

Research on Theoretical Innovation and Implementation on Modern Enterprise's Statistical Functions in China¹

WANG Yanming WANG Zhonghui YUAN Jing

(Shandong Institute of Business & Technology
Yantai City, Shan Dong Province, China 264005)

Abstract: This paper redefines the meaning and content of modern statistical functions from enterprise management perspective. It is to study the theoretical base, content and implementation of modern enterprise's statistics' three major functions systematically. The aim is to promote the innovation of the theoretical system of modern enterprise's statistics in China.

Key words: enterprise statistics, statistical functions, theoretical innovation, implementation form

The so-called functions refer to things or methods playing a beneficial role. From the systematic point of view, enterprise statistics can be seen as a method system of serving the enterprises management and operations, and then enterprises statistical functions refer to the functions of enterprise's statistical methods system. There are many aspects of formulation on enterprise statistical functions, such as the description, evaluation, forecasting, decision-making and control functions. This article defines the enterprise statistical functions from perspective of enterprise management, and the functions are listed as follows: the beneficial effect of enterprises statistical methods system that can play in the process of management and operations for enterprises.

1. Definition of modern enterprise's statistical functions

modern enterprise statistics is defined as: the study of the collection, collation, analysis, using statistical data system and work processes base on the study objects of quantitative of production management activities and their results. This definition includes both theoretical and practical aspects of meanings. From a theoretical point of view, it is a modern enterprise production and business activities of the statistical research methods. From a practical point of view, it refers to the complete work process of the enterprise statistics.

modern enterprise statistics must be conducted by first collecting the statistical data around the production and business operations, organizing the data, form the results available (database or chart form), then making statistical analysis, form the statistical analysis report for the enterprise reference to management. Due to the important production and management activities, such as program management, quality management and performance management, statistics must be directly involved in the management process, to play a decision-making, control and evaluation functions. So, the modern enterprise statistical functions can be summarized as the three aspects of the statistics information function, statistical analysis and statistical management functions. Among them, the statistical analysis function includes statistical forecasting function; statistical management function includes statistical decision-making, statistical evaluation and statistical control functions.

2. Theoretical innovation of modern enterprise statistical functions

2.1 Information function of the modern enterprise statistics

Information function of the modern enterprise statistics can be expressed as process of

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the statistical data collection, collation, transmission and management of a series of activities to form a complete system of enterprise statistics database to meet the management and operations needs in playing a favorable role.

According to modern enterprise production management theory, the modern enterprise production and operation activities are to be shown in figure 1:

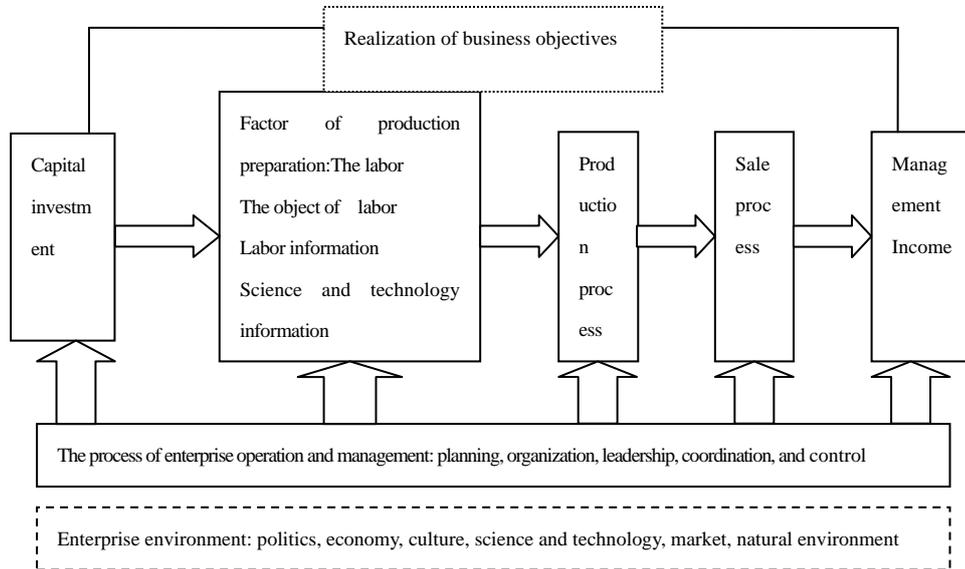


Figure1 Modern production and management activities of enterprise process sketch map

2.2 Modern enterprise statistical analysis function

Modern enterprise statistical analysis function can be expressed as: the integrated usage of modern economics, management and statistics methods, following certain procedures and rules, in qualitative and quantitative analysis of the combination of enterprises, deeply processing of statistical data analysis, improving enterprise management performance in order to improve enterprise production and management.

