INF700

IT

for

Business and Management

www.andrewsai.com
10/03/2019

Plan for Today

Part 1- Ice breaker + Introduction to BIS (30 mins)

Part 2 – Data, Information and knowledge (1 hour, 20 mins)

Short Break (10 mins)

Part 3 – IT, Strategy and competitiveness (1 hour)

- Levels of Strategy
- Developing Strategy

- Your Name

- Affiliation

- Major/Programme, Year

- Which themes (IT/Business) excite you the most?

- What are your expectations at the end of this course?

Brief Profile and Introduction

Andrew Adjah Sai, CIMA Adv. Dip. MA

Education

- PhD (Management Science) candidate
- Chartered Institute of Management Accountants (UK)
  *CIMA Advanced Diploma in Management Accounting
- Masters (Information Systems Management)
- Bachelors (Human Resources Management)
- Certification: A+[Windows]; N+[Networks and Configurations]

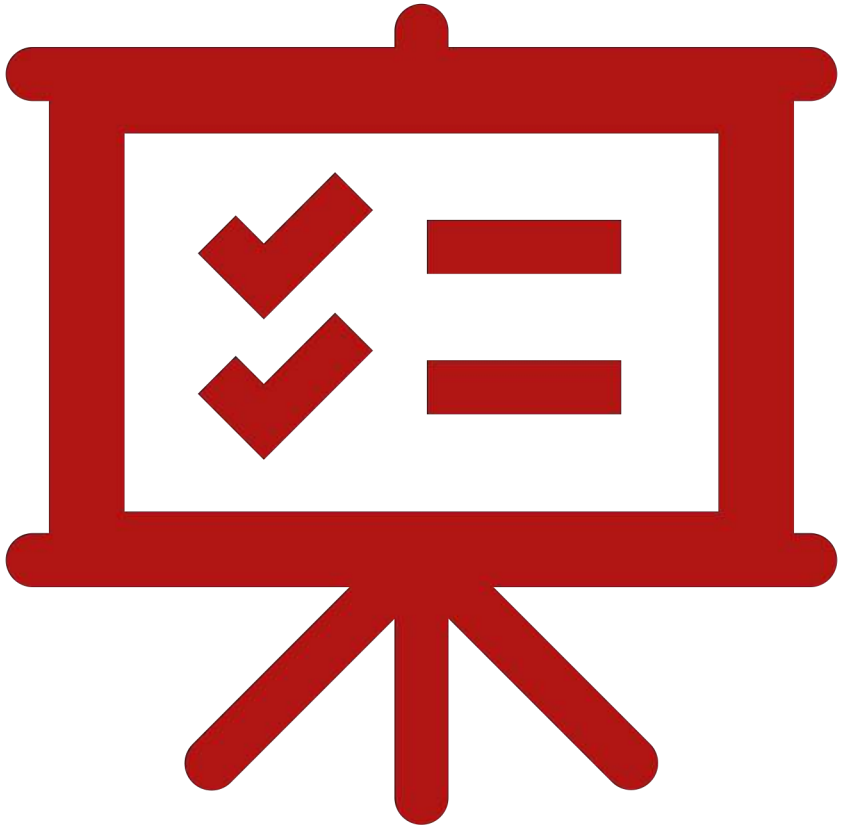
Work Experience

- ✓ **Visiting Lecturer, IT for Business & Mgt, EBS**
- ✓ Lecturer/Module Lead [EBS MBA in Digital Society program]- Tallinn & Helsinki
- ✓ Visiting Lecturer [TUT(TalTech), Euro academy, Mainor]

- ✓ **Product Operations Analyst, Twilio**
- ✓ Operations Analyst, Microsoft
- ✓ Senior Auditor, National Audit Office of Ghana
- ✓ Project Manager, FedEx
- ✓ Project Coordinator, AGRIBIZ Ghana
- ✓ Junior Internal Auditor, PMMC Ghana

- Research Interests: information technology; technological change; macroeconomic policy and strategy; ecommerce, organizational performance, institutional development, strategic management, change management and business process architecture, business and information systems management, finance and accounting, human resource management and so forth.

Course Overview



Module 1
Data, Information and Knowledge

Module 2
Information Systems & Enterprise Strategy

Module 3
IS Infrastructure
(Hardware, Software, Networks, Data Analytics with R & SQL)

Module 4
Business Process Management
(Business/Systems Analysis)

Module 5
Information Systems Security

Syllabus

Objectives of the Course

Understand how effective IT strategies are aligned to overall business strategy

Understand how IT will shape future businesses and be prepared to contribute to enterprise architecture decisions, infrastructure strategies, business application needs, IT investments and prioritization to increase business value

Understand the risks and benefits of IT investments and whether to outsource or use internally generated approaches

Understand how to lead the firm in the appropriate use of IT to achieve enterprise strategy as general managers

Intended Learning Outcomes

A broad knowledge of innovation frameworks to analyze competitive landscapes for emerging IT products and services

Ability to compare IT governance models in single and multiple contexts

Ability to analyze disruptive potential of technology, assess its transformative impact on standard business practices and formulate appropriate responses for an organization

Proficiency to create a business case for the value of an IT initiative or investment

Ability to identify the components of enterprise information architecture and its strategic role in the organization

Ability to use appropriate tools to analyze datasets, produce results and interpret same.

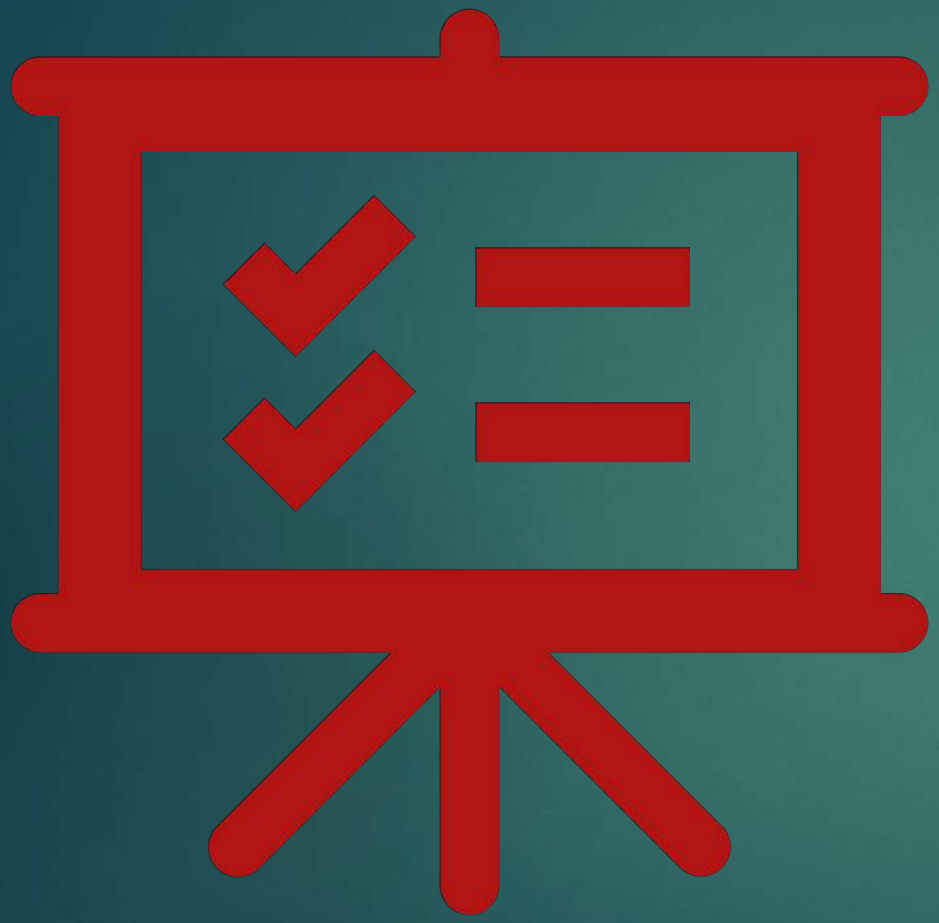
Modules Assignments

- ✓ What is Technology?
- What is Information Technology?
- What is Business and Management?

