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Surprising but true: Half the decisions in organizations fail

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Executive Overview

Half the decisions in organizations fail. Studies of 356 decisions in medium to large organizations in the U.S. and Canada reveal that these failures can be traced to managers who impose solutions, limit the search for alternatives, and use power to implement their plans. Managers who make the need for action clear at the outset, set objectives, carry out an unrestricted search for solutions, and get key people to participate are more apt to be successful. Tactics prone to fail were used in two of every three decisions that were studied.

Why Decisions Fail

Half the decisions made in organizations fail.[1] This is a major finding from studies of decision making that I have conducted over the past two decades.[2] This dramatic failure rate cannot be explained by conventional wisdom. For instance, failure does not generally stem from things beyond a manager's control: draconian regulations imposed by government, unexpected budget cuts by higher-ups, or loss of market share because of fickle customers. Although failures can occur when regulations run up costs, when budget flexibility is lost, and when customer preferences shift and wreck a marketing plan, the tactics that managers use are more important. Studies of decision making that I have conducted over a 20-year period trace failure to managers who employ poor tactics.[2]

Why are tactics prone to fail used so often? My work suggests three reasons: Some tactics with a good track record are commonly known, but uncommonly practiced. Nearly everyone surveyed is aware of participation and its ability to coax acceptance, but participation is used in just one of five decisions. Another reason is that decision makers take short cuts when they feel time pressure. As pressure appears to mount, reason gives way to such homilies as, "Why invent the wheel?" The practices of a respected organization are then copied, which is rationalized as timely and pragmatic. But such short cuts often lead to unanticipated difficulties and delays as steps are taken to convince people that the company's interests, not yours, are being served. A third reason for failure is subleties. Telling people you want to lower costs is much more powerful than finding the root cause of the cost problem. Managers who are drawn to problem solving fail to see that problems prompt blame. Telling subordinates what's wanted liberates them to look for answers. Finding problems alerts subordinates to take defensive action. Energy is directed away from finding answers to protecting their backs and their interests.

To find out why decisions go wrong, I began my research by collecting real decisions in real organizations, made by real people. Getting close to the action uncovered tactics and allowed me to see a decision's result and its consequences. Connecting outcomes to tactics provided a telling appraisal of the effectiveness of the tactics employed by managers.

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Managers can recall their successes and failures, but seldom subject them to systematic analysis. Erroneous associations between tactics and their results result and managers may discard perfectly good ways of making decisions and continue using others with poor track records. This article summarizes some of the things I have learned from such analyses.[3] Lessons drawn from this work are offered to suggest what to do and what to avoid to

increase your chances of making successful decisions.

Inventory of Day-to-Day Managerial Decisions

The cases are based on 356 decisions made by senior managers in medium to large organizations across the United States and Canada. (See Tables 1 and 2). They are the sorts of decisions managers face day-to-day about new products, equipment purchases, staffing, pricing, marketing, controls, planning, personnel policy, construction, and customer service. About a quarter were made in public agencies, about half in private sector profit-making companies, with the remainder in third-sector organizations. Public organizations are made up of governmental agencies funded by tax dollars. Private organizations are for-profit firms that offer products and services paid for by consumers. Third-sector organizations include private, not-for-profit organizations, such as the bulk of U.S. hospitals, charities, symphony orchestras, and professional societies. The results do not vary much between the different types of decisions and organizations.

Decision-making practices were collected by interviewing key participants, including the person responsible for the decision.[4] The steps managers followed were uncovered and classified into tactics that are used to set directions, find solutions,

Table 1
Decision Types, Organizations, and Participants in the Cases

Characteristics	Number	Percent
Decision Types		
Service or Product	94	26
Technology (e.g., equipment)	70	20
Internal operation (e.g., inventory control)	69	19
Control systems (e.g., accounting software)	54	15
Reorganizations (e.g., mergers, restructuring)	35	10
Personnel policy (e.g., benefit packages)	19	5
Markets (e.g., pricing, advertising)	15	4
Total	356	100
Organizations		
Third-sector (e.g., private nonprofits)	148	41
Private (e.g., for-profit companies)	126	35
Public (e.g., governmental agencies)	84	23
Total	356	100
Participants		
Executives (CEO, COO, CFO)	231	65
Middle managers	123	35
Total	356	100

Table 2
Illustrations of Organizational Decisions

Organizations	Decisions
University Hospital	Scheduling operating room
Ross Laboratories	Marketing infant formula to developing nations
Florida Medicaid	Fraud management system
Ohio DNR	Supporting wildlife programs
U.S. Air Force	Procurement
NASA	Decompression service
Veterans	Restructuring
City of Columbus	Divesting hospice program
Ohio DOT	Budget system revamping
Michigan Health	Disposing of contaminated cattle
Public School System	Redesigning curriculum
U.S. Navy	Radar development
McDonald's	New location and design
Korean Tire Co.	Marketing in South America
Nationwide Insurance	Computer system capacity
Allied Van Lines	Pricing services
Marshall Fields	New product line
Bank One	Selling Visa cards
Fifth-third Bank	Dropping Saturday service
G.E.	MRP system
National City Corp.	Private label credit card
Lennox	Recycle toxic waste
Mead Paper	Cost cutting system
Anthony Thomas	New product
Delco	Tariff management
CompuServe	New on-line service
Bethlehem Steel	Scheduling blast furnace maintenance
Battelle	Contract bidding
Toyota	Increasing sales
Large city	Creation of retirement center
The Limited, Inc.	Purchase an information system
American Electric	CAD/CAM system
General Motors	Robotic assemblers
Korean Airlines	Staff cutback
Huntington Bank	Billing and collection procedures
American Telephone	Marketing plan
400-bed acute care hospital	Add a lithotripsy service
McDonnell-Douglas	TQM teams
575-bed acute care hospital	Select a radiation treatment simulator
Dunning Lathrup	Modify bonus policy
Two small fast food restaurants	Initiate a joint venture
1000-bed university hospital	Purchase a magnetic resonance imager
343-bed acute care hospital	Add a pulmonary treatment program
City health service	Locate a halfway house for the deaf
500-bed acute care hospital	Add an open-heart program
1000-bed acute care hospital	Provide a helicopter transportation
250-bed rural acute care hospital	Create a detox unit
Lane Bryant, Inc.	Intimate apparel
For-profit journal abstracting	Devise a reference library
A large company	Create a marketing program
Delco Electronics	Inventory control system
Hertz-Penske Rental	Customer service system
NCR	Cash flow management