In order to develop the enterprise statistical analysis functions we need to study the theory improving enterprise statistical analysis, urges the enterprise statistical analysis transition from description to infer the type, from the platter to integrated, from after engaging to foresee direction.

According to the available data sources, statistical analysis can be classified statistical analysis based on the basic database and statistical analysis based on data warehouse. Generally speaking, statistical analysis is based on the basic database, using the statistical analysis method is relatively simple; statistical analysis is based on the data warehouse belongs to the depth of statistical analysis; the statistical analysis method is relatively complex. According to the statistical analysis of the existence of the fixed period, statistical analysis can be divided into regular statistics and thematic analysis and statistical analysis. According to statistic analysis purpose, as after summary or making predictions for the future, statistical analysis can be divided into after the summary analysis and prediction analysis.

2.3 Modern enterprise statistical management function

Statistical method applied to enterprise management is a gradual process, from the initial main is to provide statistical data, statistical analysis of participation in management, and then to the statistical methods for management (mainly in the field of quality management), has now developed to the combination of statistical technology and management level, formed a

series of statistical management methods, such as baseline comparison, balanced scorecard, key performance indicator (KPI), six Sigma management etc. Enterprise statistical management function is referred to the enterprise statistics in management playing a beneficial role, enterprise management is inseparable from the statistics; on the other hand, it also shows that the statistical method and enterprise management must combine ability to play a greater role.

The specific contents of modern enterprise statistics management function can be shown in two aspects: first, enterprise statistic is the foundation of enterprise management. Enterprise statistic can provide basic information and analysis conclusion to the enterprise management, and it provides a scientific method for the quantitative study for the enterprise management, three enterprise management is the foundation of enterprise management work such as standardization, quota, measurement work and so on needs statistical support. Second, enterprise statistic is enterprise management methods. Enterprise statistics is not only the foundation of enterprise management, but also an important modern management method. For the production and management activities of enterprises to carry out the scientific and effective management, enterprise functions in the planning, organization, control functions cannot be separated from the enterprise statistical methods.

3. The realization forms of modern enterprise statistical function

3.1 The realization forms of enterprise statistical information function

Realization forms of modern enterprise statistical information function are: enterprise statistic data collection (survey), the basic design of index system, statistical information center (database) and the construction of statistic information system design.

For enterprise production and management needs of data, statistical survey is the primary method of data collection. Enterprise statistical survey is divided into two aspects: one is the enterprise production and management activities of the data itself (internal data collection, two) of the enterprise market data collection. If the enterprises realize the enterprise information and statistical information, the use of enterprise statistics information system, internal statistical data collection process can be greatly shortened, from the original recording input directly generating enterprise statistical ledgers and statistics, but also can realize the real-time inquiry of original data and all kinds of ledgers, statements. Market survey data collecting in theory is normative, but in the enterprise market investigation practice, except for a few large enterprises, because of the lack of professional investigation personnel, most enterprises need external professional research institutions to collect most of the market data.

Statistical data needed by enterprises can be divided into two categories, the result of analysis no-processing of basic data, and the data based on the analysis of basic data obtained by processing the data. In survey design, the basic index system should be designed in advance to collect basic statistical data, and then according to the basic index system, it is investigated the content of the specific project design. Modern enterprise statistical index system design process can be specified as from production to run a field classification, in determining the production management based on target, determining the statistical analysis indexes and management indicators, and then determining the enterprise statistical index system.

Enterprise statistics information center can be solid, and also it can be a function of management institutions, such as the integrated enterprise information center has the functions of statistics information. In either case, the statistical database is the core tool.

Statistical data of enterprises by means of information technology, network technology and database technology are to meet the enterprise management needs of all statistical information storage and management functions.

