

The Conduct of Decision Making

By Paul C. Nutt*)

Summary

Case studies of decision making were profiled to discover the nature of the process. Analysis of the cases found distinctive differences in the tactics used by executives. This paper reports on idea generation and implementation tactics. Variations within each of these tactics are described and a commentary on the merits of tactics and within tactic variations used by executives in decision making is offered.

Introduction

This paper describes decision processes used by executives. These descriptions were categorized to identify process types, variations, and themes within types that have particular significance in understanding the conduct of decision making. These descriptions have several uses. The first and most fundamental is a refined understanding of how executives carry out a decision process. Second, descriptions of how executives go about decision making can be used

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Introduction

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to determine whether methods advocated in the literature are used. For instance, do the middle and upper reaches of management ignore normative models of decision making as Mintzberg, et al., (1976) claim? Precise descriptions about how executives identify, refine, and select solutions to problems during decision making are required to begin to answer this question. Normative methods of decision making call for problems to be carefully defined (e.g., Pounds, 1967), specific goals to be set (Locke, et al.), the development of competing ideas in the form of alternatives (e.g., Mason and Mitroff, 1981), creativity in the identification and detailing of alternatives (e.g., Nader, 1981), and the creation of a climate which eases implementation (e.g., Huse 1975). Comparisons of practice to these prescriptions can be made to detect departures from recommended procedures that may damage results.

Method

An approach called "process reconstruction" was used to identify process types (Nutt, 1983b). Multiple case studies of decision were profiled using interviews which identify critical events, determine the sequence of these events, and fit the events and their sequence to a generic representation of activities thought to be essential in decision making. Common patterns in these cases were content analyzed to determine how executives conduct decision making. This approach calls on the organizational researcher to collect data which tell stories about organizational processes and look for patterns in these data (Daft, 1983). Stories in this research form the epistemology of decision making practice.

Four activities make up process reconstruction. First, frameworks were developed to provide a common standard to represent cases. Second, interviews with people intimately involved with the details of each case were conducted. The interview identifies critical steps, determines the order that these steps were carried out, and fits the sequence of steps to one of the classification frameworks to represent key transactions and activities in each decision process. Third, a search was made to isolate the steps taken to deal with these transactions and activities. Fourth, cases with similar and dissimilar