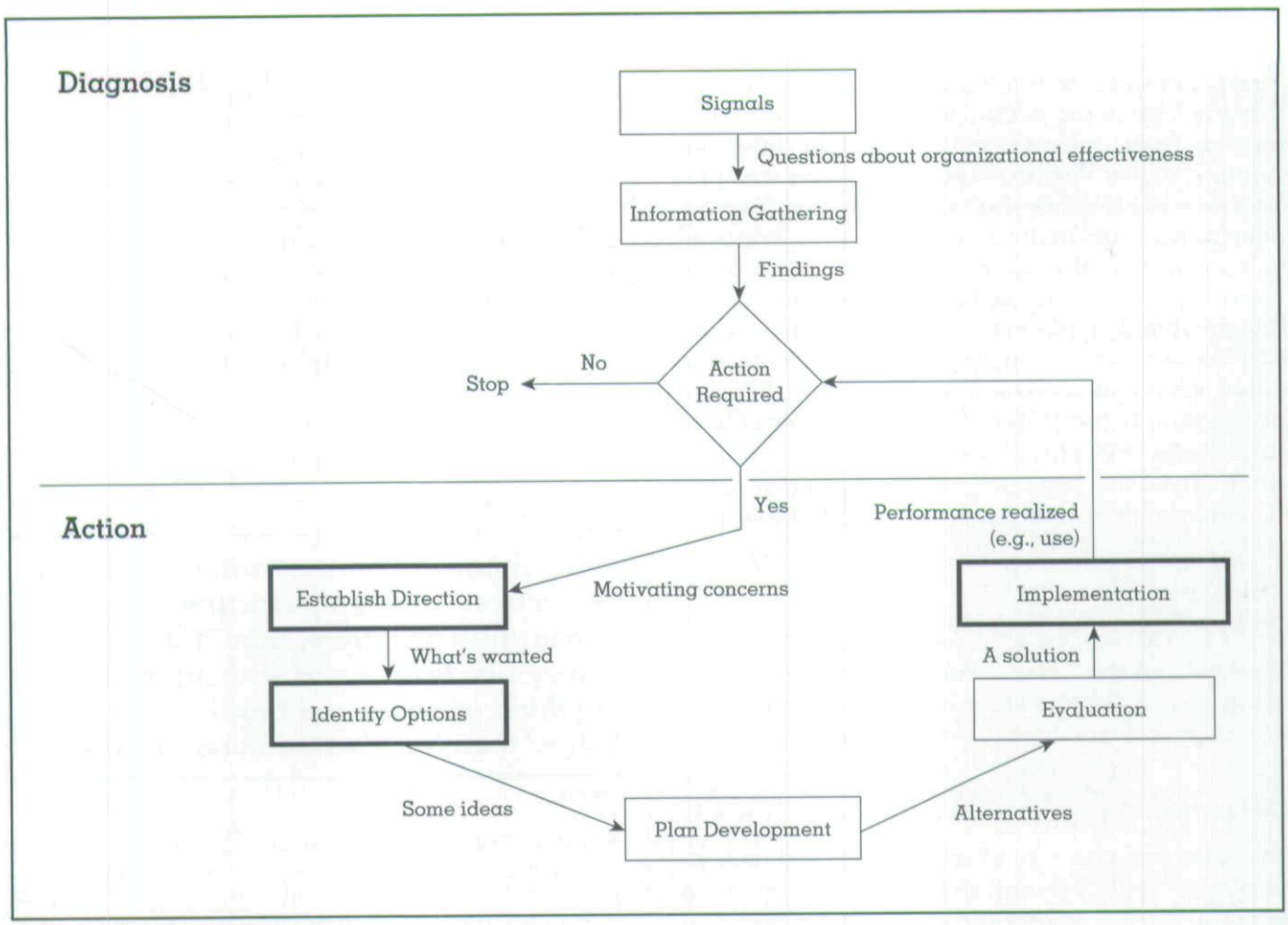
and implement the solution.[5,6] Decision outcomes were identified and success measured, linking tactics to the success measures with statistical techniques.

The primary indicator of success was whether a decision was put to use. Changes in conventional wisdom, awareness, enlightenment, or attempts to legitimize did not count as successes.[7] A management information system (MIS) was called a failure if the organization continued to use the old system, and a merger was a success if it was completed. Each decision was followed for two years to determine changes in use that can occur with time. During this two-year period, some decisions unraveled, being used only in part, or not at all. With this information, decisions were classified in the study as successful or not according to their long-term use (decisions sustained for two years) and degree of use (decisions still in full use after two years). Indicators of each decision's value and the time required to carry it out were also obtained.[8]

Organizational Decision Making

A process describing what managers do as they make a decision is shown in Figure 1.[9] The process stages identify what managers worry about as decisions are being made. Different people emphasize different things. Some stress finding a workable idea and deemphasize direction setting. Others emphasize implementation and still others consider all the stages and give them equal weight. The path shown by arrows in Figure 1 is often called a rational process, in which all the stages are considered in an orderly manner. A tactic indicates how managers go about uncovering the things that are called for by a stage: set directions with an objective to indicate what's wanted or copy what others do to get an idea.

The process gets started when a signal captures someone's attention. Signals identify something inside an organization, such as inefficient operations or loss of legitimacy, or outside it, such as an innovation by a competitor or a loss of customers,



Note: Stages discussed in this article are in bold boxes.

FIGURE 1
Decision-making Process

that calls into question organizational practices. These questions prompt information gathering, such as studies by staff, examining industry reports, and talking with stakeholders or trusted peers. A motivating concern emerges when the information gathered made the signals seem important. Concerns then take shape, such as coping with changes in customer tastes or expectations, or new computer technologies. When such a concern draws attention to an unsatisfactory situation, it prompts action.

Managers respond by working their way through the process stages, selecting tactics along the way. The orderly path in Figure 1 is seldom followed, because managers often jump to conclusions and then try to implement the solution they reached. The bias for action causes them to limit their search, consider too few alternatives, and pay too little attention to people who are affected, not realizing that decisions fail for just these reasons.

To concentrate on the most important lessons, the three stages in which tactics have the greatest influence on success are considered. The tactics employed by managers to set directions, uncover options, and implement their plans identify process types that are more and less successful. The less successful imposition process type uncovers a solution early on and does not consider any other solution ideas. The more effective discovery process type establishes directions and identifies options as separate activities. Options are developed in response to the directions established. Some discovery processes deal with implementation first. In others, implementation comes after a solution is uncovered. A decision in which implementation concerns are addressed early on is more successful. Table 3 identifies the key features of each tactic and provides an illustration. Table 4 summarizes the frequency with which each tactic is employed and the long-term and full-use rate that results.

Tactics Used to Set Direction

Managers in the cases established a direction by using one of the following four tactics, which are named to indicate how directions are set.

Generating Ideas

The most common way of establishing a direction, employed in 37 percent of the cases, is with an idea. Managers find what seems to be a useful idea in the signals motivating action and fashion it into a ready-made solution. For example, a company approached an air-conditioning manufacturer with an idea for a solar heat pump during an energy crisis. A license was offered to sell the heat pump in exchange for developing a heat wheel, a key part of the solar heat pump's design. The air-conditioning firm agreed and spent eight years in an attempt to devise a heat wheel with both moisture retention and durability, but failed to find a suitable construction material. The CEO made no attempt to move away from the design problem, to redesign the solar heat pump without a heat wheel, or to look for a better way to provide energy-efficient home heating and cooling. The project was abandoned by the CEO only after the declining cost of energy removed the incentive to find new sources of energy.

