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# MANAGEMENT OBJECTIVES IN BUSINESS ANALYSIS

by

*Mitsuo Fujimori*

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### *Preface*

When we measure whether a business enterprise is in good or poor condition, it can be first considered to measure it by the amount of profit. The use of a scale that measures a business enterprise to be in good condition because of a large profit, has been dominant for a long time and is still very influential. However, recently various scales have been considered for measuring business objectives. From the business analysis point of view, having various objectives will make it necessary to examine if the objectives have been really attained, because it will be an important criteria for evaluating the business enterprise whether the objectives made by the business enterprise itself have been attained or not.

When we measure the quality of the business enterprise, we could take various barometers. This is probably related to the fact that the business enterprise is composed of various interest groups. There is an opinion by T.K. Galbraith, that the objectives of the business enterprise are only a consensus made up as the

result of the negotiation among interest groups. The interest groups such as share holders, bankers, employees, and the community and state, participate in the business enterprise, and since each of them asserts his interests, the objectives made by them have different aspects.

Suppose that you were to ask the managers what the objectives of your business enterprise are. There would be various answers ranging from concrete objectives such as an increase in profit, growth in the rate of sales, development of new products and consumers' service, to abstract ones such as the achievement of "Wa" spirit, friendship, and national service through industry. There are so many classifications that even the same objective is called company creed, business ideology, management strategy, basic management objectives, or business policy. Though the nuance is different, they are all guideposts for taking the some course of action in business behavior in the future. That the objectives of each business enterprise are different from each other as is stated above, shows that the objectives are sometimes considered as the targets of business behavior, or considered other times as a strategy or means and is expressed without being classified. However, basically, can be said that the differences occur because of the following three reasons.

- (1) differences in the stages of historical development in the business enterprise
- (2) differences of the environment of a business enterprise
- (3) differences in the top management value system in a business enterprise

### *1. Stages of Development and Objectives in Business*

Many interest groups have appeared throughout the history of enterprises. Some of them are share holders and bankers who have been present from the beginning when the accounting entity separated from the personal property. Others are the employees, labor unions and the state which can not be ignored any more, and consumers and citizens who have recently become interest groups of the business. Even today some companies have only one original interest group, that is, share holders. In businesses like these, they tend to think that share holders' profit is equal to business profit. Here, short term maximum profit, maximum profit per share, maximum price of stock and maximum present value are often adopted as the business objectives.

At the next stage of business development, it was employees that asserted their appearance in business. There was a time when the business enterprise wanted to increase profit by simply deteriorating labor conditions, which has not been legally permitted since the Factory Resistration Act of 1802. Thus, the business enterprise must clear the minimum labor standards. So the persuit of profits must be done within controlled conditions. In order to increase profit the business enterprise must satisfy the minimum requirement of labor standards and must avoid being criticized unfavorably. If there once occurs such a situation as where

the minimum labor standards do not change with the change occurring in society, not only may social trust be lost, but such a situation becomes illegal. In this way, business objectives shifted to a maximization of profit subject to the satisfaction of restrictions. These mainly consisted of labor conditions.

Citizens and general consumers have participated in the business enterprise as a third interest group. They have been considered as totally non-business people. However, as the size of businesses have become massive, and since they have had a great influence upon communities, consumers and the public in general, these interest groups must speak out. With the criticism of mass communication, what was criticized has been made into law. This is the same as with laborers' criticism of labor conditions gradually becoming strong and finally the minimum, necessary conditions were regulated by Labor Law. Those conditions take the form of laws or regulations in various ways. What is called social responsibilities of the business enterprise describes it in another way to satisfy these various requirements of the interest groups. The firm's responsibilities to the share holders and bankers, who have existed in the business since its beginning, are not generally called social responsibilities of the business, because, as said above, it is the profit responsibility, in short, results, that are the responsibility of the firm, and this does not need to be relabeled as social responsibilities. In these new periods, various demands of the interest groups seem to be adjusted by the selection of an acceptable standard. That is because not only are most of these required standards not quantitative, but furthermore they have a variety of aspects, and a standardized quantity criteria does not seem to exist. Among the many interest groups the importance of the quantitative criteria of the profit of the former business' objective became relatively less important and it can not be said simply if there is a large profit that is good. Indeed, it is true that profit is still important in order to pay dividends to share holders, interest to bankers, to provide sufficient salaries for employees and as a tax source for the state. However, it is also true that there is an aspect of business which is more important than just that profit exists. In other words we could say from the standpoint of economics that business objectives have changed from the short term profit to long term profit with many restraints. But from the standpoint of business management theory, which focuses on business behavior and policy, we have more interest in investigating and analyzing the direct factors of behavior than in making the objective to be a single purpose of obtaining profit. One of the main purposes of business management theory is to analyze the course of action of existing business enterprises. In respect to the many objectives of contemporary business, we must think of the following things as well as of profit. Both their factors and their weight change with time, and they are the reflection of what the general public, mass communication and the government regard to be business.

