

e-Learning on Digital Agriculture

Lecture 2. Decision making and case analysis

PhD. Nargiza Nosirova

DECISION MAKING

“A decision is a judgment. It is a choice between alternatives. It is rarely a choice between right and wrong. It is at best a choice between “almost right” and “probably wrong”.-Drucker

“A manager by profession is a decision maker; Uncertainty is his opponent, overcoming it is his mission.”

Decision Making

Decision making is not easy

It must be done amid

ever-changing factors

unclear information

conflicting points of view



Decisions and Decision Making

- **Decision** = choice made from available alternatives
- **Decision Making** = process of identifying problems and opportunities and resolving them

The Significance of Decision Making

nDecision making is the one truly distinctive characteristic of managers.

nDecisions made by top managers commit the total organization toward particular courses of action.

The Significance of Decision Making (cont'd)

- n Decisions made by lower levels of management implement the strategic decisions of top managers in the operating areas of the organization.**
- n Decisions invariably involve organizational change and the commitment of scarce resources.**

Categories of Decisions/Types

- Programmed Decisions (routine, almost automatic process)
 - Situations occurred often enough to enable decision rules to be developed and applied in the future (There are rules or guidelines to follow)
 - Made in response to recurring organizational problems (managers have made decision many times before)

Example: deciding to reorder office supplies

Ethical Dilemma: The No-Show Consultant

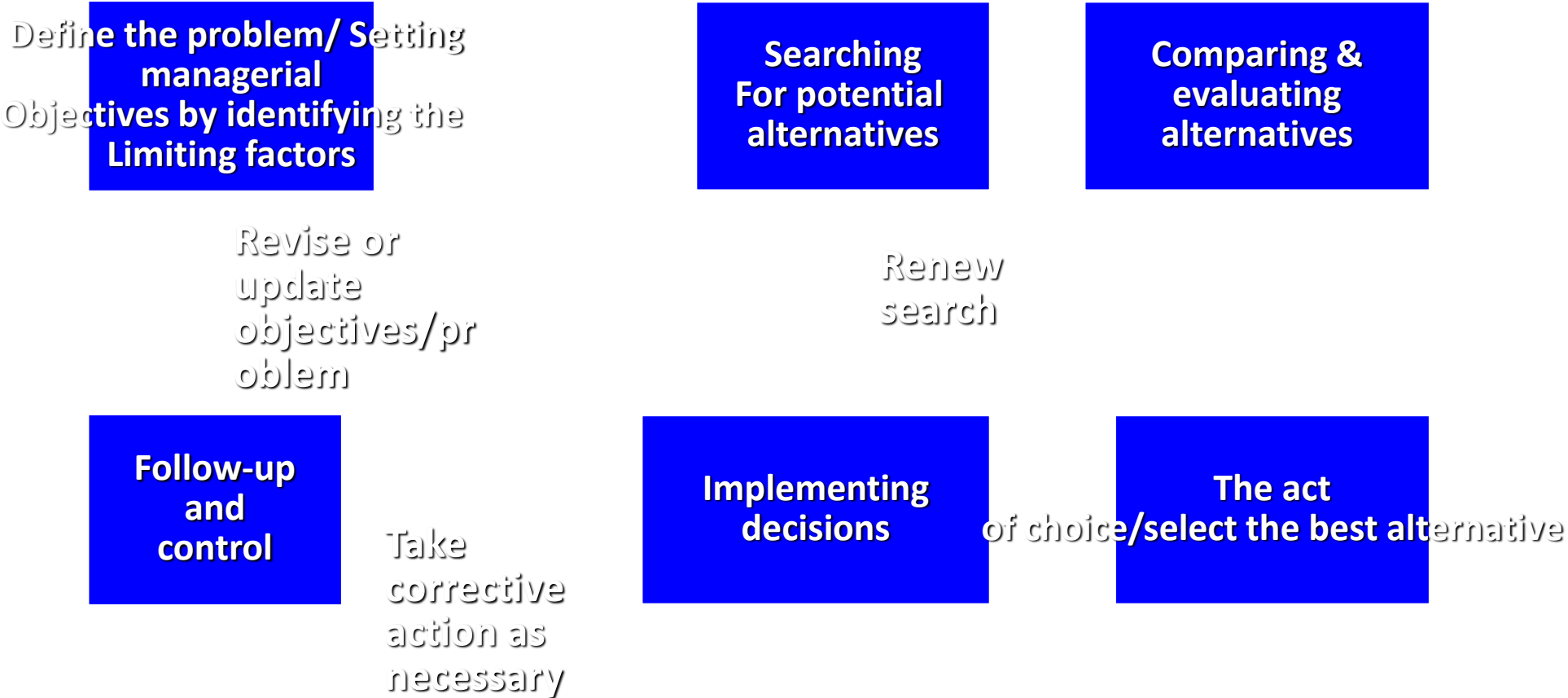


- **Non-programmed Decisions – (Unusual situations that have not been often addressed)**

- In response to unique, poorly defined and largely unstructured, and have important consequences to the organization
- No rules to follow, since the decision is new
- These decisions are made based on information, and a managers intuition and judgment

Example: should the firm invest in a new technology?

