Lecture 1

INSTITUTE OF ACTUARIAL & QUANTITATIVE STUDIES

Class: FY BSc

Subject : Problem solving & Critical thinking

Subject Code: PUSASQF106

Chapter: Unit 4 Chp 1

Chapter Name: Decision Making: Evaluating Alternatives and Making Choices

Today's Agenda

1.1 Define decision making

Decision making is the process of making choices by identifying a decision, gathering information, and assessing alternative resolutions.

1.1 Decision-making process

Identify the decision

Gather relevant information

Identify the alternatives

Weigh the evidence

Choose among alternatives

Take action

Review your decision & its consequences

1.1 Decision-making process

Step 1: Identify the decision
You realize that you need to make a decision. Try to clearly define the nature of the decision you must make. This first step is very important.

Step 2: Gather relevant information
Collect some pertinent information before you make your decision: what information is needed, the best sources of information, and how to get it. This step involves both internal and external "work." Some information is internal: you'll seek it through a process of self-assessment. Other information is external: you'll find it online, in books, from other people, and from other sources.

Step 3: Identify the alternatives
As you collect information, you will probably identify several possible paths of action, or alternatives. You can also use your imagination and additional information to construct new alternatives. In this step, you will list all possible and desirable alternatives.

1.1 Decision-making process

Step 4: Weigh the evidence
Draw on your information and emotions to imagine what it would be like if you carried out each of the alternatives to the end. Evaluate whether the need identified in Step 1 would be met or resolved through the use of each alternative. As you go through this difficult internal process, you'll begin to favor certain alternatives: those that seem to have a higher potential for reaching your goal. Finally, place the alternatives in a priority order, based upon your own value system.

Step 5: Choose among alternatives
Once you have weighed all the evidence, you are ready to select the alternative that seems to be best one for you. You may even choose a combination of alternatives. Your choice in Step 5 may very likely be the same or similar to the alternative you placed at the top of your list at the end of Step 4.

Step 6: Take action
You're now ready to take some positive action by beginning to implement the alternative you chose in Step 5.

1.1 Decision-making process

Step 7: Review your decision & its consequences
In this final step, consider the results of your decision and evaluate whether or not it has resolved the need you identified in Step 1. If the decision has *not* met the identified need, you may want to repeat certain steps of the process to make a new decision. For example, you might want to gather more detailed or somewhat different information or explore additional alternatives.

1.1 Decision Making Techniques and Tools

1. SWOT Diagram
SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. SWOT Diagram is an important management application that helps any organization to assess its current situation. It works as a basic guide for strategic planning.

Tool to create SWOT Diagram: Creately

Creately is an easy way to create SWOT diagrams online. It is one of the best tools in decision making that contains 100s of readymade SWOT analysis templates. It has a user-friendly interface that enables you to customize your diagrams. You can use this tool to collaborate around your organization strategies in real-time.

1.1 Decision Making Techniques and Tools

2. Decision Making Diagram
Decision making diagrams are graphs that enable you to map out the decision you have taken. It is one of the best decision making methods that helps you to estimate eventual actions based on the outcomes and risks. You can use this diagram for planning team strategy.

Tool to create Decision Making Diagram: Lucidchart

Lucidchart

Lucidchart is a tool that helps you to build decision tree diagrams. This software can be used to collaborate with your teammates in realtime. It enables you to visualize potential paths and examine outcomes. Lucidchart can simplify decision making process using technical diagrams.

1.1 Decision Making Techniques and Tools

3. Strategy Map
Strategy map is a diagram that can be used to document strategic business goals. This map is created during the planning process of business. It is used as a primary material to check-in and review meetings.

Tool to create Strategy: Cascade Strategy

Cascade Strategy is a decision making tool that provides a drag and drop interface to build strategy Map. This tool supports a wide range of frameworks. It is one of the best tools for business decision making which allows you to export map to the PDF file format.

1.1 Decision Making Techniques and Tools

4. Decision Matrix

A decision matrix is a technique that contains values that helps you to identify and analyze the performance of the system. The elements of a decision matrix show results depend on specific criteria.

Tool to create Decision Matrix: Mindtools

Mindtools convert your data into row and column. It represents table row as your decision and factor as a column. It is one of the best decision analysis tools which enables you to score each option from 0 (indicate poor) to 5 (indicate very good).

1.1 Decision Making Techniques and Tools

5. Pareto Analysis

Pareto Analysis is a method for decision-making. It is also known as 80/20 rule meaning, 20% of your activities will account for 80% of your results. It is used for prioritizing possible changes by identifying the problems and resolve them.

Tool to create Pareto Analysis: Visual Paradigm

Visual Paradigm helps you to add or input data to your pareto chart easily. It is one of the best tools of decision making that enables you to change chart's fonts and colors without any hassle. This tool automatically generates a chart based on the data available in the Google Sheet. Visual Paradigm allows you to resize the chart to any dimension.

1.1 Decision Making Techniques and Tools

6. Cause and Effect or Ishikawa Diagram
Cause and Effect or Ishikawa Diagram shows the causes of a particular event. It can be used for product design and to check its quality to identify possible factors causing an overall effect. You can group causes into categories to find sources of variation.

Tool to create Cause and Effect or Ishikawa Diagram: SmartDraw

smartdraw

SmartDraw is a simple tool that enables you to draw Ishikawa diagrams online or on your desktop PC. It provides support for Mac and Windows operating systems. Causes and effect diagrams are integrated automatically, and you can move or delete them quickly. SmartDraw offers numerous templates to draw Ishikawa diagrams.

1.1 Decision Making Techniques and Tools

7. Force Field Analysis

Force Field Analysis enables you to examine your project. It provides a framework for looking at the factors that influence a particular situation. This analysis helps you to understand the process of any organization in a better way.

Tool to create Force Field Analysis: SmartDraw

smartdraw

SmartDraw is a decision making tool that provides templates to perform force field analysis. You can use this graphical tool for making decision. This drawing tool automatically adjusts items on the drawing area. It is one of the best analytical tools for decision making which helps you to import or export a force field analysis diagram from Visio.

1.1 Decision Making Techniques and Tools

8. Break-even analysis
A break-even analysis helps you to determine at what stage a new business product will be profitable. It's an economic calculation used to determine the number of products or services you need to sell to cover your costs.

Tool to create break-even analysis: Good Calculators

Good Calculators provides a calculator that enables you to make better business decisions and calculate the break-even point. You can utilize this tool by just entering fixed and variable costs, selling price per unit, etc. It enables you to calculate it with just a single mouse click.

1.1 Decision Making Techniques and Tools

9. Pugh Matrix
Pugh Matrix is a diagram that is used to evaluate alternative solutions for business. It helps you to determine which solutions are more valuable than the others. This method does not require a massive amount of quantitative data.

Tool to create Pugh Matrix: Psychologia

Psychologia is a tool that provides a score for every option you have entered. This app enables you to find the highest score. It helps individuals to find the importance of specific criteria over others.

1.1 Decision Making Techniques and Tools

10. Ratio Analysis

Ratio analysis is a term used for comparison of items available in the financial statements of a business. It used to evaluate a number of problems with an entity, like its liquidity, efficiency of operation, and more.

Tool to create Ratio Analysis: Finstanon

Finstanon is a solution for financial analysis. It helps you to interpret profit ratio, liquid ratio, debt ratio, and more. This tool enables you to analyze more than 15 different types of metrices. Finstanon generates data in tables and diagrams.