IT – "is the use of computers to store, retrieve, transmit, and manipulate data, or **information**, often in the context of a business or other enterprise"

Business - "any activity or enterprise entered into for profit."

Management - "the process of dealing with or controlling things or people."



Module 1

Data, information & Knowledge

Introduction to BIS

PRIMARY CONSTITUENTS OF BIS

- What is data?
- What is information?
- What is a system?
- What is a Business Information System?

What is BIS?

Data are **raw facts or observations** that are considered to have little or no value until they have been processed and transformed

e.g., today's date, measurements taken on a production line, a record of a business transaction, such as a visit to a website

Transforming Data into Information

using a data process

(data process is any action used to place data into a meaningful context)

Classification: - placing data into categories, e.g., - fixed or variable costs

Re-arranging/Sorting: - Organising data so that items are grouped/placed into particular order

Aggregating: - Involves summarizing data, e.g., calculating averages, totals, sub-totals, etc.

Performing Calculations: - E.g. Calculating employee gross pay by multiplying number of hours worked by hourly rate of pay, etc.

Selection: - Choosing/Discarding items of data based on a set of selection criteria, e.g., sales organization creates a list of potential customers according to income levels.

Information

Information is data that has been:

- Processed so that they are meaningful

- Processed For a purpose

- Interpreted and understood by the recipient

e.g., a bank statement, a sales forecast, a telephone directory, graphs of trends in visitor numbers to a website

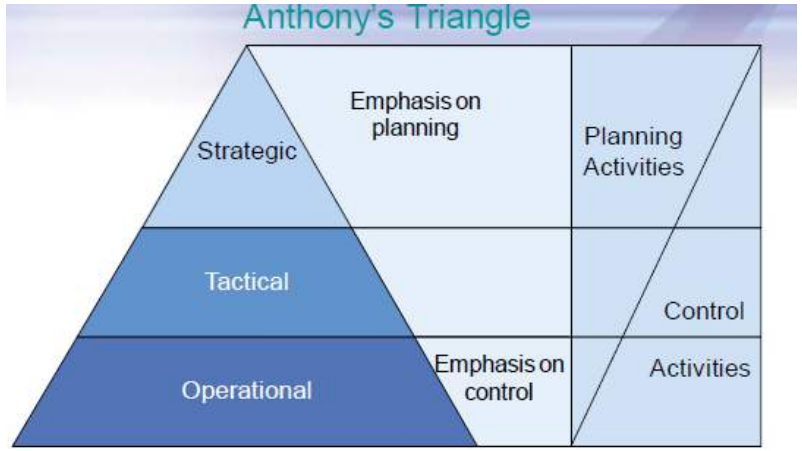
Knowledge Check!

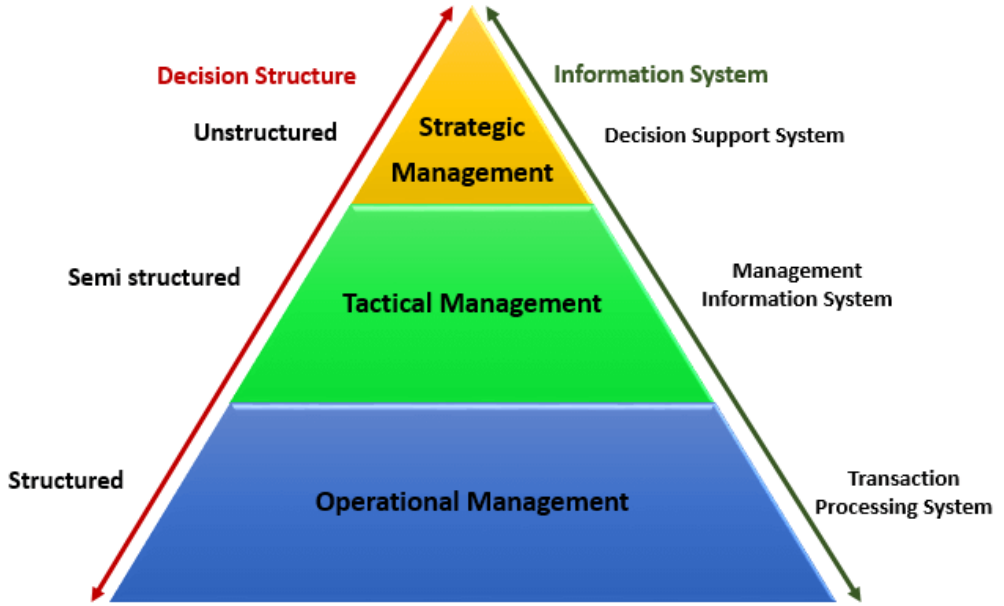
Data v Information

1. The date
2. A bank statement
3. The number 1355.76
4. A National Insurance Number (Isikood)
5. A Balance Sheet
6. A bus timetable
7. A car registration plate

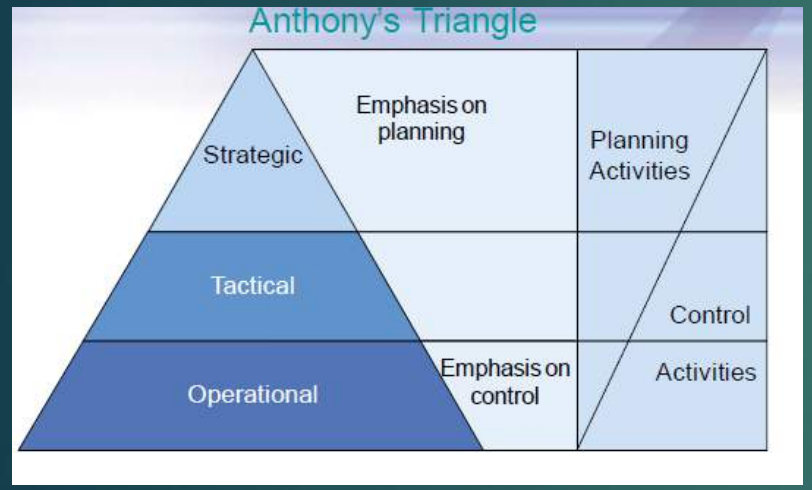
Levels of Management: **Decisions –making**

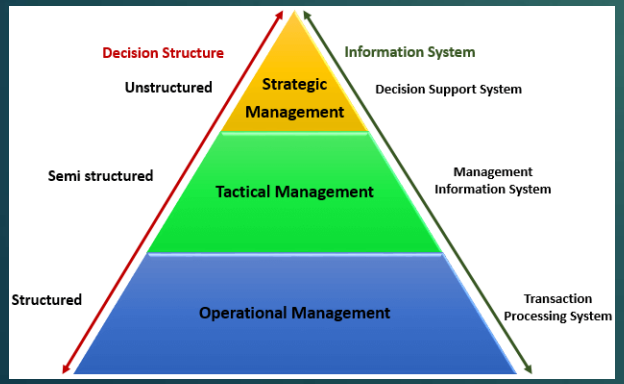
Management level	Type of decision	Time Scale	Impact on Organisation	Frequency of decisions
Strategic	Unstructured	Long	Large	Infrequent
Tactical	↔	Medium	Medium	↔
Operational	Structured	Short	Small	Frequent