The idea tactic prompts managers to focus on a single solution, as did the air conditioning firm's CEO. They saw the idea as a pragmatic way to take decisive action, and made no effort to find another option. They believed that decisiveness allowed them to quickly manage possible threats that could spin out of control. Speedy action is always favored, even in situations that have no real time pressure. However, managers in these cases often struggled to verify the virtues of their idea, to coax support from others, and had to repeatedly modify the idea to make it workable. Commitment became a trap that often produced failure. Indeed, solutions derived in this way were fully used in only 42 percent of the cases, and only 56 percent of those were used for the entire two years. Managers became trapped by perceptions of sunk cost, by perceived threats in admitting failure, and by reluctance to start over. Many organizations reward only success. This makes managers fear the appearance of failure, admitting that money has been spent without producing anything of value and that it will take longer than anticipated to get results.

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Problem Solving

In more than 26 percent of the cases, managers defined a problem and then analyzed its distinctive features with the hope of quickly uncovering clues that would suggest a remedy. For example, the director and his staff of the Ohio Department of

Claims saw a growing backlog of social security benefit appeals and called for a change in handling procedures. Analysis led to a pooling idea that grouped similar claims for mass handling. However, the backlog analysis failed to focus on the reason for the growing number of claims. After the backlog grew to the point that claims took a year to process, the director stumbled on a loophole in the legislation that inadvertently eased eligibility requirements. The director made the legislature aware of the oversight and the loophole was closed. In the meantime, the agency was subjected to constant criticism and legal action for its slow, error-prone claims management. As the case suggests, defining a problem is a familiar way for managers to initiate decision making.[10] Managers want to find out what is wrong and fix it quickly. The all too frequent result is a hasty problem definition that proves to be misleading. Symptoms are analyzed while more important concerns are ignored.

Problem solving is no more successful than the ready-made solution. Only 44 percent of the solutions that resulted from problem solving were fully used, and only 55 percent of them were sustained for as long as two years. The low sustainability occurred because it became increasingly obvious over time that more important things had been overlooked. Fortunately, more successful tactics for establishing directions can be found in the cases.

Setting Objectives

Managers set an objective to guide decision making in 30 percent of the cases. The objective indicates the results that a manager wants to realize, such as lower cost or increased market share. This approach gives everyone involved considerable freedom to search for solution options. Such managers are open to anything that would provide the desired result. Setting objectives results in a 70-percent sustained use and a 58-percent full use, making it one of the better ways to set directions.

Objectives are commonly known, but uncommonly practiced because managers often have a bias toward action and fear being seen as indecisive. Action-oriented managers see objectives as an academic exercise. Identifying desired results seems obvious, and devoting time to something thought to be obvious is irritating to the action-oriented manager. Such managers stress the need to move forward, and have little patience with objective-setting sessions. Also, many managers want to be seen as decisive. This creates an artificial pressure for action. The pressure takes several forms. Managers are expected to guarantee they will fix a problem the moment a concern emerges. Saying what will be done as soon as a concern materializes makes the manager seem to be on top of things. Authorizing a study with objectives is often sneered at by the press and others in oversight roles. Such reactions make it difficult to champion an orderly process that clearly articulates desired results with an objective and wait for a solution. Managers who would prefer to follow such a path are often pressured by higher ups or people in oversight roles to grab the first idea that pops up. People creating such pressure act as if all concerns have an immediate solution. Even when managers know that making decisions in this way is foolhardy, the pressure for a quick fix often wins out.

Ironically, setting objectives has just the opposite effect. Objectives liberate people to search widely for solutions. This lowers the chance of failure, and therefore of criticism. For example, a hospital CEO responded to a threat by Blue Cross, an insurance carrier, to cut its reimbursement rates. The hospital's proposed service charges negotiated by the hospital CEO biannually and formalized as a contract with Blue Cross, had been rejected. Blue Cross claimed that the hospital was overstaffed. To respond to this threat, the hospital CEO identified a cost reduction target and let departmental managers determine how they would make the necessary cuts. The cost reduction target directed the search for ways to reduce labor cost. A successful rate negotiation with Blue Cross resulted when the CEO indicated the cuts to be made.

Setting objectives can prompt failure if the objective is too demanding. Such an objective surpasses what can be achieved, given the time and resources available, and may panic and frustrate participants.[11] The chance of success improves when a realistic objective is set. At this point, you may be wondering about the stretch objective found in the writings on total quality management (TQM) and reengineering.[12] My reading of this literature suggests that the cases cited in TQM and reengineering are mostly anecdotal and seem to have one common element—poorly used resources. For example, long distance carriers such as Sprint, AT&T, and MCI were not satisfied with Bell Atlantic's time to hook up new customers. Thirteen hand-offs and seven information systems caused repeated delays as people coordinated with one another or waited for replies, producing a 15- to 30-day wait period. The objective selected, the 10 hours of actual work, was hardly a stretch. Redeployed resources found in unneeded or inef-

ficient procedures, not stretch objectives, explain this result. On the other hand, the continued use of stretch objectives in stressed companies that are short on resources may be a prime cause of the widely-reported erosion of morale and growth of apathy in U.S. companies.[13]

Intervening in the Process

Intervention was the least frequently used tactic, observed in just seven percent of the cases, yet was the most successful. These decisions were sustained for two years in 96 percent of the cases and were still in use after two years in 92 percent of the cases. To intervene, a manager demonstrates the imperative to act by comparing current performance to norms that discredited it. This demonstration justifies the new norm by benchmarking the performance levels of respected organizations.

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Managers compare current performance to the new norm and offer some ways to improve performance. Considerable time is spent networking with key people, explaining where the new norms came from, documenting performance, and calling attention to ideas that could work. The performance gap that results is used by these managers to make claims about needs and opportunities. These claims for action provide direction for the decision-making effort, indicating what is wanted as an outcome.

Managers often assume that the concern that motivated them to act is obvious to others. Informants in my cases pointed out that key people often have no knowledge of the reasons motivating a decision-making effort or disagree about its importance. This causes managers considerable grief as they try to reassure doubting or belligerent stakeholders, gobbling up time and delaying action. Key players often remain skeptical as justifications are belatedly offered, and speculate about the manager's hidden agenda, even when there isn't one. Managers who apply the intervention tactic are able to alter such perceptions and increase their chance of success.

The steps taken by managers to carry out intervention can be illustrated by a corporate reorganization plan. The company's board of directors had become frustrated with its scope of responsibilities, which became their motivating concern. The board members called attention to the need for change by identifying responsibilities that are typical for comparable boards. A comparison of these responsibilities suggested that the board had too much involvement in day-to-day operations. The oversight responsibilities in comparable organizations indicated what needed to be changed and how the board's fiduciary responsibilities could be carried out with less involvement in day-to-day operations. The chairperson used this information to network with key stakeholders to explain the need for change.

