Information Systems Textbook Notes

Chapter 1:

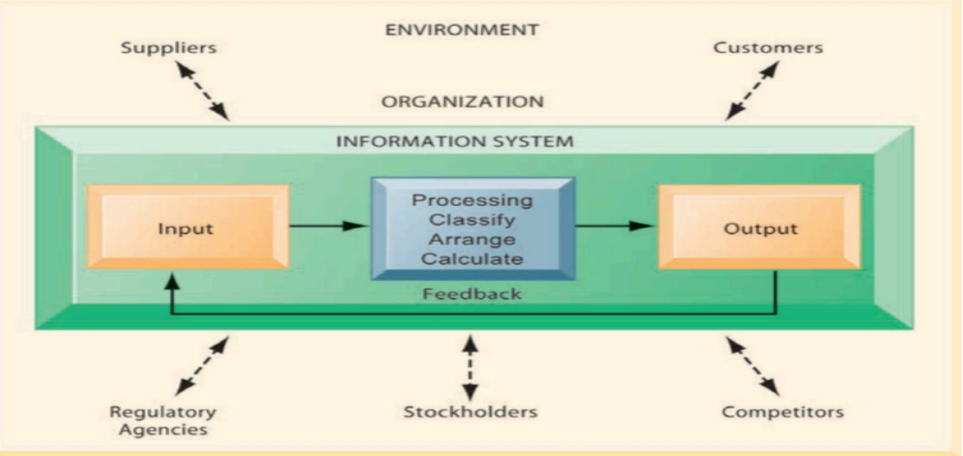
Role of info systems in business today

- Changes in technology and their impact on business
    - Cloud computing platforms
        - Flexible collection of computers on the internet begins to perform tasks. Major applications are delivered online as internet service
    - Big Data
        - Looking for insights from huge volumes of data from web traffic, email messages etc
    - Mobile digital platforms
        - Changed the way that applications and services are able to be downloaded and used
    - Online collaboration and social networking
        - Applications such as SharePoint Services and IBm Lotus are used to support blogs, project management online meetings etc.
    - Intelligence applications
        - Data analytics and interactive dashboards provide real time performance information to managers
    - Virtual meeting proliferate
        - Telepresence videoconferencing and web conferencing technology to reduce travel time/costs
    - Social business
        - Using facebook, twitter and any other social media to deepen interaction with employees, customers and suppliers
    - Telework
        - Internet, wireless laptops, smartphones and tablets make it more accessible to work away from the traditional office
    - Co-creation of business value
        - Business value shifts from products to solutions and experiences as well as from internal sources to networks of suppliers and collaboration with customers
- Operational excellence
    - Businesses continuously seek to improve the efficiency of their operations in order to achieve and maximise the profitability of the business.
- Interdependence between organisations and info systems
    - Now-a-days there is a growing interdependence between a firm's info systems and its capabilities. Changes in Strategy, rules, and business processes increasingly require changes in hardware, software, databases and telecoms. Generally speaking, what a firm would like to do is dependent on what its systems will permit it to do
- New products, services and business models
    - Info systems and new technology are an enabling tool for firms to create and develop new products/services as well as business models.
- Customer and supplier intimacy

    - The better the relationship between the firm and their customers, the customers will generally respond by purchasing more hence raising profits and revenues. Similarly if there is a positive relationship with the supplier than they are more likely to provide you with vital inputs/lower costs etc.
- Improved decision making
    - Info systems have made it possible for managers to use real time data from the market place when making decisions hence removing any bias or unfavourable/tainted data
- Competitive advantage
    - When a firm achieves operational excellence over its competition.
- Survival
    - Investing in info systems and tech because they are vital for the company to be able to function and sustain itself over periods of time