The Decision-Making Process



1. Define the problem

- Identify the problem
- Define the problem
- Identify the problem separately from its symptoms (A successful manager doesn't just attack symptoms; he works to uncover the factors that cause these symptoms)

Eg: Symptoms and their real causes

Symptoms	Underlying Problems
Low profits/declining sales	Poor market research
High cost	Poor design process, poorly trained employees
Low morale	Lack of communication between management and subordinates
High employee turnover	Rate of pay too low, job design not suitable
High rate of absenteeism	Employees believe that they are not valued

Identifying the limiting factor

- Realistically, managers operate in an environment that normally doesn't provide ideal resources. For example- they may lack the proper budget or may not have the most accurate information or extra time. So they must choose to satisfice-to make the best decision possible with the available information, resources and time available.

2. Develop potential alternatives

- A manager should think through and investigate several alternative solutions to a single problem before making a quick decision. One of the best methods for developing alternatives is through brainstorming (where a group works together to generate ideas and alternative solutions)

- Although brainstorming is the most common technique to develop alternative solutions, managers can use several other ways to help develop solutions. Here are some examples-
- nominal group technique (it's a structured meeting, with an agenda, restricts discussion during the decision making process)
- Delphi technique- (participants never meet, but a group leader uses written questionnaire to conduct the decision making

Advantages of group decision making

- >Groups provide a broader perspective
- >Employees are more likely to be satisfied and to support the final decision
- >opportunities for discussion help to answer questions and reduce uncertainties for the decision makers.

3. Analyze the alternatives

- >Decide the relative merits of each idea
- >Identify the advantages and disadvantages of each alternative solutions
- >Perform a cost benefit analysis for each alternative
- >Rank/give weights/ to each alternative
- >A manager needs to evaluate each alternative in terms of-
 - Feasibility (can it be done)
 - Effectiveness (how well does it resolve the problem situation?)
 - Consequences (what will be its cost to the organization?)

4. Select the best alternative

- Decides which alternative is-
the most feasible and effective
less cost to the organization
chances of success

A manager simply selects the alternative with the highest probability of success

5. Implement the decision

6. Establish a control- Actions needs to be monitored. An evaluation system should provide feedback on how well the decisions is being implemented, what are the results, what adjustments are necessary to get the results etc...

Decisions and Decision Making

Many decisions that managers deal with every day involve at least some degree of uncertainty and require non-programmed decision making

- May be difficult to make
- Made amid changing factors
- Information may be unclear
- May have to deal with conflicting points of view

Conditions that influence decision making

- **Certainty**

- all the information the decision maker needs is fully available (DSS)

- **Risk**

- Non programmed decisions are tailored to the situations
- Lacks complete information
- future outcomes associated with each alternative are subject to chance

