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The Innovative Organization

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SELWYN W. BECKER *is Associate Professor* of *Psychology in the Graduate School of* Business. His research *interests range across the fields* of *organization and executive behavior and cower such points as leadership emergence, ambiguity in decision-making, and relationships between personality and effective* communication in *the* organization. *He also* is conducting *research in the effects* of *varying patterns* of organizational *authority on the adoption* of *innovations; is developing a* measure of *"corporate* personality" and *the relationship* of *personality variables* to financial and organizational *decision-making; and is engaged* in *extensive research on the theory* of formal *organization.* In *the Spring* of *1964, Professor Becker and two Graduate School* of *Business Associates-Thomas L. Whisler,* Professor of *Zndustrial Relations, and Gerald Gordon, Assistant Professor* of *Behavioral Science-conducted a conference* on *The* Innovative *Organization at the* Center for *Continuing Education* of *the University* of *Chicago. This "Selected Paper" draws upon* some of *the materials presented at that* conference; *it is based'upon a talk delivered by Professor Becker at* an *Executive Program Club luncheon at the Pick-Congress Hotel, Chicago, October 29, 1964.*

The Innovative Organization

WE ALL BELONG to many organizations, formal and informal. Almost everyone who works for a living is a member of a formal organization. Some of you, if asked, would assert that the formal organizations to which you belong are highly innovative. Others of you would confess-a bit regretfully, I believe-that your organizations are "conservative," "old-fashioned," "unimaginative," or "non-innovative." If my belief is correct, most of you either belong to an innovative organization or would like to. Thus, knowing either the strengths or the deficiencies of your own organizations, you surely could respond with precision and accuracy to the question, "What is an innovative organization like?" On the other hand, perhaps you couldn't except by example!

My point is that when we talk about innovative organizations, many of us actually have in mind a specific innovative act or decision, rather than the organizational characteristics which elicited and nurtured that act or decision. If this is a fair representation of your approach to the question, you are no worse off than Tom Whisler and I were about a year ago when we asked ourselves the same question, "What is an innovative organization like?" Having uttered the question, we found we had no satisfactory answers, nor could we find any by searching through the literature. We then decided to put the question to the most eminent among our colleagues, and organized a conference of some 20 of the leading social scientists in the country for the sole purpose of getting an answer or answers.

First I'll discuss some of the issues those psychologists, sociologists, and political scientists thought were important in defining or describing the innovative organization. Then, I'll look at these issues from a particular frame of reference in order to see what the implications are for building an innovative organization.

Kinds of *Organizational Innovation*

First, the frame of reference-the kinds, or classes, of organizational innovation. We can start by defining an innovative organization, very simply, as that which is first among a set of organizations to do something that none of the set had done before. Whisler sharpened this definition by pointing out that innovation can be contrasted with invention by the infinitives "to use" and "to conceive." The first one to use an idea is an innovator, and he may or may not be the inventor-the one who conceived it.

Innovation also can be contrasted with adaptation. Adaptive behavior implies a response to environmental stimuli which is successful in terms of organizational survival. An innovation need not be adaptive, but when it is adaptive it is more than just a response to a stimulus. It is also an anticipation of the stimulus, and a response to it before it appears in the environment. Such an innovation might be Eastman's patenting a manufacturing process for color film just as a competitor develops a radical new camera which can use only that kind of film.

Accepting these thoughts on innovation, we can specify the kinds of innovation that can occur in an industrial organization.

First, ***we*** can have ***product innovation***-development of completely new products, or changes in existing ones, or combinations of existing products into new ones.

Next, we can have what I term *process innovation*-innovation anywhere in the organization that changes the *method* by which the product is produced. This includes change in the form of administration, or in the relative size of the administrative component-changes which can affect the process of production as much as the introduction of new and more efficient machinery.

Third, we can have *marketing innovation*-innovation in packaging, in distribution, or in the measurement and prediction of demand. Any changes made in the organization as a result of changes in the requirements of consumers are marketing innovations-as are changes in consumer behavior and attitudes brought about by the organization. Changing a housewife's belief that she's "cheating her husband" because she uses a cake mix to a belief that she is helping him if she does use one because that makes her a more efficient homemaker is a marketing innovation-as much of a marketing innovation as the pop-top can.

With this frame of reference, we can examine the issues our social scientists thought important, and see how they might affect product, process or marketing innovations.

The issues they explored fall under three general headings-a concern with the organization's personnel, with its structure, and with its external environment. Let us go into the personnel area first.

INSIDE THE ORGANIZATION: PEOPLE

In discussing the personnel of an innovative organization, the social scientists considered such matters as personal and job security, educational processes, decision-making criteria, provocation, and group norms, among others.

