KNOWLEDGE ORGANISER

LO3—Understand Business IT Systems

3.1 Understand business IT

- Types of
- Virtualization
- Networking
- characteristics

Types of servers: A Server is a computer or computer program which manages access to a centralized resource or service in a network

File/print: The function is typically part of the operating system but may be an add-on utility that stores the **print**-image output from users' machines and feeds it to the printer one job at a time.

Application: is a component-based product that resides in the middle-tier of a **server** centric architecture. It provides middleware services for security and state maintenance, along with data access and persistence.

Database: The back-end, sometimes called a **database server**, performs tasks such as data analysis, storage, data manipulation, archiving, and other non-user specific tasks .

Web: A *web server* is a computer system that processes requests via HTTP.

mail: an application that receives incoming e-**mail** from local users (people within the same domain) and remote senders and forwards out- going e-**mail** for delivery.

Hypervisor: is a hardware virtualization technique that allows multiple guest operating systems (OS) to run on a single host system at the same time. The guest OS shares the hardware of the host computer, such that each OS appears to have its own processor, memory and other hardware resources. A hypervisor is also known as a **virtual machine manager (VMM)**

Virtualization: is a technical term for separating sections of a device to serve different purposes, e.g. if you have ever divided your hard drive into different partitions. A partition is the logical division of a hard disk drive to create, in effect, two separate hard drives.

Network virtualisation is a method of combining the available resources in a network by splitting up the available bandwidth into channels, each of which is independent from the others, and each of which can be assigned (or reassigned) to a particular server or device in real time. The idea is that virtualisation disguises the true complexity of the network by separating it into manageable parts, much like your partitioned hard drive makes it easier to manage your files.

Storage virtualisation is the pooling of physical storage from multiple network storage devices into what appears to be a single storage device that is managed from a central console. Storage virtualisation is commonly used in storage area networks (SANs).

Server virtualisation is the masking of server resources (including the number and identity of individual physical servers, processors, and operating systems) from server users. The intention is to spare the user from having to understand and manage complicated details of server resources while increasing resource sharing and utilisation and maintaining the capacity to expand later

Business Systems: A **system** is a procedure, process, method, or course of action designed to achieve a specific re- sult.

MIS: Management information system, or MIS, broadly refers to a computer-based system that provides managers with the tools to organize, evaluate and efficiently manage departments within an organization

CRM: is a model for managing a company's interactions with current and future customers. It involves using technol- ogy to organise, streamline with computer interfaces or automatic recognition, and link together sales, marketing, customer service, and technical support. Basically it does all the management of information under one package.

SOP: Standard operating procedures (SOPs) are the documented processes that a company has in place to ensure services and/or products are delivered consistently every time. When a company is growing, it is often highly depend- ent on the owner for all major decisions.

helpdesk: Definition of: help desk. help desk. A source of technical support for hardware or software. Help desks are staffed by people who can either solve the problem directly or forward the problem to someone else. Help desk soft- ware provides the means to log in problems and track them until solved

Key term	Explanation
Hybrid cloud	Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud and public cloud services with orchestration between the two platforms. By allowing workloads to move between private and public clouds as computing needs and costs change, hybrid cloud gives businesses greater flexibility and more data deployment options. http://whatis.techtarget.com/definitions/H/page/7
Hypervisor	A hypervisor is a hardware virtualization technique that allows multiple guest operating systems (OS) to run on a single host system at the same time. The guest OS shares the hardware of the host computer, such that each OS appears to have its own processor, memory and other hardware resources. A hypervisor is also known as a Virtual Machine Manager (VMM). http://www.techopedia.com/definition/4790/hypervisor

Networking: A network is defined as a group of two or more computer systems linked together.

LAN: A Local Area Network (LAN) is a network that is confined to a relatively small area. It is generally limited to a geographic area such as a writing lab, school, or building. **Advantages:** •The sharing of resources (such as expensive peripherals and applications software) •Ease of communication between users. •A network administrator to control and monitor all aspects of the network (e.g. changing passwords, monitoring internet use etc.) **Disadvantages:** •Easier spread of viruses throughout the whole network. •Printer queues developing, which can be frustrating. •Slower access to external network, such as the internet.

WAN: re used where computers or networks are situated a long distance from each other geographically . **Advantages:** •All computers can access the same servers and resources (such as printers, scanners, internet access) from anywhere within the range of the AP's. •As there is no cabling there is a safety improvement and increased flexibility (since the user no longer has to remain at their desk). •Adding new computers and devices is very easy (all that is required is a WLAN adapter) and the costs are reduced since extra cabling isn't needed. **Disadvantages:** •Security can be a big issue since anyone with a WLAN-enabled laptop can access a network if it can pick up a signal; it is therefor necessary to adopt complex data encryption techniques. •There may be a problem with interference, which can affect the signal. The data transfer rate is slower than in a wired LAN

MAN: is a computer network that interconnects users with computer resources in a geographic area or region larger than that covered by even a large local area network (LAN) but smaller than the area covered by a wide area network (WAN). **Advantages:** MAN can cover a wider area than a LAN. MAN networks are usually operated at airports, or a combinantion of several pieces at a local school. By running a large network connectedness, information can be disseminated more widely, rapidly and significantly. high speed and cab share resources quicker. Sharing the same internet connection is cost effective. University campus's normally have MAN network. **Disadvantages:** MAN will only apply if the personal computer or a terminal can compete. Set up can be expensive, it uses Copper Fibre wires which can be expensive. If operating through a phone system, connection can be slow.

Advantages of Mesh Topology:

Each connection can carry its own data load

It is robust

A fault is diagnosed easily

Provides security and privacy

A broken node won't distract the transmission of data in a mesh network.

Advantages of Star Topology:

Easy to install and wire.

No disruptions to the network when con- necting or removing devices.

Easy to detect faults and to remove parts

Advantages of Bus Topology:

Easy to connect a computer or peripheral to a line-
ar bus.

Requires less cable length than a star topology.

Advantages of Ring Topology:

Data flows in one direction, reducing the chance of packet collisions.

A network server is not needed to control network connectivity between each work-station.

Data can transfer between workstations at high speed

Disadvantages: of Mesh Topology

There are high chances of redundancy in many of
the network connections.

Overall cost of this network is way too high as compared to other network topologies.

Set-up and maintenance of this topology is very difficult.

Disadvantages of a Star Topology

Requires more cable length than a linear
topology.

If the hub, switch, or concentrator fails, nodes attached are disabled.

Expensive

Disadvantages of Bus Topology

Entire network shuts down if there is a break in
the main cable.

Terminators are required at both ends of the back- bone cable.

Difficult to identify the problem if the entire net- work shuts down.

Not meant to be used as a stand-alone solution in a large

building

Disadvantages: of Ring Topology

All data being transferred over the network must pass through each workstation on the network, which can make it slower than a star topology.

The entire network will be impacted if one workstation shuts down.

The hardware needed to connect each work- station to the network is more expensive than Ethernet cards and hubs/switches.