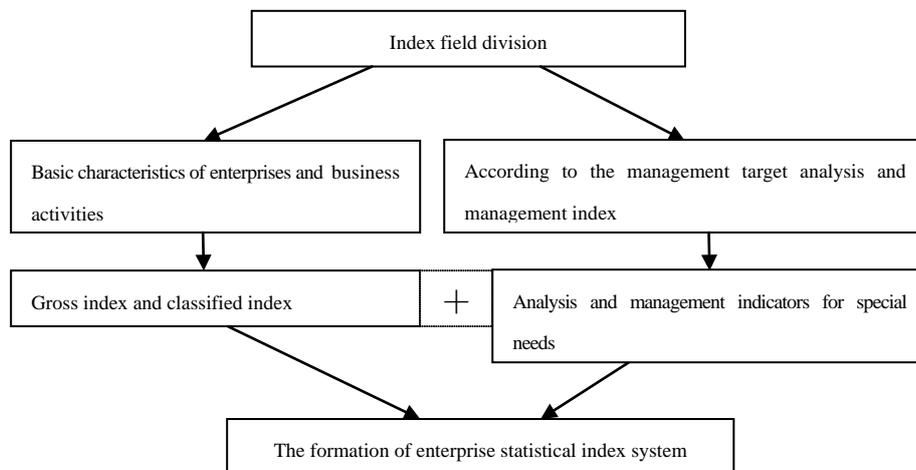


Figure 2 the enterprise statistics index system design flow

Statistical information system uses statistical theory, information technology, systems engineering method to establish man machine system in the traditional manual work based on the application of statistics. From the modern statistical information system development, enterprise statistics information system can be divided into three parts, they are statistical data processing system, statistical management information system, statistical decision support system and expert system. Two kinds system before belong to the structural problem of the system, these two kinds solve statistical efficiency problem on the system establishment and usage; the third system is to solve how to improve the effect of statistical decision problem and the semi-structured or unstructured problems.

3.2 The realization forms of enterprise statistical analysis function

The realization forms of modern enterprise statistics analysis function include three aspects, namely the enterprise statistical analysis index system design, enterprise statistical analysis report system, and enterprise statistical prediction analysis.

Defining analysis task according to the management objectives, getting the analysis index according to the basic index and market research, forming enterprise statistical analysis index system, the above can be used for statistical prediction, decision making, evaluation, control and other management activities. The specific design process and content as figure 3.

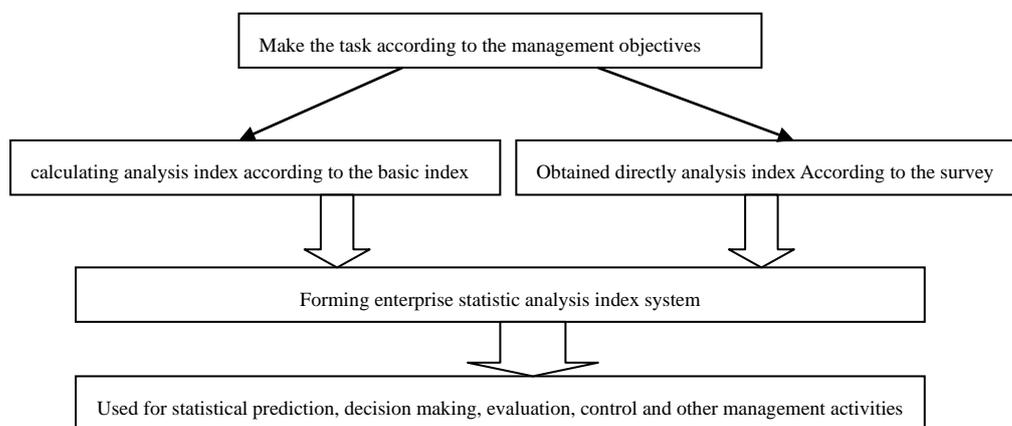


Figure 3 the enterprise statistic analysis index system design flow chart

Modern business statistical analysis report system includes two types of report system: the level of reporting system, namely the reporting results conducted according to the enterprise management level; non hierarchical reporting system, mainly refers to the flattened reporting system, including information system platform release, thematic analysis to report, and enterprise analysis conference.

3.3 The realization forms of enterprise statistical management function

Statistical management system design: on the two platforms, through the integrated using of modern statistical methods and management methods to make the statistical decision, comprehensive evaluation and statistical control for enterprise process and the results, to realize statistical management function. Contacting with the plan, organization, harmonious, control and other functions of enterprise management phase, statistical management functions as a concrete manifestation of statistical decision, performance management, comprehensive evaluation, and process control.

