Economic Approach to Organizational Control

Wanki Paik

(Associate Professor, Kookmin Univ.)

Contents

1. Introduction

The fundamental key variable of organization for development is the willingness of individual person, be it a manager or an employee, to contribute his efforts to the achievement of organizational goal.

How an organization can best keep its members to maximize an objective function is the key problem of control.

This paper is mainly concerned with exploring the ways for effective control of organizational members on the assumption that human is egoistical as well as rational in pursuing his personal goals.

The basic assumption underlying this paper is that human is much more interested in achieving his individual goal rather than organizational goal or collective goods. Therefore, human is interpreted as an economic being rather than a social or psychological being.

Before we attack the main subject, we must clarify that the word "economic" is not confined

to the material incentive but extendeded to the nonmaterial incentive such as status, prestige, or power. Accordingly, human can be called econmic if he is pursuing his personal goal, be it material or nonmaterial, paying little attention to the common goal or collective goods.

Contemporary organizational theorists have been mainly concerned with the elimination of the conflicts between individual's goals and organizational objective in dealing with the problems of organizational control. In other words, goal consensus among the members of organization, or between organization and individuals has been the central problem for effective control of individuals. They assumed that the members of organization would willingly contribute to the achievement of organizational goal if the goal is shared by the individuals. The shared goal or common goal has been considered to be the prime force for the members of organization to motivate their efforts to the organization.

Argyris, indicating that the conflict between the individual goal and organization goal will lead

to the waste of human energy, argues that the existing organization should be redesigned for the elimination of the discrepancy between human need and organizational objective.[1]

Thibaut and Kelly also assume that once norms evolve to ensure consensus, the problem of collective action will be solved.[2] For them the collective good is the prime factor to mobilize individual human energy most effectively.

Downs contends that each member's goals will inevitablly diverge to some extent from the organization's normal goals, and from the goals of other individuals therein. Such divergencies result from the four basic causes of conflicts: differential self-interest, differential modes of perceiving reality, differential information, and uncertainty.[3] Here, the goal variance itself is caused by technical factors (differential information) as well as the conflicts of interests. Downs contends that this goal conflicts is the crucial cause to bring about the ineffectiveness of productivity in organization. He mainly relies on selective recruitment, indoctrination, or use of ideology for the elimination of goal conflicts. In other words, he resorts to the goal consensus caused by the selective recruitment, indoctrination, and ideology for the effective utilization of human energy in organization.

For the theorist above-mentioned the crucial matter for the effective control of organizational members is how far the degree of consensus is formed. If there are many serious disagreement, there will be no coordinated, voluntary effort. But if there is a high degree of consensus on what is wanted and how to get it, there will almost certainly be effective group action. The degree of consensus is regarded as the only important determinant of the effective group action.

Olson chalenges the goal consensus approach to the organlizational control. His main assumption is that the egoistic motives of self-preservation and self-satisfaction are the dominating force for the organization control. Even the collective good basedon common interest or common goal is not sufficient to bring about the strong motivation of individuals for the achievement of organization's goal. Even though all of the members of the group have a common interest in obtaining the collective benefit, they are not willing to contribute to the organizational goal unless they have selectives or unless they are coerced to do so.[4]

Olson refutes that perfect consensus, both about the desire for the collective good and the most efficient means of getting it, will not always bring about the achievement of the group goal.[5] To be sure, as Olson indicates, the assumption that there is a goal consensus is unrealistic one, for the goal consensus does rarely occur.[6] Usually an organization is a group of individuals seeking to achieve his own objective which is not, in general, coincident with those of organization.

Let us now suppose there is a perfect consensus among individual members of group. Can we automatically anticipate effective contribution of individual members to the organizational goal? Olson's answer is "not". He argues that common benefit or common goal does not provide an incentive for any of individuals in the organization.

(1) Chris A gyris, *Integrating the Individual and the Organization*, John Wiley, 1964.
(2) J. W. Thibaut and H. Kelly, *The Social psychology of Groups*, John Wiley, 1959.
(3) Anthny Downs, *Inside Bureaucracy* Little, Brown and Company, 1966, p. 134.
(4) N. Olso , *The Logic of Collective Action*, Schocken Books, 1969, p. 21.
(5) *Ibid*, p. 59.
(6) *Ibid*, p. 59.