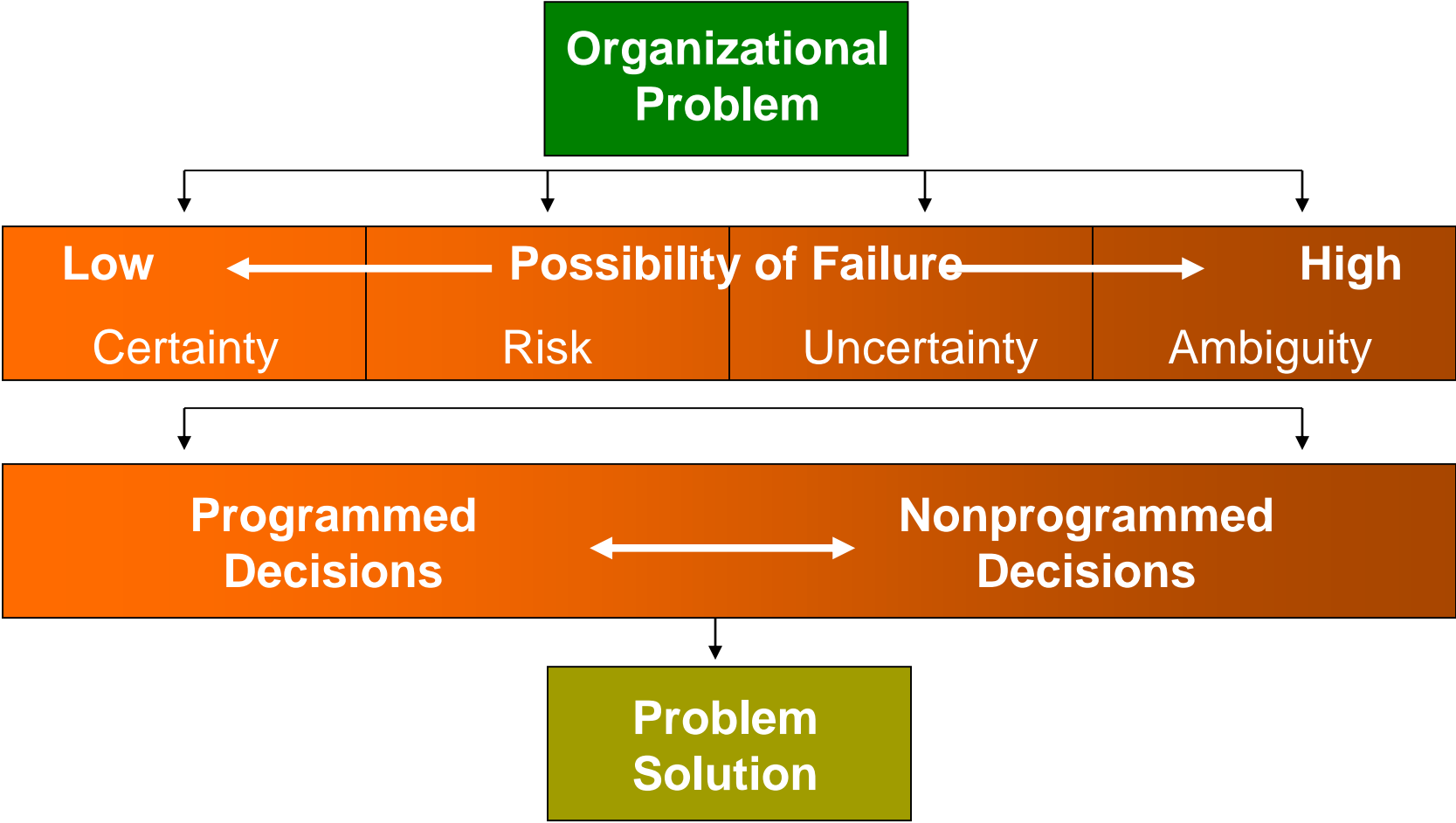
- **Uncertainty**

- Sometimes cant even assign probabilities
- information about alternatives and future events is incomplete
- managers may have to come up with creative approaches to alternatives

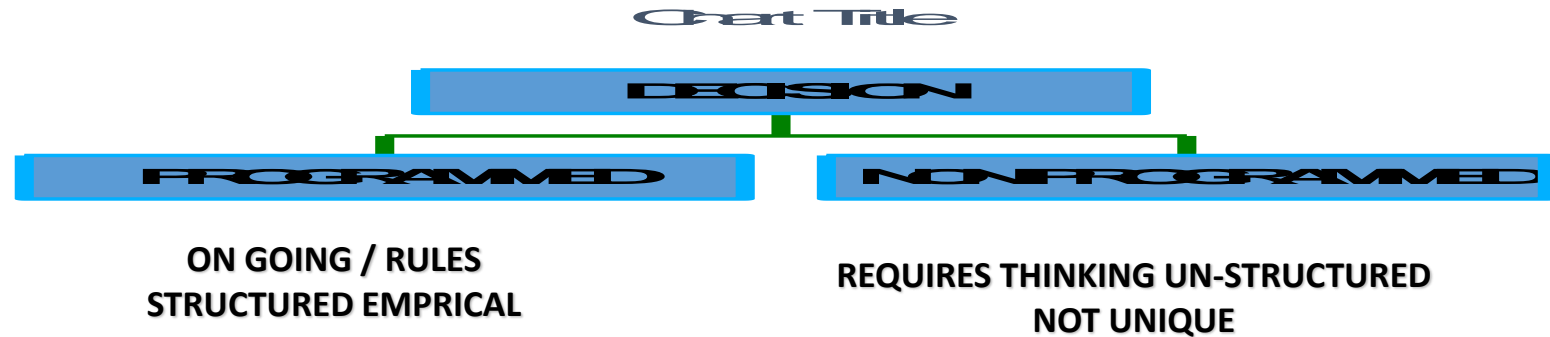
Ambiguity

- by far the most difficult decision situation
- goals to be achieved or the problem to be solved is unclear
- alternatives are difficult to define
- information about outcomes is unavailable

Conditions that Affect the Possibility of Decision Failure



MODEL OF DECISION MAKING



1.	Approach	Rational/Objective	Satisficing Approach
2.	Type	Prescriptive (Idealized situation)	Descriptive (Reality Based)
3.	Knowledge	Complete	Fragmentary
4.	Probability of risk	Low	High
5.	Alternatives available	Many	Only a few
6.	Goals	Defined	Broad Spectrum

Selecting a Decision Making Model

- Depends on the manager's personal preference
- Whether the decision is programmed or non-programmed
- Extent to which the decision is characterized by risk, uncertainty, or ambiguity

Three Decision-Making Models

① **Classical Model**



② **Administrative Model**

③ **Political Model**

Classical Model

Assumptions

- Decision maker operates to accomplish goals that are known and agreed upon
- Decision maker strives for condition of certainty – gathers complete information
- Criteria for evaluating alternatives are known
- Decision maker is rational and uses logic

Normative = describes how a manager should and provides guidelines for reaching an ideal decision

Administrative Model

Herbert A. Simon

Two concepts are instrumental in shaping the administrative model

- **Bounded rationality**: people have limits or boundaries on how rational they can be
- **Satisficing**: means that decision makers choose the first solution alternative that satisfies minimal decision criteria

