

Washington University of Virginia
BUS 510E ORGANIZATION THEORY
 Lecture Notes #11

The Managerial Subsystem I: Decision-Making Processes

Primary References

Daft, Richard L. *Organization Theory & Design*, 11th ed. Mason, OH: South-Western, 2012, 476-519.
 Kast, Fremont E. and James E. Rosenzweig. *Organization and Management: A Systems and Contingency Approach*, 4th ed. New York: McGraw-Hill Publishing Company, 1985, 399-536.

I. The Managerial Task

A. Organizational Performance

The managerial task centers on the concept of **organizational performance**, which is primarily measured by dollar sales, market share, profitability, return on investment, and asset growth. On the other hand, managers pay attention to intermediate objectives such as product quality and customer satisfaction as well as social responsibility in terms of consumer protection, affirmative action, and preservation of the environment - stockholders, senior managers, employee unions, customers, or environmentalists. For example, the Union may complain that improved profitability came from the pay-cut of employees; the environmentalists may be happy with the profit loss due to environmental protection; but stockholders are unhappy for this because of the fall of dividends and of share prices.

B. Basic Functions of Management

The managerial system functions **in the context of an external environment and internal subsystems** - goals and values, the organizational structure, organizational behavior, human resources, finance, operations and supply chain, information technology, and so forth. **Managers make decisions** on a wide variety of issues. "Figuring out what to do despite uncertainty, great diversity, and an enormous amount of potentially relevant information. Getting things done through a large and diverse set of people despite having little direct control over most them."

Few managerial decisions are final. Rather, the managerial task involves a continual stream of choices and actions that should be followed up to see if the system is on track. Problems are rarely solved once and for all time. Therefore, it is important to **follow up with some adjustments** along the way and new decisions. Managers are in the middle of many interactive processes, that require a continuing flow of decisions in order to maintain a dynamic equilibrium. Good managers are continually in sensing **threats and opportunities** from the external environment and **strengths and weaknesses** from the internal subsystems. Managers pursue high performance through managerial functions: planning, organizing, staffing, directing, and controlling: they maximize external opportunities by utilizing internal strengths and minimize external threats by reducing internal weaknesses.

C. Managerial Roles

Roles of Managers by Henry Mintzberg

<i>Managerial Roles</i>	<i>Sets of Behavior</i>
1. Interpersonal Roles	1 Figurehead; 2 Leader; 3 Liaison
2. Information Roles	1 Monitor; 2 Disseminator; 3 Spokesperson
3. Decisional Roles	1 Entrepreneur; 2 Disturbance handler; 3 Resource allocator; 4 Negotiator

II. Types of Decisions

Organizational decision making is formally defined as the process of **identifying and solving problems**. In the problem identification, information about environmental and organizational conditions is monitored to determine if performance is satisfactory and to diagnose the cause of shortcomings. The problem solution stage is when alternative courses of action are considered and one alternative is selected and implemented.

A. Programmed Decisions are repetitive and dwell defined, and procedures exist for resolving the problem. They are well structured because criteria of performance are normally clear, good information is available about current performance, alternatives are easily specified, and there is relative certainty that the chosen alternative will be successful.

B. Non-programmed Decision are novel and poorly defined, and no procedure exists for solving the problem. They are used when an organization has not seen a problem before and may not know how to respond. Clear-cut decision criteria do not exist. Alternatives are fuzzy. There is uncertainty about whether a proposed solution will solve the problem. Typically, few alternatives can be developed for a non-programmed decision, so a single solution is custom-tailored to the problem. Many non-programmed decisions involve strategic planning because uncertainty is great and decisions are complex.