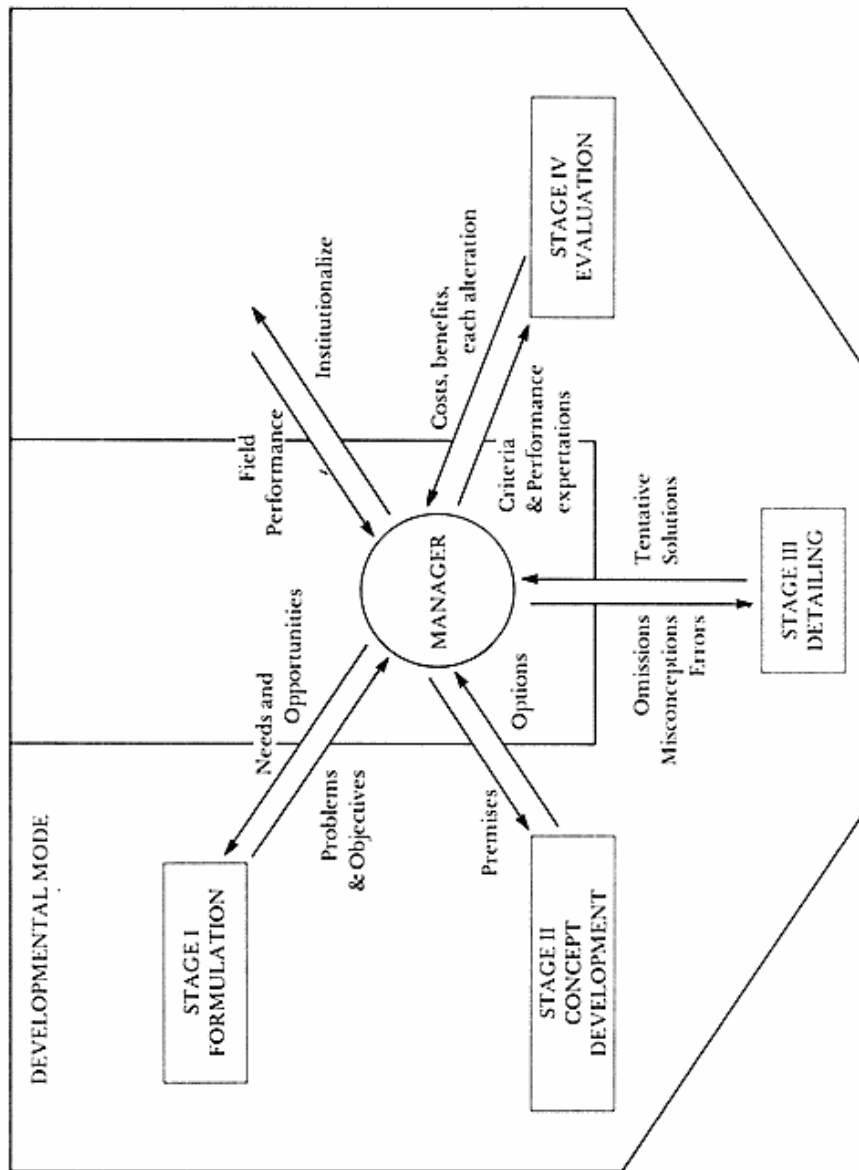
Table 1: The Morphology

		STEPS		
		SEARCH	SYNTHESIS	ANALYSIS
<u>STAGES</u>	FORMULATION			
	CONCEPTS			
	DETAILING			
	EVALUATION			
	INSTALLATION			

transactional patterns were content analyzed to distill these steps into tactics and variations within each tactic.

Multiple interviews were used to minimize distortion and memory failure, the two most common errors in the reconstruction of events (Mintzberg, and Waters, 1982). Two executives who were involved in the decision were asked to describe the sequence of decision activities. First, questions were posed to identify decision-related activities. The interviewer was asked to describe the first activity, the second and so on until all key activities were laid out. This information was fit to both frameworks. In the first, shown in table 1, a morphology of five stages (formulation, concept development, detailing evaluation, and installation) and three steps (search, syntheses, and analysis) was used to categorize events by matching decision activities to the stage-step definitions (Nutt, 1984a and 1986). For example, activities were sorted to determine how need and/or opportunity was discovered

Table 2: The Transactional Model



Adapted from: Nutt (1979 and 1984)

(search), reconciled (synthesis), and prioritized (analysis). The morphology was used to capture how (or if) each step in each stage was carried out and the order of these events. The morphologies developed from the interview with each executive were compared and differences identified. An additional meeting with both executives was used to reconcile these differences, when they occurred. In this interview the executives were asked to modify the information contained in the morphology until a consensus emerged.

The second framework, a transactional model (table 2), used the morphology stages to describe transactions between staff, who conducted the developmental activities, and managers, who made decisions as the decision process unfolded. The information uncovered in the interviews was summarized to capture key transactions. A path through the model was sketched to represent the sequence of events recalled by each executive, providing a picture of the process. These descriptions were validated by asking the managers to reconcile differences, as above.

Cases retained for the classification phase had to meet two tests: agreement on the transactions and activities and sufficient detail to understand what was done. Transactional models for 84 cases and morphologies for 73 cases meet these tests. A morphology, transactional model, and corresponding narratives were prepared for each case. Data collection and reduction took about 20 hours per case. The data were collected over a period of seven years. Approximately fifty cases still await classification.

Classification precision is a key step in a multiple case study research (Yin, 1981). Considerable care was taken to ensure that the categories identified were defensible. The morphologies and the transactional models for the cases were sorted until a set of groupings, or patterns, emerged that seemed mutually exclusive. Two criteria were used to make this sort: convergence/divergence and the importance of the distinctions (Campbell and Fiske, 1959). The convergence/divergence criterion was met when classifications had within category similarities and between category differences that could be explicitly specified. The importance dictum required that the distinctions among these categories have theoretical as well as practical significance (McKelvey, 1977).

A profile was deemed unique when the trace of the decision activities or transactions had a distinct pattern. Grouping was based on similar paths taken through the transactional models and morphologies. This information was coded to recall these categories. Intrarater reliability was determined repeating the sorting process after a year had elapsed, without referring to the first sort. Interrater reliability was carried out by having other researchers sort the morphologies. A classification agreement was quite high using these tests, suggesting that the process categories are defensible.

