REDESIGNING THE FUTURE

A SYSTEMS APPROACH TO SOCIETAL PROBLEMS

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To

Herman Wrice,

William Ellison,

and

August A. Busch III,

who have the courage, capability, and commitment

Age a great deal of effort went into the development of effective methods of problem solving but little thought was given to planning. In the Systems Age more attention is being given to development of effective methods of planning.

PLANNING

For many years social and organizational planning was ignored and held in disrepute in the United States and other Western Nations because of its association with communism. The communists believe in strongly centralized planning. Hence it was incorrectly assumed by many Americans that planning necessarily implies a strong central government or management. It was only after noncommunist France successfully planned its recovery from World War II and did so without either centralized planning or concentration of power at the top, that we began to understand that planning can serve any political or organizational philosophy, just as problem solving can. It can increase the effectiveness of either a decentralized democracy or a centralized autocracy.

There are many managers and administrators who still do not believe in planning. Attitudes toward it vary a great deal but they can be grouped into four general types: *inactive, reactive, preactive,* and *interactive.* These attitudes are mixed in varying proportions in each individual and organization and the mixture may change from time to time or from situation to situation. Furthermore, a wide variety of attitudes toward planning may be found in any one organization at any one time. Nevertheless, one of these attitudes usually dominates the others in both individuals and organizations. In a sense, these four attitudes are like primary colors; they can be mixed in many different ways to provide a wide range of secondary attitudes and these change under different "lighting" conditions. Despite the variety of mixtures in which they are found, the pure forms are easily recognizable.

After I have described the "pure" attitudes in what is obviously a biased way, I nevertheless argue that under different conditions each may be best. Therefore, as will also be apparent, my bias derives from what I believe our current condition is.

Inactivism

Inactivists are satisfied with the way things are and the way they are going. Hence they believe that any intervention in the course of events is unlikely to improve them and is very likely to make them worse. Inactivists take a do-nothing posture; they try to "ride with the tide" without "rocking the boat." Their management philosophy is conservative. They seek stability and survival. They are willing to let well-enough alone and hence are what have come to be known as "satisficers."

Inactivists believe that most apparent social and environmental changes are either illusory, superficial, or temporary. They typically see those who cry "Crisis!" as panic mongers and prophets of doom. Inactivists recall the pervasiveness of such cries and crises throughout their society's or organization's history and point to the evasiveness of the dooms foreseen. Because their society or organization has survived all of their previous crises, inactivists argue, there is no reason to believe they will not continue to do so.

Inactive organizations require a great deal of activity to keep changes from being made. They accomplish nothing in a variety of ways. First, they require that all important decisions be made at "the top." The route to the top is deliberately designed like an obstacle course. This keeps most recommendations for change from ever getting there. Those that do are likely to have been delayed enough to make them irrelevant when they reach their destination. Those proposals that reach the top are likely to be further delayed, often by being sent back down or out for modification or evaluation. The organization thus behaves like a sponge and is about as active.

Inactivists take a position on an issue only when forced to. "Forced to" means doing so is the only way left to keep changes from being made. Wherever possible, words are used in place of action. Inactivists are prolific producers of policy statements, white papers, strategy documents, position papers, reports, memoranda, and any other kind of document that can substitute for action.

Another prevalent means by which inactivity is achieved consists of setting up committees, councils, commissions, study groups, task forces, and what-have-you at the drop of an issue. The responsibilities of such groups are deliberately left vague so that they can spend most of their time in defining their functions and in jurisdictional disputes.

When one of them manages to generate a recommendation, those who were not respresented in the group can object to their lack of representation and have another group formed to take them into account. This process can go on indefinitely, particularly if augmented by occasional personnel changes.

On those rare occasions when an inactive organization takes action it is almost certain to be understaffed and underfinanced. This minimizes any possible impact it might have.

Feasibility is the principal criterion used by inactivists in selecting means. Ends are more likely to be fitted to means than conversely. As A. O. Hirschman and C. E. Lindblom, perhaps the best known spokesmen for this position, suggest in their proposed strategies for decision making: "Instead of simply adjusting means to ends, ends are chosen that are appropriate to nearly

available means." Inactivists tend to want what they can get rather than try to get what they want.