As the subject for pursuit of social responsibility in business, we will consider four types of groups laborers, communities, consumers and users, and the public at large. Each group has three sections as follows.

(i) Factors which are seen in the news paper but as of yet a consensus by the public at large has not been formed, they are called White Zone Factors, which are as follows: open data of factory discharges, investigation of bad social influences of advertisements, the treatment of workers without job guarantee, as well as the regular workers, and so on.

(ii) Factors which the public has formed a consensus on but which have not been legally regulated are called Grey Zone Factors. These are as follows: increasing of the current fifty-five year old retirement age limit, prior agreements with local inhabitants concerning prevention of the factory accidents, safety check of new products, self restraints of price gutting, and so on.

(iii) Factors which are already legally regulated and prohibited to do when the requirements are not satisfied are called Black Zone Factors, such as the following: discharge of polluted materials, security of the safety for the laborers in the factory, monopolistic control, and so on.

The minimum factors that the business must satisfy are in the Black Zone. If a business violates the regulations, they will be held responsible, its behavior will be considered illegal, and it may be forced to discontinue doing business. This is the same case as the historical situation of labor problems, regulating the object of maximum profit, which was made into the law.

Because a violation of a Black Zone Factors is a criminal act, it is a matter considered before problems of social responsibility, therefore Black Zone Factors should be omitted here. The following is thought of as Grey Zone Factors and White Zone Factors for the communities, consumers and users, employees, and public in general.<sup>1)</sup>

	White Zone	Grey Zone
(1) Community	Opening to the public of data about pollution discharge Preparation for possible factory accidents Employment of local inhabitants	Installment of the quipment for prevention of pollution Prior agreement concerning factory accidents Physical contributions to the community environment
(2) Consumers and users	Prevention of excessive sales competition Check of advertisement content Constant acceptance of factory inspection	Safety check of new products Prevention of opportunist price raising Effort for absorption of price increases of raw materials
(3) Employees	Pay level of employees without job guarantees Welfare for employees Pay level	Contents of anti-inflation policy Retirement age Promotion of woman managers
(4) Nationwide	High added value Earning proper rate of profit Concern to developing countries	Concern to subsidiaries and subcontractors Employment of the handicaped Resources and energy savings

The above research reveals that business in modern society must clear the minimum satisfactory level in the many factors as described above, when those factors are made quantitative by proxy and are compared with financial performance.<sup>2)</sup> It also reveals the performance of the business not satisfying these levels is in a bad condition. If a business in modern society does not attain social responsibility, it can not raise its financial performance.

## *2. Economic Environment and Business Objectives*

Next, the business objectives change according to the economic environment of the business. For instance, in the high growth rate period of 1955-65, in Japan, the growth objectives are regarded as important in every business. We could say financial performance in that period was evaluated by a "increase of revenue and rate of growth of profit." Increase of revenue means rate of growth of sales, and rate of growth of profit means increase of profit amount. If you look at the Kaisha-Shikiho published at that time, it shows that the business valuation puts emphasis on increase of revenue. Consequently in such a situation, managers make the objectives corresponding to an increase of revenue and try to accomplish them. This trend could be understood. In fact, at that period, a business with small sales volume had a tendency of being regarded as less valuable than it actually was in spite of a high rate of income. Once Mitsukoshi Department Store was surpassed by the rising Daiei Super Store in its amount of sales. This is rather reasonable, since the criteria by which the business was evaluated was the rate of growth of sales.

During the stable growth period since the oil crisis in 1973, the objectives were different from during the rapid growth period, stable objectives such as profit amount or cost reduction are apt to be adopted. That is, reflected by the trend in each period, the most urgent ones for the business become primary objectives. The business with a small amount of profit makes profit a primary objective, and the one with a low rate of growth of sales makes rate of growth of sales a primary objective. If there is the company with pollution problems, it needs to solve those problems.

Some objectives can be adopted at any period. Some are very important during a particular period, and not so important at other periods. Let's study here the changes of business objectives during the rapid growth period and the stable growth period since the oil crisis.