Lessons for Establishing Direction

- The rates of use and success records of the direction-setting tactics fail to match. The most successful tactics are infrequently used, and the least successful frequently used. Avoiding idea and problem-solving tactics and using objective or intervention tactics will improve the chance of success.
- Problem-solving tactics fail because the search for solutions is narrowed and defensiveness is evoked. For example, when a problem with advertising appears to exist, search is limited to advertising solutions, ruling out solutions that deal with anything else. A manager attempting to cope with an advertising problem is often unable to look beyond this problem toward opportunities that others see as useful. Poor results also stem from the defensive behavior prompted by a problem analysis. Listing problems makes people defensive because they see themselves as potentially accountable. This prompts them to maneuver to avoid becoming scapegoats and draws energy from the decision effort. However, problem listing is seductive and managers use this approach in one-quarter of their decision-making efforts.
- Intervention and setting objectives are effective because they encourage learning and development.[14] When the direction set by a manager rapidly narrows to a specific problem, or displaces a solution, little learning can occur. By opening up the decision process to new possibilities, managers are more apt to recognize the value of new ideas and move away from stereotyped responses and traditional ways of acting.

Managers find it difficult to set directions using the best tactics because they are drawn to power and shy away from ambiguity and uncertainty. Powerful managers often impose their ideas on the decision-making effort when seductive-looking so-

lutions crop up. Seizing such opportunities is viewed as a pragmatic way to take decisive action. Telling people how to make a decision is a time-honored way to appear decisive. However, imposing a solution frequently leads to failure. Managers may prefer to make sense of a decision after the fact,[15] and to combine chance with opportunity.[16] Preconceived solutions and limited searches for options are recipes for failure.

When managers impose an answer, they create a misleading clarity that sweeps aside important sources of ambiguity and uncertainty. Consider the heat pump case. After the solar heat pump concept had been accepted by the company's CEO, no one was prepared to challenge its merit. The expectation of an increase in sales was never verified or even discussed with anyone in the organization as the decision process unfolded. Decisions with an idea direction seldom go beyond that idea. Managers become fixated with the idea and do not ask reframing questions, such as, "How do we find a product that complements our air-conditioning business?" or, "How do we increase sales?" Subordinates are reluctant to carry bad news that the idea does not work, as eight years of repeated failure in the heat pump case indicate.

Managers do not know what they want until they see what they can get.[17] Having a specific answer sweeps away ambiguity and uncertainty. At first this is comforting, but it subsequently limits a manager's ability to see attractive options. Furthermore, beginning with an imposed solution is rash when a manager has little understanding of what is needed. Instead of seeking understanding, such managers explore the virtues of an idea and focus on the reactions of key people to it. The more insistent managers become, the more time they must spend defending the idea. Managers who did not impose a solution, and took steps to justify the need to act using intervention tactics cut the duration of the decision process by 300 percent. Even better, managing the politics of the situation with these steps greatly improves the prospect of decision success. Ideas can be helpful when used to illustrate the benefits of new practices, but these benefits will be lost if the options under consideration are limited to the initial set of ideas. Treating ideas as possibilities, as in the intervention tactic, improves the prospects of success.

Tactics Used to Identify Options

In the 133 cases that used discovery processes, an objective or an intervention was followed by benchmarking, searching, or designing to uncover options. The key features of these tactics can be found in Table 3 and their frequency of occurrence and success rates in Table 4.

Benchmarking the Best Practices of Others

Managers often benchmark practices that are being used by respected organizations to uncover a solution. Practices that seem desirable are expected to meet an objective or the needs suggested by an intervention. These managers said that they copied the practices of others because it seemed pragmatic and would cut costs. As one of the participating managers noted: "Why reinvent the wheel when someone else may have done it for you?" This kind of logic made benchmarking the most widely used approach for identifying options.

A single-benchmark tactic cropped up in seven percent of the cases, and had both sustained and full use rates of 59 percent. Managers using this tactic copy the practices of a single organization or work unit thought to have high prestige, and then tailor these practices to fit their needs. In one case, a manager hired someone who had successfully installed a desired system for a leading competitor. Along with hiring a solution, single benchmarks are derived from site visits made by managers and from descriptions published in periodicals and books.

Failures stemmed from difficulties that arose as the transported idea was modified to fit the needs of its new user. For example, the CEO of the University of Minnesota's Medical Center visited the University of Iowa's Medical Center to study its corporate and governance structure. The visitor enumerated the functions of trustees, the prerogatives of its medical staff, and mechanisms of accountability for state and federal funds. Unfortunately, the Iowa Medical Center has a state-wide monopoly over tertiary care treatment for the poor, giving it complete control over substantial amounts of revenue. The structure that evolved to fit this situation offers no guidance in forming a governance structure for the University of Minnesota, with its more competitive environment.

Some managers used the more sophisticated approach of integrated benchmarking. This tactic was observed in six percent of the cases and had a good record of success with 71-percent sustained and 78-percent fully used decisions. Managers who use integrated benchmarking examined the practices of several organizations or work groups, identifying the best features from each. An amalgamation of these practices produced the solution. For example, before purchasing a major piece of equipment, several organi-

Table 3
Decision-Making Stages and Their Key Tactics

Stages/Tactics	Key Features	Illustration
Establish Direction		
Imposition process types		
• Idea	Impose a ready-made solution on the decision-making effort	A company attempted to develop a solar heat pump devised by another firm.
• Problem solving	Infer a solution by problem analysis	The Ohio Department of Claims analyzed its claim backlog to find reasons for its growth.
Discovery process types		
• Objectives	Set objectives to guide solution development	A hospital identified a cost reduction target and let departments determine how to make the cuts to meet the target.
• Intervention	Find new norms that dramatize the need for action. Suggest needs and opportunities to guide solution development.	A board of directors called attention to its scope of responsibilities by comparing them to those of boards in comparable companies. The need to reduce these responsibilities was identified by the atypical degree of the board's involvement with the firm's operations.
Identify Options		
Imposition process types		
• Existing solution	Explore the idea	Management shows the benefits of a solar heat pump or the remedy for claim backlogs.
Discovery process types		
• Benchmarking	Adapting the ideas of others	A material management system was obtained by hiring someone who had developed such a system.
Single	Single source	
Integrated	Amalgamate ideas from multiple sources	Before purchasing equipment, several organizations were visited to see how the equipment was used. The best features of practice at each site were combined to form a plan.
• Searching	Aggressive and overt search	
Single	One search cycle	An RFP was used by a firm to select among computer vendors.
Multiple	Learning from sequential searches	A recursive search was carried out by a firm for an auditor, using what was learned in a past search to identify requirements for the next search cycle.
• Designing	Custom-made solutions are sought	A new system was designed for the records, scheduling, and billing patients in a university hospital clinic, without reference to existing systems.
Implement Decisions		
• Intervention (revisited)	Show stakeholders that performance has improved and that performance now meets agreed upon norms	Hospital trustees were shown that the high cost of burn care had been covered by endowments, reimbursements, and cheap resident manpower.
• Participation	A task force made up of stakeholders formed to make recommendations:	
Token	solution framing with partial participation	A committee made up of departmental representatives was formed to identify concerns.
Delegated	solution specification with partial participation	A committee made up of departmental representatives was formed to uncover concerns and recommend solutions.
Complete	solution framing with full participation	Surveys of people near a proposed prison site were conducted to identify their concerns.
Comprehensive	solution specification with full participation	(not observed)
• Persuasion	Attempt to sell a solution by demonstrating its benefits	A CEO asked the head of an EDP department to make recommendations for a new computer and used the arguments to make a presentation to the board of directors.
• Edict	Issue a directive	A materials management department head issued a memo indicating new responsibilities for people who were affected by the plan or must carry it out.