Emphasizing statistical methods into the management process and the management technology is the statistical management function embodiment, its practical significance lies in: it has been on the statistical point of view, statistics is a statistics, management is management, they both are very super-facial, statistics in enterprise management is to provide data, most staff, and it is not for statistics function. So, it is to emphasize the enterprise statistics and management problems, rather than emphasizing enterprise statistical independence. The enterprise organization design has important guidance significance: namely the enterprise statistical posts and personnel should be closely combined with the business management department, preferably a management position with a statistics function, rather than a separate statistical job, make statistics and management in the same position, the same department better fusion.

4. Association and implementation of three major functions in modern enterprise statistics

4.1 The association of three major functions in modern business statistics

The difference among the three major functions in enterprise statistics is the relative; the three has a close organic contact. Enterprise statistical information function, analysis function and management functions are interdependent, mutual support, together forming the enterprise statistics function: namely the enterprise statistical reference to enterprise management and decision-making, help managers to improve the overall management level of enterprises, realize the enterprise performance target. At the same time, the three function is "division and association", information function is the basis, without information function, the analysis function could not be performed; there is no information function and the analysis function, it is impossible to realize the management function. Enterprise statistical functions play a role based on the three functions closely around the goal of enterprises gradually; the statistical function of the enterprise value and the social value of the company can both be realized.

4.2 Comprehensive implementation of three major functions in enterprises statistics

Enterprise statistical function plays a fundamental role. From the basic index system design through the enterprise statistical investigation, the collection enterprise basic statistics form the basic database; on this basis, according to the statistical analysis of index system and analysis method of basic statistical data into the analysis process, analysis database is formed. Statistical analysis' function is played, namely basic database; analysis of database and

management information system based on the generated management database together form the enterprise data warehouse, with the aid of enterprise management methods and statistical techniques, use of enterprise data warehouse, data mining, the enterprise statistical management function is fully presented, so as to realize the goal of enterprise management. As shown in figure 4.

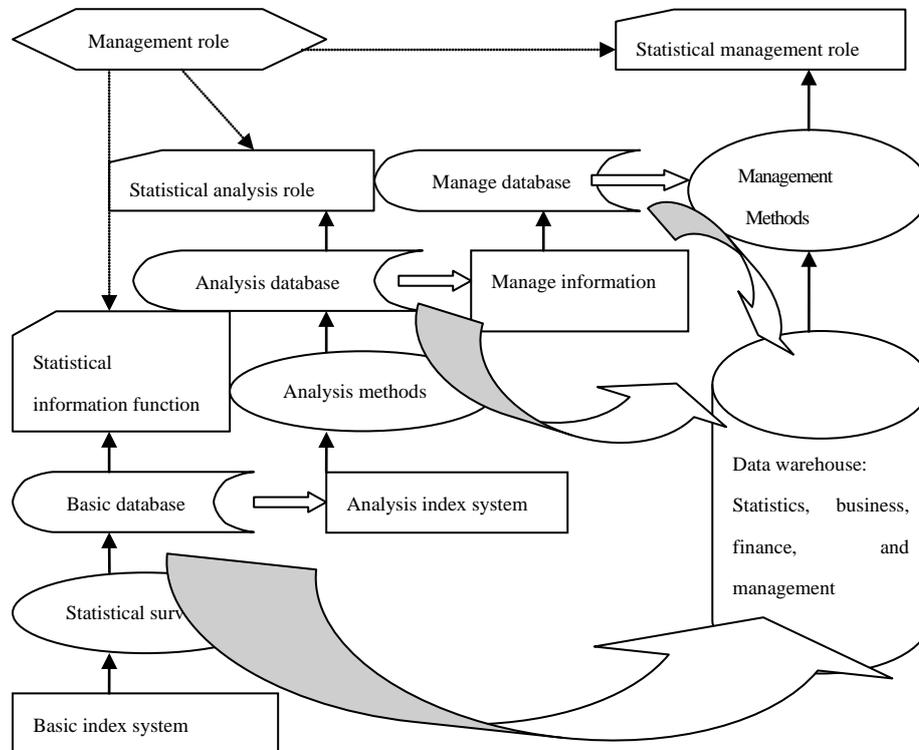


Figure 4 flow chart of enterprise statistics function realization

In short, the modern enterprise statistics has developed into enterprise management tools. Regardless of its traditional information and analysis function, or with the modern management theory emerged with the development of modern management of new technologies, all continually deepen statistical technology in enterprise production and management activities of enterprise statistics and business management, the combination of more and more close, enterprise statistical function will be more fully.

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