When inactivists intervene in the course of events they do so as little as possible. In the words of Hirschman and Lindblom: "Attempts at understanding are limited to policies that differ only incrementally from existing policy." Little wonder they call their overall strategy "disjointed incrementaliism."

Inactivists have a greater fear of doing something that does not have to be done (errors of commission) than of not doing something that should be done (errors of omission). Hence they tend to react only to serious threats, not opportunities. By so doing they practice what has come to be known as "crisis management."

In general the only organizations that can survive inactive management are those that are protected from their environments by subsidies that assure their survival independently of what they accomplish. The most conspicuous examples of such organizations in our society are universities, government agencies, and publicly protected private monopolies such as utility companies.

Needless to say, inactivists do not believe in planning. They do not even believe in problem solving.

Reactivism

Reactivists prefer a previous state to the one they are in and they believe things are going from bad to worse. Hence they not only resist change but they try to unmake previous changes and return to where they once were. They are generally nostalgic about "the good old days." Their propensity to return to the past makes their management philosophy reactionary.

Reactivists are moved more by their hates than by their loves. Their orientation is remedial, not aspirational. They try to avoid the undesirable rather than attain the desirable. They see very little new in anything proposed and still less that is worthwhile in what they accept as new. Their reaction to most proposed changes is: "We tried jt and it doesn't work." For example, a railroad executive once told me after I had proposed using linear programming to solve a problem he had that he had tried it on the problem about ten years ago and it had not worked. At the time linear programming was considerably less than ten years old.

Because technological change is so conspicuous and because the past has always had less technology than the present, technology is the reactivists' principal scapegoat for whatever ills they perceive. They prefer art to science: the art of muddling through to the science of management. In dealing with problems they rely on common sense, intuition, and judgment based on long

experience. The longer the experience, the better. They believe experience is the best teacher and the best school is the school of hard knocks. For this reason they place high value on seniority, immobility, and age and allocate status and responsibility proportionately thereto.

Reactivists dislike complexity and try to avoid dealing with it. They reduce complex messes to simple problems that have simple solutions—solutions that are "tried and true." They are panacea-prone problem solvers, not planners. They try to recreate the past by undoing the mess they believe the planning of others has wrought.

Unlike inactivists, reactivists do not ride with the tide; they try to swim against it back to a familiar shore. It is not surprising, therefore, that once successful but now declining institutions and organizations are particularly susceptible to this point of view.

Preactivism

Preactivists are not willing to settle for things as they are or once were. They believe that the future will be better than the present or the past, how much better depending on how well they get ready for it. Thus they attempt to *predict and prepare.* They want more than survival; they want to grow—to become better, larger, more affluent, more powerful, more many things. They want to do better than well enough; they want to do as well as possible, to *optimize.*

Preactivists are not only concerned about doing something wrong (errors of commission) but also about *not* doing something right (errors of omission). Consequently, they are as occupied with potential opportunities as they are with actual and potential threats. They attempt to identify and deal with problems before they become serious and, if possible, before they arise. For this reason they are preoccupied with forecasts, projections, and every other way of obtaining glimpses of the future. They believe the future is essentially uncontrollable but that they can accelerate its coming and control its effects on them. Therefore, they plan *for* the future; they do not plan the future itself.

Preactive planning and problem solving is based more on logic, science, and experimentation than on common sense, intuition, and judgment. Unlike reactivists, preactivists tend to credit science and technology for most of the progress we have enjoyed and to blame current problems and crises on their misuse or abuse. They seek to solve problems and exploit opportunities more through research and development than by individual and institutional change. They are hardware, rather than software, oriented; thing, rather than people, oriented. When they must deal with people they prefer to deal with them

collectively, impersonally, rather than individually, because they believe collective behavior is more predictable.