As shown in Table 1, it was the size of the scale that had a strong influence on business objectives during the rapid growth period in 1969. This can be understood from the following fact that the amount of money such as the amount of profit and sales has more weight than the rate of sales or profit, such as the rate of return of capital or the capital structure. The companies on the second list had a strong inclination towards this. This calls our attention to the fact that the objective, in spite of putting emphasis on sales and profit, it is not the rate that is emphasized but the amount of money. This fact shows the characteristics of

Table 1 Business Objectives in the Rapid Growth Period

Targets	Total businesses	Big companies	Intermediate companies
1. Amount of Profit	31.2%	29.5%	33.7%
2. Amount of Sales	30.5	29.8	31.4
3. Rate of Return On Capital	12.1	13.7	9.8
4. Capital Structure	10.4	11.2	9.2
5. Market Share	5.8	6.9	4.1
6. Average Salary Distribution Criteria of Added Value	5.1	3.5	7.4
7. Standard Price	2.0	1.5	2.8
8. Others	2.9	3.8	1.6
	1,390 companies	811 companies	579 companies

Source: *Questionnaire for Development of Management Ability, Japan Productivity Center, 1969*

Table 2 Strategies in the Rapid Growth Period

Targets	Total businesses	Big companies	Intermediate companies
1. Increase of Market Share or Sales Amount	350 (13.5%)	209 (13.7%)	141 (13.2%)
2. Cost Reduction	291 (11.2)	167 (10.9)	124 (11.6)
3. Development of New Products	290 (11.2)	165 (10.8)	125 (11.7)
4. Modernization of Equipment	194 ( 7.5)	104 ( 6.8)	90 ( 8.4)
5. Recruiting New Employees and Development of Employees' Ability	179 ( 6.9)	94 ( 6.2)	85 ( 7.9)
6. The Principle of a Small Number of Select Personnel and An Advancement by Ability System	177 ( 6.8)	118 ( 7.7)	59 ( 5.5)
7. Improvement of Product Quality	140 ( 5.4)	69 ( 4.5)	71 ( 6.6)
8. Increase of the Capital Debt Ratio	133 ( 5.1)	84 ( 5.5)	49 ( 4.6)
9. Advance into Overseas Markets	132 ( 5.1)	87 ( 5.7)	45 ( 4.2)
10. Enlargement of the Production Scale	112 ( 4.3)	69 ( 4.5)	43 ( 4.0)
11. Introduction of Management Information Systems	94 ( 3.6)	63 ( 4.1)	31 ( 2.9)
12. Strengthening Research and Development (R & D)	80 ( 3.1)	56 ( 3.7)	24 ( 2.2)
13. Advance into New Fields	78 ( 3.0)	51 ( 3.3)	27 ( 2.5)
14. Selection of Higher Margin Products	75 ( 2.9)	36 ( 2.4)	39 ( 3.6)
15. Others	274 (10.5)	155 (10.2)	119 (11.1)
	2,599 companies (100%)	1,527 companies (100%)	1,072 companies (100%)

Source: *Questionnaire for Development of Management Ability, Japan Productivity Center, 1969*

the rapid growth period when the scale was more important than the rate itself. The objective was useful when there was an increase in income, even if the rate of profit was lower.

As shown in Table 2, of importance to this strategy was the growth policy such as market share and increase of sales. This policy is the same at any scale. If some difference must be shown, it is as follows. Of the companies on the first list of the Tokyo Stock Exchange, the main business policies are a principle of select employees and an advancement by ability system, advance into overseas markets and so on. In those on the second list, more important are recruiting new employees and development of employees' abilities and improvement of product quality.

Since the oil crisis in 1973, the Japanese economy entered the stable growth period which is totally different from the rapid growth period. Business objectives and strategies changed eventually.

As shown in Figure 1 and Table 3, market share, which was the objective in the rapid growth period, decreased very much right after the oil crisis in 1975, but after that it was enlarged again in the stable growth period. The rather positive objective of development of new products also decreased very much in the stable growth period, but, since the companies could not rely upon the main products, the positive objectives increased to some degree. Cost reduction is a slightly defensive type of objective, and its aim is to produce a profit by lowering the costs. The in-

Table 3 Trend of Business Objectives

	1974	1975		1976		1977	
	SA	SA	MA	SA	MA	SA	MA
	(%)	(%)		(%)		(%)	
Development of new products	25.3	20.4	54.2	18.9	48.6	21.6	55.7
Market share of main products	46.9	34.1	70.5	36.8	74.3	41.1	73.0
Harmony with community (such as pollution problems)	1.1	0.2	6.9	0.5	6.4	0	1.7
Strengthening exports and direct investment	1.1	3.2	19.9	2.8	22.9	1.5	15.2
Cost reduction by rationalization and labor saving	19.7	27.6	78.2	29.4	87.6	24.5	84.1
Cutting down the number of employees	—	4.4	25.3	2.8	16.3	5.0	28.1
Employees' welfare	0.4	0.2	3.3	0	3.4	0.4	2.0
Diversification	3.4	1.1	6.5	0.5	11.0	0.6	3.9
Consolidation	0	0	0.2	0.2	0.7	0	0.2
Consumers' service	0.2	0.6	3.1	0	1.6	0.2	1.7
Cutting down the numbers of products	—	0.2	1.3	0	0.5	0.4	2.0
Increase of the capital debt ratio	—	8.0	26.2	8.3	25.9	4.8	30.0
Others	1.9	—	—	—	—	—	—