Table 4
Success of Decision-Making Tactics

Stage/Tactic	Cases	Percent of Decisions Studied	Sustained Use Rate	Full Use Rate
Establish Directions				
Imposition process types				
• Idea	131	37	56	42
• Problem Solving	92	26	55	44
Discovery process types				
• Objectives	107	30	70	58
• Intervention	26	7	96	92
TOTAL	356	100	N/a	N/a
Identify options				
Imposition process types				
• Existing solution	223	63	55	41
Discovery process types				
• Benchmarking	46	13		
Single	(25)	(7)	59	59
Integrated	(21)	(6)	71	78
• Searching	43	12		
Single	(34)	(9)	63	51
Multiple	(9)	(3)	100	100
• Designing	44	12	63	53
TOTAL	356	100	N/a	N/a
Implement Decisions				
• Intervention (revisited)	26	7	96	92
• Participation	63	18	80	73
Token	(9)	(3)	70	67
Delegated	(34)	(10)	80	77
Complete	(20)	(6)	100	95
Comprehensive	(0)	(0)	0	0
• Persuasion	133	38	56	47
• Edict	132	38	53	35
TOTAL	344	100	62	50

Notes: Decisions that used multiple tactics were not included. N/a=not applicable.

zations were visited to determine the types of equipment in use and to extract the best features of procedures for staffing and other aspects of using the equipment. A hybrid of procedures and equipment with the best match to local conditions suggests the solution.

Four reasons accounted for the infrequent use of the integrated benchmarking tactic. First, many of the managers seem unaware of this tactic or its benefits. Second, managers seem to know little about systems analysis and other techniques required to create a systems synthesis.[18] Third, some managers have limited access to relevant practices because high status organizations are locked in fierce competition with the manager's organization. Finally, perceived time pressure begins to mount as decision-making reaches the idea stage, often creating artificial pressure to adopt the first workable idea that is uncovered.[19]

Searching for Solutions

In 12 percent of the cases managers used search aids, such as a request for proposal, or RFP, to find prepackaged solutions from vendors or consultants. Search efforts can be either single or multiple. Managers who feel that they are aware of standards by which to judge a proposed option carry out a single search. Others conduct a multiple search, such as the manager who searched repeatedly to learn about the financial analysis packages offered by consultants. Such managers accumulated several competing packages and compared them to discern their features and capabilities. With this knowledge, a new RFP called for a system with features known to be available and needed by the organization. In a single search, the RFP was written with available information, and learning and choosing were done at the same time.

The multiple search tactic was used in three percent of the cases with no failures. The single search tactic was used in 10 percent of the cases; 51 percent of these decisions were fully used and 63 percent were sustained for at least two years.

Managers who experience failure are often unaware of what is available. Managers who do not know what they do not know or want are apt to be duped. Vendors often sell a system whether or not it fits the user's needs. Huge expenditures are made for data processing systems with features an organization has no use for; the firm must pay someone else to write software to make the system meet its needs. The multiple search tactic increases the prospect of finding off-the-shelf ideas that fit your needs.

Managers fail to use the multiple search tactic because they are unaware of its benefits, or feel too much time pressure. However, managers with a workable option, hoping to find a better one, can defend a multiple search by citing the reduced prospect of failure associated with it.

Designing Options

Managers apply design to develop innovative options in response to the need or objective guiding the decision-making effort. They used design to devise marketing programs, controls, products, and services with original features—distinct from those found in the practices of others. Design tactics were found in 12 percent of the cases and produce 63 percent sustained decisions and 53 percent fully used decisions.

Managers were reluctant to use design because it seemed quite risky, compared with the benchmarking or the searching tactics. The motivations to be pragmatic are stronger than the urges to be innovative. This is unfortunate because failure has less to do with the risk of innovation than with how design is carried out. Poor results often stem from

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poor practice. Managers are rarely schooled in design and few have access to people who are. In addition, many of the subordinates who are asked to come up with an innovative solution have no idea how to proceed. Consultants using the design tactic are even more prone to failure than in-house staff because they design systems based on the wants of their client instead of their needs. The demands for repeat business force consultants to be very sensitive to what their clients say they want and make it difficult to criticize these wants for fear of offending clients.

Lessons for Identifying Options

- The ineffectiveness of the single benchmark and single search tactics stem from several related factors. Imposing an idea seems to be pragmatic because it's fast and decisive. However, my studies suggest that managers who used single benchmarks often spent considerable time trying to make the idea work, as they did in the cases in which a solution was imposed at the outset. The single benchmark provided a solution often selected in haste, with little reflection, and then required considerable tailoring later on to get it to work. Furthermore, some of the managers with a ready-made solution had hidden motives. Choice opportunities enticed some managers to bring out a self-serving idea that was unrelated to any of the organization's concerns. Resources were mobilized to justify the solution, which kept the people in the organization from looking into other possibilities.
- Single searches opened up the search process but allowed little opportunity for learning, compared with the integrated benchmarking and multiple search tactics. Integrated benchmarking and multiple search prompted managers in a decision-making role to engage in a process of reflection in which possibilities were carefully studied. This investment paid dividends by improving success. Time was actually saved because fewer repairs were necessary to fix solutions gone awry.
- Design is controversial. Design produced good results under certain conditions, such as for important decisions and when multiple alternatives were sought. Design was less successful under other conditions, and never reached the success level of the multiple search and integrated benchmarking tactics. This mixed endorsement of design is also found in the literature, where the practice of design and its frequency of use are disputed. Some argue that design should be used more often, which would increase the number of innovation attempts in organizations.[20] Others view innovation as high risk,[21] which suggests that, even with the use rate of 12 percent, design may occur more frequently than is desirable. However, you can improve the prospects of success when good de-

sign practices are followed that stress creativity. When good practice is followed, the prospect of success improves. To increase the rate of innovation in organizations, it may be necessary to train managers and their staffs in both creativity techniques and in approaches that help organizations absorb new ideas.

- Nearly every discussion of decision making calls for developing multiple options. Multiple options allow managers in a decision-making role to combine the best features of options to make a superior one, and to make a comparison with a preferred action to demonstrate its merits. In my research, managers used multiple options in less than 20 percent of their decisions. When multiple options were developed, success rates jumped from 56 percent to 70 percent. Multiple options provide another way to increase your chance of success.