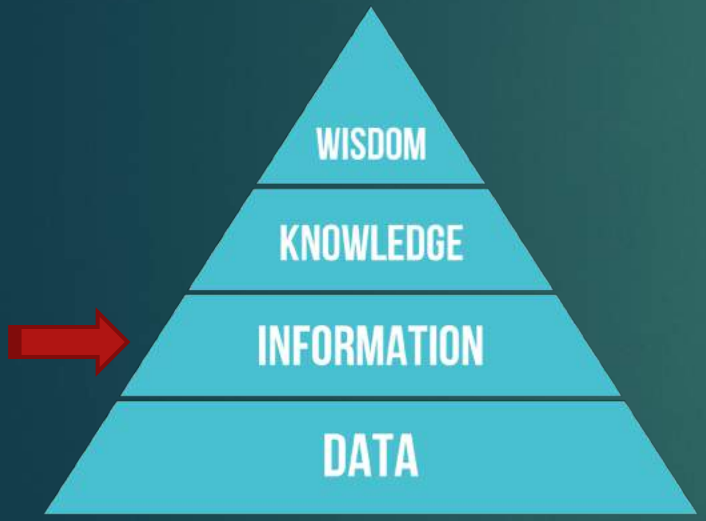
Levels of Management: **Information Needs**



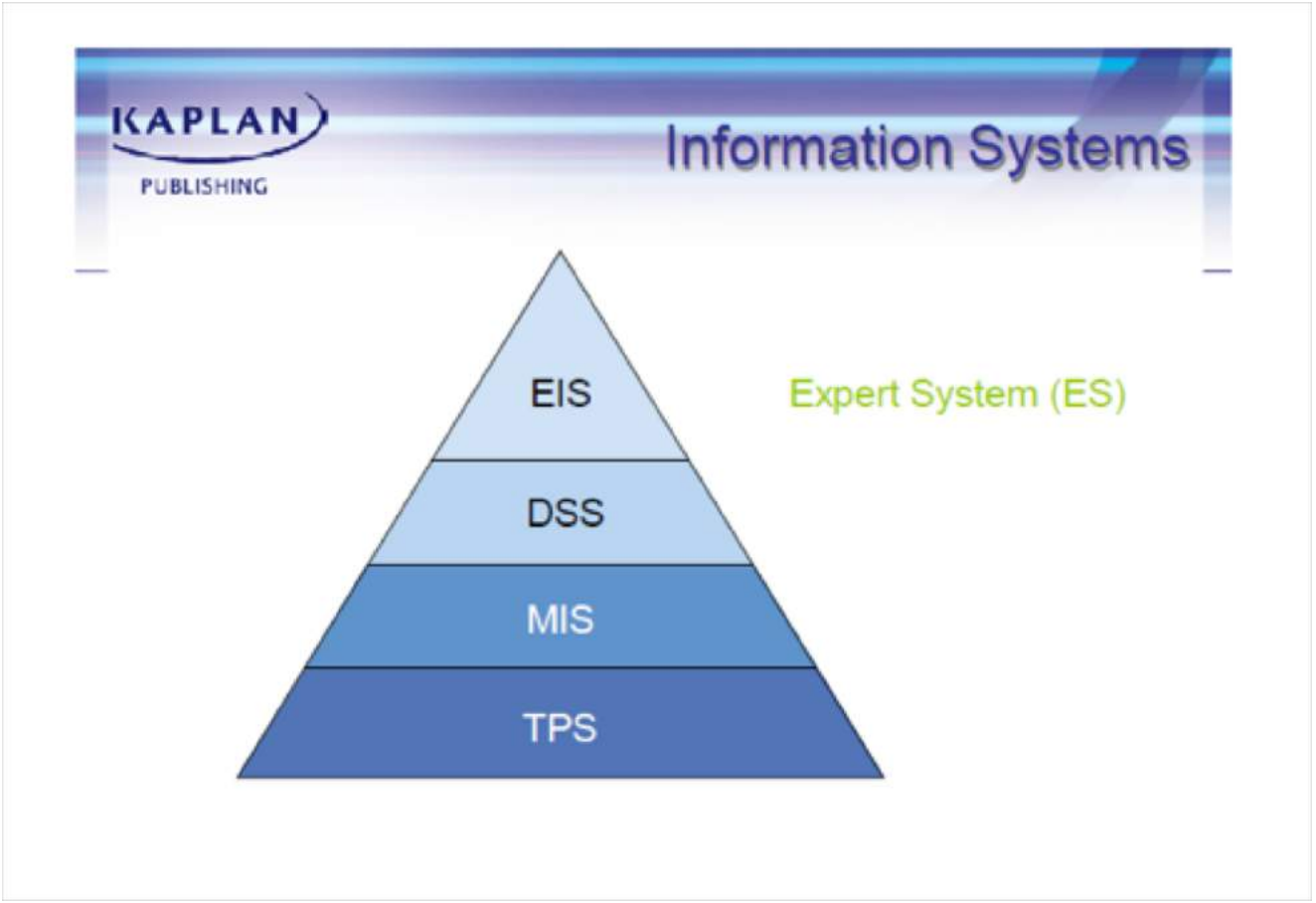


Management level	Time period	Frequency	Source	Certainty	Scope	Detail
Strategic	Wide	Infrequent	External	Less certain	Wide	Summarized
Tactical	↔	↔	↔	↔	↔	↔
Operational	Narrow	Frequent	Internal	More certain	Narrow	Detailed

Levels of Management, Decision–making & Information Needs [Examples]



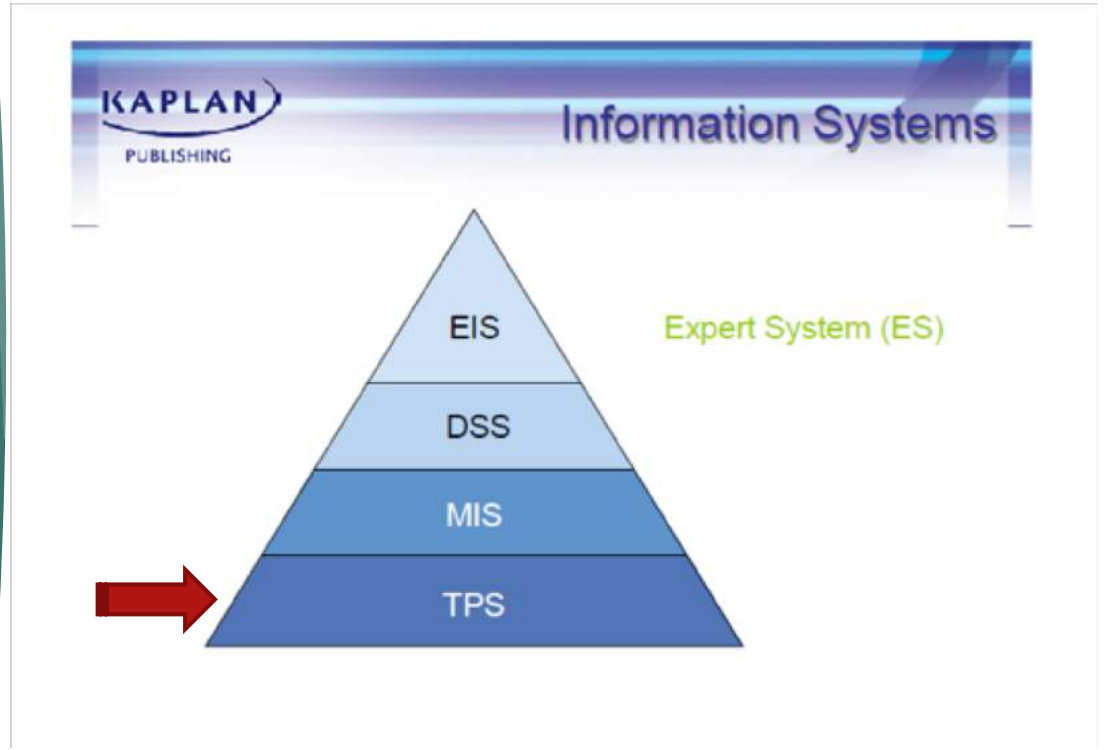
System	Purpose	Features	Example (s)
Transaction Processing system.	Captures and Stores transaction data.	Batch, online Or real time processing.	• Sales order processing. • Accounting system.
Management information system.	Integrated system for supporting operations and decision making.	Data gathered from TPS. Predetermined output format.	• Databases. • Reporting systems.
Enterprise resource planning system	Integration of information across the company.	Commercial software package installed on a Database Management System.	• Customer relationship Management (CRM). • Balanced scorecard performance reporting.
Decision support system.	Present selected / focused information for senior executives.	Highly visual and incorporates internal and external data.	• Executive performance' dashboard'.
Expert system.	Present decision options to 'non-expert' users.	Modify its knowledge database in accordance with its own results.	Tax advice. • Legal advice. • Selection of training methods.
Strategic enterprise management system.	Assists with strategic decision making	Incorporates tools such as ABM.	• Significant investment decisions. • Acquisition decisions.