Frame One: Process Distinctions

Each of the decision processes was found to begin with formulation and end with installation. The distinguishing *process* feature proved to be which of the intermediate stages were used. Processes called historical model, off-the-shelf, appraisal, search, and nova were identified. Table 3 summarizes these processes to highlight the patterns and themes discovered as well as frequency of use. These decision processes were found to differ in terms of the origin of ideas, the guarantors (Churchman, 1971) used, and the rationale applied to manage the process.

The *historical model* process activated the formulation, detailing, and implementation stages, as shown in table 3. Concepts drawn from the practices of others are used to guide solution development. The executive visits an organization and/or recalls an experience which offers a way to deal with a problem or opportunity. This allows the executive to visualize actual operations which demonstrates that action is feasible and puts solution development on a tangible basis at the outset. The guarantor applied is one of demonstrable workability.

The historical model decision processes had variations which use the same sequence of stages but differed in the nature or intensity of key activities. A *parochial* historical model was used when the practice or procedure of a single organization or work unit, thought to have high prestige, was used as a template for solution development. The installed system becomes a near carbon copy of the practices used by the high prestige organization. Solution development in the detailing stage provides finer process distinctions and could be summarized as:

Table 3: Developmental Processes and Variations

Process type/variation	No. of Cases	Frequency	Stages Activated	Themes
Historical Model	30	41% ^o	1-3-5	- Adopt the ideas of others ● Single source ● Multiple sources ● Preconceived idea
a) provincial	15	(20%) ^o		
b) enriches	4	(6%)		
c) pet idea	11	(15%)		
Off-the-shelf	22	30%	1-3-4-5	- Aggressive and overt search ● Evaluation criteria defined by attributes of the alternatives ● Generic criteria used
a) extended search	17	(7%)		
b) truncated search	5	(23%)		
Appraisal	5	7%	1-4-5	- Seeking a rationale ● Deflecting criticism ● Shaping plan features
a) covert	3	(4%)		
b) overt	2	(3%)		
Search	5	7%	1-5	- Passive and defensive search ● Executive conducts ● Executive delegates
a) sequestered search	3	(4%)		
b) open search	2	(3%)		
Nova	11	15%	1-2-3-4-5	- New ideas sought ● Development carried out by internal staff ● Development by outside consultant
a) internal staffers	6	(8%)		
b) outside consultants	5	(7%)		
TOTAL	73	100%		

^o Percent of all cases

hiring a system, site visits, past experience, outside requirements, and using the literature. The parochial-historical model occurred quite often, representing over half of the historical model cases and twenty percent of the total cases (table 3).

An *enriched* model draws on the practices of several organizations or work groups and attempts to cull out the best features from each. An amalgamation of practices and procedures is used. Key solution development tactics for the enriched historical model projects stemmed from site visits or bids by contractors. The enriched-historical model was comparatively rare, occurring in only 6% of the cases.

The historical Model process was also used to promote the *pet idea* of an executive. When the time seems ripe, some executives identified a problem which justified using his/her idea. This process was always self-serving and may or may not be in the best interests of the organization. Some executives with a pet idea selectively interpreted environmental trends and other factors that made their precon-

ceived idea seem like the response to an opportunity. Other executives identified problems that their idea could solve and marshalled support to deal with this inferred problem. Still others carefully selected site visits or literature reviews which made their ideas seem desirable.

The *off-the-shelf* process activated the formulation, detailing, evaluation, and implementation stages. This process attempts to identify the best available ideas using search aids, such as a request for proposal or an RFP, to identify the prepackaged solutions of vendors or consultants. Search is aggressive and overt. Competition among ideas serves as the guarantor. An off-the-shelf process was observed in 30% of the cases studied.

Process variations were linked to the scope of search which could be truncated or extended. Search was extended when the sponsoring executive was unsure of potentials and truncated when standards to judge a vendor's idea seemed clear. In an extended search several competing ideas were accumulated and studied at length before making a choice to extract criteria from the features of the competing ideas. Generic criteria were used to select among vendor proposals in a truncated search process. Search tactics included RFP processes or sole source contracting. Truncated search with a sole source contractor was used in two-thirds of these cases. Apparently architects, auditors, and the like cultivate organizations until they achieve "consultant loyalty", much like "brand loyalty" promoted by advertisers. Many executives seemed to overstate their ability to recognize a good system when they saw one. Using a sole source consultant limited the scope of ideas considered, creating some potential problems for organizations that apply satisficing criteria. The remaining third of the truncated search cases solicited competition among consultants and vendors. RFP's were used to solicit ideas and/or to find someone to carry out the project. Extended search processes relied almost exclusively on RFP's.