Administrative Model

- **Managers actually make decisions in difficult situations characterized by non-programmed decisions, uncertainty, and ambiguity**
- Decision goals often are vague, conflicting and lack consensus among managers;
- Rational procedures are not always used
- Managers' searches for alternatives are limited
- Managers settle for a satisficing rather than a maximizing solution
- intuition, looks to past experience
- **Descriptive** = how managers actually make decisions--not how they should

Political Model

- Closely resembles the real environment in which most managers and decision makers operate
- Useful in making non-programmed decisions
- Decisions are complex
- Disagreement and conflict over problems and solutions are normal
- **Coalition** = informal alliance among managers who support a specific goal

Characteristics of Classical, Political, and Administrative Decision Making Models

Classical Model

Clear-cut problem and goals
Condition of certainty
Full information about
alternatives and their outcomes
Rational choice by individual
for maximizing outcomes

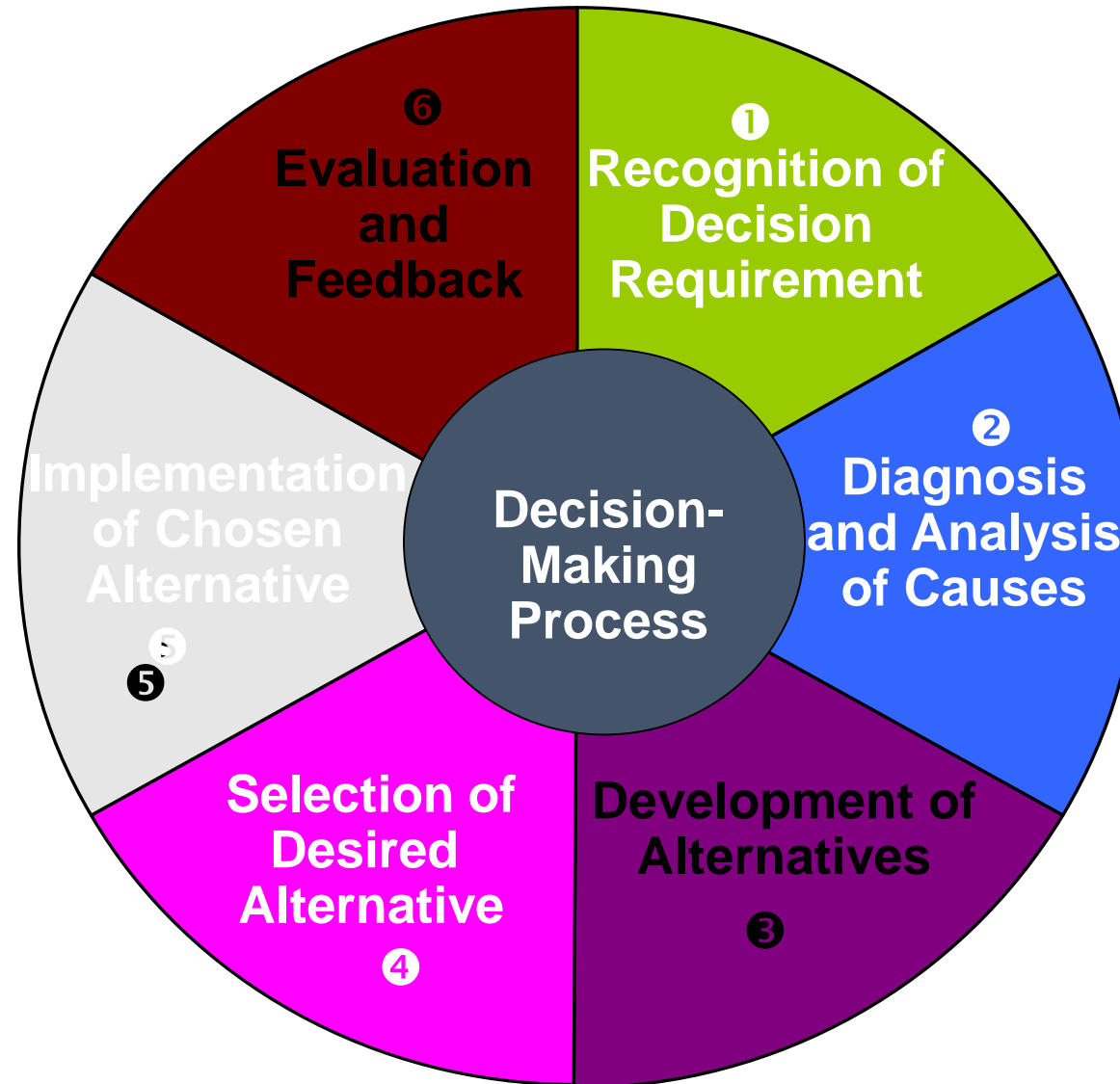
Administrative Model

Vague problem and goals
Condition of uncertainty
Limited information about
Alternatives and their outcomes
Satisficing choice for resolving
problem using intuition

Political Model

Pluralistic; conflicting goals
Condition of uncertainty/ambiguity
Inconsistent viewpoints; ambiguous
information
Bargaining and discussion among
coalition members

Six Steps in the Managerial Decision-Making Process



Rational decision making model

Step	Example
Recognizing & defining the situation	A plant manager sees that employee turnover has increased by 5%
Identifying the alternatives	The plant manager can increase wages, increase benefits, or change hiring standards
Evaluating the alternatives	Increasing the benefits may not be feasible. Increasing wages and changing hiring standards may satisfy all conditions
Selecting the best alternative	Changing hiring standards will take an extended period of time to cut turnover, so increase wages

Implementing the chosen alternatives	The plant manager may need permission from corporate headquarters. The HRD establishes a new wage structure
Following up and evaluating the results	The plant manager notes that six months later turnover has dropped to its previous level

CONSTRAINTS OF RATIONAL DECISION MAKING

1. PROBLEM

- Seldom consensus as to the definition of the problem.
- Differentiate fact from opinion.
- Identify what standard is violated.