Information Systems Pyramid

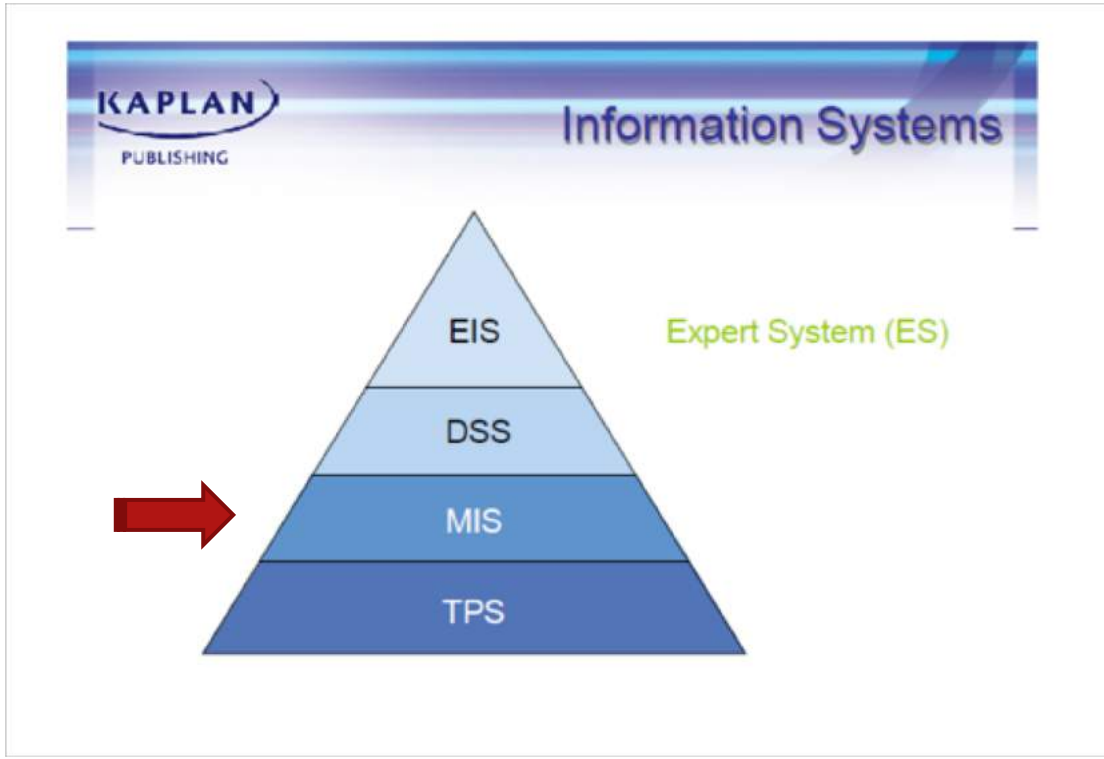
Transaction Processing System

- This is the system that records historic information and it represents the simple **automation of manual systems**
- The TPS routinely **captures**, **processes**, **stores** and **outputs** low level transaction data.
- This system is very important. Data input incorrectly will affect every report produced using it, giving management misinformation and hence will make poor decisions



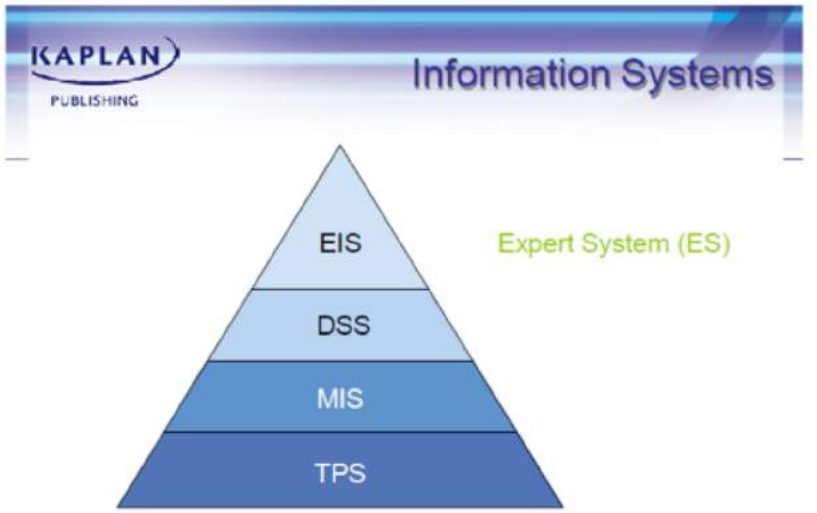
Management Information System

- A management information system is defined as ' a **system to convert data** from internal and external sources into **information**, and **to communicate** that information in an appropriate form to all managers at all levels and in all areas of the business to **enable them to make timely and effective decisions**'



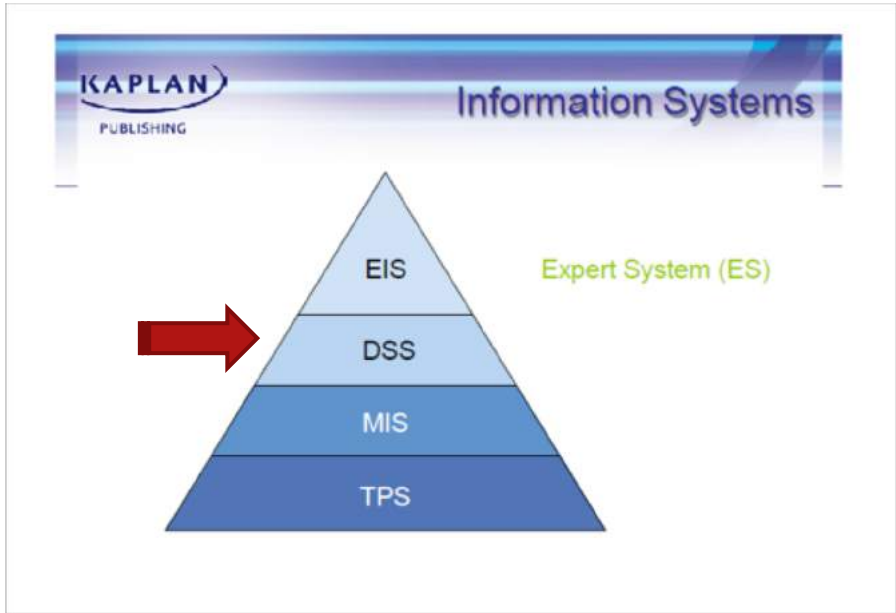
Enterprise Resource Planning System (ERPS)

- An enterprise resource planning system is comprised of **a commercial software package** that promises the **seamless integration** of all the information flowing through the company – financial, accounting, human resources, supply chain and customer information.
- This is achieved by holding the data for all transaction and management information system on a **common database**.