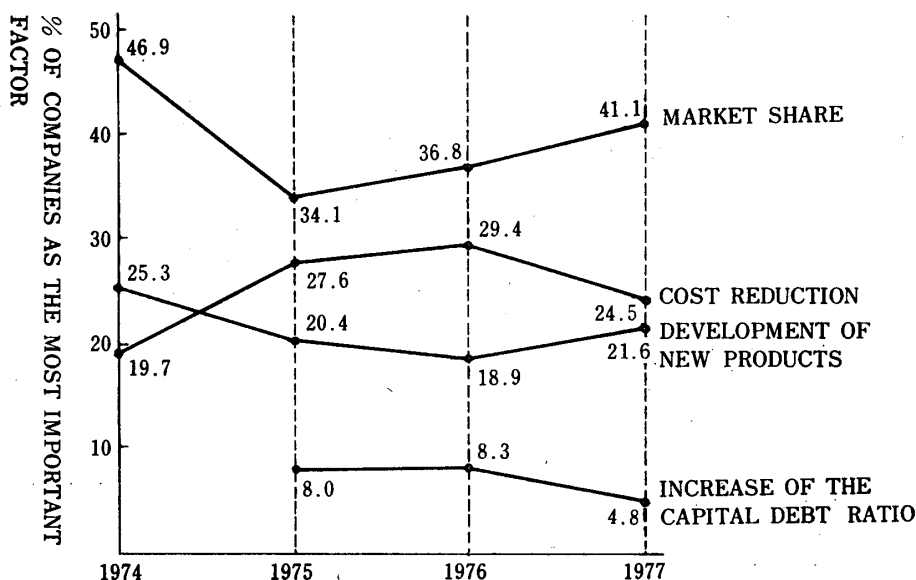
SA: Single answer, MA: Three multiple answers

MITI, *New managerial index*, '74, '75, '76, '77



crease of capital debt ratio is aimed directly at a "trim management" policy by repayment of debt. There were 4.4% of the companies in 1975, 2.8% in 1976, and 5.0% in 1977, whose first objective was cutting down the number of employees.

Figure 1 Trend of Business Objectives



When we define the development of the new products as positive objectives, and the cost reduction and increase of capital debt ratio as defensive ones, we can see that in 1975 and 1976 right after the oil crisis, the objectives turned defensive, and in 1977 turned somewhat positive. Since business behavior is aimed at solving the most important problems, the objectives show which of problems of that period that were to be solved.

### 3. Manager's Value System and Business Objectives

It is quite obvious that a manager's set of values influences business objectives. After an objective was adopted for a long time, even if it was not directly influenced by the manager, in some companies it became the company's character and was called a business creed, or business principle.

Not all companies have managers who have strong leaderships. Besides, in the business society in Japan, on the whole, is apt to adopt a from the bottom up decision making system, so we can say a manager's roles are comparatively small. On the other hand, in many companies, all of the employees work very hard especially after the change of the president, or the founder's value system is maintained as a guideline for the course of action of business behavior.

We could say the manager's values, called business creed, is an abstract business objective. Here is a list of business creeds in Japan.

The most typical one can be seen in Matsushita Electric Company's case. The

business creed of Matsushita Electric company: National Service through Industry, Fairness, Harmony and Cooperation, Struggle for Betterment, Courtesy and Humility, Adjustment and Assimilation, Gratitude.

And as a basic creed, it has "Progress and development can be realized only through the combined efforts and cooperation of each member of our company. Each of us, therefore, shall keep this idea constantly in mind as we devote ourselves to the continuous improvement of our company."

We have heard that this business creed is recited every day by the employees at Matsushita. When the opinions about management split, whether the opinion follows the business creed or not can be judged by this criterion. In this meaning this creed works as guideline for the course of action of business behavior.

The business creed of Hitachi Electric Company: Cooperation, Creativity, Progressiveness, Self-technology. Hitachi's creed has characteristics of directly advocating self technology as well as the mental attitude.

The business creed of Isetan Department Store: Be creative in your job, Be faithful to your guests, Be progressive in your job, Be cooperative at your work station, Be of a merchant spirit in your job, Be proud of your company. The originality of Isetan's creed is that it shows the course of action in each situation. In this meaning Isetan's business creed is somewhat concrete.