The central component of his argument is that large groups of individuals have no tendency to act voluntarily to further their common interest, unless the group is able to enforce coordination or unless the group has an independent source of selective incentive. Here, the motivation to serve the common interest is supplemented by a motivation to serve personal interest.

Small groups are more likely to act jointly to secure common interest. The reason large groups do not spontaneously act jointly is that each individual perceives his contribution to be small as not to be noticeable in the over-all effect.

We come to conclude that we are likely to resort to the optimum size of group(hierarchical system) selective material and nonmaterial incentive, and coercive power for the effective organizational control.

2. Price System (Material Incentive)

Market place has remarkable possibilities for the reconciliation of conflicting individual goals and the allocation of scarce resources among competing ends. This price system can be applied within organization in the same way it is in the whole economic system as one of the major devices for coordinating different activities. Kenneth J. Arrow suggests that we must be prepared to recognize that intraorganizational transactions will have the same economic contents as price mediated transactions. [7]

Many of transactions within an organization are similar to those that take place in the market. Here, price can be used to regulate transactions within the organization. The function of price to regulate the transaction within the organization are usually referred to as "transfer price." [8]

In the purest form, a price is attached to each commodity and services produced or consumed by any activity in the organization. The activity or sevice of the individual worker has the corresponding price. Control problem is the choice of correct price for the contribution of individual. Of course, individual worker always tries to maximize his utility, as computed by valuing its inputs and outputs at the transfer price.

If the price are first set by guesswork, each individual worker can make a set of tentative decisions. If the resulting inputs and outputs match, then the prices were indeed the correct one; if not, the normal precedure would be to raise the prices of those goods for which demands in the aggregate exceeds supply, and lower those for which the contrary is true. [9]

The price system is a satisfactory way under the assumption that every individual worker pursue to maximize his utility. The successive adjustment in the prices require information about the supplies and demands of individual activities. But this price theory for control needs many assumptions for practical use. Before we deal with these problems, let us see how some theorists approach this price system.

March and Simon explained price system in terms of the inducement-contribution postulates. [10] They indicate that equilibrium reflects the organization's success in arranging payments to its participants adequate to motivate their continued participation in organization.

The central postulates of the inducement-contribution theory are stated by Simon, Smithb-

---

(7) K.J. Arrow, "Control in Large Organization" *Management Science*, April, 1964, p. 403.

(8) *Ibid*, p. 404.

(9) *Ibid*, p. 404.

(10) J.G. March and H. A. Simon, *Organization*, John Wiley, 1958, pp. 84-110.

urg, and Thompson.[11]

1. An organization is a system of interrelated social behavors of a number of participants in the organization.

2. Each participant and each group of participants recive from the organization inducements in return for which he makes to the organization contribution.

3. Each participant will continue his participation in an organization only so long as the inducements offered him are as great or greater (measured in terms of his values and in terms of the laternatives open to him) than the contribution he is asked to make.

4. The contribution provided by the various groups of participants are the source from which the organization manufactures the inducements offered to participants.

5. Hence, an organization is "solvent" and will continue in existence only so long as the contributions are sufficient to provide inducements in large enough measures to draw forth these contribution.

The balance of inducements and contributions for each participant, measured in terms of his utilities, is the main factor to mobilize the efforts and energies of the individual workers effectively. The inducement-contribution postulates require procedures for measuring (in terms of individual utilities) the inducements offered by the organization and the contribution made by the participant.

Inducements are payments made by the organization to its participants. These payments can be measured in units that are independent of their utility to the participants. For example, wages and income can be measured in terms of dollars. Consequently, for an individual participant we can specify a set of inducements, each component of the set representing a different dimension of the inducements offered by the organization. For each component in the set of

inducements there is a corresponding utility value. The utility function for a given individual reduces the several components of the inducements to a common dimension.

The contribution made by participant to organization can be also measured in units that are independent of their utility to the participants. Consequently, for any individual participant we can specify a set of contribution.

