

Decision Making on Value Engineering

Ichibei KUDO and Makoto BITO

価値工学における意思決定に関する研究

工 藤 市兵衛・尾 藤 信

We confess at the outset that we don't really know how decision making actually takes place. This is a pity, because decision making is a truly indispensable process. But pity or not, our ignorance is a fact. We do, of course, know a good deal about the steps which managers have found to be helpful as prerequisites for making decisions. So we will, in this paper, study on the subject.

(1) The Need for Alternatives.

Thomas Hobson was a sixteenth century stable owner. He was also a firm believer in the first-in first-out principle. He rented his horses out to the U-drive men of that era on a strict basis—You take the horse that has rested the longest, or none at all, Hobson's customers might inspect all the horses, but they would "decide" to take Hobson's choice.

This spectacle goes on apace in modern industry. A key job suddenly opens up, and there is no one ready to fill it. No one. No one, that is, except maybe Stanley.

Stanley has been the corporal in this department for years. No one has ever thought of him as a candidate for the top job. No imagination, colorless, a plugger, a steady-Eddie.

But suddenly we are faced with a crisis. We must fill this job promptly because so many things are popping.

We must decide, right now. So we take a second look at all our candidates, namely, Stanley.

Stanley has played ball with the company. His attendance record is unique. He has never refused to pitch in an emergency. He hasn't uttered a peep at being passed over for promotions. Shouldn't seniority count for anything around here? And how about that vanishing commodity, old-fashioned loyalty?

We favor to take it sound plausible. And we give the job to Stanley. Thereafter, for years, he does the job.

No imagination, colorless, a plugger, a steady-Eddie, Exactly according to forecast.

We didn't "decide" to give Stanley the job. We had maneuvered ourselves into a situation where we had Hobson's choice.

The need is for alternatives. If we are going to fill a key job, we should have several competing candidates. If we are going to buy a house, elect a public

official, award a construction contract, revise a process, we should have several competing candidates. Otherwise, we have Hobson's choice. Any pretense of "deciding" is just a pathetic ritual.

One of our alternatives is making better use of what we have. Remember the case of the phony figures? There we made an unfair comparison. We compared the proposed method operating at optimum efficiency with our present method operating at mediocre efficiency. Hence an added alternative was to make no change in process, but to beef up the present process.

But what if there are no alternatives? Then, say many authorities, delay your final decision. "We should make plans so that we may have plans to discard." Use the delay to create alternatives. Search for competing candidates. Assign people to work out competing proposals.

The alternative may be there but we haven't smoked them out. One of our nine sales representatives is outdoing the rest, by a good margin. He did it by setting up a repair service which, though it is marginal for profit, has attracted a good deal of new business. But no one understands this. The "reps" know that there is a star in their midst, but they don't know just what makes him a star. (Neither does the star know—his book aren't that precise.) And we don't know, but we should. We have the most at stake, and we are in the best position to look into why these performances are different.

Conference leaders have long made use of the principle of competing alternatives. They stimulate people to talk, to come up with ideas, even if you are just thinking out loud. A good conference leader puts these ideas on the blackboard immediately, without challenge. Once these competing ideas are on display, they will be challenged, to the hilt. But they will also elicit support. The resulting contest will, of course, discard many ideas. But the surviving ideas will be the

better for it, and there will be greater confidence that there has indeed been a survival of the fittest.

The ultimate in grasp of the principle of alternatives is resached when a manager's internal alarm system stops him in his tracks. "I'm in a fix where I have Hobson's choice. So I'll decide as little as I mnst. And I'll set wheels in motion to develop alternatives as to the undecided residue."

(2) The Right to Decide.

The line manager, not the scorekeepers, is responsible for making the decision on what to do when performance departs from standard. There is fairly complete agreement on this principle. Otherwise we would be taking away with the left hand responsibility we gave with the right hand. The jurisdictional problem on decision making is rather among the various line managers. Some of this problem arises because the work of several line managers must be coordinated. But some exists as between the line manager and his boss.

The pyramid of control made clear that most control action takes place at the bottom of the company. It is inevitable that most decision making likewise must take place at the bottom of the company. This, of course, requires delegation of the right to make decisions. And it requires that the men at the bottom be stimulated to be stimulated to be decisive.

The fact of degation is what counts ; The form is optional. Delegation may be a matter of unwritten precedent ; there may be a list of don'ts with the implication that all else is delegated ; or the delegation way be spelled out with the implication that anything not on the list is reserved to the boss. Now and then there is an attempt to define everything.

(3) The Duty to Decide.

We can pass quicly over the conventional esablishment of the duty to decide. The job descriptions contain the proper clauses, and the usual motivations of reward and punishment are in the background. We might best devote our attention to the overshadowing force—the environment of law and order.