Tactics Used to Implement Decision Stages

Four tactics are used by managers to pave the way for installing a preferred course of action. I call them intervention, participation, persuasion, and edict.

Intervention

Implementation by intervention occurred in seven percent of the decisions studied, with 96 percent sustained and 92 percent fully used. This makes intervention the most successful, and the least frequently used, approach to implementation. The success of intervention cuts across organizational levels. Middle managers had 90 percent of their decisions sustained, and 75 percent fully used, compared with 100-percent full use when intervention was used by top managers. The top manager's position helps to guarantee success. Middle managers must carefully work through a process of authorization and justification of the proposed new norms. This takes more time than some are willing to devote. Although their prospects of full adoption are less, middle managers can dramatically increase their prospects of success by using intervention.

Intervention creates the need for change in the minds of key people, identifying and justifying new performance norms. Showing how a comparable organization is able to operate with lower cost creates new cost expectations, suggesting a real opportunity to make a positive change. After a solution was found, these managers intervened again to facilitate implementation by showing how performance could be improved. For example, hospital trustees in one of the cases were wary of offering high-cost services, such as burn and coronary care, because third party payers like Medicaid and insurance carriers do not cover the full cost of treatment. To overcome this objection, a hospital CEO demonstrated how the cost of burn care could be covered by a variety of sources—endowments, reimbursements, and cheap resident manpower. The CEO presented the trustees with a demonstration of financial feasibility and a description of how other hospitals had enhanced their image, and thus endowments, with this service. A candidate for the burn care supervisor position showed how resident recruitment had been improved at hospitals after burn service had been added, suggesting that future resident recruitment efforts could be harmed without a burn care service. The CEO reported back to the trustees, providing data on image, resident recruitment, and cost after a pilot test of the unit.

Participation

Managers started other decision-making efforts by creating task forces with key individuals as members. Authority was delegated to the task force to oversee important aspects of the effort. Managers employed participation in 18 percent of the cases and had 80 percent of their decisions sustained and 73 percent fully used.

Managers said that they were aware of the value of participation, but found it difficult to use. This is another example of commonly known, but uncommonly practiced, activities. Managers reported avoiding participation because of its time requirements and the seeming loss of control that results. They had little knowledge of the high failure rate of other tactics, or how to deal with obstacles that arise when involving people to make a decision. Another explanation can be found in subtleties that stem from the paradox of control, which are not as widely known. Managers who give up control through participation actually get more control. People are more apt to ask for help when they need it and be candid about the decision situation when asked to participate in the decision-making effort. Unilateral action will close off this type of information.

Managers using participation form task forces that have differences in the degree of involvement and roles for its members. This suggests four types of participation. When a few people affected by the decision are given limited involvement, token participation results. Only a subset of the affected individuals are consulted and given little to do. For example, the dean of a college of business formed

an executive committee to comment on his policy ideas for the college. Two faculty were selected to represent the more than 100 faculty members, located in six departments, who were expected to be aware of and represent the concerns of their colleagues—a difficult task. The dean used the executive committee as a sounding board to test his ideas and seldom asked for ideas from the committee. Token participation can also result when surveys are conducted to sample user needs or problems. Choosing a site for a regional headquarters was carried out in this way in one of the cases to determine what people wanted and would accept.

Delegated participation also limits the involvement of stakeholders, but asks the task force to do more, such as offer a solution. This type of participation is used in strategic planning. A strategic planning group is formed that draws its members from the organization's board and its top management, and is expected to create a plan. Managers who use complete participation involve all the stakeholders as members of a task force and call on the group to comment on some aspect of a decision. For instance, in one of the cases, all accountants in a firm's accounting department were asked to state their needs before a financial analysis package was purchased. Comprehensive participation requires that all stakeholders be involved in both finding concerns and offering solutions.

Delegated participation is often used, token and complete participation rarely used, and comprehensive participation never used. (See Table 4). In theory, all affected parties can be asked to identify and select among proposals, but comprehensive participation was not observed in my research. Questions about cost and unpredictability arise when decisions are delegated to this extent. Managers seemed to be unaware that token and delegated participation have a lower rate of success than does complete participation. Token participation had a 70-percent sustained use rate and 67-percent full use. Delegated participation works better than token participation, with 80-percent sustained and 77-percent complete use rates. When task force members are given an important assignment, success is more likely. Complete participation is rarely employed but leads to decisions that are adopted in almost all cases. Wide involvement is even more important than a meaningful task. Participation failures are linked to low involvement. As the proportion of participants to all affected parties falls, the failure rate for participation increases. The power of co-optation, enticing people who participate to go along, is difficult to export. A few enthusiastic participants are unable to sway people who have vested interests or are suspicious about the manager's motives.

Persuasion

Managers use persuasion in nearly 40 percent of the cases to implement decisions. These managers called on experts to search out options offered by vendors or being used by competitors, or to devise novel options, carefully evaluating the merits of the proposed solution. Managers combined the rational arguments provided by experts with salesmanship to convince people to go along with a decision. Despite its frequent use, the persuasion tactic has significantly lower success than the participation and intervention tactics, with a 56-percent sustained use, and only a 47-percent full use rate.

Managers mistakenly saw persuasion as low risk. If the expert could convince them, they believed they could convince others. These managers saw persuasion as more successful than the success measures indicated. Failure occurred when the experts' arguments were unable to sway people. Gathering documentation to support the merits of a decision was often done at the expense of gaining the acceptance of key people affected by it. Unmanaged social and political concerns, such as job security and vested interests, scuttled many of these decisions.

Edicts

Some managers use their power to issue a directive that announces a decision. A memorandum is written, job training conducted, or an administrator hired to carry out actions called for by the decision. This is done without consulting with people who have stakes in the changes the decision would bring. For example, a new pricing policy for emergency room services was announced by a memorandum sent to all hospital employees and members of the medical staff. The memo explained the new policy and when it would go into effect. Edicts were observed in 40 percent of the cases and had the highest failure rate. When implementation was attempted by edict, 53 percent of the decisions were sustained for two years, and only 35 percent were fully used.

Managers know that they must rely on their power to issue an edict, but believe that their prerogatives and the need for timely action make this justifiable. They seem unaware of the high rate of failure of an edict. Failure can be traced to underestimating that amount of power needed because people resist the appearance of being forced to comply. To use an edict you must draw on your social credit, that store of goodwill built up by

honest dealings and positive accomplishments. When you are carrying out an edict, your social credit is traded for quick action. Repeated use of edicts depletes the store of social credit, opening the way to sabotage, token compliance, delays, and outright refusals to comply.[22] The turmoil that results seems to outweigh the decision's benefits so these decisions are often withdrawn.