Exhibit: Decision Making in Today's Environment

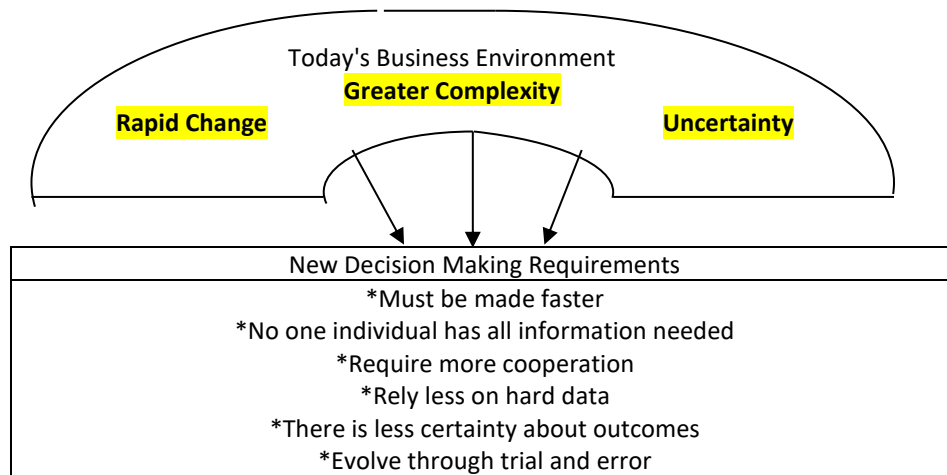


Exhibit: Several Dimensions of Decision Making

Closed	Contextual Systems	Open
Programmable	General Processes	Non-programmable
Computational	Specific Techniques	Judgmental

III. Individual Decision Making

A. Individual Perception and Making Judgments

1. Perception is a process by which individuals organize and interpret their sensory impression in order to give meaning to their environment. Factors influencing perception are perceiver, target, and situation.

Exhibit: Factors Influencing Perception

Perceiver (Personal characteristics)	Target (Characteristics of target)	Environment
Attitudes Motives Interests Experience Expectations	Novelty (New) Motion, Sounds Size Background Proximity, Similarity	Time Working setting Social setting

2. Attribution Theory: When we observe an individual's behavior, we attempt to determine whether it was internally or externally caused, depending on distinctiveness, consensus, and consistency.

Distinctiveness	Consensus	Consistency
It refers whether an individual displays different behaviors in different situations	If everyone who faces a similar situation responds in the same way, we can say the behavior shows consensus.	If an individual who faces a similar situation takes the same action, we can say his behavior shows consistency

Fundamental attribution error: When we make judgments about the other's behavior, we tend to underestimate the influence of external factors and overestimate the influence of internal factors.

Self-serving Bias: Individuals and organizations tend to attribute their own successes to internal factors such as ability or effort, while putting the blame for failure on external factors such as bad luck or unproductive co-workers.

3. Common Shortcuts in Judging Others

Category	Explanation
Selective Perception	The tendency to selectively interpret what one sees on the basis of one's interests, background, experience, and attitudes.
Halo Effect	The tendency to draw a general impression about an individual on the basis of a single characteristic.
Contrast Effects	Evaluation of person's characteristics that is affected by comparisons with other people recently encountered who rank higher or lower on the same characteristics.
Stereotyping	Judging someone on the basis of one's perception of the group to which that person belongs.

4. The Link between Perception and Decision Making

Decisions are choices made from among two or more alternatives. Decision making occurs as a reaction to a problem, that is, a discrepancy exists between the current state of affairs and some desired state, requiring us to consider alternative course of action.

B. Individual Decision Making in Organizations

The Steps in the Rational Decision-Making Model

- 1 Define the problem
(monitor the environment, define the problem, specify the decision objectives, and diagnose the problem)
- 2 Identify the decision criteria
- 3 Allocate weights to the criteria
4. Develop the alternatives
5. Evaluate the alternatives
- 6 Select the best alternative

How to Evaluate Alternatives (An Example)