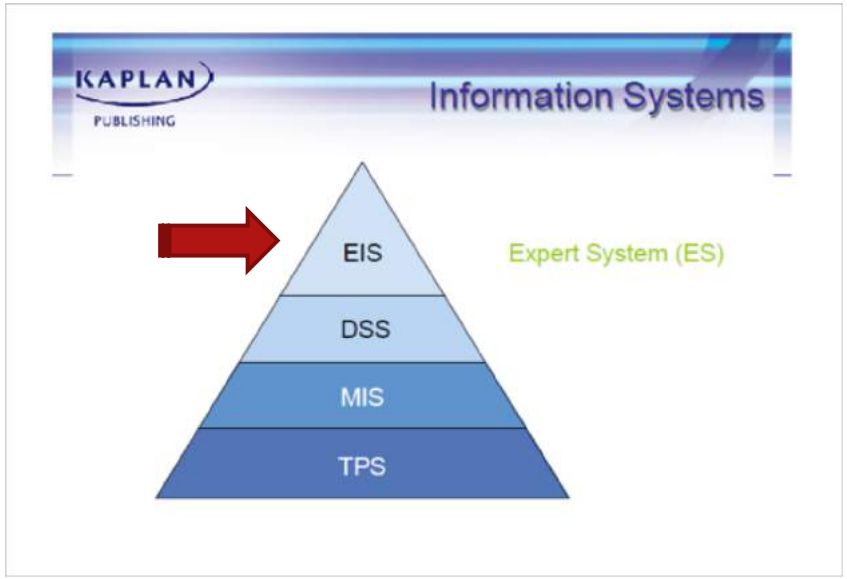
Decision Support System (DSS)

- A decision support system is defined as a '**computer-based system** which enables managers to **confront ill-structured problems** by **direct interaction with data** and **problem solving programs**.'
- They are computer systems which are **used as an aid in making decisions** when presented with **semi-structured or unstructured problems**.
- Their aim is to provide information in a flexible way to aid decision making.



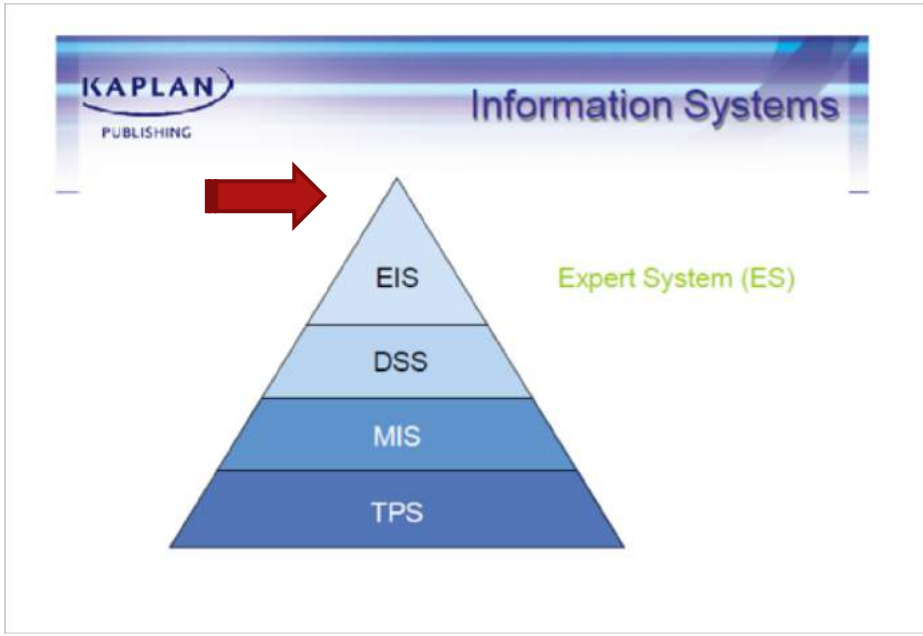
Executive Information[Support] System (EIS)/[ESS]

- An executive support system (ESS) or executive information system (EIS) is an **interactive system** that allows executives to **access information for monitoring the operations** of the organisation and scanning general business conditions.
- It gives executives ready access to key internal and external data.



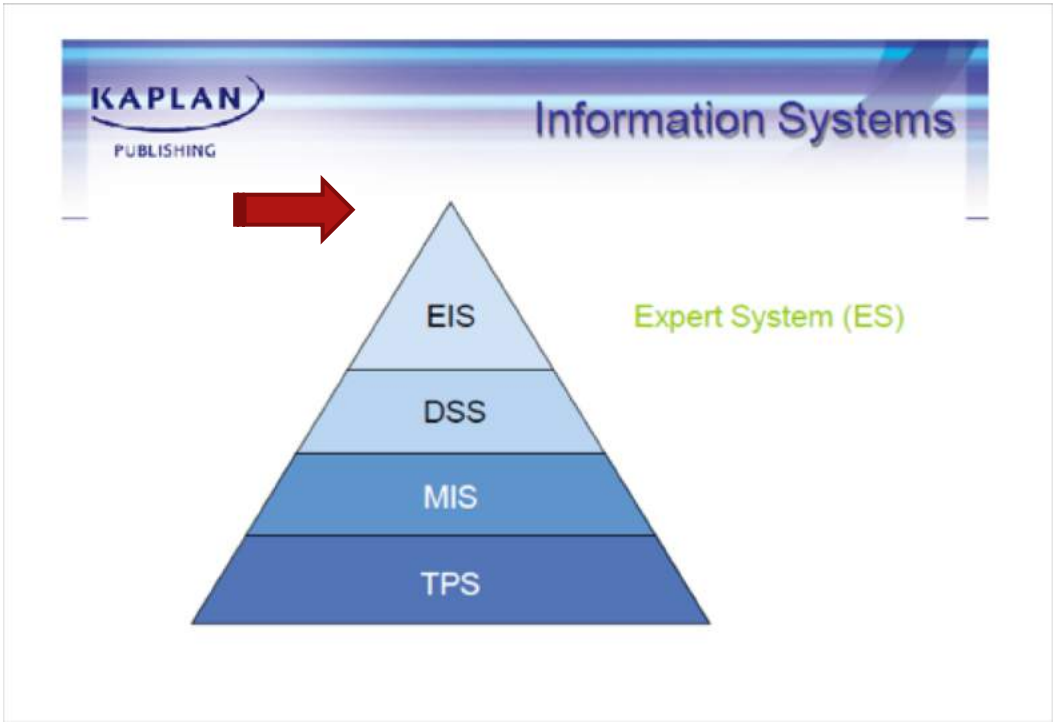
Expert Systems (ES)

- An expert system is defined as a 'computerised system that **performs the role of an expert** or carries out a task that requires expertise'
- The system **holds expert/specialist knowledge** and allows non-experts to interrogate a computer for **information, advice and recommended decisions**.



Strategic Enterprise Management Systems (SEMS)

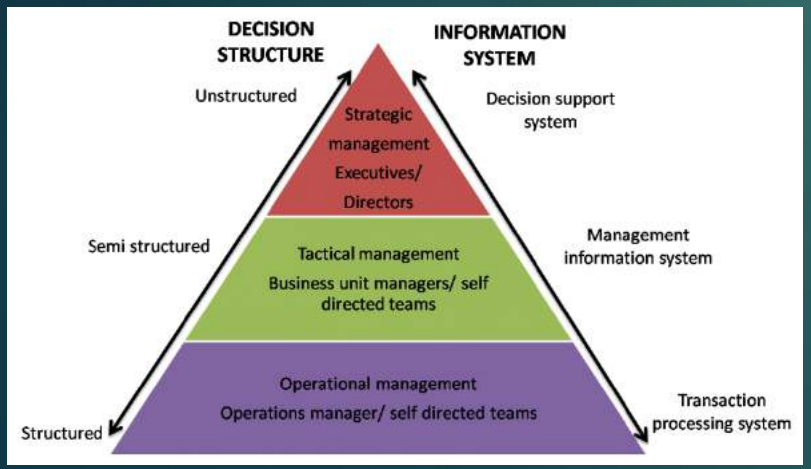
- A strategic enterprise management system **assists management in making high-level strategic decisions**
- Tools such as **activity-based management (ABM)** and the **balanced scorecard** are applied to the data to enable the strategic goals of the organisation to be worked towards.



Organisation-level decisions (Knowledge check!)