2. GENERATE ALTERNATIVE SOLUTION

- The first acceptable solution is usually accepted.
- Alternatives are based on what was successful in the past.
- Specify alternatives that are consistent with goals

CONSTRAINTS OF RATIONAL DECISION MAKING

3. EVALUATE ALTERNATIVES

- Limited information available about each alternative.
- Satisfactory solutions, not optimal ones, are usually accepted.
- Do not evaluate main effects and side effects.

4. IMPLEMENT AND FOLLOW UP

- Resistance to change is a universal phenomenon.
- Not always clear what part of the solution should be monitored or measured in follow-up.

Case Study

Case Study

Harish Bhatt, a very bright and ambitious young executive, was born and raised in Jaipur. He graduated from a local college and married a girl who was his class-mate. Harish then went to Mumbai where he received an M.B.A. He was now in the seventh year with Birla Steel Ltd. This was located in Jaipur

-

Case Study-contd.....

As part of an extension program, the board of directors of Birla Steel decided to build a new branch plant. Bhatt was selected to be the manager at the new plant. He was also informed that if the new plant is a success he would be promoted to a higher post. The location of the new plant was to be decided by an ad hoc committee of which Bhatt was made the chairman. In the committee's first meeting Bhatt explained to the members the ideal requirements for the new plant and gave them one month to come up with three choice locations

Case Study- contd.....

When after a month the committee re-met, it recommender the following cities in order of preference: Gurgaon, Chennai; and Indore. Bhatt thanked the committee members for their fine job and told them he would like to study the report in more depth before he made his final decision.

Case Study-contd....

That evening he asked his lovely wife. “Honey, how would you like to move to Gurgaon?” Her answer was quick and sharp. “Heavens no!” she said. “I have lived in Rajasthan all my life and am not at all inclined to move out to gurgaon- extent ion of Delhi. That kind of life is not for me.” Bhatt weakly protested by saying that the committee had ranked Gurgaon as the best location for the new plant. The second was Chennai and the third was Indore, but if you insist on Gurgaon, you will have to by yourself.”

Case Study-contd....

The next day Bhatt, called his committee together and said, “Gentlemen, you should all be commended for doing an excellent job on this report. However, after detailed study, I am convinced that Indore will meet the needs of our new plant better than Gurgaon or Chennai. Therefore, the decision will be to locate the new plant in Indore, Thank you all again for a job well done”