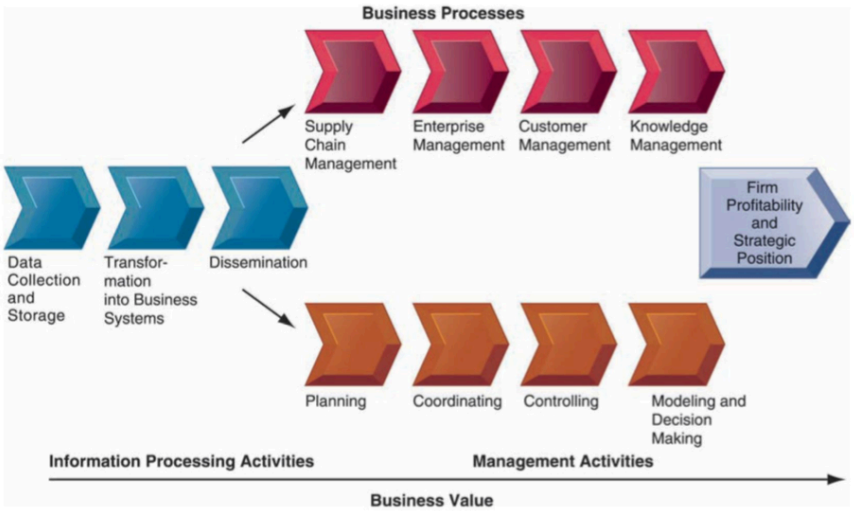
Perspectives on info systems

- What is an info system?
    - Defined technically as a set of interrelated components that collect, process, store and distribute information to support decision making and control in an organisation. In addition to this they help managers and workers analyse problems, visualise complex subjects and create new products
- Functions of an information system
    - An info system contains information about an organisation and its surrounding environment. Three basic activities; input, processing and
    - output, produce the information that the organisation needs.



    - Processing converts the raw input into a meaningful form
    - Output transfers the processed information to the people who will use it
    - Feedback is the output that is returned to appropriate members of the organisation to help evaluate or correct the input stage
- Information technology
    - Computer hardware is the physical equipment used for input, processing, and output activities
    - Computer software consists of detailed, preprogrammed instructions that control and coordinate the computer hardware components
    - Data management technology, consists of software governing the organisation of data on physical storage media

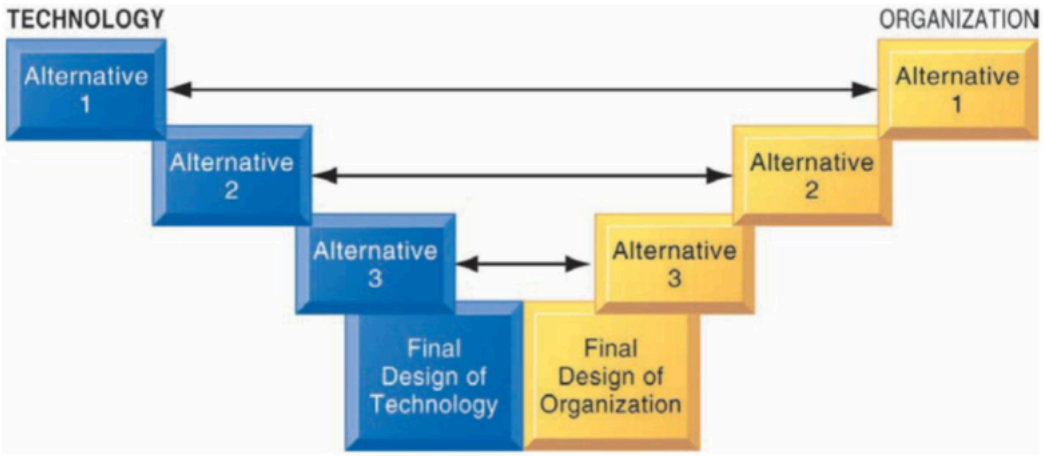
- Networking and telecommunications technology, consists of both physical devices and software that link various pieces of hardware and transfers data from one physical location to another
- Network links two or more computers to share data or resources
- Intranet is an internal corporate network based on internet technology
- Information technology infrastructure is all of the above working together.



- From a business perspective, info systems are a part of a series of value adding activities for transforming and distributing information that can be used to improve decision making thus enhancing organisational performance and ultimately increasing profitability
- Variation in returns on investment in information tech
    - Although on average, investment produces return far above other investments, there is considerable variation across firms
- Complementary assets
    - Those assets required to derive value from a primary investment. This accounts for the variation amongst firms
- Investment in organisation and management is known as organisational and management capital

Contemporary approaches to information systems

- Technical approach: Management science, Computer science, Operations research
    - Emphasises mathematically based models to study info systems, as well as the physical technology and formal capabilities of these systems.
- Behavioural approach: Psychology, Economics, Sociology
    - Focuses on how groups and organisations shape the development of systems and how systems affect individuals, groups and organisations

- Sociotechnical view

- Performance of a system is optimised when both the technology and the organisation mutually adjust to one another until a satisfactory fit is obtained