They agreed that psychological and job

security are both necessary for creativity. Only a man who is personally secure can deviate from the group solution and suggest the novel approach; just as some modicum of job security is necessary before a man can afford to propose a deviant solution which might be upsetting to various elements of the organization. Security as a general stimulus to creativity clearly can be associated with all three categories of organizational innovation. The same can be said about diversity of educational backgrounds in personnel.

Diversity of educational upbringing is thought to be positively related to innovation in the following way:

If the members of a decision-making group in an organization all had been exposed to the same educational discipline they would tend to consider the same sorts of alternatives as possible solutions. The "far-out" idea has much less chance of inclusion or survival in the set of possible solutions than it would have if the members had been educated in diverse disciplines-disciplines which might utilize different approaches to problem solving. Increasing the probability of accepting an innovative solution by diversifying the backgrounds of group members seemingly affects the three kinds of organizational innovation equally.

Perhaps related to the individual's education, but more probably a personality factor, is the kind of decision-making criteria he employs. One of our social scientists thought it crucial to innovation whether an individual uses abstract or concrete decision-making criteria. The scientist asserted that there is a tendency to decide in favor of the alternative which can be supported by objective, countable, quantifiable attributes. Alternatives sup-

ported by abstract criteria dealing with the unverifiable and the future tend to be disregarded. If, as he argued, there is a general preference for the concrete over the abstract, then surely that preference will bias decisions against innovation. Here, perhaps we can make a useful distinction. Almost all decisions in the product and marketing areas could be based on abstract criteria, while some of the decisions in the process area only can be based on concrete criteria (i.e., what kind of punch press to use). Thus, increasing the use of abstract decision-making criteria will lead to greater product and marketing innovation relative to process innovation.

Provocation

Provocation, as a technique for inducing innovation, starts with the assumption that the man is capable of creating. He is then told that the organization has a solution to some problem, and that he is not able to-nor should he attempt to-think of a superior one. If it is a problem of interest to him, he certainly will be provoked into thinking about a more innovative solution.

The trouble with this technique is that it will not work unless real sanctions accompany the cease-and-desist order; and if real sanctions exist, the innovative idea, while provoked, will never be translated into behavior unless the restriction can be overcome by the innovator. This implies that provocation and restriction are to be directed upward in the organization, so that the man with higher status, after being provoked to innovate, will have the power to circumvent or overcome the restriction. How many people tell the boss he doesn't have the brains to think of a better answer than the one given to him by a subordinate? Again, provocation does not

seem more likely to produce one kind of innovation than another.

Another factor which could lend general impetus to innovation, and so be applicable to our three kinds of innovation, is the group norm. This involves a principle-simply stated, but difficult to execute. If *all the groups within the organization adopt the norm that the unusual is not criticized-that the nonconformist response, the new and unsettling, is to be admired-members* of *the group more frequently will make those kinds of responses.* The difficulties arise when what is new and innovative for one group is unsettling to another; or when a group, after adopting an innovative solution, vests its interest in that solution and builds resistance to other solutions which might threaten that interest. Obviously, appropriate group norms equally could affect product, process, or marketing innovation.

The individually centered variables so far discussed-personal and job security, mixture of educational backgrounds, decision-making criteria, provocation, and group norms-all equally could stimulate product, process or marketing innovations. The one exception is abstract decision-making criteria, which I argued would increase product and marketing innovations. I will return to this argument later.

THE ORGANIZATION: STRUCTURE

The personnel-oriented issues generally focused on conditions which both stimulate personal creativity and which inhibit, through group action, the adoption of conformist alternatives. In a like manner, the issues involving organizational structure focused on how differing structures evoke innovation, and how they facilitate the adoption of change.

One such issue is the degree to which organizational functions are differentiated. It

has been demonstrated, at least among scientists, that persons whose tasks are highly specialized are less innovative than those who perform and are responsible in a number of task areas. It would seem to follow that an organization which demands as little specialization as possible maximizes the probability of innovation. This apparently is so because if a man or a group has more than one kind of task to perform, he or they will become familiar with more than one way to solve problems. The man or group also will come into contact with a larger number of people, both within and without the organization, from whom he (or they) may receive new and different ideas which may aid in the solution of one of the problems. Indeed, the fact that a man is interested in a number of problems increases the likelihood that he (and through him the organization), can utilize a new idea.