The individual worker is assumed to continue his work for the achievement of the organization's goal the inducement utility coincide with contribution utility. In other words, if the inducements give a positive balance for all groups of participants, they will devote themselves to the achievement of the goal.

Cyert and March explains price theory in terms of bargaining process.[12] They argue that all conflicts are settled by the side-payment bargaining. The entrepreneur purchase whatever services he needs to achieve his objective. In return for such payments employees contract to perform whatever is required of them. In other words, the price of the service is the meditating mechanism by which empoyee and entrepreneur form a coalition.

An organization coalition is viable if the payments made to the various coalition members are adequate to keep them in the organization. If the resources exist to meet all demands and those resources are distributed so as to meet demands, the employees are motivated to devote themselves to the organizational goal. Since demands adjust to actual payments, there is a long-run tendency for payments and demands to be equal.

Cyert and March insist that in bargaining side-payment appear to have performed the function

(11) H. A. Simon, D. W. Smithburg, and V. A. Thompson, *Public Administration*, Knopf, 1950, pp. 381 382.

(12) R. M. Cyert and J. G. March, *A Behavioral Theory of The Firm*, Prentice-Hall, Inc., 1963, pp. 29- 2.

of speci ying a joint perference ordering. [13] Side-payment , far from being the incidental distribution of a fixed resources, represent the central process of goal specification. A significant number of these payments are in the form of policy commitm nts. In the process of bargaining over side-pay ents, many of the organizaational objective are defined or clarified.

L.R. P ndy, indicating the reduced effectiveness of marke mechanism, proposes internal resource-allocation approach for the effective control system. [14] He argues that resource allocation to various output activities takes place so as to maximize the organization's utility function, subject to the budget constraint of the limited resources. Resources will be reallocated in response to change in input price, the level of available resources, and the goals of the organization. He argues th it this approach is essentially the theory of individual consumer behavior. The "consumer theory of organization" provides us with a tool for explai ing how the entry or exit of members of the or anization may change the production function and the allocation of resources to selected output ac ivities.For example, a potential member with some scarce skill or talent may demand as an induce nent to his participation that organization chan e its goal.If his command of a special technologi al skill sufficiently changes the produc tion funct on so as to allow to achieve its exist-ing goals more effectively, the organization may be willing to make a "policy side-payment" in return. [15]

Pondy's internal resource-allocation approach is a modifica ion of price theory. Especially in the case of allocation of resources to the individual worker, there is no difference between price theory and resource-allocation theory if the individual worker is permitted to leave the organization to which he belongs at will.

The price systems we explained above, regard-less of the different designations, are basically concerned with equal pays for equal works and activities. The emphasis of this price theory is that the price must represent the marginal co-ributions of the individual worker to the organi-ntzational goal.

But there are some problems for the price theory. First, the price by which organizational coalitions are formed does not satisfy the requi-rement of unrestrained transferability of utility. [16] There are some kinds of works where quality standards are significant and not easily checkable in detail by the purchaser of individual worker.

Second, payments and demands are in the form of a variety money payment, perquisities, policies, personal treatment, and private commitments. As a result, information or actual factors "price" is hard to obtain and often unreliable. [17]

Third, information about the "market" is not, obtained automatically; it must be sought. Typically, the participant in the organization do not seek information until stimulated to do so by some indication of failure. [18]

Fourth, it is hard to get an universal criterion to measure the performance or contribution. If the index of performance is based primarily on ouput rather than profit, the individual worker will be tempted to be wasteful of input.

Because of the above frictions in the mutual

(13) *Ibi l*, p. 30.
(14) L. R. Pondy, "Toward A Theory of Internal Resource-Allocation" in M.N. Zald(ed.)*Power In Or anization,* Vanderbilt University Press, 1969, pp. 270-307
(15) *Ibi l*, pp. 272-273
(16) Cy rt and Mar h, *op. cit,* p. 29.
(17) *Ibi l*, p. 87.
(18) *Ibi l*, p. 36.

adjustment o payments and demands, there is ordinarily dis parity between the resources availabe to the organi ation and the payments required to maintain the coalitions. The organizational slack caused by these conflicts is present in any organization.

