UNIVERSITY OF NICOSIA
ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

Decision Making

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Lecture’s topics

- What is a decision?
- How are decisions made?
- What are the main decision making conditions?
- How can quantitative methods help in the decision making process?

Decisions

A decision is a specific commitment to action – usually requiring a commitment of resources.

Decisions

Decisions are made with regard to all aspects of the management process: inputs, outputs and transformations.

Decisions

- Input decisions

  How to raise capital, who to employ etc.

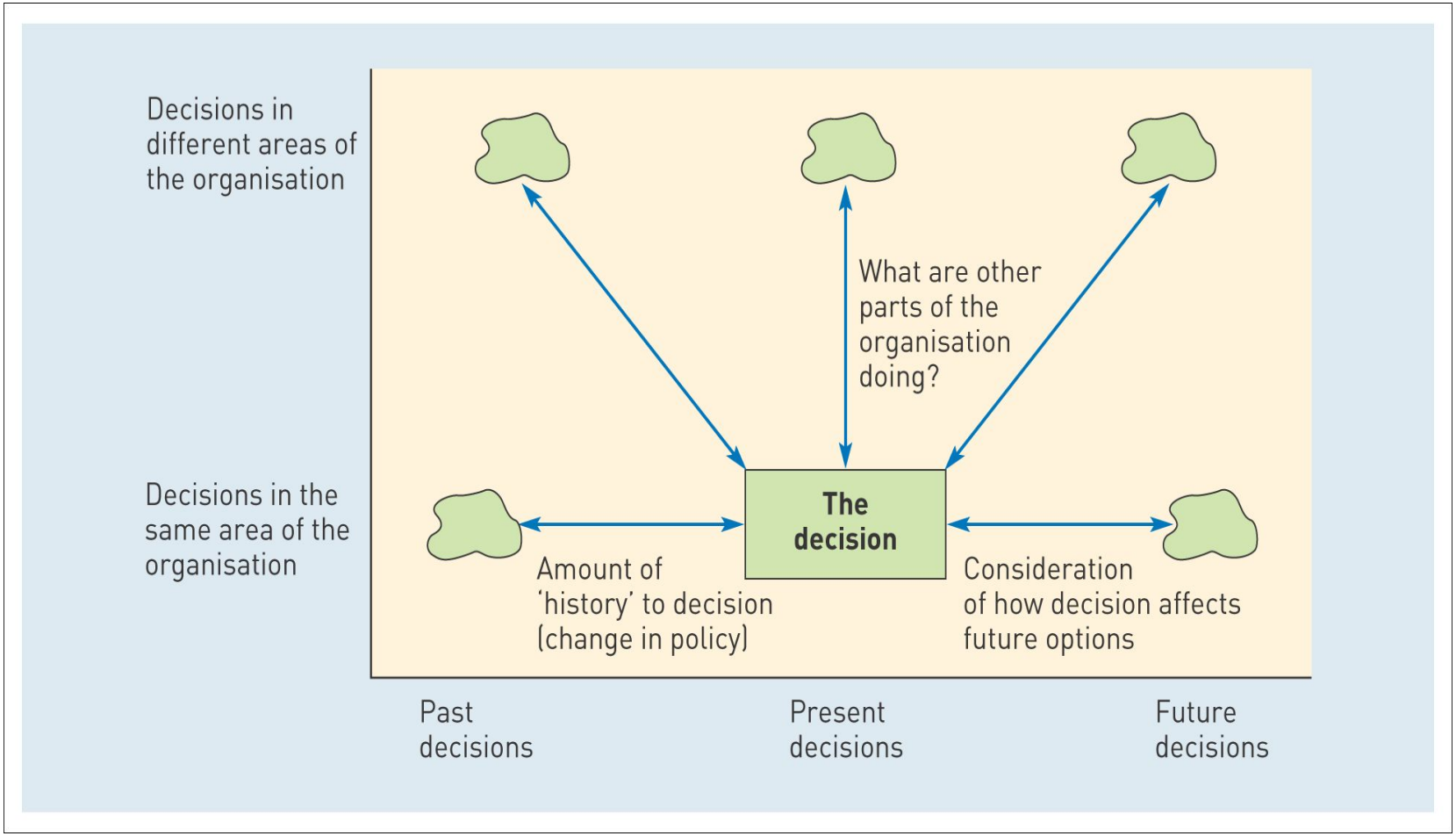
- Output decisions

  What products to make, how to distribute them etc.