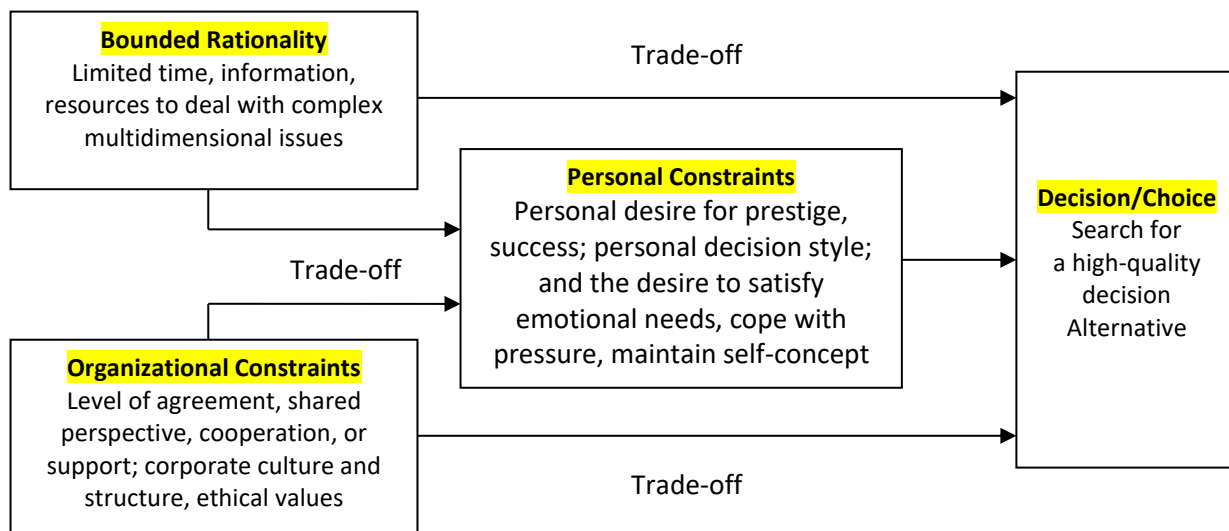
Criteria	Weight	Evaluation		
		Alternative 1	Alternative 2	Alternative 3
The first factor to be considered	30%			
The second factor to be considered	20%			
The third factor to be considered	20%			
The fourth factor to be considered	15%			
The fifth factor to be considered	15%			
Total Evaluation (%)	100%	85%	65%	90%

Chosen alternative in this example is Alternative 3 (the highest: 90%)

C. Bounded Rationality Perspective

If managers deal with problems in such conditions as time pressure, a large number of internal and external factors affecting a decision, and the ill-defined nature of many problems, it is virtually impossible for them to make the systematic analysis to find and solve the problems. In other words, the attempt to be rational is bounded (limited) by the enormous complexity of many problems: there is a limit to how rational managers can be.

Exhibit: Constraints and Tradeoffs during Non-programmed Decision Making



1. Constraints and Trade-offs: Not only are large organizational decisions too complex to fully comprehend, but several constraints impinge on the decision maker, as illustrated in above exhibit. For many organizational decisions, the circumstances are ambiguous, requiring social support, a shared perspective on what happens, and acceptance and agreement; but other constraints include corporate culture and ethical values.

Constraint also exist at the personal level. Personal constraints - such as decision style, work pressure, desire for prestige, or simple feelings of insecurity - may constrain either the search for alternatives or the acceptability of an alternative. All of these factors constrain a perfectly rational approach that should lead to an obviously ideal choice. Some managers, for example, make many of their decisions within a mindset of trying to please upper managers, people who are perceived to have power within the organization or others they respect and want to emulate. Other managers are constrained by an un-adaptive decision style.

2. The Role of Intuition: The bounded rationality perspective is often associated with intuitive decision processes. In intuitive decision making, experience and judgment rather than sequential logic or explicit reasoning are used to make decisions. Most researchers have found that effective managers use a combination of rational analysis and intuition in making complex decisions under time pressure.

IV. Organizational Decision Making

Organizations are composed of managers who make decisions using rational and intuitive processes, but **organizational-level decisions** are not usually made by a single manager. Many organizational decisions involve several managers. Problem identification and problem solution involve many departments, multiple view-points, and other organizations, which are beyond the scope of an individual manager.

The processes by which decisions are made in organizations are influenced by a number of factors, particularly the organization's own **internal structures** and the degree of stability or instability of the **external environment**. There are **four primary types** of organizational decision-making processes - the management science approach, the Carnegie model, the incremental decision model, and the garbage can model.

A. Management Science Approach

The management science approach to organizational decision making is the analog to the rational approach by individual managers. Management science came into being during World War II. At that time, mathematical and statistical techniques were applied to urgent, large-scale military problems that were beyond the ability of individual decision makers.

