

# A Probe into the Index System of Organizational Effectiveness Evaluation Based on the Corporate Strategy

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**Abstract**—The Index System of Organizational Effectiveness Evaluation (ISOEE) makes a comprehensive evaluation of the organizational effectiveness of the corporate units of different functional orientation and different natures, with a view to reaching an overall assessment of the operating conditions of the conglomerate and detecting timely and accurately the problems existing in its operations, and in so doing improving its total performance. This essay considers as a whole the merits and weaknesses of various performance appraisal and competency appraisal methods, drawing on the strong points of one to make up for the other's weak points, and on the basis of the Balanced Score Card (BSC) method, builds up a corporate index system of organizational effectiveness evaluation based on the corporate strategy, which constitutes a new organizational effectiveness evaluation system.

**Keywords**—corporate strategy; organizational effectiveness; evaluation system; performance management

## I. INTRODUCTION

The level of the organizational effectiveness of an enterprise determines to a considerable degree its rise and fall. The concept of Organizational Effectiveness was first raised by Stanley E. Seashore in 1965. It means the sum total of all kinds of evaluation criteria measuring the conditions of enterprise operation. Being a goal system with a pyramid-like structure, it instilled logic and order into the previously disorderly aggregate. This concept set a new direction for the comprehensive and objective measurement and appraisal of the efficiency and benefit of the enterprise operation.

## II. THE CONSTRUCTION OF ISOEE

### A. Foundation of the Construction

After a comparative analysis of various performance appraisal and competency appraisal criteria, such as the DuPont Analysis Method, Seashore's pyramid-shaped Competency Appraisal criteria (Seashore, 1965), Peter Drucker's 8 aspects of performance evaluation standard (Drucker, 1990), Cross and Lynch's pyramid-shaped Performance Evaluation System (Cross & Lynch, 1991, Kaplan and Norton's "balanced

scorecard method", on the basis of the idea of BSC (Balanced Score Card), and according to the organizational functional orientation and business features, ISOEE has been constructed.

### B. The Composition of ISOEE

The ISOEE mainly covers 8 aspects:

The Financial Capacity Index (FCI), which reflects the enterprise's capability of allocating resources rationally and making effective use of financial resources to create continuous competitive edge for the firm. As a manifestation of financial abilities, it measures and assesses corporate comprehensive strength from four aspects: debt risk, operating, profit and development.

The Production Capacity Index (PCI), which reflects the enterprise's abilities of converting, by adopting certain technological methods, the means of production into products to meet the market demands. It measures and assesses the matching degree between the enterprise's scale of production and market demands from six aspects: advancement, cost, quality, efficiency, delivery, investment in the fixed assets.

The Marketing Capability Index (MCI), which reflects the enterprise's capability of meeting the demands of the target market to achieve its marketing goals. It measures and assesses the corporate market competitiveness from three aspects: marketing development, product markets, market expansion.

The Service Capability Index (SCI), which reflects the enterprise's ability of satisfying the customers' service demands. It measures and assesses the quality of the services undertaken by the enterprise from three aspects: reaction to service demands, service quality guarantee, satisfaction degree of the service.

The Human Resource Capability Index (HRCI), which reflects the enterprise's capability of constructing a team of talents and developing and utilizing human resources. It measures and assesses the corporate competitive edge of human resources from four aspects: efficiency of labor, quality of the team, investment into the development of human resources and labor cost.

The Innovation Capability Index (ICI), which reflects the enterprise's capability of supplying various production and operating activities of the firm with new and economically and socially valuable thinking, theories, methods, and inventions. It measures and assesses the enterprise's impetus to sustain and enhance its competitiveness mainly from six aspects: investment into the research and development of new technologies, technical innovation, efficiency of technical innovation, transformation of scientific and technological products, advantage in technology, sustainable development of technology.

The Growth Capability Index (GCI), which reflects the influence and adjusting power that the enterprise should have in order to sustain a healthy development. It is a manifestation of the firm's development prospect. It is measured and assessed from five aspects: academic influence, industry qualifications, adaptive power to industry competition, corporate brand reputation, internationalization.

The Basic Management Capability Index (BMCI), which reflects the foundational conditions, platform and environment of production and business operation. It is mainly measured and assessed from four aspects: corporate culture, safety management, informatization management, white-handedness and honesty of communist party members.

In setting the secondary indexes and the third level indexes, particular attention should be given to the strategic orientation and business matching degree of different industries and enterprises of different kinds. With the units that provide technical support for scientific and technological research, the research, development and manufacture of equipment, information communications, etc, emphasis should be laid on their production capacity and innovation capacity in valuation; with the ones that offer intellectual support for corporate management and operation, development planning of the industry, survey and design, technical and economic consultation, construction of soft power of the enterprise, etc, emphasis should be laid on their service capability and innovation capability; with the ones that provide service guarantee for information communication, material supply, educational training, media and logistics services, their production capacity and service capability should be stresses; with the ones that provide benefit contribution for equipment manufacture, energy production, international business, real estate development, etc, focus should be laid on their financial capacity.