The *appraisal* process activated the formulation, evaluation, and implementation stages. This type of process begins with an idea that has unknown or contentious value. A process which resembles the scientific method is used. The guarantor is similar to the norms of science. Findings are used to win over the support needed to implement.

The appraisal can be covert, carried out to devise politically defensible arguments to support the idea, or overt, attempting to remove real uncertainty about value. A *covert* appraisal, was carried out to develop politically effective arguments to blunt the expected attacks of adversaries, Arguments are developed that entice support (Bower, 1970). Other appraisal efforts were postures, undertaken to placate key constituencies, not to produce new information (Nutt, 1980). An *overt* appraisal is less defensive, more inquisitive, and more open to change. They were carried out to document unknown benefits, often in the form of consumer or user acceptance.

The *search* decision process activated the formulation and implementation stages. Search processes were used when an executive sensed a need but lacked a workable idea. The executive mobilized people he/she trusts, made a stab at defining the need, and waited for a reply. The executive and his/her colleagues carried out a passive and defensive search to locate a viable idea which treated perceived symptoms. The search was expected to provide a full blown idea that required little, if any, detailing. Evaluation was not used. Once a "workable" idea was discovered the sponsor saw no necessity to test it. The force of the idea was seen by the sponsor as sufficient rationale to promote adoption. Search processes were found to be used in seven percent of the cases.

A *sequestered search* variation was carried out when the need was seen as both ill-defined and threatening. In these cases the executive personally managed the search process which occurred in sixty percent of the search cases. The *open search* was used for needs seen as trivial. The executive defined a need in vague terms and asked subordinates to seek a solution. An open search process occurred in forty percent of the open search cases. Both peers and the literature were used to seek out ideas.

A *nova* decision process activated all stages: formulation, conceptualization detailing, evaluation, and implementation and attempted to create new ideas. A guarantor of innovation was applied. Stage two, in which options were identified and pursued in subsequent stages, was particularly important in a nova process. the nova process is the *only* process with activity in stage two. Nova planning was observed in 15% of the cases studied.

Nova process variations stemmed from using internal or outside consultants who offered (or sold) a means to deal with the problem. The *internal consultant* was drawn from the organization's staff. The *outside consultant* came from one of three sources: the organization's auditor, an "old boy network" of friends and former associates, or organizations and/or individuals thought to be "high prestige". The internal and external consultant differed in their approach to generating alternatives. Outside consultants feel more constrained than the internal consultant to offer ideas that depart from the traditional practices and policies used by the organization. Consultants seem prone to be problem reactive, offering a "corrective" type of option that responded to complaints and proposed a modification to overcome the malfunction, perhaps fearing that they may offend a client by attempting to redefine stipulated performance failures. "Idea driven" processes were more than twice as common for inside, as compared to the outside consultant. These variations occurred about equally in the cases.

Reconciling Process Descriptions

March (1981) contends that organizational action taking is based on rule, rational change model, learning, conflict, contagion, and regeneration processes. With one exception, all of March's processes have analogues in the process types identified in this research. In *rule* following the equivalent of SOP's are used. None of the cases were sufficiently routine for SOP's to be observed.

Rational choice models were observed in the off-the-shelf processes which stressed carefully comparing options against expectations, consequences, and/or each other. Overt appraisal processes also applied rational methods of choice. *Learning* was also apparent. The executives contended that they used the extended search off-the-shelf processes for the express purpose of learning because it seemed to have worked when used for other decisions. It should be noted that repeating a sequence of steps perceived to be successful also produced "superstitions", in which success was spuriously related to the process that preceded it. Customers were found to be a source of learning.

For instance, customers often sent signals about new technology and the opportunities it creates. Competency multipliers (March, 1981) were used in which organizations (e.g. vendor search) and people (e.g., passive search using peers) were probed to get ideas. When conflict was anticipated, it stimulated covert appraisal processes. Politically effective arguments were sought which could buttress the executive's bargaining stance for anticipated confrontations with power centers. Organizations appear to follow these patterns of behavior to learn during decision making.