-

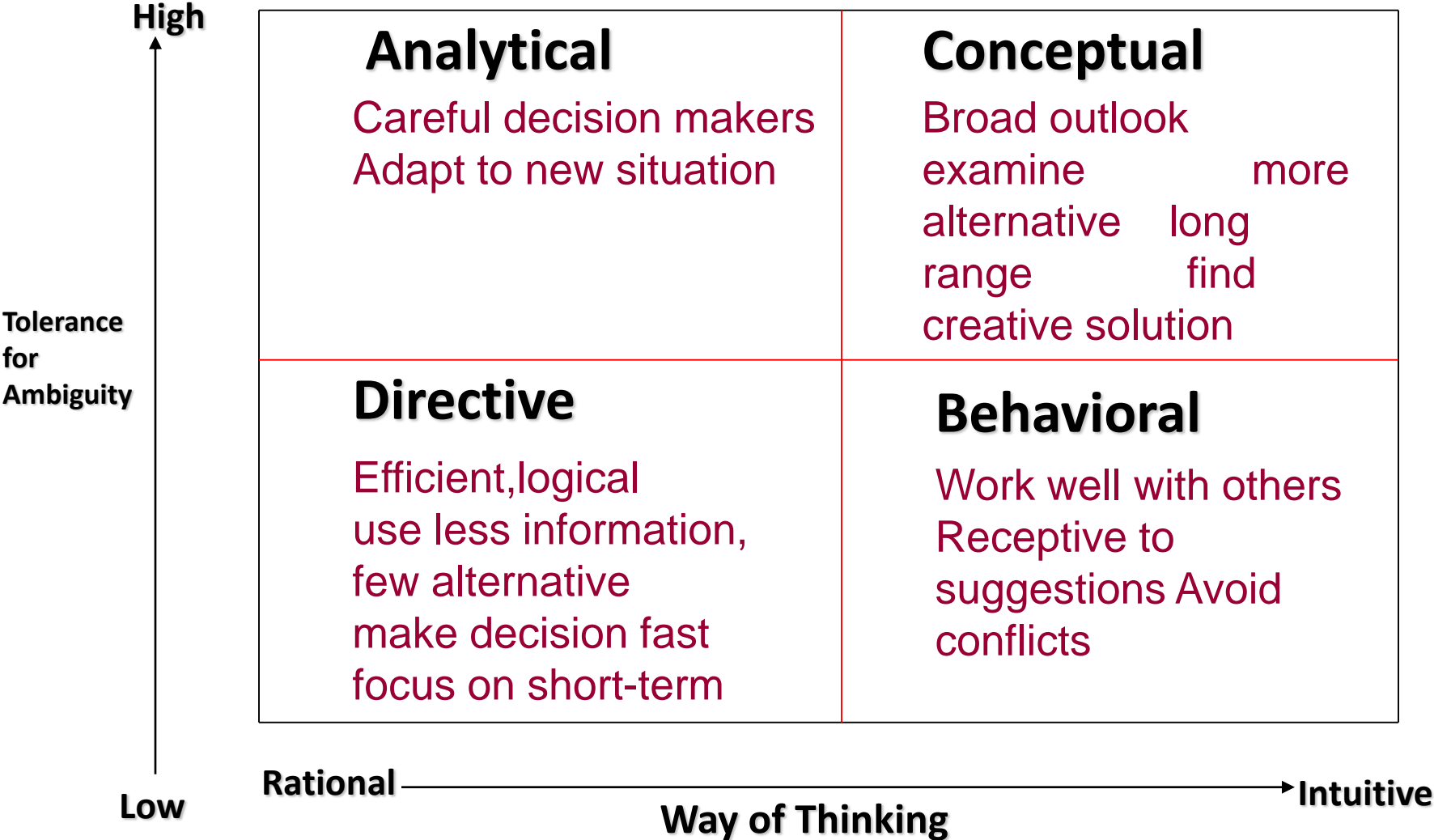
Case study-Questions

- Did Bhatt make a rational decision?

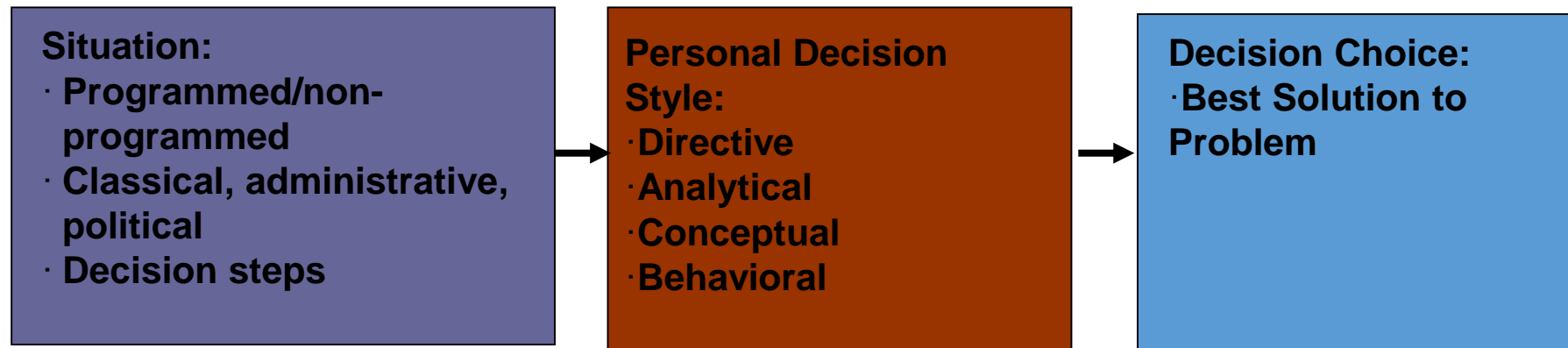
Decision Styles

- Differences among people with respect to how they perceive problems and make decisions
- Not all managers make decisions the same
 - Directive style
 - Analytical style
 - Conceptual style
 - Behavioral style

DECISION STYLES



Personal Decision Framework



Directive Style

- People who prefer simple, clear-cut solutions to problems
- Make decisions quickly
- May consider only one or two alternatives
- Efficient and rational
- Prefer rules or procedures

Analytical Style

- Complex solutions based on as much data as they can gather
- Carefully consider alternatives
- Base decision on objective, rational data from management control systems and other sources
- Search for best possible decision based on information available

Conceptual Style

- Consider a broad amount of information
- More socially oriented than analytical style
- Like to talk to others about the problem and possible solutions
- Consider many broad alternatives
- Relay on information from people and systems
- Solve problems creatively

Behavioral Style

- Have a deep concern for others as individuals
- Like to talk to people one-on-one
- Understand their feelings about the problem and the effect of a given decision upon them
- Concerned with the personal development of others
- May make decisions to help others achieve their goals

Experiential Exercise: What's Your Personal Decision Style?