### III. APPLICATION OF ISOEE TO MANUFACTURING GROUP AS AN EXAMPLE

#### A. Index system

Taking a manufacturing group as an example, according to their business features and management reality, having as principles strategic orientation, systematicness and comprehensiveness, classification of design, this essay forms the effectiveness evaluation system with 3-level indexes(as shown in table 1).

TABLE I. MANUFACTURING ENTERPRISE-ORIENTED ISOEE BASED ON THE CORPORATE STRATEGY

A-level Indexes	B-level Indexes	C-level Indexes
FCI	Solvency Index	Liquidity Ratio
		Asset-liability Ratio
	Operating Index	Velocity of Liquid Assets
		Turnover of Account Receivable
	Profit index	EVA
		Gross Profit Rate
		Return on Equity
	Development index	Increase Rate of Business Revenue
Profit Growth Rate		
PCI	Production Advancement	GDP Per Capita of Production People
		Net Salvage Value of Production Equipment as Fixed Assets
	Production Cost Index	Production Costs, Per Unit
	Production Quality Index	Qualified Rate(Inspected by One Time)
	Production & Delivery Index	On-time Consignment Rate
MCI	marketing development index	Average Growth Rate of the Corresponding Period of Sales Contract within 2 Years
		rate of return
	Product Marketing Index	Market price value
		Market Share of Main Products
Market Promotion Index	Average Growth Rate of the Corresponding Period of Contract Amount outside the Industry within 2 Years	
SCI	Service Response index	Convenient Reduced Value of Service Response
	Service Satisfaction Index	Complaint Rate of After-sales Service
HRCI	Labor Efficiency Index	Staff Labor Productivity
	Team Quality Index	Equal Yield Density of Qualified Personnel
	Investment in Human Resource Development Index	Staff Training Rate
		Training Fund Per Capita
labor Cost Index	Personnel Expense Rate	
ICI	Index of Investment in Technology Research and Development	Investment Ratio R & D Funds
	Technological Innovation Index	Average Growth Rate of the Corresponding Period of Patent Licensing within 3 Years

	Transformation of Scientific and Technological Products Index	Contribution Rate of New Products within 2 Years
	Advantage in Technology Index	Technology Reduced Value
	Sustainable Development of Technology Index	Investment Proportion of Funds for Forward Looking Basic Research and Development
GAI	Industry Qualifications Index	Reduced Value of Credit Qualification
	Corporate Product Reputation Index	Reduced Value of Corporate Brand Reputation
	Internationalization Development Index	Average Growth Rate of the Corresponding Period of International Licensing within 3 Years Average Growth Rate of the Corresponding Period of Contract Amount in International Market within 2 Years
BMCI	Corporate Culture Index	Completion Rate of Corporate Cultural Construction
	Safety Management Index	Reduced Value of Safety Management
	Informatization Management Index	Completion Rate of Annual Task of Informatization

### B. Method of Determining Index Weight

Evaluation index system determines the weight of different kinds of indexes through analytic hierarchy process. Analytic hierarchy process is a kind of systemic analysis method, which applies to structurally complex decision problems subject to various decision criteria that are difficult of quantization. It divides and groups a complex problem in order of priority or according to dominance relation, to form an orderly hierarchical structure, and in comparison of one with the other, determines the relative importance of each layer of the structure; then through synthesis within the hierarchical structure it comes up with the general order of the relative importance of each decision-making factor in relation to the overall goal, and finally, after an analysis of the general order, the weight of all kinds of indexes in corporate competency appraisal is determined. In its practical application, the enterprise nature, functional orientation, business scope of each unit under evaluation are comprehensively considered, and a horizontal comparison between units is conducted, as well as a vertical comparison between indexes of all kinds of levels within the unit.

To take as an example "ICI"(A-level index) in Competency Appraisal, it can be subdivided into 3 B-level indexes: "Investment in Technology Research and Development Index", "Technology Research and Development Efficiency Index" and "Advantage in Technology Index", thereof a number of C-level indexes.