Contagion can be described as an idea which spreads among organizations. The provincial form of the historical model process promotes contagion. Imitation was more likely if the organization using the idea was seen as high prestige by the adopting organization. *Regeneration* stems from new people and new ideas. Both were observed. Raiding competitors to find an executive who could install a preferred system was a theme observed in several provincial historical model cases. Executive hired to fill slots vacated by the routine turnover of executives also introduced new ideas.

These perspectives fail to explain why nova and enriched historical model processes occur. The processes used by managers seem to represent a sophisticated understanding of idea development that goes beyond March's generative rules. Action taking that sought innovation was found in nearly 21% of the cases studied.

The decision processes identified by this research can be mapped to Simon's intelligence, design, and choice typology (Simon, 1955). In each case intelligence, prompted by problem, crisis, and opportunity stimuli, were collected and reconciled in the formulation stage. Distinctive differences occur in design. To carry out design activities the historical model process used the practices of others, off-the-shelf tactics engage in vendor searches, appraisal processes evaluate existing ideas, search seeks a fully developed idea, and the nova process attempted to create a novel solution. Differences in choice activities were equally distinct. Past use provided ample demonstration of workability in the historical model process. The off-the-shelf process compared ideas to choose among them. Appraisal tactics called for empirical investigations to specify merits, as did nova processes. The search process used a satisficing rule (March & Simon, 1958) to determine if the idea meets a perceived need.

Cohen, March, and Olsen (1972) contend that executives use a “garbage can” approach to decision making in which solutions are used to formulate problems. In 62% of the cases studied this matching was found to be problem to solution, *not* solution to problem as the garbage can model implies. Performance gap information was often present at the outset, and typically in a form which suggested that the gap could not have been a reconstruction. Needs were articulated and searches conducted to find ways to fill these needs. These searches were managed by RFP's, site visits, or Nova processes aimed at discovering ways to deal with perceived performance gaps.

A process somewhat like a garbage can was observed but executives did not use it to the degree that Cohen et al., (1972) contend: pet idea and opportunity driven processes made up only (35%) of the cases studied. Furthermore, the rationale of the pet idea and opportunity evoked processes differs from that used in the garbage can model. Decision processes were found to be motivated by a recognition that an idea was useful or self promotion attempts by an executive which seem neither capricious nor whimsical.

Finally the processes discovered can be mapped to Thomson's computational, compromise, judgmental, and inspirational strategies (Thomson, 1967). Executives in this study framed decisions by treating outcomes as clear. This act created a sense of security (possible false security) from which the process unfolded. Furthermore, the executives seemed to recognize limitations in understanding cause and effect relations. In most cases, the decision process was undertaken to clear away this ambiguity. As a result, most of the decisions in the study could be classified as following Thomson's judgmental strategy. The nova, search, off-the-shelf and historical model processes attempt to find a solution which can sweep away causal uncertainty. These processes represent 93% of the decisions suggesting that decision making relies on a judgmental approach.

Use of Normative Models and Preferred Practices

Views of innovation – Nova processes are regarded by Churchman (1979) and others as ideal because of their potential to innovate but

executives seldom initiated a nova process. They prefer to copy the ideas of others or to search for ready made solutions. Exceptions stem from executives who seek to get a new mood (Christensen, 1976). Some risk taking is justified when a new leader arrives on the scene to demonstrate that the organization is being revitalized. The necessity to make changes under these conditions may identify one of the few instances when executives willingly initiate an innovation seeking process.

According to Schon (1983) the successful executive accepts the uncertainty in perceived needs and reflects on the inherent confusion in these needs. The equivalent of an experiment is conducted that varies *both* means and ends. New theories or explanations are constructed that attempt to explain away the confusion and the uncertainty. The acceptance of uncertainty, the search for new theories and understandings (innovation), multiple means (several alternatives), and fluid assumptions about ends (avoiding dogmatic need stipulations) characterize the successful practitioner. However, executives in this study often found uncertainty intolerable which enticed them to create a artificial certainty. For example, an RFP rapidly produces tangible results but requires the executives to be explicit about needs which are often far from clear early in the process. As a result ends were often prematurely fixed and a single means quickly identified; setting in motion a process which stifled innovation.

Normative methods. Nothing remotely resembling the normative methods described in the literature was carried out. Not even variations were observed. Either managers have little knowledge of normative methods or do not find them useful. The problem definition, alternative generation, refinement, and selection sequence which is called for in nearly all normative methods of decision making seem rooted in rational arguments, not behavior. *Ideas* drive the decision process, which was used to rationalize and shape the idea or determine if it had value.