- Transformation decisions

  How to carry out a particular process, how to manage the finances etc.

Relationships between decisions



Types of decisions

Strategic decisions:

- long-term decisions on the future direction of the organisation
- relate to the world outside the organisation and can require the commitment of major resources

Types of decisions

Operational decisions:

- shorter-term decisions often on day-to-day matters and within established policy

Types of decisions

Programmed decisions:

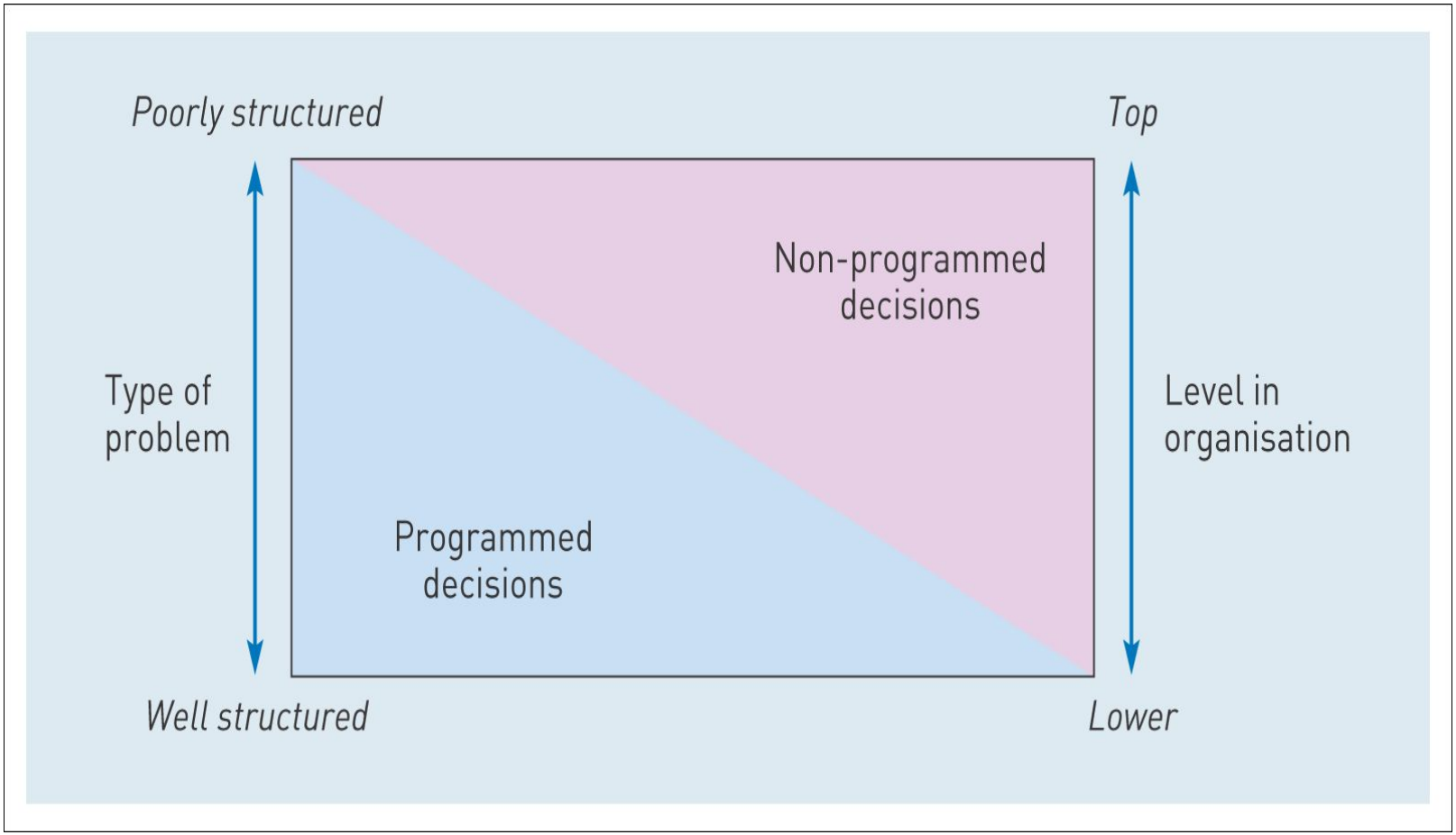
- deal with familiar problems or with well structured situations
- are based on established procedures or policies
- often handled by computers