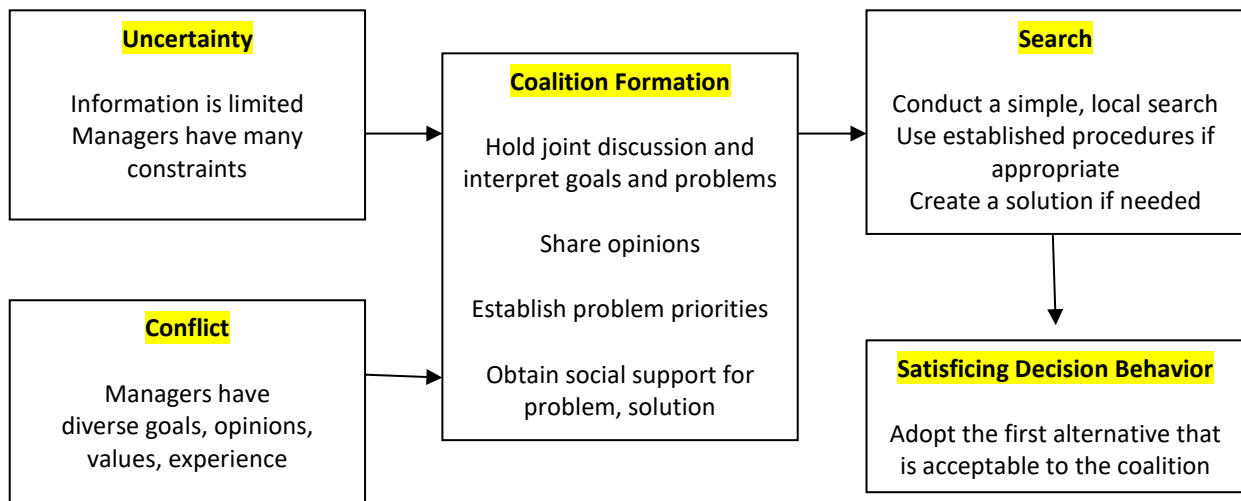
Mathematicians, physicians, and operations researchers used systems analysis to develop artillery trajectories, antisubmarine strategies, and bombing strategies. Consider the problem of a battleship trying to sink an enemy ship several miles away. The calculation for aiming the battleship's guns should consider distance, wind speed, shell size, speed and direction of both ships, pitch and roll of the firing ship, and curvature of the earth. Methods for performing such calculations using trial and error and intuition are not accurate, take far too long, and may never achieve success. This is where management came in. Now the entire sequence is automatically computed.

Operations research departments use mathematical models to quantify relevant variables and develop a quantitative representation of alternative solutions and the probability of each one solving the problem. These departments also use such devices as linear programming, Bayesian statistics, PERT charts, and computer simulations. If the important factors cannot be quantified in the model in terms of qualitative dimensions, the final decision should include **both qualitative and quantitative factors**.

B. Carnegie Model

The Carnegie model of organizational decision making is based on the work of Richard Cyert, James March, and Herbert Simon, who were all associated with Carnegie-Mellon University. Their research helped formulate the bounded rationality approach to individual decision making, as well as provide new insights about organizational decisions.

Exhibit: Choice Processes in the Carnegie Model



Since organizational-level decisions involved many managers, a final choice is based on a coalition among those managers. A coalition is an alliance among several managers who agree about organizational goals and problem priorities. It could include managers from line departments, staff specialists, and even external groups, such as powerful customers, bankers, or union representatives.

Management coalitions are needed during decision making for two reasons. **First**, organizational goals are often ambiguous, and operative goals of departments are often inconsistent. When goals are ambiguous and inconsistent, managers disagree about problem priorities. They must bargain about problems and build a coalition around the question of which problems to address. **Second**, individual managers intend to be rational but function with human cognitive limitations and other constraints. Managers do not have the time, resources, or mental capacity to identify all dimensions and to process all information relevant to a decision.

In the process of coalition building, **first**, decisions are made to *satisfice* rather than to optimize problem solutions, which means organizations accept a satisfactory rather than a maximum level of performance, enabling them to achieve several goals simultaneously. **Second**, managers are concerned with immediate problems and short-run solutions. They engage in *problemistic search* - managers look around in the immediate environment for a solution to quickly resolve a problem. Managers do not expect a perfect solution when the situation is ill-defined and conflict-laden. **Third**, discussion and bargaining are especially important in the problem identification stage of decision making. Unless coalition members perceive a problem, action will not be taken. However, a coalition of key managers is also important for smooth implementation of a decision. When top managers perceive a problem or want to make a major decision, they need to reach agreement with other managers to support the decision. The processes are explained in the above exhibit.