The Scope of Decision Making

nIndividual decision making

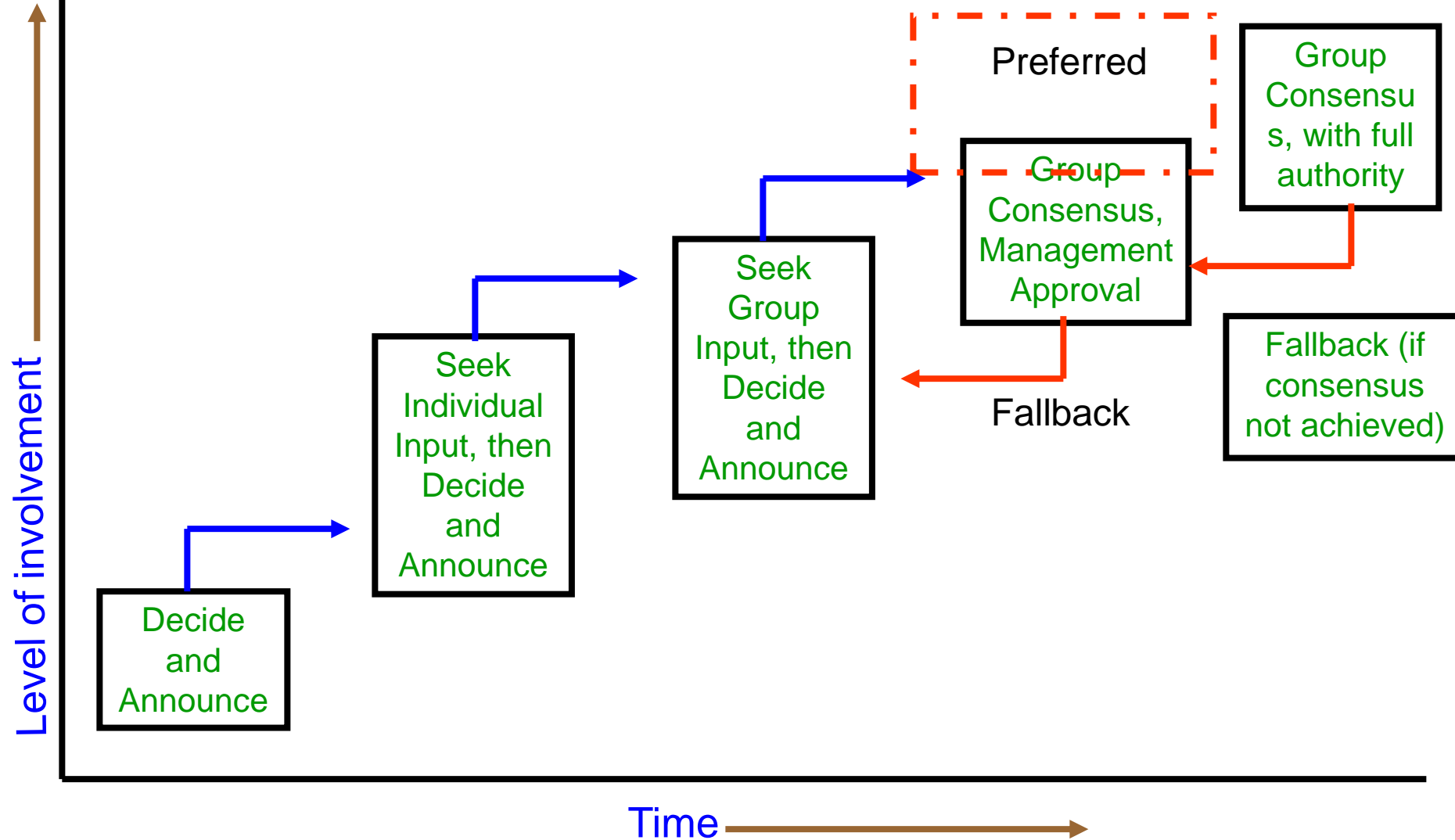
nGroup decision making

nOrganizational decision making

nMetaorganizational decision making

The Scope of Decision Making

TOYOTA DECISION MAKING METHODS



THE TOYOTA WAY

1. Thorough Consideration

- Quality of decision
- Asking why? 5 times
- Building Consensus
- Deming Cycle (PDCA)