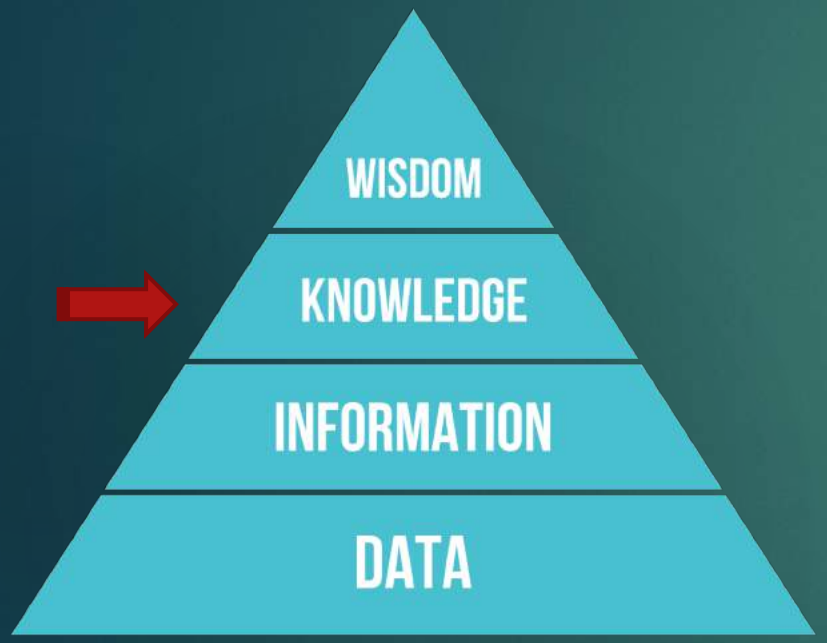
Classify the following:

- by **type** (Structured, semi-structured, unstructured) and
- **organisational level** (strategic, tactical, operational).
- In addition, **determine whether or not the decision-making process should be automated**, and if possible,
- the **name and type of information system to be used**.



1. At what level should we set the budget for next year?
2. Does this customer qualify for a discount on a large order?
3. How should we deal with a takeover bid?
4. Should we employ more staff to cope with an urgent order?
5. Should we expand abroad?
6. Should we launch an advertising campaign?
7. Should we take a short-term loan to help our current cash flow position?
8. What new markets should we move into?
9. What should we do about a faulty machine?

Knowledge & KM



What is Knowledge?

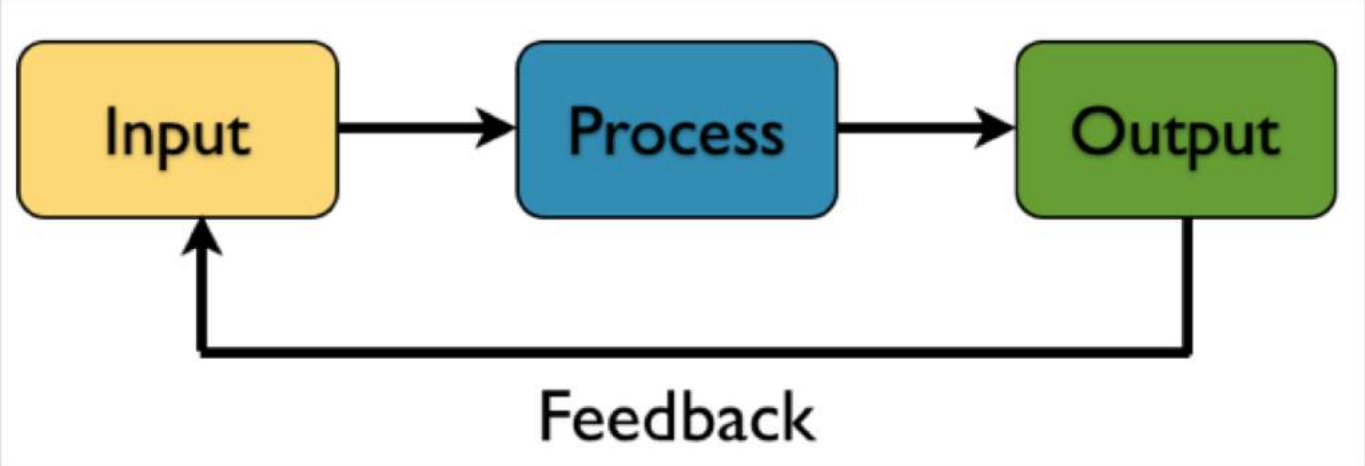
- **Knowledge –** applying managerial experience to problem solving
- **Knowledge Management (KM) –** Techniques and tools for collecting, managing and disseminating knowledge within an organisation

Types of knowledge?

- **Explicit –** knowledge that can be readily expressed and recorded within Information Systems
- **Tacit–** Mainly intangible knowledge that is typically intuitive and not recorded since it is part of the human mind.