C. Incremental Decision Model

The model identified 25 decisions made in organizations and traced the events associated with these decisions from beginning to end. In this model, major organizational choices are usually a series of small choices that combine to produce the major decision. The model consists of three phases.

Exhibit: The Incremental Decision Model

<i>Identification Phase</i>	<i>Development Phase</i>	<i>Selection Phase</i>
Recognition Diagnosis	Search - Screen Design	Judgment: Evaluation-Choice Analysis: Evaluation Bargaining: Evaluation-Choice
Internal Interrupt	New Option Interrupt	External Interrupt

1. **Identification Phase** begins with *recognition*, which means one or more managers become aware of a problem and the need to make a decision. Recognition is stimulated by a problem or an opportunity. A problem exists when elements in the external environment change or when internal performance is perceived to be below standard. The second step is *diagnosis*, in which more information is gathered if needed to define the problem situation. Diagnosis may be systematic or informal, depending upon the severity of the problem.

2. **Development phase:** A solution is shaped to solve the problem defined in the identification phase. The development of a solution takes one of two directions. First, search procedures may be used to *seek out* alternatives within the organization's repertoire of solutions. Second is to *design* a custom solution. This happens when the problem is novel so that previous experience has no value. Development of the solution is a grouping, incremental procedure, building a solution brick by brick.

3. **Selection phase** is when the solution is chosen. This phase is not always a matter of making a clear choice among alternatives. In the case of custom-made solutions, selection is more an evaluation of the single alternative that seems feasible. Evaluation and choice may be accomplished in three ways. (1) The judgment form of selection is used when a final choice falls upon a single decision maker, and the choice involves judgment based upon experience. (2) In analysis, alternatives are evaluated on a more systematic basis, such as with management science techniques. (3) Bargaining occurs when selection involves a group of decision makers. Each decision maker may have a different stake in the outcome, so conflict emerge. Discussion and bargaining occur until a coalition is formed, as in the Carnegie model.

4. **Dynamic Factors** (bottom row -Exhibit) : Organizational decisions do not follow an orderly progression from recognition through authorization. Minor problems arise that force a loop back to an earlier stage. These are *decision interrupts*. If a custom-designed solution is perceived as unsatisfactory, the organization may have to go back to the very beginning and reconsider whether the problem is truly worth solving. Feedback loops can be caused by problems of timing, politics, disagreement among managers, inability to identify a feasible solution, turnover of managers, or the sudden appearance of a new alternative.

V. Organizational Decisions and Change

To overcome **uncertainty and complexity** in decision making, one approach is to combine the Carnegie and incremental models, and the other is the garbage can model.

A. Combining the Incremental and Carnegie Models: The Carnegie description of coalition building is especially relevant for the problem identification stage. When issues are ambiguous, or if managers disagree about problem severity, discussion, negotiation, and coalition building are needed. The incremental model tends to emphasize the steps used to reach a solution. After managers agree on a problem, the step-by-step process is a way of trying various solutions to see what will work. When problem solution is unclear, a trial-and-error solution may be designed. The two models do not disagree with one another. **They describe different approaches** for how organizations make decisions when either problem identification or problem solution is uncertain. When both parts of the decision process are simultaneously highly uncertain, the organization is in an extremely difficult position. In that situation, a combination of the Carnegie and incremental models may be useful in decision processes.

Exhibit: Decision Process when Problem Identification and Problem Solution are Uncertain

<i>Problem Identification</i>	<i>Problem Solution</i>
<ul style="list-style-type: none"> *When problem identification is uncertain, Carnegie model applies *Political and social process is needed *Build coalition, seek agreement, and resolve conflict about goals and problem priorities 	<ul style="list-style-type: none"> *When problem solution is uncertain, incremental decision model applies *Incremental, trial-and-error process is needed *Solve big problems in little steps *Recycle and try again when blocked