We propose that the problems in price theory can be solvec to some extent by the following assumptions.

First, we a sume that utility function of both inducement a d contribution changes only slowly. [19]

Second, we assume that each utility function is monotonic with respect to its corresponding inducement o contribution. [20]

Third, we a sume that utility function of broad classes of people are very nearly same; within a given subculti re there is no radical difference in values.

Fourth, we assume that the technology of the organization i given.

Fifth, we a sume that both external and information cost ir the organization is zero.

3. Nonmaterial Incentive

In every type of organization, for whatever purpose, nonmaterial incentives are necessary.

Olson argue that selective social incentives constitute powerful motivating force for individual worker to make effort to the achievement of organizational goal. [21] He asserts that economic incentives are not, to be sure, the only incentive. People are usually also motivated by a desire to win respect, prestige, friendship, and other social or psychological utility. Any incentive, be it economic, social, psychological, or moral, can mobilize human efforts effectively to the exten they provide selective incentive.

Barnard also indicated that inducement of a personal, nonmaterialistic character are of great importance to secure cooperative effort above the minimum material rewards essential to subsistence. [22] The opportunities for distinction, prestige, personal power, and the attainment of dominating position are much more important than material rewards in the development of all sorts of organization. Even in strictly commercial organization, money without distinction, prestige, position, is utterly ineffective. It is rare that greater income can be made to serve even temporarily as an inducement if accompanied by suppression of prestige. Barnard argues that there is unlimited experience to show that among many men, and especially among women, the real value of difference of money rewards lies in the recognition or distinction assumed to be confered thereby. [23]

The hierarchy of position with gradation of honors and privileges is essential to the adjustment of nonmaterial incentives to induce the sevices of the most able individual or the most valuabe potential contribution to organization.

Ideal benefation is also one of the strong social incentives. Ideal benefaction is the capacity of organization to satisfy personal ideal usually relating to the future of of individual. [24] This usually includes the opportunity for the satisfaction of the motives of hate and revenge, often the controlling factor in the intensity of effort in some organization.

(19) March and Simon, *op. cit.*, p. 86.
(20) *Ibid*, p. 87.
(21) Olson, *op. cit.*, pp. 60-64.
(22) Chester Barnard, *The Function of Executive*, Harvard University Press, 1938, p. 144.
(23) *Ibid*, pp. 60-64.
(24) Ibid p. 146.

4. Optimum Size of Organization (Hierarchy)

As mentioned earlier, Olson emphasized the importance of group size to achieve collective good. He argues that unless the number of individual in a group is quite small, rational and self-interested individuals will not act to achieve their common or group interest.[25] For Olson what is important is not the total number of individual but the number of decision centers, each of which may be made up of several individuals. Why are the individual workers hesitant to contribute willingly to the organization, even if they share the common interest? Olson answers in that individual worker's efforts will not have a noticeable effect on the situation of his large organization. The individual worker can enjoy any result brought about by others regardless of the amount of his work for organization.

Olson also contends that some latent large groups can be collectively mobilized by federating them, that is, by coalescing them into a small, manageable number of subgroups.[26] Here, hierarchical system is required for the effective control.

Before we deal with the optimum size of hierarchy, we will see how Tullock and Downs perceive hierarchical system for organizational control.

Tullock and Downs, perceiving organizational control in terms of the maintenance of goal consensus among members of organization, argue that the hierarchical system with many levels is not likely to get effective control because of the distortion information.[27]

Tullock argues that information is unintendedly distorted and biased each time it is passed from one level to another, upward or downward, even in the absence of goal conflict among members.[28] The more hierarchical levels there are in an organization, the greater the cumulative distortion and bias of information; therefore the greater the divergence is between actions at the operational level and goals at the top of the organization. Such cumulative control losses eventually create an internal limitation to the size of the organization.

