Accounting Information Systems Revision

IS and AIS Concepts

- Defining accounting information system (AIS) is difficult as:
  - AIS needs to carve out a field of its own distinct of other disciplines
  - The landscape is constantly evolving and changing
- AIS examples:
  - Small business packages: Xero and MYOB
  - Enterprise wide systems: Oracle and SAP
- Data and information:
  - **Data**: gathered and recorded in an AIS. Is useful when it is converted into **information**.
    - **Too much data** → information overload
- A **system** is an organised set of principles or procedures created and used to carry out a specific activity.
  - A system relies on the **input-processing-output (IPO) model** used in information systems.
    - **Inputs** are often recorded initially on source documents, which provide documentary evidence for transactions into an AIS.
      - Inputted through manual keying, scanning of barcodes, voice recognition, optical mark readers
    - **Processing** refers to activities that are performed on the inputs into the system e.g. checking format and validity
    - **Data manipulation** refers to the act of performing calculations and adjusting the data inputs e.g. sales price x units sold = $total
    - **Outputs** refer to what is obtained from a system, or the result of what the system does. Normally the starting point for designing a system e.g. receipts, invoices
  - A **control system** is the set of checks and balances to ensure:
    - The system is running as expected
    - There are no data errors or exceptional circumstances
  - External environment creates outside factors or pressures outside that influence and design and operation of an AIS e.g. relevant accounting standards
- **Accounting Information System**: the application of technology to the capturing, verifying, storing, sorting and reporting of data relating to an organisation's activities.
- **Data management** is the processing of attaining, storing and controlling of data (in an AIS).

: Business Functions vs Processes

- **Mission statement:** typically contains an expression of the organisation's vision, business domain, competencies and values.
- **Strategy:** a means of putting a mission statement into practice. Operates at three levels:
  - **Internal**
  - **Competitive**
  - **Business portfolio**
- According to Porter, businesses have two options when deciding on a strategy:
  - **Cost leadership**: carrying out activities cheaper than competitors through economies of scale, technology, low overheads, etc
  - **Differentiation**: involves creating a business adding that little bit extra for customers, offering unique products targeted to the customers needs.
- **Porter's five forces model:** use to analyse an organisation's industry to identify opportunities and threats and tactics for these situations.
  1. Rivalry among existing competitors
  2. Threat of substitute products or services
  3. Bargaining power of suppliers
  4. Bargaining powers of buyers
  5. Threat of new entrants

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- A business process is a series of interlocking activities that work together across the organisation, to achieve some predetermined organisational goal (typically defined around satisfying customer needs).
    - E.g. sales process, purchasing process
- **Functional perspective**: highly hierarchical and specialist
    - **Benefits**: control and coordination, specificity – highly defined and specified tasks
    - **Problems and limitations**: no reflective of the reality of today, information and communication problems, slow to react to the environment, focusses on the wrong things
- **Business process perspective:**
    - Issues when changing to BP: when there is management change to convert to BP rather than function requires a top down support, narrowly defined specialist jobs may become generalist and diverse, reduction of middle management – increased authority to those lower in the organisation.

	Functional Perspective	Process Perspective
Focus	What is done	How it is done
Orientation	Vertical, hierarchical	Horizontal, across the organisation
Objective	Task driven	Customer driven
Personnel	Specialists – highly defined tasks	Generalists – tasks across the process

- An **ERP system** is a set of computer program modules that attempt to integrate the different functional areas of the organisation on the basis of best practice – the best way of performing a particular process.
- Approaches to changing to business process:
    - TQM: progressive change through a series of small progressive steps. Based around four main concepts: quality, people, organisations, management.
    - BPR: the **fundamental** rethinking and **radical** redesign of business **processes** to achieve **dramatic** improvements in critical contemporary measures of performance, such as cost, quality, service and speed.

Primary criteria	TQM	BPR
Level of change	Incremental	Radical
Starting point	Existing process	Clean slate
Frequency of change	One-time/continuous	One-time
Time required	Short	Long
Participation	Bottom-up	Top-down
Typical scope	Narrow, within functions	Broad- across functions
Risk	Moderate	High
Primary enabler	Statistical control	IT
Type of change	Cultural	Cultural/statistical

Enterprise Systems

- ERP systems capture four major areas:
    - Sales and marketing
    - Finance
    - Manufacturing
    - HR
- As well as linking suppliers and customers.

SAP

- Two modules which extend the ERP system:
    - Supply chain management (SCM)
    - Customer relationship management (CRM)
- Core SAP Modules:

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  - Financial accounting
  - Controlling and profitability analysis (management accounting)
  - Sales and distribution (revenue or sales order to cash process)
  - Materials management
  - Human resources – recruitment, payroll, training etc
- **Transaction data**: process data related data that is short-lived and dedicated to certain master data
- **Documents**: Is a record of business transaction. E.g. sales document, purchasing document, material document, accounting document

Systems Documentation

- A **business process** is the activities that work together to achieve business objectives.
- An **information system** is a support for the business process.
- **Systems documentation**:
  - When a business process is documented the interactions with the information systems enabling that process are shown
  - Is a way of visually depicting the operations of a system
  - Is important throughout an accounting career
- A **process map** is a simple graphical representation of a business process.
- Data flow diagrams (DFD) are graphical representations of the data flows that occur within a system and can have three forms:
  - **Context diagram**
    - Provides a representation of the system interest and how it interacts with external entities
      - **System of interest** is the system or process that is the focus of the documentation (with a clear scope).
  - **Physical DFD**
    - Entities involved in a process (internal and external)
    - Flows among those entities
    - Interaction with external entities
  - **Logical DFD**
    - The process that take place within a system
    - Flows between these processes
    - How these processes interact with the external entities that provide inputs to, or receive outputs from, the system of interest
- **Systems flowcharts:**
  - Illustrate a system and its inputs, processes and outputs
  - More detailed than a process map or DFD
  - Provides information about the documents and processes performed within the system, as well as who is involved in the system