B. Garbage Can Model:

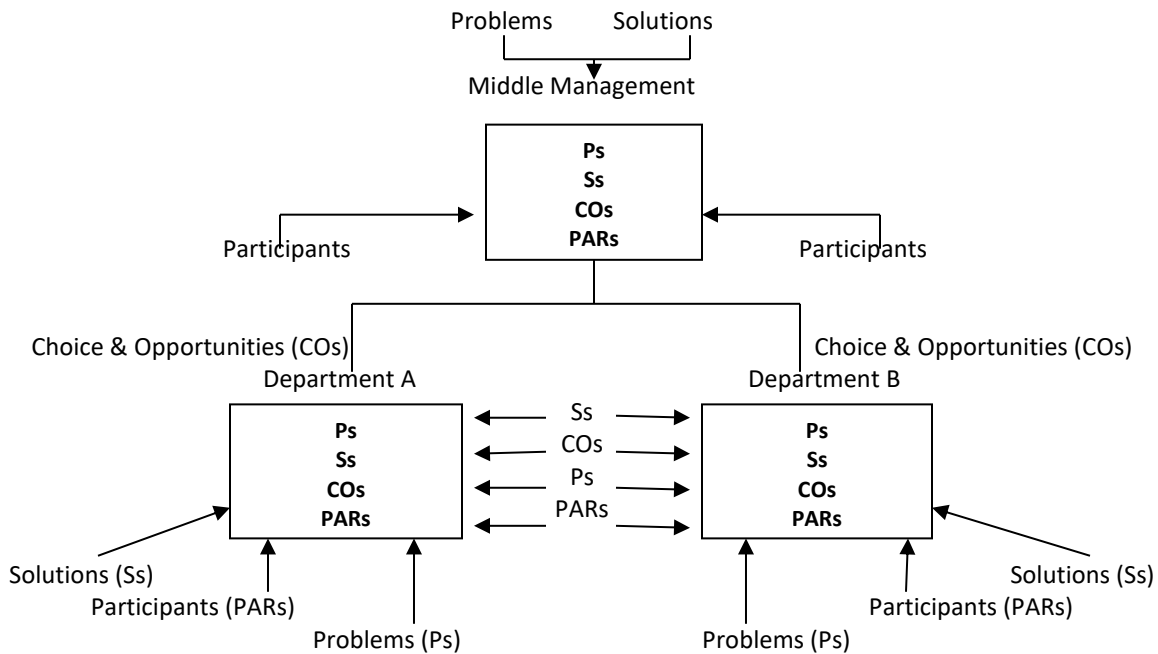
The garbage can model is one of the most recent and interesting descriptions of organizational decision processes. It is not directly comparable to the earlier models, because the garbage can model deals with **the pattern or flow of multiple decisions** within organizations, whereas the incremental and Carnegie models focus on how a single decision is made.

1. **Organized Anarchy:** The garbage can model was developed to explain the pattern of decision making in organizations that experience extremely high uncertainty. Michael Cohen, James March, and Johan Olsen, the originators of the model, called the highly uncertain conditions an **organized anarchy**, which is an extremely organic organization. Organized anarchies do not rely on the normal vertical hierarchy of authority and bureaucratic decision rules. They result from three characteristics:

- a. **Problematic preferences:** Goals, problems, alternatives, and solutions are ill-defined. Ambiguity characterizes each step of a decision process.
- b. **Unclear, poorly understood technology:** Cause-and-effect relationships within the organization are difficult to identify. An explicit database that applies to decisions is not available.
- c. **Turnover:** Organizational positions experience turnover of participants. In addition, employees are busy and have only limited time to allocate to any one problem or decision. Participation in any given decision will be fluid and limited.

2. **Streams of Events:** The unique characteristic of the garbage can model is that the decision process is not seen as a sequence of steps that begins with a problem and ends with a solution. Indeed, problem identification and problem solution may not be connected to each other. An idea may be proposed as a solution when no problem is specified. A problem may exist and never generate a solution. Decisions are the outcome of independent streams of events within the organization. The four streams relevant to organizational decision making are as follows:

Exhibit: Illustration of Independent Streams of Events in the **Garbage Can Model** of Decision Making



a. **Problems:** Problems are points of dissatisfaction with current activities and performance. They represent a gap between desired performance and current activities. Problems are perceived to require attention. However, they are distinct from solutions and choices. A problem may lead to a proposed solution or it may not. Problems may not be solved when solutions are adopted.

b. **Potential solutions:** A solution is an idea somebody proposes for adoption. Such ideas form a flow of alternative solutions through the organization. Ideas may be brought into the organization by new personnel or may be invented by existing personnel. Participants may simply be attracted to certain ideas and push them as logical choices regardless of problems.

c. **Participation:** Organization participants are employees who come and go through the organization. People are hired, reassigned, and fired. Participants vary widely in their ideas, perception of problems, experience, values, and training. The problems and solutions recognized by one manager will differ from those recognized by another manager.

d. **Choice opportunities** are occasions when an organization usually makes a decision. They occur when contracts are signed, people are hired, or a new product is authorized. They also occur when the right mix of participants, solutions, and problems exists. Thus, a manager who happened to learn of a good idea may suddenly become aware of a problem to which it applies and, hence, can provide the organization with a choice opportunity. Match-ups of problems and solutions often result in decisions.