Solution centering – There was a clear preference, indeed often a demand, for concrete ideas quite early in the process. A “solution centered” process, which quickly identified the features of the plan, was used in 83% of the cases studied. This leads to the off-the-shelf, historical model, and appraisal processes because each provides a tangible idea.

These processes may have several limitations. First, a solution centered process may result in "single loop learning" which Argyris and Schon (1978) argue limits learning scope and thereby the insights that can be gained. Second, Maier (1970) finds that a fixation on either problems or solutions is undesirable. If executives stay "problem centered" as they explore possibilities results should improve (Delbecq, 1967).

Guarantors

Identifying the decision problem creates a paradox because there is no test that can be applied to determine if the "correct" problem has been selected. To demonstrate this point, problems can be viewed in terms of the systems they imply, which have a hierarchical relationship. Every system can be thought of as a part of a large system and, at the same time, containing many smaller systems. Thus, the choice of scope is the key act in decision making because the nature of the solution is dictated by this choice. Two tests can be used: salience and control. The executive may choose to restrict his/her purview to those systems over which he/she has control. The salience test is used to select a problem that stands out, as contrasted with the other potential problem definitions. The conspicuousness of some problems, gives them a sense of urgency. To make problem selection less arbitrary, system theorists call for the executive to consider a system that is one level up and one level down from the focal system to select an appropriate scope for decision making.

A new type of guarantor can be defined from the generation of options "broadly defined"; that is a set of options for each of several levels of inquiry. For instance, options for balancing accounts receivable and accounts payable are dramatically different from options that compare account balancing with revenue generation. The comparison of options broadly defined may offer a new guarantor that helps the executive avoid responding to symptoms, instead of underlying causes.

Frame two: Process Management

Distinct types of implementation tactics and within tactic variations emerged from analysis of the transactional models. Four types of implementation tactics were used by executives in 93% of the cases. The *nature* and *degree* of executive's *involvement* in the decision process were found to be the distinguishing features of these tactics. These tactics were called intervention, participation, persuasion and edict. Each tactic had important variations. Table 4 lists the frequency of use for each tactic and tactical variation, and summarizes their features.

Insights about the practice of implementation were identified by noting how executives regulated the decision process (table 4). In the *interventionist* tactic an executive created a need to act and then

Table 4: Implementation Tactics and Variations

<i>Tactic/Variation</i>	<i>Cases</i>	<i>Frequency* of Occurrence</i>	<i>Salient Features</i>
Interventionist implementation	16	19%	<ul style="list-style-type: none"> ● A key executive justifies the need for change: <ul style="list-style-type: none"> ● new norms to judge performance ● ways performance can be improved ● both performance and norms
a) norm test	4	5%	
b) Feasibility test	6	7%	
c) Both	6	7%	
Participation Implementation	14	17%	<ul style="list-style-type: none"> ● User and/or power center representatives make recommendations: <ul style="list-style-type: none"> ● solution framing with partial participation ● solution specification with partial participation ● solution framing with full participation ● solution specification with full participation
a) Token participation	2	2%	
b) Delegated participation	10	13%	
c) Complete participation	2	2%	
d) Comprehensive participation	0	0%	
Persuasion Implementation	35	42%	<ul style="list-style-type: none"> ● Experts attempt to sell their ideas: <ul style="list-style-type: none"> ● persuasion by consultants ● persuasion by organizational staff
a) Consultants	14	13%	
b) Internal staff	24	29%	
Edict Implementation	19	23%	<ul style="list-style-type: none"> ● Executive issues a directive requiring adoption: <ul style="list-style-type: none"> ● executive has more at stake than the organization ● the organization has more at stake than the executive ● both have clear cut stakes
a) executive's significance	5	6%	
b) organizational significance	10	12%	
c) both	4	5%	
TOTAL	84	100%	

* percentage of all cases

acquired the authority to carry out the decision process. Steps are similar to the Lewin-Schein implementation procedure of unfreezing, change, and refreezing (Dalton, 1970). However, the executives were far more aggressive than the OD specialist acknowledge as either necessary or desirable. Similar to the prescriptions of Kotter and Schlesinger (1979), successful implementors were active in carefully monitoring the entire process, regulating social and political issues as they arose. Executives, using the interventionist tactic, were quite good at renorming a system they sought to change. Tactical variations stemmed from how these norms were justified. To create new definitions of norms comparable organizations that had superior performance were cited, ways to improve current practices were described, or both tactics were used. Through these steps, the executive was able to stipulate needs (thereby eliminating ambiguity), deal with scale, self-educate, collect essential data to deflect threats, manage resentment, build confidence, and reinforce what was wanted: all key forces identified by Zand and Sorensen (1975) in their study of implementation.