Types of decisions

Non-programmed decisions:

- deal with unstructured situations requiring a unique solution
- depend on personal judgement

Types of decisions



Student activity

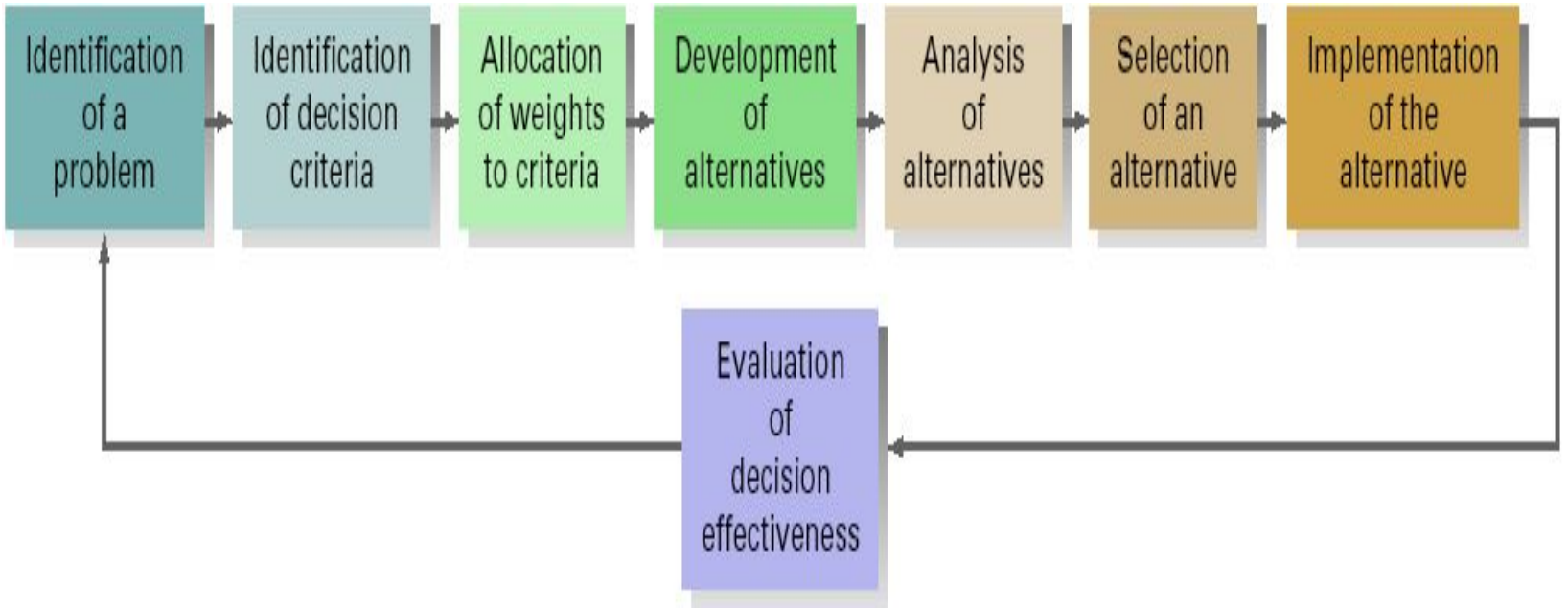
Think of an important decision that you have taken sometime in your life. Then answer the following:

1. Why did you have to take a decision in this case?
2. What were your alternative options?
3. What factors did you consider when you took your decision?
4. Did you make the right decision?

