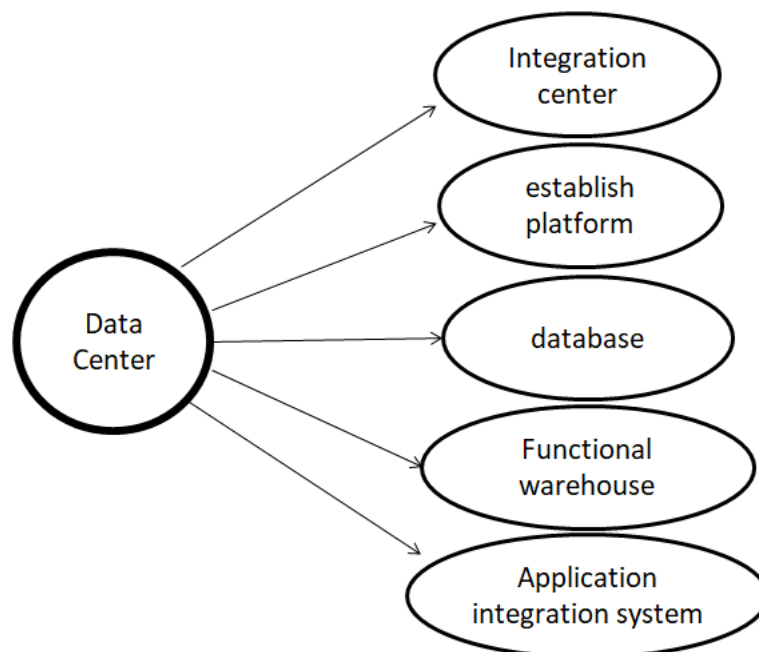
#### 4. The Measure of Big Data Analysis's Problem

##### 4.1 The Selection of Relevant Data Should be Cautious

The guarantee of data quality is very important, and the massive data means that the amount of junk data accounts for a large proportion. When the company conducts data analysis, the garbage data will interfere with the generation of effective information and generate spam. Therefore, when selecting data, not more is better, but should be analyzed in a targeted manner. The analysis object is selected according to the desired result to be accurate to each analysis data, and the quality of the analysis is improved. In terms of analyzing dimensions, we must also fully consider the factors involved, so that the analysis does not stop at the surface.

##### 4.2 Informatization Infrastructure Should be Improved

The company is collaborated by multiple departments to complete daily work, and big data analysis is gradually running through each department. To improve the infrastructure of big data analytics, it is necessary to link financial data with other business data of the enterprise to ensure that all data used by the enterprise comes from the same information system. Avoid the situation of "information islands", and only the information and data can be connected to complete the accurate and efficient analysis of big data.



**Fig 2.** Data center structure

### 4.3 Security Should Pay Attention to

The rapid development of the Internet era also means the high-speed transmission of information, and security issues have become a concern of today. Also in the use of big data analysis, a large amount of information is brought together during the analysis and application of its own data. If the enterprise does not protect the data, it is likely to cause its own enterprise data to be used by others without being aware of it, resulting in irreparable losses for both the enterprise and the users. Most of the existing big data platforms have been put into use after secondary development, which also poses hidden dangers for data security. And in today's network development, big data technology has spawned new network attack technology, and traditional defense methods have gradually become no longer effective, which is also a big challenge for big data analysis.

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