Tullock's arguments have been refined and extended by Downs. Downs contends that at every level there is a certain discretionay gap between the orders an official receives from above and those he issues downward, and every official is forced to exercise discretion in interpreting his superior's orders. Downs insists that whenever rational officials have the power to make choices, they tend to use that power to achieve their own goals.[29] Each official's goal will inevitably diverge to some extent from the organization's formal goals. This rsulting diversion constitutes a leakage of control. Let us take an example of how this leakage of control takes place.

The president of organization issues an order to his immediate subordinates, B-level. B's orders to his C-level subordinates embody only 90 percent of what the president originally desired. C-level officials also distort the orders they receive to some degree. D-level officials will receive commands embodying 81 percent of what the president really desired. If similar distortion

---

(25) Olson, *op. Cit.*, p. 14

(26) *Ibid.*, pp. 60-62.

(27) Antony Downs, *op. cit.*, pp. 132-143.
    Gordon Tullock, *The Politics of Bureaucracy*, Public Affairs Press, 1965, pp. 131-141.

(28) Tullock, p. 38.

(29) Downs, p. 134.

continues at each level, G-level officials will be aimed at accomplishing only 53 percent of what organization's goal originally desired. From the point of the organization's formal goal, almost one-half of the activity carried out by the entire organization is wasted motion.[30] Here, Downs insists that in any large, multi-level bureaus, a very significant portion of all the activity being carried out is completely unrelated to the formal goal.[31] He concludes that as the organization grows, the proportion of wasted activity rises steadily. In other words, no effective control can be guarranted in the large organization with many levels of hierarchy.

Downs and Tullock share the similar idea with Olson from the viewpoint the larger any organization becomes, the poorer the control is. However, when we come to apply their respective ideas to a given organization, we are led to get different answers contradicting each other. Tullock and Downs alike attempt to avoid the hierarchical system with many levels for the elimination of distorted communication. In other words, they seem to favor the flat organization based on wide span of control for the effective control. Contrally, Olson favors hierarchical arrangements based on narrow span of control for the effective mobilization of human energy.

We are now facing the problem of deciding the optimum size for the effective control. How should we divide the large group into small, manageable numbers of groups for the minimum cost of effective control?

L.R. Pondy explains that the optimum size of organization takes place when it minimizes the total of external cost and coordination cost. Let us see his explanation in more detail. He argues that, other things being equal, the cost of

coordination will increase as the number of subunits being coordinated increase.[32] For example, consider an organization comprising twelve subunits, each of which imposes external costs on the others. Coordinating all twelve subunits together is more costly than coordinating the decisions within two groups of six units, which in turn is more costly than coordination within three groups of four subunits, etc. When all twelve subunits allocate their resources autonomously, coordination costs are zero, but external costs are at a maximum, As the size of the coordination unit increases, the coordination cost increases, but the external costs decrease until external costs reduce to zero. His explanation is shown in the Figure 1.

Pondy concludes that coordination through hierarchical authority will tend to reduce estimation bias and noncompliance with intention, primarily because of authority figure's control over the careers of departmental officials and other resources required by the department.

Figure 1 External and Information Processing (Coordination) Costs As Function of Coordinating Unit
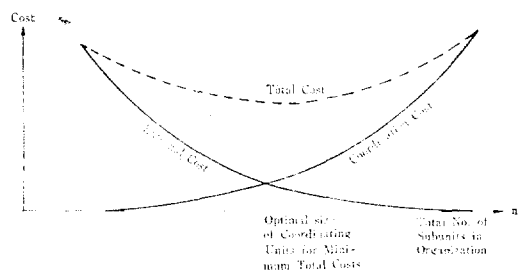
We will develop a simple mathematical approach for the optimum size of organization units.

----

(30) *Ibid*, p. 135.
(31) *Ibid*, p. 136.
(32) Pondy, *p. cit.*, p. 286.

A. Let us, first, emaine the relationship between coordinati n costs and the size of group.

a. As he size of group, n, increases. the coordinati n costs, C_i, will increases. Here, we assume th at as n is infinite, C_i is also infinite $(n\rightarrow\infty$ le ds to $C_i\rightarrow\infty)$

b. Whe group size, n, is composed of only one perso , information costs' C_i, is assumed to be minim m.