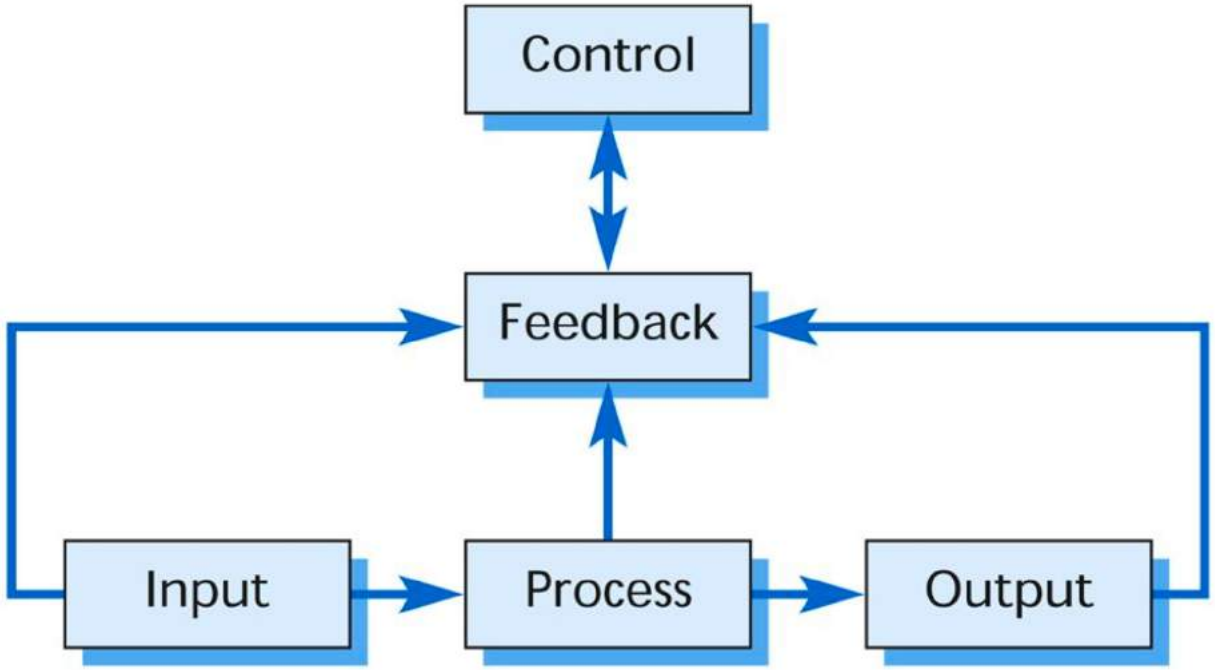
A System

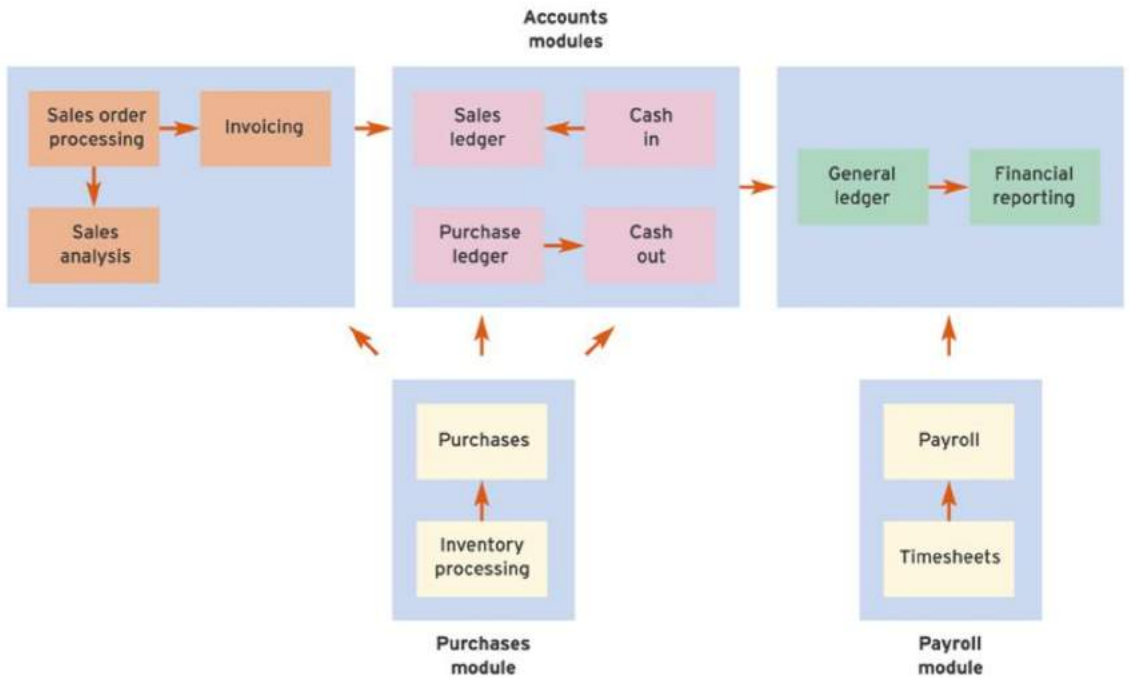
A collection of interrelated components that work together towards a collective goal.



Characteristics of Systems?

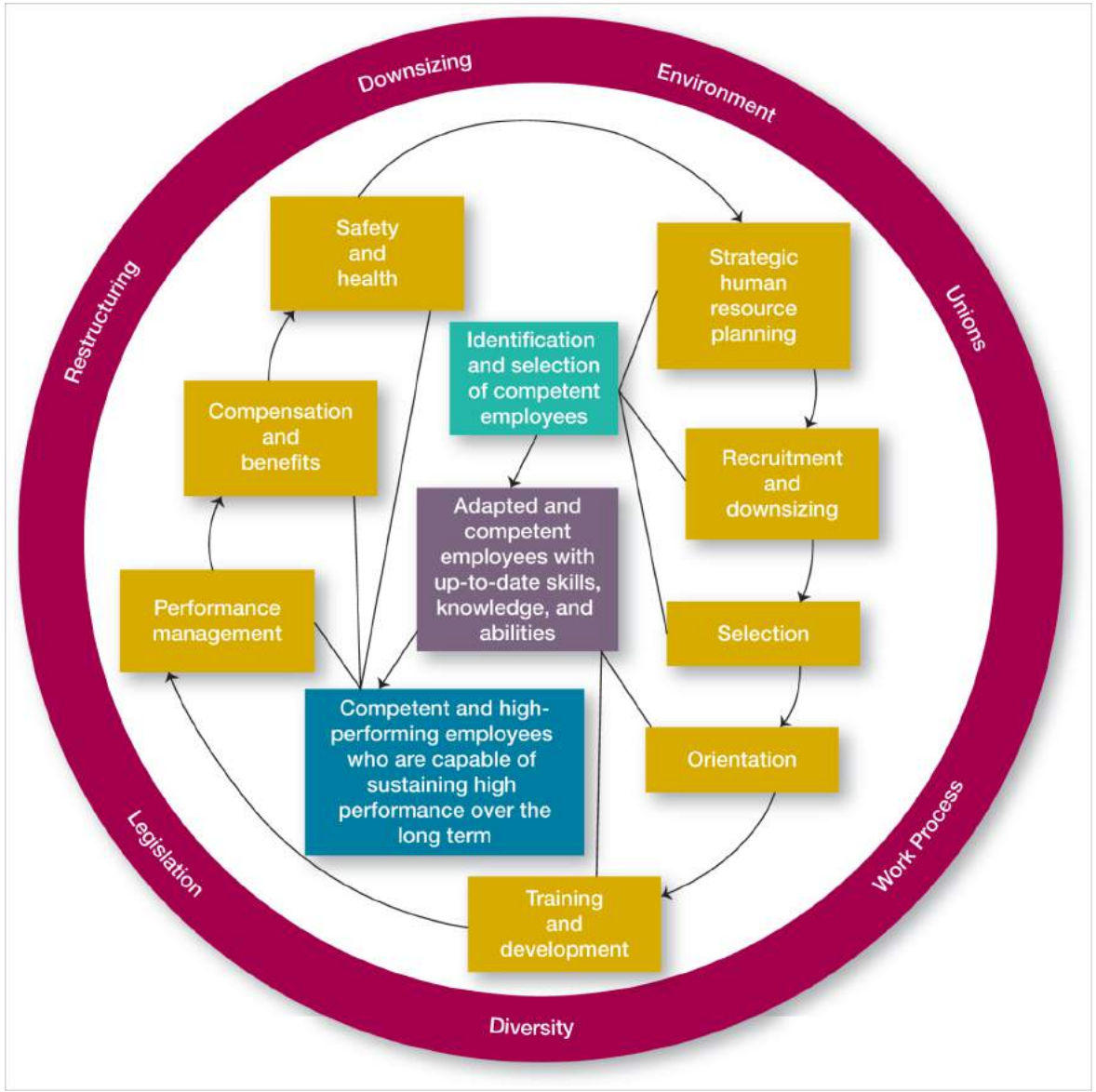
Generic model of a system





Modules of **a standard accounting system**, plus additional **purchasing**, **sales order processing** and **payroll modules**

Source: Bocij, Chaffey, et al.



A Human Resource Management system

What is a Business Information System (BIS)?

- Group of interrelated components that work collectively to carry out input, processing, output, storage and control actions in order to convert data into information products that can be used to support forecasting, planning, control, coordination, decision making and operational activities in a organisation

Main Categories of BIS (old school)

Operations Information Systems	Management Information Systems
Transaction processing systems	Decision support systems
Process control systems	Information reporting systems
Office automation systems	Executive information systems

- **1. Operations Information Systems –** are generally concerned with
  - **-process control,**
  - **-transaction processing,**
  - **-communications (internal and external) and**
  - **-productivity**
- **2. Management Information Systems** – provide feedback on organisational activities and help to support managerial decision making.

Examples of computer-based information systems

Main Categories of BIS (New school)

- **Enterprise resource Planning (ERP) software –** software system with integrated functions for all major business functions across an organisation such as:
- -Production
- -Distribution
- -Sales
- -Finance and
- -human resources management, etc.

- It is normally purchased as an off-the-shelf package which is tailored by a consultant

Introduction to BIS as Strategy

Aligning IT to Business Strategy

- IT-business strategy alignment should consider **internal and external opportunities** as well as **resource requirements**.
- Michael Porter, of the Harvard Business School, states that corporations **need to incorporate IT into their business strategy formulation rather than focus on IT's operational role**.
- Technology strategy and business strategy need to be orchestrated prior to deploying IT.