These creeds are typical ones in Japan. These three creeds that are expressed in a text are shown here. In many companies which do not express their creeds in a text form, the president's view of business is expressed in his greeting at the beginning of the new year or in the past daily business behavior.

According to *Interview Research of Business* by Japan Productivity Center in 1969, things relating to personal matters, such as management ideology, friendship and co-operation, and a positive attitude towards business are principles adopted most often. Next, concrete matters such as "aiming to be a world wide business" and "development of one's own technology" are adopted. The idea of emphasizing social responsibilities and expressing business as a kind of public institution was noticeable.

Some companies confirm these principles and make them the course of action of business behavior. Some do not lay stress on them or they do not make use of them in actual business behavior in spite of expressing them in a text form, and, of course, some do not seem to have any management ideas like these.

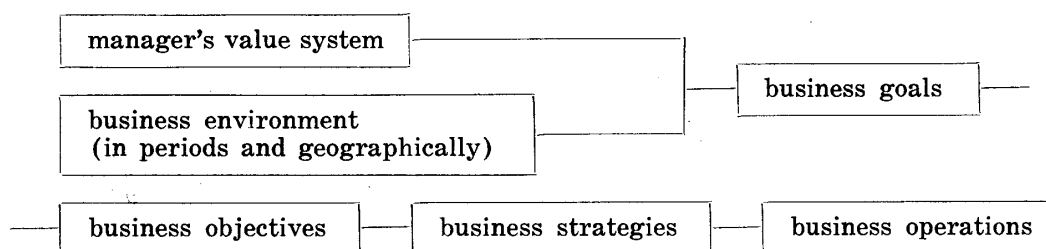
#### ***4. Concrete Objectives and Abstract Objectives***

Among what are called objectives, as stated above, there are various ones based on a business manager's set of values, and the historical and geological environment. Moreover, business objectives are very often confused with the means of attainment. Objectives are a hierarchy ranging from business objectives at the highest level of the organization to the sub-divisional objectives related directly to them, and to personal objectives. Ideally the objectives of the lower

level contribute as the means to attain the ones at a higher level, however, since the objectives are not actually completely a hierarchically integrated objective system, it is reasonable for the target and means to exist mixed together. Besides, the objectives must lead to some attainable course of action. This is another reason why the objectives and strategy exist in a mixed state.

Since it is most important in business analysis to measure the degree of attainment criteria settled in advance in order to take a course of action in business behavior, the objectives need to be quantitative as much as possible. Some say the objectives are qualitatively expressed and the goals are quantitatively expressed.<sup>3)</sup> It is enough to put the objectives on order from abstract ones to the concrete ones, such as the three steps, business objectives, business strategies, and business operations. The objective means are strategies and the concrete presentation of the strategies are operations. The business objectives and strategies are quite often used without distinction, but categorically they should be distinct. Strategies can be thought of as the combination with in the operation of actual activities, and they have concrete characteristics. The above stated is shown in Figure 2.

Figure 2 The Stages of the Business Objectives



### 5. Economics and Profit Objectives

As stated above, the business objectives are different in different businesses, and not always only a single one, some of them are concrete and the others abstract. However, it seems that traditional economics has been analyzing profit or income as a single objective of a business. Knowing that the business objective is not single, traditional economics has been arguing that "the objective of business is long term profit after all." This argument does not coincide well with management theory, because concrete business behavior sometimes does not set profit as the objective. Management theory must explain concrete business behavior. It is easier to explain that we have many concrete business objectives rather than to explain that business objective is long term profit maximization after all, and for that purpose business temporarily takes an opposite course of action in the short run. For business management, definite behavior is always important, so that an objective and its means, strategy are sometimes presented at the same time.

Here, at first, we would like to examine the profit concept in economics. They

say profit is produced by the following four causes.<sup>4)</sup>

1 Profit is the return for the factors (for instance, capital, land, labor) provided by the owners of the firm. So it has the quality of the mixture of interest on capital, rent on land, and wages to labor.

2 Profit is the return to innovators or entrepreneurs. Entrepreneurs are different from management that are simply employed obtaining salary. So profit is paid to entrepreneurs, when he carries out new activities, or when he introduces new processes.

3 Profit is the premium to the bearers of risk and uncertainty. If unstabilized income is inferior to stabilized income, more money must be paid to the capital invested in the risky industries, or no one would invest in these kinds of industries.

4 Profit is the earnings of monopoly. Excess profit is paid to the owners because of the artificial scarcities.

According to P. A. Samuelson, profit in economics is divided into four classifications, but it is not clear how much profit is earned, even if we classify the causes. After all we must depend on corporate financial accounting to determine the amount of profit. Therefore, the conclusion is that profit counted by corporate accounting is the mixture with all of the above four causes. Concerning the corporate accounting's calculating system the following classifications are important.