We will use the exponential function (e^{km}) as the functi n which satisfies the above assumption, that s, $C_i=Ae^{kn}$ (A and K are characteristic constants determined by kinds of work or the likes)

B. We vill see the rlationship between the size of group, n, and external cost, C_e.

a. As t ie size of group increases, the external cost, C_e ill decreases. In other words, as the numbers of groups increase, the external cost will incre se. If the size of group, n, is composed of only ne person, the external cost will be maximum that is as n=1, C_e=maximum.

b. Whe the group size, n, is infinite, that is, the numb r of group becomes one, the external cost will e zero.

Expone tial function will be used for the function vhich will satisfies the above assumptions, that is, $C_e=Be^{-kn}$ (B and k' are characteristic consts nt from A and k)

C. The total costs, C_t, will be defined by the sum of e ternal cost and information cost. $C_t=C_i+C_e$, t at is, $C_t=Ae^{kn}+Be^{-k'n}$.

D. To et the optimal size of group, n_{op}, which minimize the total costs, C_t, we will find the value of z which makes the first derivative of the total costs, C_t, with respect to n zero. That is, $\dfrac{dC_t}{dn}=0$.

5. Coercive Power

Olson, emphasizing the selective incentives and size of group for the effective control, regards coercive power as also important. He contends that coercion or some other special devices to make individuals act for the objective of organiz ation should be accompanied by the satisfaction selfish utility.[33] In other words, coercion compliments and strengthens effective control system.

Barnard also indicated that contributions secured by force seemed to have often a necessary process of cooperation.[34] The degree of need of coercive power to control members of organization differ largely according to the ranks of the participants that are controlled and the kinds of organization.[35] Other things being equal, coercion is more likely used in the lower ranks than higher ranks. And military organization, concentration camps, prisons, correctional institution, and prisoners of war camps are such places where coercive power is mainly used. The need of coercive power is closely related to the compulsory membership of the organization and the ease of withdrawl from the organization. Coercion is predominantly used in the organization where the membership is compulsory and the withdrawl is not easy.

However, the coercion is also necessary in any type of organization with difference of degree of need, be it bureaucracy or economic organization. This coercion usually includes the enforcement of regulation (norm or law), discharge, degradation, demotion, withholding of benefit, etc.

6. Conclusion

We have examined some requirements for effective control in organization on the assumption

---

(33) O son, pp. 7-10.

(34) B rnard, *op. cit.*, p. 150.

(35) A nitai Etzioni, *Modern Organization*, Prentice-Hall, Inc., 1964, p. 59.

that man is rational to maximize his utility.How to satisfy this utility is the key variable for the effective control. This utility is not confined to economic utility, but extended to social, moral, and psychological utilities.

We think that price system and hierarchical system are logical derivatives for the most efficient mobilization of human energy on the self-seeking assumption. Price system provides a way to satisfy economic incentive while the hierarchical system affords facility in which social incentives and coercive control are easily met.

Bibliography

1. Chris Argyis, *Integrating the Individual and the Organization*, New York, Wiley, 1964.
2. Kenneth J. Arrow, "Control in Large Organization," *Management Science*, April, 1964.
3. R.M. Cyert and J.G. March, *A Behavioral Theory of the Firm*, Prentice-Hall,Inc., 1963.
4. Chester Barnard, *The Function of The Executives*, Harvard University Press, 1938.
5. Anthony Downs, *Inside Bureaucracy*, Little, Brown and Company, 1966.
6. J.G. March and H.A. Simon, *Organization*, New York, Wiley, 1958.
7. Amitai Etzioni, *Modern Organization*, Prentice-Hall, Inc., 1964.
8. N. Olson, *The Logic of Collective Action*, Schocken Books, 1969.
9. L.R. Pondy, "Toward A Theory of Internal Resource-Allocation" in M.N. Zald (ed.) *Power in Organization* Vandervilt University Press, 1969.
10. J.W. Thibaut and H. Kelley, *The Social Psychology of Groups*, New York, Wiley, 1959.
11. Gordon Tullock, *The Politics of Bureaucraby*, Public Affairs Press, 1965.