Managers who routinely use edicts develop a reputation of being heavy-handed and put their decisions in jeopardy. Attention is directed away from the merits of the decision and toward the manner in which implementation is attempted. Considerable expense, time, and effort are expended trying to overcome the resistance provoked by an edict. More often than not, these efforts failed, no matter what the decision's merits. For example, one firm tried to force internal use of an MIS system that had been developed by a subsidiary. The system had no external buyers, making the targeted in-house users see it as suspect. Department managers resented being forced to adopt an MIS of questionable value that could adversely affect their performance. When asked to participate in a pilot effort, they simply refused to cooperate. The CEO of the firm entered the fray. Incentives, in the form of budget supplements, were offered if a department would operate the new MIS along with its current system, and compare the results. The department designated to work with the subsidiary sabotaged the effort by continuing to rely on its old information system and by providing erroneous information to the new system, causing it to malfunction. The malfunctions were then cited by the department as evidence that the new MIS design was faulty, ultimately forcing the firm to abandon its attempts to use the subsidiary's MIS system.

Lessons for Implementing Decisions

- Managers should become more involved in decision making. When a manager takes charge and creates an environment in which change is justified and understood, implementation is almost always successful.[23] However, managers distanced themselves from implementation by delegating important tasks in 93 percent of the decisions studied.
- Substitute intervention for edicts and persuasion. The success of implementation by intervention extends to all decision-making efforts, regardless of factors such as initial resistance to change, the scope of change called for, decision importance, resources available to support the decision effort, urgency, and the decision maker's level in the organization.[24] This suggests that substituting intervention for edicts and persuasion could nearly double decision-making success.
- Involve people affected by a decision.[25] The human relations movement has long determined that implementation success improves when key people are involved. But there is an important qualification suggested by my work. Representing some stakeholders can help, but the power of co-optation does not extend to people who are not involved in decision-making activities. Managers often limit involvement, with just a few representatives of a large group of stakeholders placed on a task force. Or the task force is limited to commenting on the decision, or other relatively minor tasks. Leverage is lost when participation is curtailed in these ways. Complete participation is rarely observed, perhaps because it can be difficult or impossible to involve large numbers of scattered stakeholders. For example, decisions that affect large numbers of people, such as locating prisons or airports, can never hope to involve all the interested parties. Nevertheless, managers will be more successful if they expand the role of their task forces as much as possible to involve as many of the stakeholders as is feasible, and keep others informed about what is being considered. If intervention cannot be used because of the press of other activities, participation is a viable substitute. When using participation instead of intervention, managers should anticipate a drop in the prospects for success from well above 90 percent to about 70 percent.
- The origins of implementation by persuasion can be traced to the operations research movement.[26] Advocates of a sales approach argue that success depends on anticipating and countering objections to proposed changes. Experts determine what should be done and devise rational arguments to support their views. Organizations like the National Science Foundation, the Ford Foundation, and the National Institutes of Health use this approach in their peer review procedures: Experts select the grants and contracts to be funded by the agency and offer justifications for their choices. The controversial Operations Research Society of America guidelines, published in 1971, called for experts to vigorously sell ideas that they find desirable. When experts recommend and managers react, implementation becomes an exercise in salesmanship. In 40 percent of the cases, managers in a decision-making role delegate to experts in this manner. Such managers give the expert broad responsibility, but withhold approval un-

til the expert can demonstrate value. This forces the expert to concentrate on providing compelling arguments that support the preferred course of action. Gathering arguments that support a decision occurs at the expense of gaining the acceptance of stakeholders, and accounts for persuasion's 50-percent failure rate.

- Issuing edicts calls for reward, legitimate, expert, informational, or referent power.[27] Reward power is the authority to offer incentives or remove irritants. To apply this type of power, managers must come up with an incentive that entices people to go along with their decision. Legitimate power is based on a manager's right to take action. Expert power flows from a track record of success and a reputation for candid and honest dealings. Expert power requires both credibility and trust, but informational power, in which a manager offers insights or cites anecdotes, requires only that the manager have the trust of other organizational members. Referent power stems from the individuals seen as charismatic, such as Ross Perot who founded EDS, or Lee Iacocca, who saved Chrysler Corporation from bankruptcy. Managers draw on one or more of these power bases when using an edict. For example, legitimate power is applied when a decision maker employs his or her prerogative to make a decision. When carrying out an edict, managers trade their social credit for action and risk failure if their power proves insufficient. The frequent use of power strains an organization and gradually drains the manager's store of social credit. Eventually, social credit disappears and every decision becomes a test of will. Morale deteriorates and the organization sacrifices the creativity of its members for their compliance. This accounts for the high rate of failure associated with issuing edicts.

Successful Decision Making

Managers can improve their chances of making successful decisions. These suggestions stem from my key findings about tactics, important related practices to follow, and tips on how to manage the decision-making effort. These suggestions call on you to practice what you know, resist pressures for a quick fix, accept uncertainty and ambiguity, and recognize subtleties in what works and what doesn't. Following these suggestions has minimal cost when compared to the cost of a failed decision.

- Personally manage your decision-making processes. The prospects of success improve when you take charge. Delegation to experts or to people who are expected to champion your ideas may give you time for other things, but will make success much less likely.
- Search for understanding. Signals that capture your attention can be symptoms of other concerns that are misleading, or more urgent than important. Careful probing can provide a window that can open up on a landscape with useful insights into what needs fixing. The time spent in reflecting on what is at issue can pay handsome dividends. A deeper understanding of the issues meriting your attention provides better direction as well as a defense for the course of action selected.
- Establish your direction with an intervention and an objective. Intervention establishes the rationale for action. An objective that indicates the desired outcome opens up a search to new ideas. An open search pays dividends by reducing the chance of failure.
- Stress idea creation and implementation. A decision-making process should guide thinking about action and taking action. Many decision makers see the importance of one but not the other, being biased toward idea development or managing the politics of the situation. There is no substitute for clear thinking or for diplomatic action. Both thoughtful idea development and adroit idea promotion are essential.

There is no substitute for clear thinking or for diplomatic action. Both thoughtful idea development and adroit idea promotion are essential.

- Identify more than one option. The consideration of several competing options improves decision results. The discarded options are not wasted. They help confirm the value of a preferred course of action and frequently offer ways to improve it. Employ one of the more effective option development tactics to do this. Consider developing an option with integrated benchmarking, with cyclical search, *and* with design. This opens up your search process to a variety of ideas from different sources. The best one or a combination of the best features of each suggests a solution that improves your chance of success.
- Deal with barriers to action. Implementation tactics must address social and political barriers to action to be successful. Intervention is the best way to manage the social and political barriers that can block a decision. Participation can be recommended when using intervention would

draw your attention away from other, more important activities. Avoid edicts and persuasion, even when a decision seems urgent.

Endnotes

[1] This finding from my research over the past two decades was highlighted in *The Wall Street Journal.* 1996. Business Bulletin. July 25.