1 Margin of Profit of Sales = Sales - Cost of the Goods Sold

2 Operational Income = Margin of Profit of Sales - Administrative and Sales Expense

3 Income before Tax = Margin of Profit of Sales ± Non Operational Revenue or Expense

4 Net Income before Tax (taxable income) = Income before Tax ± Special Profit or Loss

5 Net Income after Tax = Net Income before Tax - Tax

Income before tax (called "keitsune") and net income after tax are the most important and are often used as the criteria of business performance in Japan. A large profit means that income before tax or net income after tax is big. When we use profit to measure whether the business is good condition or not, we could say the profit figure generally used is income before tax and net income after tax.

## 6. *A Single Objective*

Let's review the theory that business objective is profit maximization.

### (1) Short Term Maximization Profit

The business' objective in this case is to take a course of action in order to make a maximum profit at each accounting period. This type of business is the old type of business owned and managed by share holders. Therefore, the profit of business is exactly that of the share holders. "If a person expects no change in

economic conditions, and expects to receive a constant flow of receipts, the same amount in every future week as he receives this week, it is reasonable to say that that amount is his income."<sup>5</sup> This is the short term profit objective. Monetary income obtained by exceeding capital is basically profit, and it is profit even if it is a capital gain by price increase of owned raw materials and land.<sup>6</sup>

#### (2) Maximization of Long Term Profit

Since various interest groups existed, the companies needed to consider the requirements of these groups as well as the share holders. These requirements must be considered as the restrained conditions of maximization of profit for share holders. So the profit changed from having a short term character to having a long term character. "A company might sacrifice a part of its profit in one period, but in the following periods increase profit at this cost."<sup>7</sup> Long term profit is not a sum of short term profits, but a present discounted value of these periodical profits and long term profit that is a converted value of expected benefit streams can help us to decide between two courses of action that differ in respect to their timing.<sup>8</sup> The object for business management is to maximize long term profit or present value of expected short term profit streams.

### 7. *Reasons for Existence of Multiple Objectives*

The above single objective will be criticized for the following two reasons from the standpoint of the business administration. The first reason is because it is difficult to connect the single object with the practical, strategic, and operational business behavior. The attainment of maximum profit could be a criteria measuring business performance post factum, but it is difficult to take a concrete course of action of behavior in advance. This is just like in the case of "harmony and co-operation" as a business objective. (But the difference is only that the former can be measured quantitatively.) This objective can not encourage the employees' morale, nor does it show clearly what strategy should be taken. An objective should be connected with more concrete behavior, otherwise we could say it is not useful to management. As stated above, in business management, an objective must be connected with a concrete strategy, but the profit objective does not have such a quality.

But there was one technique with which a connection was tried to be made between the rate of profit investments and business operation. It was the du Pont system. According to du Pont system the rate of profit has two components margin of sales and turnover of capital. Furthermore it concretely becomes a sum of the cost products, sales expense, administrative expense, inventories, receivables, and cash. For instance, the rate of profit will be higher by managing cash control well so as to keep the amount of cash small but large enough to cover current expense. In this way, the du Pont system made clear the relation between concrete behavior and the rate of profit, which is the greatest achievement of the du Pont system.

The second reason why a single profit objective is criticized is, as in the answers of the business managers in fact, because not a single objective, but various objectives exist at the same time. Besides, in modern business there is a situation where business can not take a course of action favorable only to the share holders, because such interest groups, as mentioned previously, exist and their existence influences the business. Indeed, only considering economic values is not enough. Not all the items that are called public responsibilities of business are economic in nature, such as elimination of factory pollution, long term service for consumers, employment of the aged, and so on. It could be said that these responsibilities are hindrances to profit maximization. The actual situation in which these factors must be added for carrying on business should not be forgotten.

### *8. The Contents of Multiple Objectives*

Various factors are considered as business objectives. What is adopted and what is emphasized depend on the period, environment, and management's philosophy, but in any case, the most important thing is management is that the objective is connected with a kind of concrete behavior. According to P.F. Drucker, "objectives are needed in every area where performance and results directly and vitally affect the survival and prosperity of the business."<sup>9</sup>

There are eight areas in which objectives have to be set.

- 1 Market standing (for instance, an objective related to the market share in the existing market of main products)
- 2 Innovation (for instance, an objective related to new products)
- 3 Productivity (for instance, an objective related to marginal profit, sales minus material expense)
- 4 Physical and financial resources (for instance, capital budget, capital procurement plans, etc)
- 5 Profitability (for instance, an objective of a minimum required rate of profit)
- 6 Manager performance and attitude
- 7 Workers performance and attitude (for instance, an objective about labor union)
- 8 Public responsibility (for instance, an objective concerning the discovery of the method to promote social prosperity)

Those areas from 1 to 5 are quantitatively measurable, and they have such a nature that to what extent the objective is attained is quite obvious, once the yardstick of measurement is settled. 6, 7, and 8 are not easily measurable. In these areas human matters are keys, and the objectives require not measurement but judgement.