A *participation* tactic was used when a task force was formed with key power centers and individuals as members. The executive delegates his/her prerogatives for development to the task force. Four crucial participation variations were identified by the scope of stakeholder involvement and role of the task force. *Token* participation had stakeholder representatives frame a solution, such as problem identification. *Delegated* participation used partial stakeholder involvement with solution specification as the task force's role. *Complete* participation made all stakeholders members of the task force to carry out a framing task. *Comprehensive* participation calls for all stakeholders to be involved in solution specification. Delegated participation was frequently used, token and complete participation rarely used, an comprehensive participation never used (table 4).

The benefits of participation seem contingent on what the task force is asked to do and the scope of involvement of key people. Representatives can help, but the power of cooptation drops dramatically for those not directly involved. The impact of cooptation also declined when the role of the task force was limited.

The *persuasion* implementation tactic relied on experts to guide development activities. Implementation was dependent on experts who

determine what should be done and use rational arguments to convince the executive to go along. To illustrate, much of the development done by management scientists and operations researchers has an expert recommending and the executive reacting (Churchman, 1975). Adoption failures have been attributed to executives who did not understand the developmental process or the nature of its product (Churchman & Schainblatt, 1965; Duncan, 1974).

Executives were found to engage in considerable delegation to experts. More than forty percent of the decision cases used an expert-managed development process. The executive gave the expert broad responsibility, but held up approval until the expert could demonstrate value. This forced the expert to devise a well constructed rationale and use salesmanship tactics. The frequency with which persuasion tactics were used suggests that many executives see development as an activity that should be carried out by internal staff or consultants. Implicitly forcing the expert to gather arguments for adopting a project, at the expense of gaining the acceptance of user, may account for the persuasion implementation failures.

Issuing an *edict* requires the executive to use power (French and Raven, 1959). When carrying out an edict the executive trades social credit for action and risks failure if his or her power proves to be insufficient. However, even when the executive has the power needed to act its use strains the organization and gradually drains the executive's store of social credit.

References:

1. Argyris, C. and Schon, D. A., *Organizational Learning: A Theory of Action Perspective*, Reading, Mass: Addison-Wesley, 1978.
2. Campbell, D. T., and Fiske, D. W., "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix," *Psychological Bulletin*, Vol. 56, 1959 (81-105).
3. Christensen, S., "Decision Making and Socialization," in (J. G. March and J. P. Olsen, eds), *Ambiguity and Choice in Organizations*, Bergen, Norway: Universitets forlaget, 1976 (351-385).
4. Churchman, C. W., *The Design of Inquiring System*, New York: Basic Books, 1971.
5. Churchman, C. W., *The Systems Approach*, New York: Dell, 1979 (Revised Edition).
6. Churchman, C. W., "Theories of Implementation," in R. L. Schultz and D. P. Slevin, *Implementing Operations Research/Management Science*, New York: Elsevier, 1975.
7. Churchman, C. W. and Schainblatt, A. H., "The Researcher and the Manager: A Dialectic of Implementation," *Management Science*, Vol. 11, No. 4, 1985 (B69-B87).
8. Cohen, M. D., March, J. G., and Olsen, J. P., "A Garbage Can Model of Organizational Choice," *Administrative Science Quarterly*, Vol. 17, 1972 (1-25).