Turnover and ***Znnovation***

Closely related to this idea is the one that rates of executive succession are correlated with innovation. The hypothesis here is that a deliberate increase in executive turnover will increase innovation. It is based on the idea that new executives infuse new ideas into existing group structures. The difficulty with this notion is that the technique used to increase the flow of ideas also decreases job and perhaps personal security-factors which, at the individual level, are linked to less innovative behavior.

Once conditions have been established which make it possible for new ideas to appear, what can be done to actually evoke these ideas? Most of our social scientists felt that the reward and goal structures of the organization could be utilized to perform thae function. Agreement on what and how to reward was not reached, nor was there agree-

ment on what should be the relationship between reward structure and organizational goals.

Some in our group felt that innovation should be directly rewarded, thus increasing the probability that more innovations would occur. This is a perfectly good statement from a learning theory point of view, but it neglects the fact that the rewarders also are subject to the same principles of learning. They would soon learn to reward only successful or adaptive innovations, and so through relative or even real deprivation punish the unsuccessful innovation, thus cutting down the number of innovators and innovations-for innovating would now involve a risk.

Others proposed that people who search out new ideas and people who loosen communication barriers within the organization be rewarded, since both "search behavior" and communication of ideas are parts of the process of innovation in an organization. Search is more important in finding and defining a problem for solution, while communication is necessary for organizational adoption, especially when an innovation has interdepartmental ramifications. Nobody really argued with these propositions, although the difficulty of identifying search and communication-loosening behavior was noted. Behavior which can't be identified presents obvious problems in setting up a reward structure.

Scarcity vs. Slack

One issue which provoked much discussion was organizational slack and its relation to innovation. Organizational slack-unused and uncommitted resources-can exist administratively, technologically, or simply in the form of money and facilities.

The question of whether innovation was a

function of a lack of slack or of an abundance of it was difficult to resolve. As many case studies could be produced in support of the "necessity-is-the-mother-of-invention" view as could be produced favoring the argument that for the most part only successful firms can afford to innovate.

Often a firm in trouble must either innovate or go under, and in some proportion of the cases we observe innovation. A successful firm, on the other hand, with resources in excess of those required to maintain itself, can devote those resources to exploring new ideas, even though the ideas are not needed at the time.

The argument of slack versus necessity as a spur to innovation was resolved by a political scientist. He equated the politics of scarcity with repressive law, with law indistinguishable from custom, with redistribution of existing resources, and with suppression, as techniques of conflict resolution. The politics of abundance he equated with restitutive law, with variability between law and custom, and with the resolution of conflict by increasing the resources of competing groups.

"Abundance," he said, "permits social choice to replace central decision-making," so that "scarcity is associated with centralization, abundance with decentralization."

Extrapolating from these statements we would find that firms near failure, if they innovate administratively, would tend to centralize and cut costs by firing people, dropping unprofitable lines, etc. These changes almost always occur in the area I call process innovation. They are introduced into the organization from the top down.

A successful firm, perhaps decentralized, permits decision-making at hierarchic levels below the top so that innovations can be introduced at many levels, including those in

close contact with the environment. This increases the probability of marketing innovations as well as product and process innovations. In addition, the organization with slack can reward search and other irregular behaviors, while the highly centralized organization demands regularity in behavior. Creativity, like moods, frequently occurs in cycles and the demand for regularity by a centralized organization can "short-circuit" these cycles and reduce innovative acts.

Now we can see that the organization which seeks to stimulate innovation should be structured to (1) encourage the diffusion of ideas by diversifying an individual's tasks and his contacts with others; (2) use its slack to reward innovation, or behavior that leads to innovation; (3) centralize to be better able to install the innovation and at the same time decentralize to produce that innovation; (4) provide for individual and job security; (5) while doing all this, make certain that the organization's goals are being attained.

Outside the Organization: Environment

Having described the personal and organizational conditions essential to an innovative organization, we can ask where it ought to be located. In what kind of environment is an innovative organization most likely to flourish?

The most obvious location is one where a pool of innovative people may be found, some of whom the organization can employ. For them to be constantly stimulated with new ideas, there should be other organizations nearby which encourage innovation and employ innovators. Such conditions are met in areas which include universities and large numbers of independent research and development laboratories; here there is likely to be

considerable interchange of ideas **among** innovative people.

Information may be more rapidly metabolized if the organization is located near others which have the same or similar personnel requirements. This increases individual job mobility and the individuals bring new ideas with them as they change from one organization to another. However, this has possible drawbacks. Creativity and innovation have been related to conflict, the resolution of which often requires innovation. Locating an organization near others similar in nature reduces the probability that conflicting ideas will penetrate the organization; and this in fact is what frequently happens.