To some it may seem reprehensive for a manager to secure compliance by threat of invasion. But it is only an expression of a universal reality. (Nonunion shops may follow enlightened practices because of the threat of unionism). The subordinate who is motivaled to keep things under control has acquired skills and habits which will be increasingly valuable to the company and himself.

(4) How Much to Decide

A profound question in decision making is just how much to decide. The manaqer's range is wide. He can not to decide. Or he can commit the company to a considerable risk. The process by which he chooses a sector of this spectrum is still a mystery to us. But we

might dwell on an important related matter : futur events have a way of sneaking in, as uninvited guests, behind today's decisions.

Keeping these uninvited guests out is important enough, in enough cases, to warrant a question on the manager's agenda : "How much should we decide ?"

The uninvited guest are of two main classes :

1. In deciding this case, we are committing ourselves to a "Whole course of action."
2. In deciding this case, we are setting a precedent for a whole host of cases.

The usual approach to the "whole course of action" problem is to split the program up into logical steps. As each step is taken, we can review the situation, and make a new decision on wether to proceed futher or to call a halt.

In effect, we distinguish between a plan of approach and a definite decision. This distinction, though widely practiced, is not well understood.

An example is the capital appropriation budget. This is prepared annually, based on anticipation of projects to be initiated or continued in the year ahead. The total is estimated, reviewed, and finally approved, as a plan or budget. This approval is not an authority spend the money. The spending authority comes later, project by project.

There are managers and engineers who deplore this state of affairs. Why go through the ritual of approving something as a plan but with holding approval to spend the money ? The reason is that new developments may require that we change our position. Between December (when the plan is approved) and a year from now, a product becomes, obsolete, a key man dies, a customer abandons us, a new machine comes on the market, a recession looms up. We must flexibility.

In The same way, some companies prepare sales forecasts for 5 years ahead. But the firm authority to produce per schedule may be limited to only the next quarter, or even to the next month. We know, from bitter experiens, that we must retain frexibility.

Despite the absence of firm decisions, the planned approach has great value. It "combs out our thinking." We cannot prepare the plan without going through some wholesome disciplines of fact collecting, study, etc. Moreover, the plan is not an academic exercise. We intend to carry it out. If the conditions we had forecast actually come to pass, we do carry the plan out. Otherwise, we change the plan.

The other problem of uninvited guests is that of precedent. "If we do this in situation A. we will have to do it in all similar situations."

If the manager is afraid of precedents, let him talk to the lawyers. They have faced this problem for centuries. Under the Anglo-Saxon system of law. a decision becomes a precedent to be followed in the future in like cases. Otherwise the law will be applied unfairly and unpredictably.

The lawyer's solution is to get pretty precise. "If we do this in situation A, we do not have to do it in all similar situations ; only in identical situation. We can seize on the differences to arrive at different answers."

A precedent applied to the vilale few does not have to applied to the trivial many ; the economic balance is different. What we do in the Eastern Zone does not have to result in the same action in the Western Zone, in spite of what some of the staff men say "The same action" might be the right thing to do. But not because it has rights as an uninvited guest. When we made our earlier decision, it was restricted to the cace at hand.

(4) The Time Factor

The effectiveness of a decision depends greatly on the timing. The proverbial "stitch in time" and "nip in the bud" have their counterparts in modern industry. A failure to lubricate ruins a good machine ; slow settlement of a grievance loses a good man ; hesitancy in bringing out a product loses a market. The rerative cost of badly timed to well-time decisions can be enormous.

In other cases, time acts not as a magnifier, but as an evaporator. Many problems "solve the selves," meaning there are forces at work which don't need help.

Discovering what kind of case are dealing with requires that we know the time perspective, the

trends. When we limit ourselves solely to control during the fact, we may look ridiculous several years hense.

(5) Action in Theory and Practice

With the decision and choice of action. the road diverges again. The designaed effector are energized and, in theory, we are on the way to restoring normalily. Working this theory out in practice is, as always, a subject in itself. It is this subject, "Taking Action." which closes the feedback loop as well as our treatment of the control process.

References

- 1) W. W. Abendoroth. "The Research and Decision Making.
- 2) D. R. Currier, Fundamentals of Top Management.
- 3) D. M. Marshall, The Executive in Action.
- 4) P. F. Drucker, The practice of Management.
- 5) A. M. Ross, Industrial Confect.
- 6) C. H. Kepner and B. B. Tregoe, The Rational Manager ; A Systematic Approach.
- 7) T. F. Muth and G. L. Thomson, Industrial Scheduling.
- 8) P. H. Howard, Through Values to Social Interpretation.
- 9) L. D. Miles, Techniques of Value Analysis and Engineering.

(Recieved Jan. 16th 1982)