For B-level indexes, P subgoal elements are respectively referred to as  $B_k, k=1, \dots, p$ . Conduct a pairwise comparison between any two elemental indexes immediately below  $B_k, C_{ik}, k=1, \dots, p$ , to form a comparative judgment matrix  $C=(C_{ij})_{non}$ , thereinto  $C_{ij}$  represents importance value of element  $i$  and element  $j$ , two relative elemental indexes. To take as an

example the execution of element judgment matrix below subgoals, build an index judgment matrix as shown in table 2:

TABLE II. INDEX JUDGMENT MATRIX

Innovation Capability	Investment in Technology Research and Development	Productivity of Technology Research and Development	Advantage in Technology
Investment in Technology Research and Development	$C_{11}$	$C_{12}$	$C_{13}$
Productivity of Technology Research and Development	$C_{21}$	$C_{22}$	$C_{23}$
Advantage in Technology	$C_{31}$	$C_{32}$	$C_{33}$

In order to form the numerical judgment matrix above, quantification of its judgment according to a certain ratio scale is required, with 1-9 ratio scale being the normal case.

TABLE III. RATING SCALE

serial number	Importance Scale	$C_{ij}$ value assignment
1	$i$ and $j$ are equally important	1
2	$i$ is slightly more important than $j$	3
3	$i$ is obviously more important than $j$	5
4	$i$ is drastically more important than $j$	7
5	$i$ is extremely more important than $j$	9
6	$i$ is slightly less important than $j$	1/3
7	$i$ is obviously less important than $j$	1/5
8	$i$ is drastically less important than $j$	1/7
9	$i$ is extremely less important than $j$	1/9

Note:  $C_{ij} = \{2, 4, 6, 8, 1/2, 1/4, 1/6, 1/8\}$  means level of importance being among  $C_{ij} = \{1, 3, 5, 7, 9, 1/3, 1/5, 1/7, 1/9\}$ .

After one-off inspection of the above matrix and rank ordering, the index weight can be determined.

### C. Computing Method of Index Evaluation Scores

Scores of enterprise's effectiveness evaluation are calculated on the principle of "bottom-up, step-by-step deduction". That is, the fourth level indexes constitute the base of the calculation of the scores of the third level indexes, and accordingly, the scores of the second level the first level indexes can be achieved, and finally the scores of the competency appraisal of the enterprise are figured out. The standard scores of the indexes of the three levels are 100, with no upper limit and the lowest score being 0. The evaluation

scores are calculated according to index trend. Every individual unit's corporate competency appraisal scores are worked out in accordance with the evaluation scores of the first-level index on a weighting basis, the formula being:

$$\text{Evaluation scores of business efficiency} = \sum (\text{Evaluation scores of the first-level indexes} \times \text{Weightiness}) \quad (1)$$

#### D. The Definition Method of the Target Value of the Index Evaluation

The target value of the index evaluation is defined through the Industry Standard Method, the Benchmarking Method, the Operational Budget Method, according to the business features or the size of the enterprise.

The Industry Standard Method has the excellent value of industry index issued by state authorities as the target value of the evaluation. Its application mainly lies in the indexes that can be employed universally in the industry and have authoritative statistical standard, such as asset-liability ratio, gross profit rate, the standard coal consumption of power supply, investment ratio of scientific research funds. The Industry Standard Method defines part of the key indexes of the enterprise and comparison standard of the industry, and realizes an objective evaluation of the enterprise's external competitiveness.

The Benchmarking Method considers the index's best value completed during the previous year as the target value. It is applicable mainly to the common indexes that represent the enterprise's business features, such as AR rate, customer satisfaction, the application rate of technological achievements, staff training rate. Benchmarking method sets up an internal benchmark and realizes an internal comparison of the enterprise's common indexes.

The Operational Budget Method fixes the target value set in each unit's business plan as the target value of the evaluation. Its application mainly lies in the distinguishing evaluation norms of each unit, such as the pass rate of the project quality, the completion rate of the planned overhaul. The Operational Budget Method puts the criteria of index evaluation in line with the strategic goals of the firm, and succeeds in orienting corporate strategic management.

## IV. CONCLUSION AND APPRAISAL

The organizational effectiveness evaluation system based on corporate strategy makes a comprehensive evaluation of the corporate units of different functional orientations and different natures, aiming at reaching an overall assessment of the operating conditions of the conglomerate and detecting timely and accurately the problems existing in its operations, and in so doing improving its global performance. In application of the results of the evaluation, recourse can be had to the information system for the construction of an early warning mechanism of the multidimensional evaluation of organizational effectiveness. In case that a short-board index harmful to enterprise operation emerges, the warning mechanism can immediately and timely report it to the administrator. On the other hand, it is advisable that a regular comparison should be made with the organizational effectiveness of the enterprises of the same type to find out in a comprehensive manner the long boards and the short boards in each and every operation management, so as to lay value evaluation foundations for the later enhancement and perfection of corporate organizational effectiveness, and finally to ensure the implementation and execution of the corporate strategy.

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