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References

1. Argyris, C. and Schon, D. A., *Organizational Learning: A Theory of Action Perspective*, Reading, Mass: Addison-Wesley, 1978.
2. Campbell, D. T., and Fiske, D. W., "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix," *Psychological Bulletin*, Vol. 56, 1959 (81-105).
3. Christensen, S., "Decision Making and Socialization," in (J. G. March and J. P. Olsen, eds), *Ambiguity and Choice in Organizations*, Bergen, Norway: Universitets forlaget, 1976 (351-385).
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6. Churchman, C. W., "Theories of Implementation," in R. L. Schultz and D. P. Slevin, *Implementing Operations Research/Management Science*, New York: Elsevier, 1975.
7. Churchman, C. W. and Schainblatt, A. H., "The Researcher and the Manager: A Dialectic of Implementation," *Management Science*, Vol. 11, No. 4, 1985 (B69-B87).
8. Cohen, M. D., March, J. G., and Olsen, J. P., "A Garbage Can Model of Organizational Choice," *Administrative Science Quarterly*, Vol. 17, 1972 (1-25).

9. Daft, R. L., "Learning the Craft of Organizational Research," *Academy of Management Review*, Vol. 8, No. 4, 1983 (539-546).
10. Dalton, G. W., "Influence and Organizational Change," (in G. W. Dalton, P. Lawrence, L. Greiner, eds), *Organizational Change and Development*, Homewood, Illinois: Irwin, 1970.
11. Delbecq, A., "The Management of Decision Making in the Firm: Three Strategies for the Types of Decision Making," *Academy of Management Journal*, Vol. 10, No. 3, 1967 (329-339).
12. Duncan, W. J., "The Researcher and the Manager: A Comparative View of the Need for Multiple Understanding," *Management Science*, Vol. 20, 1974 (1157-1163).
13. French, J. and Raven, B., "The Bases of Social Power," in (D. Cartwright, ed.), *Studies in Social Power*, Ann Arbor, Michigan: Institute for Social Research, 1959.
14. Huse, E. F., *Organization Development and Change*, St. Paul, Minnesota: West Publishing, 1975.
15. Kotter, J. D. and Schlesinger, C. A., "Choosing Strategies for Change," *Harvard Business Review*, March-April, 1979, (16-114).
16. Locke, E. A., Shaw, K. N. Saari, L. M., Latham, G. P., "Goal Setting and Task Performance 1969-1980," *Psychological Bulletin*, Vol 90, 1981 (125-152).
17. McKelvey, B., "Organizational Systematics: Taxonomic Lessons From Biology," *Management Science*, Vol. 24, No. 12, 1978 (1428-1440).
18. Maier, N. R. F. W., *Problem Solving and Creativity: In individuals and Groups*. New York: Brooks/Cole, 1970.
19. March, J. G.: "Footnotes to Organizational Change," *Administrative Science Quarterly*, Vol. 26, No. 4, 1981 (563-577).
20. Mason, R. O. and Mitroff, I. I., *Challenging Strategic Planning Assumptions*. Wiley-Interscience: New York, 1981.
21. Mintzberg, H., and Waters, J. A., "Tracking Strategy in an Entrepreneurial Firm," *Academy of Management Journal*, Vol. 25, No. 3, 1982 (465-499).
22. Mintzberg, H., Raisinghani, D., and Theoret, A., "The Structure of the Unstructured Decision Process," *Administrative Science Quarterly*, Vol. 21, No. 2, 1976 (246-275).
23. Mintzberg, H., *The Nature of Managerial Work*, New York: Harper & Row, 1973.
24. Nadler, G., *The Planning and Design Approach*, New York: Wiley, 1981.
25. Nutt, P. C., *Planning Methods*, New York: Wiley, 1984a.
26. Nutt, P. C., "Types of Organizational Decision Processes," *Administrative Science Quarterly*, Vol. 29, No. 3, 1984b (414-450).
27. Nutt, P. C., "Implementation Techniques for Planning," *Academy of Management Review*, Vol. 8, No. 3, 1983a (600-611).
28. Nutt, P. C., "Stage-Based and Process Reconstruction Paradigms for Planning Research," Academy of Management national Meeting, Dallas, Texas, August 1983b.
29. Pounds, W., "The Process of Problem Finding," *Industrial Management Review*, Fall, 1969 (1-19).
30. Schon, D. A., *The Reflective Practitioner: How Professionals Think In Action*, New York: Basic Books, 1983.
31. Thomson, J. D., *Organizations in Action*, New York, McGraw Hill, 1967.
32. Yin, R. K., "The Case Study Crisis: Some Answers," *Administrative Science Quarterly*, Vol. 26, No. 1, 1982 (58-65).
33. Zand, D. E. and Sorensen, R. E., "Theory of Change and The Effective Use of Management Science," *Administrative Science Quarterly*, Vol. 20, 1975 (532-545).