Most of the auto industry is in Detroit, the steel industry in Pittsburgh or around Gary and South Chicago, the electronics industry on the East and West Coasts. In these instances, it is difficult for an organization to achieve interaction with others unlike it, for there is no basis for attraction and some basis -in the form of conflict and some resultant initial instability-for repulsion.

Thus it appears that the organization must be located near ***similar*** ones to increase worker mobility, and near ***dissimilar*** ones to induce conflict and its subsequent resolution. The environment that provides both, as well as access to large numbers of innovative individuals, is that of an urban complex.

This factor itself provides another impetus to innovation by presenting problems for solution. An urban center is characterized by great technological change, as compared with a rural area. This technological change produces pressure in the organization to utilize or adopt that change within the organization; or it defines a new problem in the environment which the organization might solve. So the complex, technologically-oriented urban

area **not only provides new things to use, but also gives the organization an awareness of new problems to solve.**

Lastly, the environment should be one where innovative organizations are rewarded and where innovations are adopted, thus increasing the probability that innovation will occur.

Summarizing the Criteria

Simply stated, the problem is to select or create a milieu in which an organization can provide for the infusion of new ideas, and design an organizational structure within that milieu so that the new ideas will evolve into organizational innovations and so that resistance to the adoption of new ideas will be minimized. All this while achieving the goals of the organization, of course.

In terms of the issues already discussed let's see how closely the traditional organizational form meets these criteria. Quoting from Max Weber:1

The decisive reason for the advance of bureaucratic organization has always been its **purely technical** superiority over any other form of organization. The fully developed bureaucratic mechanism compares with other organizations exactly as does the machine with the non-mechanical modes of production.

Precision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs-these are raised to the optimum point in the strictly bureaucratic administration, and especially in its monocratic form. As compared with all collegiate, honorific, and avocational forms of administration, trained bureaucracy is superior on all these points. And as far as complicated tasks are **concerned, paid bureaucratic work is not only more** precise but, in the last analysis, it is often cheaper than even formally unremunerated honorific service.

1 Gerth, H. H., and Mills, C. Wright, From Max *Weber: Essays* in Sociology, p. 214. Oxford University Press. New York (1958).

How does the traditional organization implement the issues we have discussed? As far as the individual is concerned, the monocratic or Weberian bureaucracy makes no provision for personal security; it rejects the notion of interhierarchical provocation; and it rewards the selection of concrete rather than abstract decision-making criteria.

On the structural level, functional specialization rather than functional generalization is required to increase efficiency, and executive succession is minimized to increase stability. Reward structures are based on goal achievement rather than on innovative behavior.

In short, the bureaucracy is the most efficient organizational structure if you want reliability and repetitiveness, by definition almost the opposite of innovation.

THE INNOVATIVE BUREAUCRACY

What, then, would an innovative organization look like? Every variable we examined so far seemed to apply equally well to product, process, or marketing innovations except one -decision-making criteria. Here we found that decision-making based on abstract criteria would stimulate greater innovation in the product and marketing areas compared with the process area. The reason is that decisions about actual production of a product generally involve concrete phenomena. If we classify all organizational decisions into two kinds-those based only on concrete criteria and those based possibly on abstract ones- we find that at the same time we have separated decisions made under certainty from those made under uncertainty.

Almost all the marketing and product-oriented decisions fall into the uncertain category, as do the personnel, financial, legal and (some) administrative decisions from the

process area. Only actual production decisions are made under certainty.

The clues are all in. It remains to draw the appropriate conclusions as to the nature of the truly innovative organization, and how it may be established.

Organize all the functions which develop from ***the decisions under certainty into a monocratic bureaucracy and all the others into one almost structureless unit without hierarchy.***

The monocratic bureaucracy should be highly centralized so that product innovations or innovations in the process of production-innovations which arise in the structureless unit-can be installed quickly and efficiently. As a rule, the centralized bureaucracy will only be concerned with the actual process of manufacture. This is an arrangement with which we are familiar, but what about the other unit?

The structureless unit should be the organizational superior to the top of the already established monocratic bureaucracy. Within this unit, teams are assembled around problems, with each executive a member of three or four different problem teams. No man heads more than one problem team at a time, but when he is head of a team he has responsibility for the final decision. He also rates each team member for search and innovativeness and for effective use of abstract criteria. All members in the unit receive bonus payments according to their ratings. Problem teams are dissolved as soon as a decision is reached. New teams and heads are assembled as problems arise. Everyone in the unit simultaneously is head of one team and member of some others.