Preactive decision makers and planners tend to think of the system to be managed in terms of the resources over which it has direct control. They are preoccupied with allocation and use of these resources within the system. They do not try to influence other systems in the environment; they tend to perceive the environment as constraining rather than as enabling. Hence they are competitive rather than cooperative when other systems are involved.

If the management philosophy of the reactivist is reactionary, of the inactivist, conservative, then the preactivist's is liberal. Preactivists seek change *within* the system, but not change *of* the system or its environment. They are reformers, not revolutionaries. They seek neither to ride with the tide nor to buck it, but to ride in front of it and get to where it is going before it does. In this way, they believe, they can take advantage of new opportunities before others get to them.

Preactive planners take their function to consist of producing plans and presenting them to those empowered to act, but not involvement in implementing approved plans. Preactivists see planning as a sequence of discrete steps which terminate with acceptance or rejection of their plans. What happens to their plans is the responsibility of others.

Interactivism

Interactivists are not willing to settle for the current state of their affairs or the way they are going, and they are not willing to return to the past. They want to design a desirable future and invent ways of brining it about. They believe we are capable of controlling a significant part of the future as well as its effects on us. They try to *prevent,* not merely prepare for, threats, and to *create,* not merely exploit, opportunities.

Preactivists, according to interactivists, spend too much time trying to forecast the future. The future, they argue, depends more on what we do between now and then than it does on what has happened up until now. The major obstacle between man and the future he desires is man himself.

Interactivists are not willing to settle for survival or growth. They seek self-development, self-realization, and self-control: an increased ability to design and control their own destinies. They are neither satisficers nor optimizers; they are *idealizers.* They plan to do better in the future than the best that presently appears to be possible. They pursue ideals that they know can never be attained but that can be continuously approached. Thus to them the formulation of ideals and the design of idealized futures are not empty exercises in utopianism, but necessary steps in setting long-range directions for continuous development.

They treat ideals as relative absolutes: ultimate objectives whose formulation depends on our current knowledge and understanding of ourselves and our environment. Therefore, they require continuous reformulation in light of what we learn from approaching them.

Because of the accelerating rates of technological and social change, interactivists try to design the systems they control so as to increase their ability to learn and adapt rapidly. They maintain that experience is no longer the best teacher; it is too slow, too ambiguous, and too imprecise. Therefore, they attempt to replace experience by experimentation wherever possible. They try to design the implementation of every decision as an experiment that tests its effectiveness and that of the process by which it was reached.

No aspect of a system is precluded from change. Interactivists are willing to modify a system's structure, functioning, organization, and personnel as well as its allocation and use of resources.

Unlike preactivists, interactivists try to induce cooperative changes in environing systems, changes that are as fundamental as those they seek for the systems they can control directly. They consider the world, not merely their neighborhood, to be their arena.

Interactivists consider technology to be neither good nor bad in itself, but to have a potential for either. Its effects, they believe, depend on how people use it. Thus they view behavior and technology as interrelated aspects of *sociotechnical systems.* They treat science and the humanities as two aspects of one culture, not as two cultures. Like the head and tail of a coin these aspects can be discussed or viewed separately, but they cannot be separated.

According to interactivists science is the search for similarities among things that are apparently different, and the humanities are the search for differences among things that are apparently similar. Scientists seek the general and humanists seek the unique. To deal effectively with a problematic situation one must be able to determine both what it has in common with previously experienced situations and how it differs from them. Awareness of similarities enables us to use what we already know; awareness of differences enables us to determine what must still be learned if the situation is to be dealt with effectively. The humanities furnish us with the problems, science and technology with means for solving them.

Interactivists are radicals; they try to change the foundations as well as the superstructure of society and its institutions and organizations. They desire neither to resist, ride with, nor ride ahead of the tide; they try to redirect it.

Despite the obvious bias in my characterization of these four postures there are circumstances in which each is most appropriate. Put simply, if the internal and external dynamics of a system (the tide) is taking one where one wants to go and is doing so quickly enough, inactivism is appropriate. If the direction of change is right but the movement is too slow, preactivism is

appropriate. If the change is taking one where one does not want to go and one prefers to stay where one is or was, reactivism is appropriate. However, if one is not willing to settle for the past, the present, or the future that appears likely now, interactivism is appropriate. My bias for interactivism derives from my belief that our society can be much improved and that it is not tending to improvement. Our intervention is therefore required.