Reading systems documentation

- An **entity** is any person or thing involved in the activities of a business process:
  - **Internal entity**: processes or transforms the data within the business process of interest
  - **External entity**: provides inputs into a process or receives outputs from a process
- Starting point for systems documentation is the **process narrative** - is a text based chronological description of the process prepared by observing a process in operation and interviewing the key participants in the process.
  - **Limitations**: writing style and subjective interpretation.
- Process narrative table:
  - Summarises the narrative table systematically
  - Emphasises entities are involved in the process
  - Records activities undertaken during the process
  - Records inputs required for each activity
  - Records outputs produced by each activity

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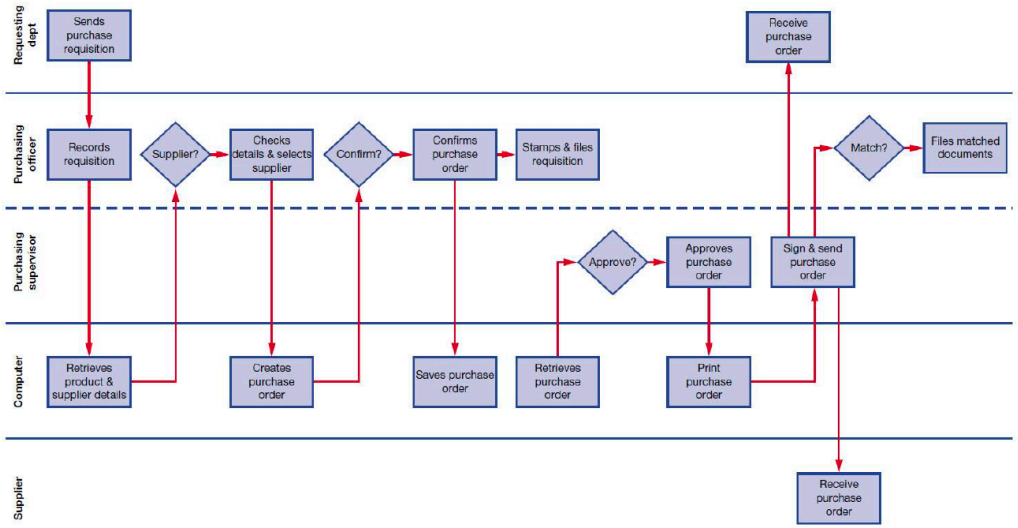
No	Entity	Activity
1	Requesting department	Sends PR
2	Purchasing officer	Enters item no into computer
3	Computer	Extracts product and supplier data

- A **process map** is a graphical representation of a business process



- **Rules** for reading a process map:
  1. Functional areas on the left-hand side
  2. Functional areas separated with a solid line
  3. Sub functions separated with a dashed line
  4. Standard symbol for a process or activity is a rectangle
  5. Process rectangles describes processes *not* documents
  6. The process map reads left to right and top to bottom

DFD Symbols

- Context diagram – system of interest
- Physical DFD – internal entity
- Logical DFD – internal process

- External entity

- Data flow

- Data Store

Logical DFD:

- Explodes the context diagram to show the procedures are happening in the system:
  - Circles represent data transformation activities e.g. sales order (revenue cycle), creator PO (expenditure), compare inputs with master data (can be in both cycles), create batch total (both cycles).
- **Level 0 DFD**: highest level, overarching view
- **Level 1 DFD:** takes one of the process bubbles form level 0 diagram and expands it to provide detail about the activities that occur within the process
- **Level 2 DFD**: provides a more detailed processes than level 1

Balancing a data flow diagram

- Balanced DFDs have the same external entities and flows to and from these external entities.

Systems Flowchart:

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- Represents a combination of the logical and physical DFDs
- Provides detail of the:
    - Processes they performed (logical perspective)
    - As well as the physical resources that are used to perform them (physical perspective)
    - Thus, provides information about the documents and processes performed within the system, as well as who is involved in the system

Symbol	Description
	Start or stop, or an external entity — can depict either the beginning or end of a process, or an external entity whenever they send or receive data from the system of interest.
	Data input — the keying in of data by a person using a keyboard. Only people can use keyboards, so you would never use this symbol in a computer column.
	Offline data input — for example, data gathered in a handheld barcode scanner that is not immediately uploaded to the computer. Both people and computers can use scanners, so you can use this symbol in either a person or a computer column.
	Manual process — a process performed by a person, for example, counting how many invoices are in a batch or attaching a label to a box. Only a person can perform this type of activity, so you would never use this symbol in a computer column.
	Computer process — a process performed by a computer, for example, data extracted from a data store. Only a computer can perform this type of activity, so you would never use this symbol in a person column.
	A single paper document — computers can print documents and people can read and use documents, so you can use this symbol in either a person or a computer column.
	Multiple (in this case three) documents — this could be three copies of the same document or three different documents grouped together. For clarity, each document contained in the group must be individually labelled.
	Batch total — used to indicate when a batch (group) of documents has had some calculation performed upon them, usually for control purposes. Examples include totalling the totals of all the invoices contained in a batch (a batch total), or totalling the invoice numbers of all the invoices contained in a batch (a hash total). The batch total symbol should be shown as being attached to the documents in the batch.

Systems Flowcharts

- **Systems flowcharts** present a comprehensive picture of the management, operations, information systems, and process controls embodied in business processes
    - Each column is allocated to an internal entity
    - Each entity is separated by a solid line
    - Symbols within the columns tell us what data is used, what task is performed, and how the task is performed