Thus, when viewing the organization as a whole and considering its high level of uncertainty, one sees problems arise that are not solved and solutions tried that do not work, and solutions act as independent events. When they connect, some problems are solved, but many are not.

3. **Consequences:** There are four specific consequences of the garbage can decision process for organizational decision making:

a. *Solutions may be proposed even when problems do not exist.* An employee might be sold on an idea and might try to sell it to the rest of the organization.

b. *Choices are made without solving problems.* A choice - for example, creating a new department or revising work procedures - may be made with intention of solving a problem; but, under conditions of high uncertainty, the choice may be incorrect.

c. *Problems may persist without being solved.* Organization participants get used to certain problems and give up trying to solve them; or participants get used to certain problems and give up trying to solve them; or participants may not know how to solve certain problems because the technology is unclear.

d. *A few problems are solved.* The decision process does work in the aggregate. In computer simulations of the garbage can model, important problems were often resolved. Solutions do connect with appropriate problems and participants so that a good choice is made.

VI. Contingency Decision-making Framework

Two characteristics of organizations that determine the use of decision approaches are (1) problems consensus and (2) technical knowledge about the means to solve those problems.

A. Problem Consensus

This variable ranges from complete agreement to complete disagreement. Consensus refers to the agreement among managers about the nature of a problem or opportunity and about which goals and outcomes to pursue. When managers agree, there is little uncertainty - the problems and goals of the organization are clear, and so are standards of performance. When managers disagree, organization direction and performance expectations are in dispute, creating a situation of high uncertainty.

Problem consensus is especially important for the problem identification stage of decision making. When problems are clear and agreed on, they provide clear standards and expectations for performance. When problems are not agreed on, problem identification is uncertain and management attention must be focused on gaining agreement about goals and priorities.

B. Technical Knowledge about Solution

Technical knowledge refers to understanding and agreement about **how to solve problems** and reach organizational goals. This variable can range from complete agreement and certainty to complete disagreement and uncertainty about cause-effect relationship leading to problem solution.

When means are well understood, the appropriate alternatives can be identified and calculated with some degree of certainty. When means are poorly understood, potential solutions are ill-defined and uncertain. Intuition, judgment, and trial and error become the basis for decisions.

C. Contingency Framework

Exhibit: Contingency Framework for Using Decision Models

		Problem Consensus	
		Certain	Uncertain
Solution Knowledge	Certain	<p>Individual Rational approach, Computation</p> <p>Organization Management Science</p>	<p>Individual Bargaining, Coalition formation</p> <p>Organization Carnegie model</p>
	Uncertain	<p>Individual Judgment, Trial and error</p> <p>Organization Incremental Decision model</p>	<p>Individual Bargaining and judgment, Inspiration and imitation</p> <p>Learning organization Carnegie and Incremental Decision models, Evolving to Garbage Can model</p>

Above Exhibit describes the contingency decision-making framework, which brings together the two dimensions of problem consensus and technical knowledge about solutions. Each cell represents an organizational situation that is appropriate for the decision-making approaches described here.

VII. Special Decision Circumstances

<i>Circumstances</i>	<i>Explanation</i>
1. High-Velocity Environments	The rate of competitive and technological change is so extreme that market data are either unavailable or obsolete, strategic windows open and shut quickly, perhaps within a few months, and the cost of poor decisions may be company failure.
2. Decision Mistakes and Learning	Organizational decisions result in many errors, especially when made in conditions of great uncertainty. Managers simply cannot determine or predict which alternative will solve a problem.
3. Cognitive Biases	Cognitive biases are severe error in judgment that all humans are prone to and that typically lead to bad choices. Three common biases are escalating commitment, loss aversion, and groupthink.
4. Overcoming Personal Biases	To overcome personal biases, evidence-based management and to encourage dissent and diversity are useful.

(End of Lecture Notes #11)