Inactivists and reactivists at best treat planning as a ritual or prayer that may bring the intervention of a superior force in the course of events. They do not view it as a process which directs one's own intervention.

Preactive planners try to accelerate the future and control its effects on the system they plan for, but they do not try to redirect it. Interactive planners do. Preactive planning deals with products rather than producers. For example, a preactive urban transportation planner tends to assume continued growth of demand for automotive transportation and no significant change in the nature of the automobile. These, he assumes, are out of his control. Therefore, he tries to reduce projected future congestion by increasing the number and size of streets and roads and by expanding other modes of travel. The interactive planner, on the other hand, considers such things as changing the automobile and the city so that the demand for transportation and roadways is modified. He attempts to manipulate the producers of problems as well as their effects.

The short-to-medium range future receives the attention of the preactivist. The interactivist gives more attention to the long range because he believes that short-run gains are frequently paid for by larger long-run losses, and long-run gains are often preceded by short-run losses. Therefore, he believes it is essential to seek a proper balance between long- and short-run consequences of current behavior. The ability to perceive and be governed by long-run consequences is the essence of *wisdom*. Knowledge may be enough for effective problem solving but it is not enough for effective planning. Planning also requires wisdom and wisdom is as much a product of the humanities as it is of science.

Interactivists have extracted four principles of planning practice from their experience.

1. *Participative planning.* The principal benefits of planning are not derived from consuming its product (plans), but from engaging in their production. In planning, process is the most important product. Hence, effective planning cannot be done *to* or *for* an organization; it must be done *by* it. The proper role of the professional planner is not to plan for others but to facilitate their planning for themselves; that is, to provide everyone who can be affected by planning with an opportunity to participate in it, and to provide them with the information, instruction, and motivation that will enable them to carry it out effectively.

2. *Coordinated planning.* All aspects of a system should be planned for simultaneously and interdependently. No part or aspect of an organization can be planned for effectively if planned for independently of any other part or aspect. For example, planning to reduce crime should involve all aspects of the criminal justice system and more: education, housing, employment, health services, welfare, and so on. All societal functions should be dealt with. In planning, breadth is more important than depth and interactions are more important than actions.

3. *Integrated planning.* In multilevel organizations like governments or corporations planning is required at every level and planning at each level should be integrated with planning at every other level. In organizations whose objectives dominate those of its members, such as corporations, strategic planning (selection of ends) tends to flow from the top down, and tactical planning (selection of means) tends to flow from the bottom up. This flow is usually reversed in a system whose primary function is to serve its members. Strategy and tactics are two aspects of behavior. Strategy is concerned with long-range objectives and ways of pursuing them that affect the system as a whole; tactics are concerned with shorter-run goals and means for reaching them that generally affect only a part of the organization. Although they cannot be separated in principle, they often are in practice. This means that one or the other type of planning is not carried out consciously and, hence is not made explicit. Both types should be done interdependently, consciously, and explicitly.

4. *Continuous planning.* Because purposeful systems and their environments are changing continuously, no plan retains its value over time. Therefore, plans should be updated, extended, and corrected frequently, if not continuously. Continuous planning is necessary if a system is to learn and adapt effectively. A plan's actual performance should be compared frequently with explicitly stated expectations. Where they deviate from each other significantly, the producers of the deviation should be identified and appropriate corrective action taken.

Interactive planning is a system of activities; hence its five phases are interdependent. They are as follows.

1. *Ends planning.* Determining what is wanted: the design of a desired future. This requires specifying goals, objectives, and ideals; short-run, intermediate, and ultimate ends.

2. *Means planning.* Determining how to get there. This requires selecting or inventing courses of action, practices, programs, and policies.

3. *Resource planning.* Determining what types of resources—for example, men, machines, materials, and money—and how much of each will be required, how they are to be acquired or generated, and how they are to be allocated to activities once they are available.