The above statement of P.F. Drucker's about the objectives made a contribution in making it clear that profit maximization is not the only objective of a business, and that there are multiple objectives. It is true that the objectives should be set in every required area, but, the environment of a business and

management's philosophy put a different weight on every objective. Therefore, some objectives like the one of profit are considered in any era, and some are considered as more important during a particular time, but as less important at other times.

**9. Principle for Selection Among Multiple Objectives**

Let's think of how objectives are adjusted and selected when they are multiple.

(1) Selection by the maximization criteria

For the convenience of explanation, consider the case of an entrance examination. The examination is given as follows. It consists of three subjects of English  $X_1$ , mathematics  $X_2$ , and social study  $X_3$ , with the value of 100 points each. Applicants will pass the examination in the order of the total scores, that is,  $Y = X_1 + X_2 + X_3$ , until the number reaches to the full quota. The high score in any subject is acceptable, if the total score is high. Even if he fails in English, he can catch up in mathematics.

This method is not only used for valuation of business by which the quality of a business is judged, but also used in a merit rating scheme by which personal achievement and ability are evaluated. The general expression is as follows:

$$Y = w_1X_1 + w_2X_2 + w_3X_3 \dots \dots w_nX_n$$

provided,  $w_i$ : weight,  $X_i$ : score in each item

For instance, a middle manager is evaluated by the following 7 items: degree of performance of duties:  $X_1$ , job knowledge:  $X_2$ , judgement ability in planning:  $X_3$ , co-operation:  $X_4$ , the will to work:  $X_5$ , administration:  $X_6$ , educational counseling:  $X_7$ , and the weight of each item is 20, 10, 20, 10, 10, 20, 10 in that order, the total being 100. When the score is evaluated by five (semantic differentials, excellent, good, satisfactory, poor, unsatisfactory), he is evaluated by

$$Y = 0.2X_1 + 0.1X_2 + 0.2X_3 + 0.1X_4 + 0.1X_5 + 0.2X_6 + 0.1X_7$$

X takes one score of each item, that is, 1, 2, 3, 4 or 5. A middle manager with larger Y will be a good manager.

For instance, let's compare two middle managers, A and B as the following.

	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$X_6$	$X_7$
A	3	3	3	4	4	3	5
B	4	4	4	3	4	4	3

A's evaluation:

$$Y_A = 0.2(3) + 0.1(3) + 0.2(3) + 0.1(4) + 0.1(4) + 0.2(3) + 0.1(5) = 3.5$$

B's evaluation:

$$Y_B = 0.2(4) + 0.1(4) + 0.2(4) + 0.1(3) + 0.1(4) + 0.2(4) + 0.1(3) = 3.8$$

Therefore, we can say B's score for merit rating scheme is high.

Now, when we adjust the multiple objectives of a business, it is a little difficult to adjust by the above said merit rating system, because this method is always followed by a selection of weight. This weight is sometimes arbitrary, and a general consent often can not be made. Because of this, the adjustment is often done by the so-called "even split" without factor weighting. The second weak point is that every objective must be presented quantitatively, which is a very troublesome problem. There are many problems involved in quantitative presentation of factors especially in the case of quantitative expression of factors like human beings or the organization, etc.

(2) Selection by the maximization criteria with restraining conditions.

There is a method with which the main objective is maximized while the other multiple objectives are restrained. Again take the example of the entrance examination of a university with three subjects English, mathematics, and social study. The full score of each subject is 100 points and minimum required score is 60 points,  $X_1, X_2, X_3 \geq 60$ . That one of the three scores is under 60 means that applicant fails in the examination. The rest of the applicants are permitted to enter the university in the order of the highest scores ( $Y = X_1 + X_2 + X_3$ ). Here the objective is to make  $Y$  maximized and also at the same time to make  $X_1, X_2$  and  $X_3$  larger than 60 (that is,  $X_1 \geq 60, X_2 \geq 60, X_3 \geq 60$ ).

This method is like the conception of Linear Programing. Let's see the following example.

$X_a, X_b$ ; volume of product of product A and B  
 2.00, 2.50: a unit of profit of product A and B  
 0.50, 1.00: producing capacity required to produce one unit of product A and B in Division I  
 0.80, 0.50: producing capacity required to produce one unit of product A and B in Division II  
 Maximize  $2.00X + 2.50X$   
 Subject to Division I  $0.50X + 1.00X \leq 100\%$   
 Division II  $0.80X + 0.50X \leq 100\%$   
 $X_a \geq 0, X_b \geq 0$

The production volume of product A and B must be within the capacity of Division I and II, and be positive. It is a typical LP problem to survey combinations of the volume of products making the maximum profit. The expression with restraints shows the minimum satisfactory level of each factor.

