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Information Systems Analysis

Topic 7:
Process-Oriented IS Methodologies

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Process-Oriented IS Methodologies Topic 7 - 7.2

Scope and Coverage

This topic will cover:

- Process-Oriented Information System methodologies
- Advantages and disadvantages of Process-Oriented methodologies
- The purpose and potential of the Yourdon methodology
- The POEM methodology

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Process-Oriented IS Methodologies Topic 7 - 7.3

Learning Outcomes - 1

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

- Define and explain the term process-oriented IS methodology
- Identify types of process-oriented IS methodologies
- Identify and discuss the advantages of process-oriented IS methodologies
- Identify and discuss the disadvantages of process-oriented IS methodologies

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Learning Outcomes - 2

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

- Define and explain the term Yourdon methodology
- Evaluate and discuss the Yourdon methodology in the context of a business scenario
- Define and explain the abbreviation POEM
- Evaluate and discuss the POEM methodology in the context of a business scenario

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Terminology

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

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

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Process-Oriented IS Methodology - 1

- A hard approach to information systems analysis
- A highly-structured, step-by-step methodology that follows strict rules and guidelines, as defined in the SDLC
- It focuses on the flow, use and transformation of data in an information system.
- It identifies and details the core processes of a system.
- Graphical representations such as data flow diagrams and charts are used to illustrate the data processes.

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Process-Oriented IS Methodology - 2

- *QUESTION*
  - Do the previous descriptions of a process-oriented methodology make you think of one methodology in particular?

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Types of Process-Oriented IS Methodologies

- There are several types and these include:
  - SSADM
  - Yourdon
  - POEM

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Application of Process-Oriented IS Methodologies

- There are many areas that utilise process-oriented analysis methodologies and these include:
  - business information systems and sub-systems, for example:
    - management information systems
    - project management
  - manufacturing systems
  - industrial quality control systems

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Advantages of Process-Oriented IS Methodologies - 1

- It is a flexible method of analysis because it can be applied to both business and industrial systems.

- It is a thorough and efficient method of analysing organisations, information systems, industrial processes and resources.

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Advantages of Process-Oriented IS Methodologies - 2

- It enables the detailed analysis of technical aspects of a system.

- DFDs summarise and organise detailed information about a system's boundaries, processes, and data entities efficiently and provide physical and logical views of a system.

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Advantages of Process-Oriented IS Methodologies - 3

- A flexible method of analysis because it can be applied to both business and industrial systems

- A thorough and efficient method of analysing organisations, information systems, industrial processes and resources

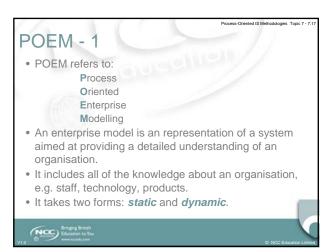- Enables the detailed analysis of technical aspects of a system

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Disadvantages of Process-Oriented IS Methodologies - 1

- Concentrates on a hard approach to systems analysis and there is little involvement of the user

- Neglects the human, social and organisational impacts of system.

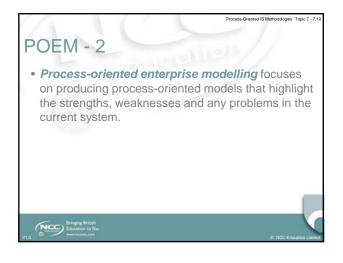- The step-by-step approach makes this methodology less flexible than other methodologies.

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Disadvantages of Process-Oriented IS Methodologies - 2

- Maintaining, updating, and documenting a complete set of DFDs can be time consuming.

- DFDs are not always not designed with the user in mind and this can cause difficulties in communication.

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Yourdon Methodology

- A process-oriented, hard approach to information systems analysis
- A highly structured and logical method, following a step-by-step approach
- Uses DFDs to illustrate:
  - what the system does
  - what happens and when
  - what data is used by the system
- Leads to well-organised systems

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Applying the Yourdon Methodology

- There are many areas that utilise the Yourdon analysis methodology and these include:
  - business information systems such as:
    - transaction processing systems
    - payroll systems
  - manufacturing systems
  - industrial quality control systems

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POEM - 1

- POEM refers to:
  - **P**rocess
  - **O**riented
  - **E**nterprise
  - **M**odelling
- An enterprise model is an representation of a system aimed at providing a detailed understanding of an organisation.
- It includes all of the knowledge about an organisation, e.g. staff, technology, products.
- It takes two forms: *static* and *dynamic*.

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Static and Dynamic Modelling

- A *static model* is a view of an organisation at a point in time and considers the aims of an organisation, its structure, its position and opportunities it has to expand.

- *Dynamic enterprise modelling* looks at the way an organisation changes over time and is often used when an organisation is having to make a decision and needs to know how this decision will affect the whole organisation.

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POEM - 2

- ***Process-oriented enterprise modelling*** focuses on producing process-oriented models that highlight the strengths, weaknesses and any problems in the current system.

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POEM - 3

- Process-oriented models can be used to analyse:
  - business processes
  - business roles and responsibilities
  - relationships between the processes (which depend on other processes, replace other processes or are replaced by other processes)
  - relationships between the roles
  - relationships between the roles and processes

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POEM - 4

- Business processes can include: data entry, validation, verification, etc.
- Business Roles can include project managers, administrators, technical support, etc.
- A diagram or set of diagrams (a Process Map Diagram) can be produced by the analyst to enable them to identify:
  - which processes are being performed to meet an organisation's aims
  - what the relationships and dependencies are within the system

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Evaluation of POEM

- Takes more account of human activity in the system than the Yourdon methodology

- Attempts to blend aspects of soft approach with hard approach

- Useful when analysing the knowledge-base and knowledge management within an organisation

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References

- Interfacing. (2008). Business Process Management helps build best practices for port logistics. [Available Online] http://www.interfacing.com/uploads/File/EFFORTS2.pdf

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Topic 7 – Process-Oriented IS Methodologies

Any Questions?

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