So far, what have we accomplished? Certainly we have increased the number and kind of tasks each man will perform. If the data

from the study of scientists are applicable to business executives-and I know of no reason why they are not-then greater innovation should result. Executives should be able to transfer techniques and solutions from one problem area to another. The application of a technique usual on one kind of task to a totally different task will represent an innovation, at least part of the time.

We achieve mixed educational backgrounds by having a team made up of perhaps a lawyer, a comptroller, a sales manager and an engineer -all working on a marketing problem, or a capital budgeting problem. Presumably, their diverse backgrounds will provide new and unusual approaches to the decision problems.

We have eliminated hierarchy, except temporarily, and thus reduced status anxiety, thereby increasing the individual's freedom to respond in a novel fashion. The elimination of hierarchy also relieves the pressures toward regularity, so the individual can move through his creative and noncreative cycles without the cycles being aborted prior to the creative phase.

Because rewards are in part based on innovative behavior, group norms favorable to nonconformity should develop.

The "Farm System"

Whatever we have so far accomplished, we have not provided job security nor have we provided for the infusion of new ideas by increasing the rate of executive succession. By eliminating status we increase personal security, but job security is a more difficult matter. Perhaps the answer is for the organization to buy another organization and maintain it in a more traditional fashion. Then the latter organization could be used to guarantee jobs for anyone who wishes to be moved-or who should be moved-out of the

statusless unit. The innovative organization would then maintain the manufacturing version of a "bush league" system, and positions in the "farm" organization could be guaranteed for everyone in the statusless unit. This would not be detrimental to the "farm" organization, for certainly everyone selected for the innovative unit already would have demonstrated competence more than sufficient for success in the "farm" organization. As a further benefit, those in the "farm" organization who exhibit unusual ability and the desire to participate in the work of the innovative organization could be moved up to it.

Executive Exchange Program

To infuse new ideas into the organization, rather than require an artificially high turnover rate, the organization could establish an exchange program with other organizations in similar activities, as well as with those in very different ones. Each man in the structureless unit would get leave to be spent working in one of the cooperating organizations, which would send someone to replace him. In this way the first unit would get the benefit of the visitor's experience, and when the original member returned he would bring fresh ideas from his contacts in the second.

Implementing the exchange program presents few problems when the cooperating organization is a very different one. However, some problems can be foreseen when the organizations are similar-for example, the possibility of antitrust action, particularly in the area of price collusion. (I would suggest that with similar organizations, marketing problems be eliminated from the exchange program.) Another problem is, I believe, more apparent than real. It concerns the surrender of competitive advantage by the innovative organization to a conventional collaborator.

I tend to believe that organizations which would cooperate in an exchange program would be more, rather than less, innovative. The exchanged personnel could be screened for comparability of quality and caliber, so that neither organization is disadvantaged. The exchangees would be more concerned with solving new problems than with giving away secrets. Rather than loss of competitive advantages, the plan would favor mutual gain-at the expense of noncooperating organizations. Finally, if there is too much to be lost by exchanging within an industry, the organization can seek an exchange plan with organizations in other industries.

The exchange plan achieves the same things as enforced rates of executive turnover, and does so while maintaining stability in the system. In addition, it artificially solves the environmental problem of locating near and interacting with both similar and nonsimilar organizations.

There can be many criticisms of this postulated innovative organization. Some may argue that the plan provides nothing more than decision by committee; and that while committees frequently come up with acceptable solutions, they rarely, if ever, innovate.

To this I reply that, first, the team, as I have specified it, functions somewhat like a President and his cabinet. One man-not the team-has final responsibility for the decision. The team contributes ideas, and the team leader uses them in his solution to the problem.

Second, bonuses for innovative ideas and search behavior will produce group norms that solutions "acceptable" to most firms are barely permissible here, for "acceptable" solutions bring no bonus payments.

In summary, to achieve our innovative organization we have centralized the func-

tions stemming from certainty, and thoroughly decentralized those dealing with uncertainty. Within the decentralized unit we have maximized information flow and provided for interorganization communication. Production of new and different ideas is maximized by diversity of both internal and external personal contacts.

Should I require an innovative organization, I would build it by imposing a structureless unit above a monocratic bureaucracy. Even in reorganizing an already functioning organization, within the limits imposed by tasks and personnel, this kind of organization can be approximated.

Perhaps the remaining issue to be dealt with in the present context concerns the necessity for such an organization. Remember that the Weberian bureaucracy is still the most efficient form of organization for dealing with a stable environment. It is up to each organization to determine the characteristics of its present and future environment. Each organization must determine how much of a return ii can expect from reliability; and also the rate at which reliability leads to obsolescence.

The resolution of these questions requires, of course, an innovative approach!