Generally, when we use this method, we select the most critical objective to be the objective function (profit in the above example) among the various objectives, and we set the rest of them as restrained conditions. Therefore, if employment of labors is a more critical objective than profit, we must set profit as a restrained condition and employment as the objective. But the important thing is, at that time, to rearrange all the objectives in the same dimension. The above example means to transfer the conditions of employment to a monetary term. This surrogate actually seems very difficult.



(3) Selection according to the minimum satisfactory level criteria

Once a decision is made and another try can not be made, usually the selection is not made with the maximization criteria, but instead the selection is made according to a level criteria. This is done as follows. Suppose now that there are four objectives,  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$ .

(i) Set the temporary satisfactory levels,  $S_1$ ,  $S_2$ ,  $S_3$  and  $S_4$  for each of the main causes. These levels do not need to be measured only quantitatively, the use of subjective methods is also acceptable.

(ii) When appraising the company, check whether or not the company could clear each of the satisfactory levels of all the objectives. Even if just one of the objectives does not reach the prescribed level, the company is given the answer "no". Each objective, if it clears the level, whether the level is cleared by a large or small amount, is given the same evaluation. When there is an objective under a prescribed level, the integrated evaluation for the company is "no".

(iii) When there are many applicants who clear all the levels, in order to know their ranking, add the additional objectives,  $X_5$ ,  $X_6$ , and examine whether each of the applicants clears these additional satisfactory levels. It would be self-contradictory to say that a company that exceeds one of the first four criteria by a large amount is better than the other companies, because it is sufficient, or good, just to clear the criteria by any amount of margin.

(iv) In the case where none of the companies qualified at the present minimum required levels, re-examine the companies that have once failed to reach the prescribed levels, then, lower the satisfactory levels. Put the objectives in order beginning with the one which satisfies the lowest level. They should be in the order of  $X_4$ ,  $X_3$ ,  $X_2$  and  $X_1$ . Reduce the initial temporary levels starting with  $X_4$ . Thus as a result, any company that clears this level, is eligible. If again no company clears the lowered level of  $X_4$ , then lower  $X_3$ , also. Since the levels are qualitative, reduction of the level will be done until a difference can be recognized. As a result, if a company clears all the levels, it is eligible. Follow this procedure in the order stated above.

The characteristics of the above discussion are very different from the characteristics of selection by a maximization criteria. First of all the operation does not need to transform all the factors to the same dimension. Quantifying each objective is needed only to the degree that it can be judged that the applicant clears the criteria or not. It is a very strong point of this method to be able to avoid having to forcefully quantify the objectives and having to weight the factors.

The second characteristic is that the integrated evaluation becomes "no", if even only one of the objectives is not attained. This is fundamentally different from maximization criteria with which a low level of an objective is supplemented by the high levels of other objectives.

### Conclusion

We must criticize the point of view that the objectives of a business are just the single objective of profit maximization, because, first, this can not explain the actual behavior of the business, and secondly, it can not explain the diversity of business objectives which is a result of the diversity of the interest groups. In the modern big business enterprise, objectives are inevitably multiple objectives. Especially in a field with a practical character like business administration. It must be said that business objectives must be connected with the business strategy and operation.

The business enterprise has various objectives, that the proportion of the emphasis on these objectives is different is a matter of course. Differences result according to the manager's philosophy, development stages of the business and the change in the environment of the business. The growth oriented objectives were adopted in the rapid growth era, and the stable objectives in the stable growth era, because the objectives emphasized in the society at that period have a tendency to be also main objectives in the business.

There are three methods to adjust and integrate the multiple objectives as a whole.

(1) Maximization criteria — by weighting each objective, the objectives are judged good if the summation of the products of the weight and factors are large.

$$\max Y = w_1X_1 + w_2X_2 + \dots + w_nX_n$$

(2) Maximization with restrained conditions — a method of maximizing the object under many restraints.

$$\max Y, \text{ restraints: } X_1 > S_1, X_2 > S_2 \dots X_n > S_n$$

(3) Criteria by satisfactory level — the method of selection satisfying all the satisfactory levels of each factors.

$$(X_1 > S_1) \cap (X_2 > S_2) \cap \dots \cap (X_n > S_n)$$

The method by maximization criteria, the method by maximization with restrained conditions, and the method by satisfactory level all have both merits and demerits. These methods have been used for business analysis without sufficient examination, therefore this should be re-examined.

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