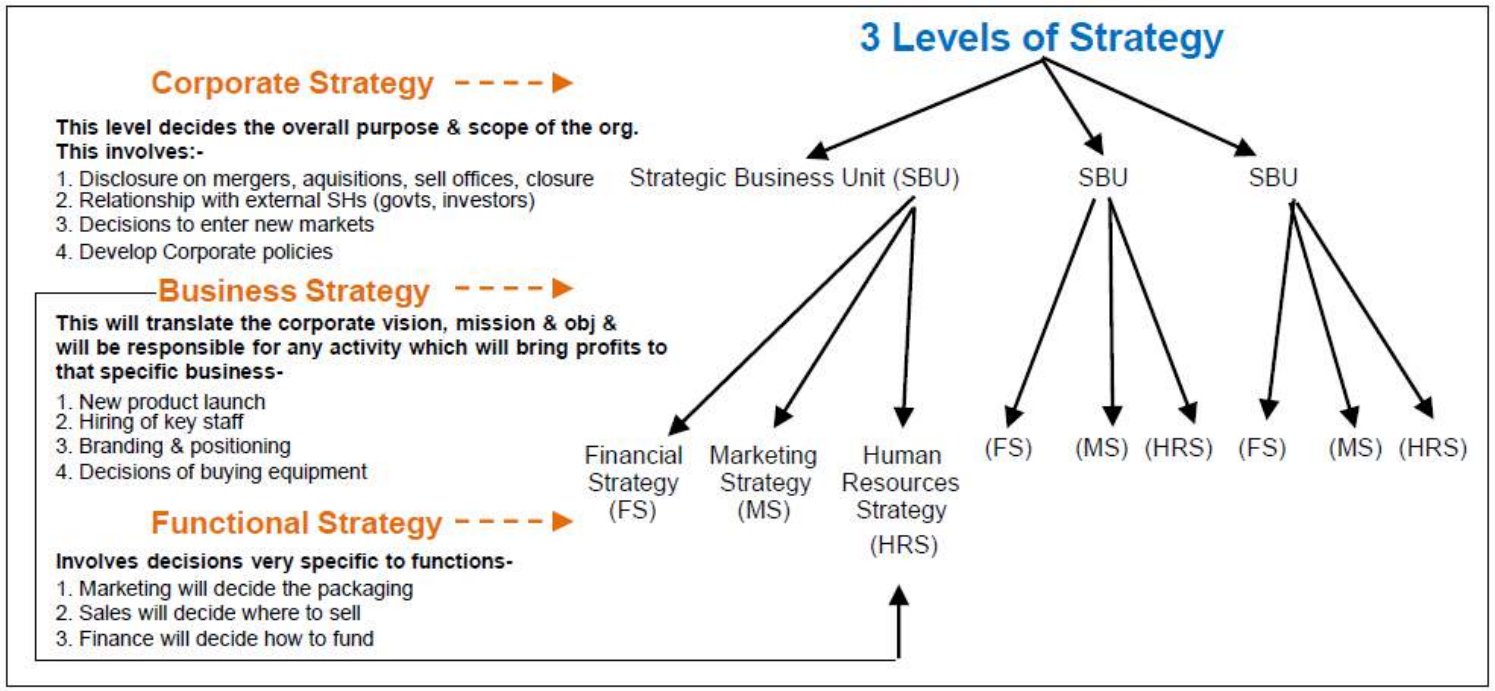
Aligning IT to Business Strategy

- IT managers need to understand the business, its processes, and the objectives of the organization.
- **Henderson and Venkatraman** present four perspectives of strategic alignment based on the driving force—business strategy or IT strategy.
- Business strategy can dictate internal IT infrastructure and drive the IT strategy, just as IT can be an enabler of business strategy. The key is their alignment.

Aligning IT to Business Strategy

1. **Alignment driven by business strategy** manifests in two forms:
   - One is **strategy execution**, where the business strategy determines organizational design, IT investments, and IT infrastructure.
   - second is **technology transformation**, where the business strategy leads the organization to explore innovative IT.

2. **Alignment driven by IT strategy** also takes two forms:
   - One **exploits the competitive potential of IT**.
   - The second **establishes a world-class service using IT**, such as Apple providing the iTunes online channel for the sale of music.



Levels of Strategy

3 Levels of Strategy – Johnson & Scholes

- Corporate Strategy – Looks at the industries in which the organisation operates. This may mean deciding to leave existing area or enter new ones. This is particularly true if the organisation has a number of divisions

- Business Strategy – looks at how the organisation (or subsidiary/division) competes. This tends to mean either:

- The division is trying to win customers by being better than rivals in some way (differentiation/focus as strategy)

OR,

- The subsidiary is trying to win customers by being cheaper than rivals (cost leadership).

3. Operational Strategy – looks at how resources are used to carry out the strategies noted above

What is Strategy?

Strategy can be defined as:

'the **direction** and **scope** of an organisation over the **long term**, which **achieves advantage** in a **changing environment** through its **configuration of resources and competencies** with the aim of **fulfilling stakeholder expectation**

Simply put, strategy is how an organisation attempts to meet its objectives

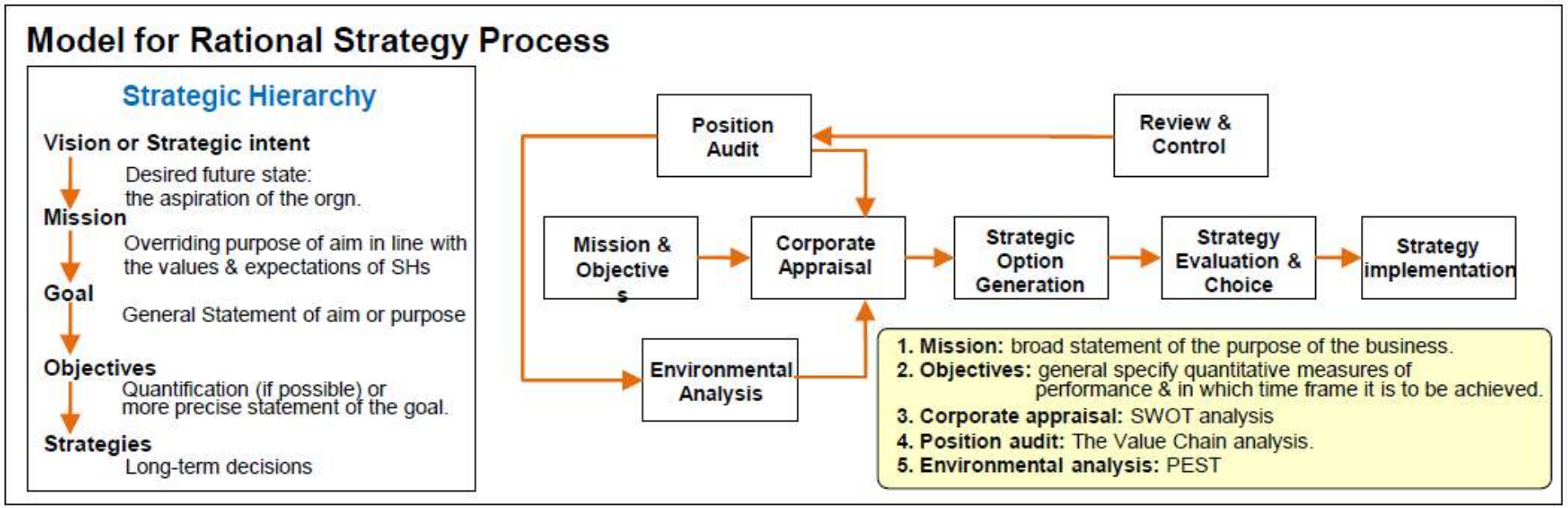
Two Approaches to Strategy

1. Strategic Planning – involves formal analysis of each of the stages in strategic position before a final strategic option is chosen

Used in public sector, justify actions, considers all aspects of biz, proactivity

2. Free-wheeling opportunism – means having no long term strategic plan, in effect, making up the strategy as the organisation goes along

Quick response, etc.



Old School Approach to Strategy?

More Approaches to Strategy?

1. **Position-based strategy** – organization that is responding to changes in the external environment (reacting to or anticipating opportunties and threats)

2. **Resource-based strategy** – organisation that concentrates on gaining an advantage because of its own strengths. These resources must be:

(1) valuable, (2) rare, (3) imperfectly imitable (tough to imitate), and (4) non-substitutable.

Three Lenses Approach to Developing Strategy?

Strategy as design – driven from the top

Strategy as experience – repeating what worked in the past

Strategy as ideas – encourage innovation

Next Module: 29.03.19

IS & Enterprise Strategy

-IT Strategy & Competitiveness

-Business Operating Models

-Case Study