The decision making process

An eight-step process that includes identifying a problem, selecting and implementing a solution, and evaluating its effectiveness.

The decision making process



The decision making process

Step 1: Identification of a problem

- A problem is a discrepancy between an existing and a desired state of affairs.
- Need to compare current state of affairs to some standard.
- Identifying what a problem is is subjective and can be difficult.
- Danger of solving the wrong problem!!

The decision making process

Step 2: Identification of decision criteria

- What guides the decision maker in their decision.
- Some are objective (e.g. price, delivery time etc.) while others are subjective (e.g. appearance, ease of use etc.).
- Not always explicitly stated.

The decision making process

Step 3: Allocation of weights to decision criteria

- Not all decision criteria identified in the previous step are equally important.
- Assign weights to the decision criteria in order to give them their relative priority in the decision.

The decision making process

Step 4: Development of alternatives

- Make a list of the alternatives that could succeed in solving the problem.
- Developing too few alternatives limits choice.
- Developing too many alternatives can be counter-productive – more choice means more stress, frustration and anxiety that we might make the wrong decision.

The decision making process

Step 5: Analysis of alternatives

- Compare each alternative with the criteria and weights established in steps 2 & 3.
- Evaluate the strengths and weaknesses of each alternative.
- Some assessments are objective but others are based on personal judgement.

The decision making process

Step 6: Selection of an alternative

- Choose the best alternative out of those evaluated in the previous step.
- Quantitative methods can help in this selection.

The decision making process

Step 7: Implementation of the alternative chosen

- Putting a decision into action
- Includes conveying the decision to the persons who will be affected by it and getting their commitment to it.

The decision making process

Step 8: Evaluation of decision effectiveness

- Appraise the result of the decision to see whether it has solved the problem.

Decision making conditions

- Certainty:

  The decision maker knows exactly what will happen in the future.

- Uncertainty:

  The decision maker doesn’t know what will happen in the future.

Decision making conditions

- Risk:

