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Information Systems
Analysis

Topic 5:
Techniques Associated With Requirements
Capture

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Techniques Associated With Requirements Capture Topic 5 - 5.2

Scope and Coverage

This topic will cover:

- Stakeholder analysis techniques
- The Stakeholder analysis matrix
- The purpose and potential of CATWOE
- Advantages and disadvantages of CATWOE
- Evaluation of CATWOE

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Learning Outcomes

By the end of this topic students will be able to:

- Define and explain the term 'stakeholder'
- Identify and discuss types of stakeholder analysis techniques
- Define and illustrate the Stakeholder Analysis Matrix
- Define and explain the abbreviation CATWOE
- Identify and discuss the advantages of CATWOE
- Identify and discuss the disadvantages of CATWOE
- Provide solutions to business problems using CATWOE
- Evaluate CATWOE

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Terminology

- Terminology will be explained in the lecture, seminar and tutorial and you should take notes.

- Ask questions if you there is anything that you don't understand.

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Stakeholder

- Refers to people, groups or organisations whose roles, views and contributions should be taken into account when an information system is being analysed. For example:
  - managers
  - end users
  - technical staff
  - customers
  - suppliers

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Stakeholder Analysis

- Stakeholders need to be identified.

- Their power, influence and interest need to be established.

- The most important stakeholders need to be identified and understood so that their responses are likely to be anticipated.

- Time and resources need to be devoted to maintaining important stakeholder involvement and commitment.

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Stakeholder Characteristics

- The following stakeholder characteristics need to be identified:
  - Knowledge of the information system, department, organisation, etc.
  - Their interests related to the system, etc.
  - Whether they are for or against system development
  - Alliances or potential alliances with other stakeholders
  - Their ability to affect decision-making
  - The extent to which they will be affected by development of the system

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Stakeholder Matrix - 1

- A stakeholder's position indicates the actions to be taken with them.

- Use this to discover the key stakeholders and find out how they are likely to feel about and react to the system development and how to engage them and communicate with them.

	Low Interest	High
High Power	Keep satisfied	Manage closely
Low	Monitor	Keep informed

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Stakeholder Analysis - 2

- *High power, interested people*: must be fully engaged and kept satisfied

- *High power, less interested people*: should be kept informed and satisfied

- *Low power, interested people*: should be kept informed and spoken with to ensure that they have no major concerns

- *Low power, less interested people*: should be spoken with and monitored

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Stakeholder Analysis -3

- An analyst should ask the following questions when attempting to get to know an organisation's stakeholders:
  - What motivates them?
  - What information do they want to receive about the project?
  - What is the best way of communicating with them?
  - Who influences their opinions?
  - If they are not in favour of system development, what might persuade them?
  - If they won't be persuaded how can they be managed?
  - Who else might be influenced by their opinions?

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CATWOE

- Originally referred to in Topic 3, it is used to prompt thinking about what the business is trying to achieve and helps identify and categorise all the people, processes and external factors involved in the information system that is being analysed. It refers to:
  - **C** = Customers/Clients
  - **A** = Actors/Agents
  - **T** = Transformations
  - **W** = World view
  - **O** = Owners
  - **E** = Environment

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When can CATWOE be used?

- For any project and particularly when the needs of the users need to be taken into account in order to enhance productivity and quality assurance

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Customers/Clients

- Are those who benefit or do not benefit from the work of the organisation

- They need to be asked the following questions:

  - Do they have any problems with the existing system?
  - How will they react to a new system?

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Actors/Agents

- Are directly involved with the system, e.g. the users and undertake the activities associated with it

- The following questions need to be considered by the analyst:

  - What will be the impact of a new system on them?
  - How might they react to a new system?

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Transformations

- Refer to what happens to the data and what processes will be affected by development of the system

- The analyst needs to consider:
  - What are the inputs?
  - Where do the inputs come from?
  - How are the inputs converted into the outputs?
  - What are the outputs?
  - Where do the outputs go?
  - Are there other processes and if so, what are they?

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World View

- This refers to what is going on in and outside the organisation and that may be influencing development of the system.

- The analyst needs to consider if there will there be other impacts as a result of system development and if so, what they will be.

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Owners

- Refers to who owns the organisation

- The analyst needs to find the answers to the following questions:
  - What role will they play in the system development?
  - Can they help or hinder the analysis?
  - How could they help make the analysis a success?
  - Are there other stakeholders who could make a claim for ownership or part ownership?

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Environment

- The analyst needs to be aware of the demands of the political, legal, economic, social, demographic, technological, ethical, competitive, and environmental factors and their associated constraints and limitations.
- It needs to be investigated whether this will affect the analysis and development of the system.
- Questions that the analyst will need to find answers for include:
  - Are there any financial, legal, ethical limits etc?
  - If so, what impact might these have on analysis and design?
  - How could they be resolved?

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Advantages of CATWOE

- Encourages:

  - open discussion of problems, perceptions and needs
  - different perspectives
  - joint problem solving
  - user participation and commitment
  - bringing sectors of an organisation together

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Disadvantages of CATWOE

- May not be appropriate for complex systems in large organisations due to economic and time constraints

- Can take a long time to reach agreement

- It can be difficult to manage

- It has been accused of concentrating more on the user and less on the technical specifications

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Evaluation of CATWOE - 1

- CATWOE allows a problem definition to be formulated and this definition can be reformulated if required, thus allowing flexibility in the definition and suggested solution
- It is useful when trying to formulate a problem definition when:
  - there are complex human problem situations in an organisation
  - an organisation has several goals
  - there are a considerable number of stakeholders
  - staff, customers and stakeholders have different views and opinions

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Evaluation of CATWOE - 2

- Staff, customers and stakeholders are more likely to understand and support information systems development if they take part in defining a problem and discussing how it could be improved.

- It is important that it is managed effectively.

References

- Avison D. and Fitzgerald G. (2002). *Information Systems Development: Methodologies, Techniques and Tools,* 3rd Edition. McGraw-Hill Education

Topic 5 – Techniques Associated With Requirements Capture

Any Questions?