THE TOYOTA WAY

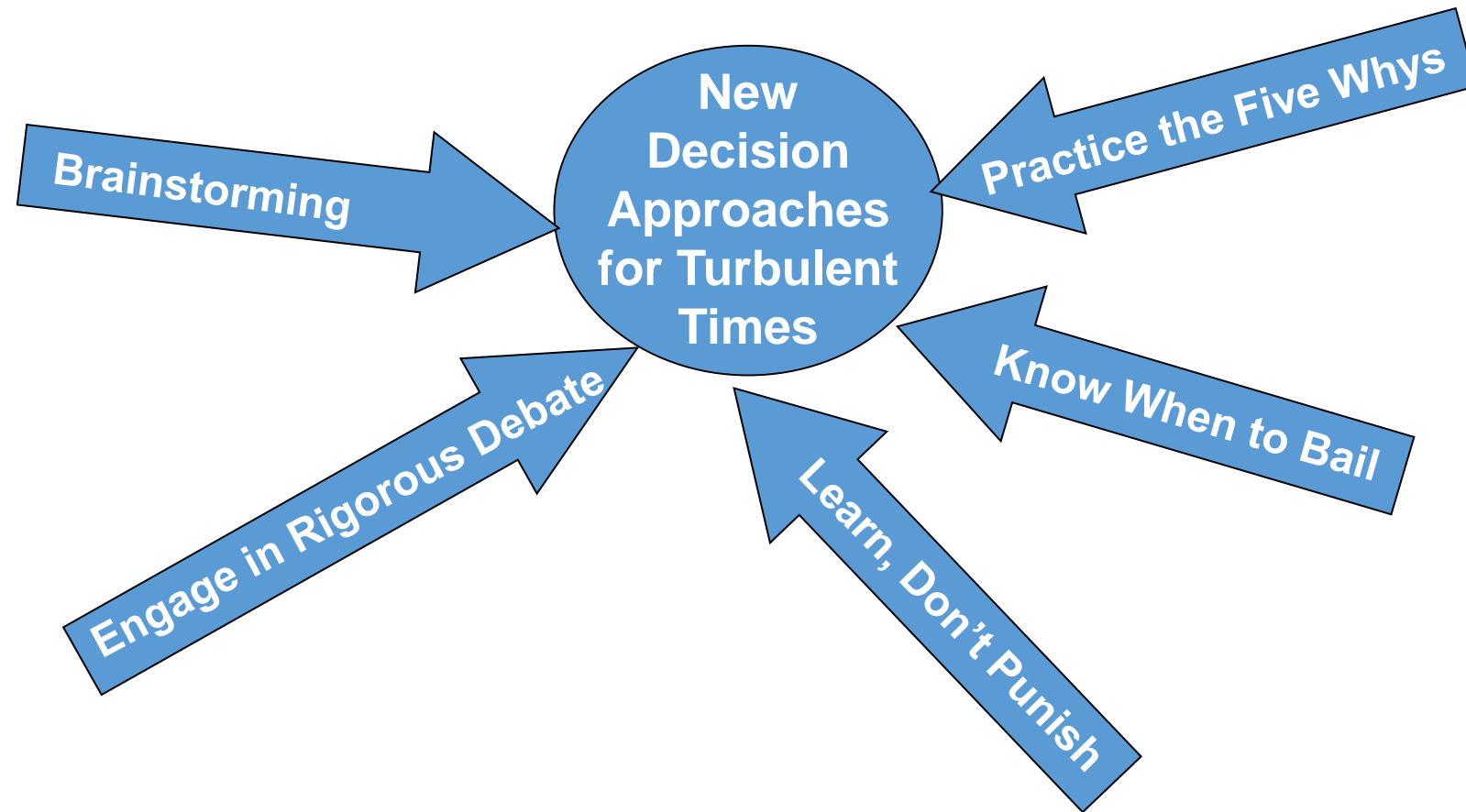
2. Considering Alternative Solution

- Follow set based Approach
- Different people-different set of alternatives
- Turn conflict into win / win situation

3. Presenting Decision on one page

- Proposal discussed with all
- Agreement before presentation
- One page – formal decision only formality

New Decision Approaches for Turbulent Times



Reference and source

- Andrade-Sanchez, P., & Heun, J. T. (2010), Understanding Technical Terms and Acronyms Used in Precision Agriculture, The University of Arizona, Arizona Cooperative Extension Bulletin AZ1534.
- Ault, A., Krogmeier, J., & Buckmaster, D. (2013, July), Mobile, Cloud-Based Farm Management: A Case Study with Trello on My Farm, In 2013 ASABE Annual International Meeting, <https://elibrary.asabe.org/abstract.asp?aid=43733&t=2&redir=&redirType=>, Accessed: 11.02.2017.
- Avşar, D. & Avşar, G. (2014), Yeni Tarım Düzeninin Tarımsal Üretim Üzerindeki Etkileri ve Türkiye'deki Uygulamalar, Akademik Platform, 379-385.
- Balamurugan S., Divyabharathi, N., Jayashruthi, K., Bowiya, M., Shermy, R. P. & Shanker, R., (2016), Internet of Agriculture: Applying IoT to Improve Food and Farming Technology, International Research Journal of Engineering and Technology (IRJET), 3(10), 713-719.
- Byerlee, D., de Janvry, A. ve Sadoulet, E. (2009), Agriculture for Development: Toward a New Paradigm, Annual Review of Resource Economics, 1, 15-31.
- Chavali, L. N. (2014), Cloud Computing in Agriculture. In Agricultural Bioinformatics, 189-213, Springer India.
- Deichmann, U., Goyal, A., & Mishra, D. (2016), Will Digital Technologies Transform Agriculture in Developing Countries?, Agricultural Economics, 47(S1), 21-33.
- Devlin, B. (2013), Business UnIntelligence: Insight and Innovation Beyond Analytics and Big Data, Technics Publications, New Jersey, p.151.
- Doğan, Z., Arslan, S. ve Berkman, A.N. (2015), Türkiye'de Tarım Sektörünün İktisadi Gelişimi ve Sorunları: Tarihsel Bir Bakış, Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, Ocak, 8(1). 29-4.