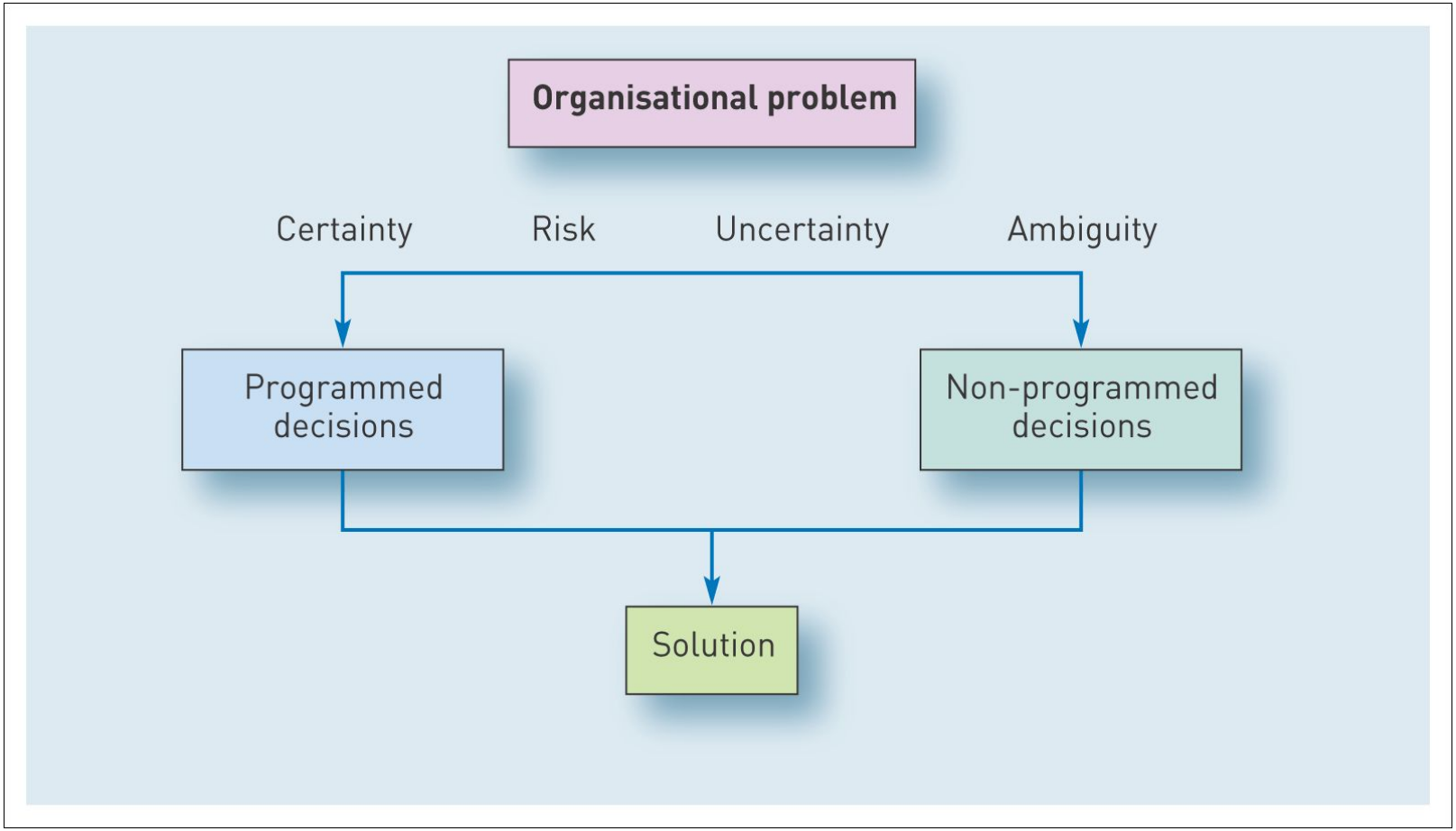
  The decision maker doesn’t know what will happen in the future but can estimate the likelihood of the alternative outcomes.

Decision making conditions

- Ambiguity:

  The decision maker is uncertain about their goals and how best to achieve them.

Decision making conditions



Decision making using Quantitative methods

- Quantitative methods can be used to select the best alternative.
- Normally used for programmed decisions.
- Different methods are based on different criteria and produce different results.

An Example

Type of investment	Condition of Market		
	Good	Moderate	Poor
A	200	100	50
B	400	-40	-90
C	550	-80	-120

Laplace method

Type of investment	Condition of Market			
	Good	Moderate	Poor	Average
A	200	100	50	116.67
B	400	-40	-90	90.00
C	550	-80	-120	116.67

Which alternative should you select?

Maximax method (optimistic)

Type of investment	Condition of Market			
	Good	Moderate	Poor	Max
A	200	100	50	200
B	400	-40	-90	400
C	550	-80	-120	550

Which alternative should you select?

Maximin method (pessimistic)

Type of investment	Condition of Market			
	Good	Moderate	Poor	Min
A	200	100	50	50
B	400	-40	-90	-90
C	550	-80	-120	-120

Which alternative should you select?

Expected Value method

Type of investment	Condition of Market		
	Good	**Moderate**	**Poor**
A	200	100	50
B	400	-40	-90
C	550	-80	-120
prob.	0.4	0.3	0.3

Expected Value method

Type of investment	Condition of Market			
	Good	Moderate	Poor	EV
A	200	100	50	125
B	400	-40	-90	121
C	550	-80	-120	160
prob.	0.4	0.3	0.3	

Which alternative should you select?