[2] These conclusions stem from a series of studies I have done, including: 1984. Types of organizational decision process, *Administrative Science Quarterly,* 29 (3), 414–450; 1986. The tactics of implementation, *Academy of Management Journal,* 29 (2),230–261; 1987. Identifying and appraising how managers install strategic changes, *Strategic Management Journal,* 8 (1),1–14; 1989. Selecting tactics to implement strategic plans, *Strategic Management Journal,* 10, 145–161; 1993. The formulation processes and tactics used in organizational decision making, *Organization Science,* 4 (2), 226–251; and 1993. The identification of solution ideas during organizational decision making, *Management Science,* 39 (9), 1071–1085.

[3] This article draws on some key ideas from more than 30 studies reported in the literature.

[4] The approach to interview people and profile decisions was adapted from the work of Patton, M. P., 1990. *Qualitative evaluation and research methods,* Newbury Park, Calif.: Sage, and Denzin, N. K., 1989. *The research act: A theoretical introduction to sociological methods,* Englewood Cliffs, N.J.: Prentice Hall; and Lincoln, Y. S. & Guba, E. G. 1985, *Naturalistic inquiry,* Beverly Hills: Sage.

[5] The steps taken to discover tactics were: a.) A top executive in the participating organization suggests a current decision and provides documents describing it. b.) The decision maker and two others familiar with the decision and responsible for carrying it out are recruited for interviewing. In most cases, the contact person offered a decision he or she made and became the primary informant. c.) Interviews were conducted by the author, asking the decision maker and one other informant, independently, to spell out the sequence of steps taken to make the decision. d.) A written summary was prepared by me. e.) The summary was presented to each informant. f.) The summary was modified by informants until it agreed with their recall of events. g.) At an additional interview, the decision maker was asked to amend the summary to account for differences in documents and the other informant's account of what happened. Only cases that had agreement and sufficient detail to understand what was done were included in the database of decisions. h.) The two secondary informants were asked to indicate if the decision was used, to indicate how long it took, and to evaluate it. Two years from the date of first implementation these indicators were collected again. i.) I prepared a one-page summary that listed the key decision steps taken. j.) Patterns in these steps were identified to uncover tactics by sorting cases, putting each in a pile that used similar steps or tactics until groupings emerged that seemed mutually exclusive; putting code numbers on back of each summary and repeating the sort to find ambiguous classifications; creating new category or modifying an existing one to resolve ambiguities; repeating until full agreement was obtained (intrarater reliability 100 percent), and having a colleague repeat the sorting (interrater reliability 90 percent). k.) Link tactics and measures of success using statistical techniques.

[6] The explanation-building ideas of Yin were used to uncover tactics. See Yin, R., 1993. *Applications of case study research: Design and methods.* Beverly Hills: Sage.

[7] This distinction between symbolic and instrumental used can be found in Pelz, D.C., 1978, Some expanded perspectives on use of social science in public policy, in Yinger, M. & Cutler, S. J. (Eds.) *Major social issues: A multidisciplinary view,* New York: Free Press (346–357), and Beyer, J. M. & Trice, H. M., 1982, The utilization process: A conceptual framework and synthesis for empirical findings, *Administrative Science Quarterly,* 27, 591–622.

[8] The measures of use increased as indicators of decision value increased, and tended to decline as indicators of duration increased. Thus, successful decisions were put to use, had high value, and were finished in a timely manner.

[9] Similar stages have emerged in a wide variety of studies. Sources considered in my studies included Damanpour, F., 1991. Organizational innovation: A Meta-analysis of determinants and moderators, *Academy of Management Journal,* 34(3),555–590; Dunn, W. N., 1981, *Public policy analysis,* Englewood Cliffs, N.J.: Prentice Hall; Hage, J., & Aiken, H., 1970, *Social change in complex organizations,* New York: Random House; Nutt, P. C., 1992. *Managing planned change,* New York: Macmillan; and March, J. G., 1994, *A primer on decision making: How decisions happen,* New York: The Free Press.

[10] An interesting discussion of the impact of symptomatic and misleading problem directions can be found in Kolb, D. A., 1982. Problem management: Learning from experience, in Srivasta, S. (Ed.), *The executive mind,* San Francisco: Jossey-Bass, 109–143.

[11] The difficulties that stem from panic-driven decision making are discussed in Janis, I., 1989. *Crucial decisions,* New York: The Free Press.

[12] For some illustrations, see Linden, R. M., 1994. *The seamless organization,* San Francisco: Jossey-Bass.

[13] Kelley, R., 1992. *The power of followership,* New York: Doubleday.

[14] Pettigrew, A., 1995. *The awaking giant: Continuity and change at ICI.* Oxford: Blackwell.

[15] Weick, K., 1979. *The social psychology of organizing,* 2nd edition. Reading, Mass: Addison-Wesley.

[16] The notion of chance decision making is discussed in Cohen, M. D., March, J. P., & Olsen, J. P., 1976, A garbage can model of organizational choice, *Administrative Science Quarterly,* 17,1–25.

[17] See Wildavsky, A., 1979. *Speaking truth to power,* Boston: Little Brown.

[18] A useful discussion of systems synthesis can be found in Weinberg, G. & Weinberg, D., 1979. *On the design of stable systems,* New York: Wiley-Interscience.

[19] March and Simon describe the motivation to use bland alternatives in their classic work: March, J. G., & Simon, H. A., 1958. *Organizations,* New York: Wiley.

[20] Nadler, G., & Hibino, S. 1990. *Breakthrough thinking,* Prima, Rocklin, CA.

[21] Another view of innovation can be found in March, J. G., Footnotes to organizational change, *Administrative Science Quarterly,* 26,4(1981), 563–577.

[22] A useful discussion of the resistance provoked by edicts can be found in Bardack, E., 1977. *The implementation game,* Cambridge: MIT Press.

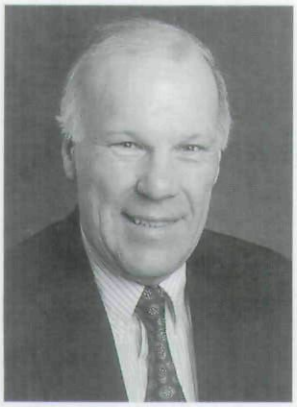
[23] See Dalton, G. W., *Influence and organizational change.* In Dalton, G. W., Lawrence, P., & Greiner, L. (Eds). 1970. *Organizational Change and Development.* Homewood, IL: Irwin.

[24] Nutt, P. C., 1998. Leverage, resistance, and the success of implementation approaches. *Journal of Management Studies,* 35(2),1998, 213–240.

[25] See, for example, Coch, L. & French, J. R. P., Jr. 1948. Overcoming resistance to change, *Human Relations,* 1,512–532.

[26] See, for example, Churchman, C. W. 1975. Theories of implementation. In Schultz, R. L. & Slevin, D. P. (Eds), *Implementing operations Research/Management Science.* New York: Elsevier.

[27] See, for example, the classic work of French, J., & Raven, B., 1959. *The bases of social power.* In D. Cartwright (Ed.), *Studies in social power:* 150–167. Ann Arbor: Institute for Social Research.



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