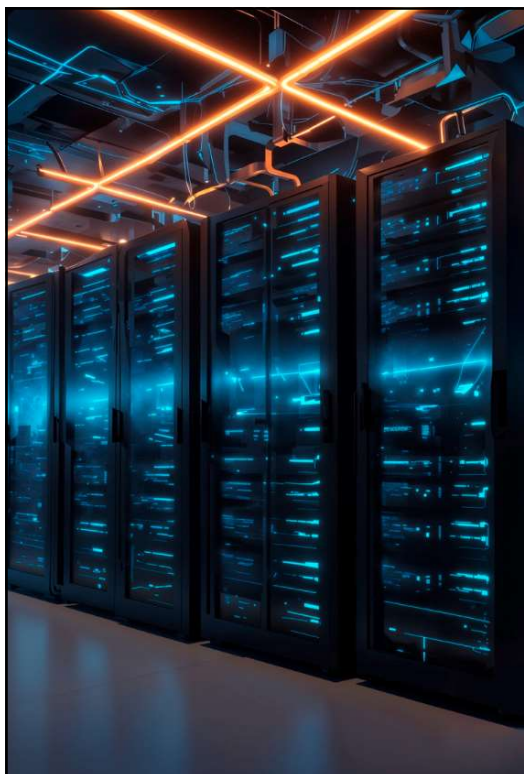
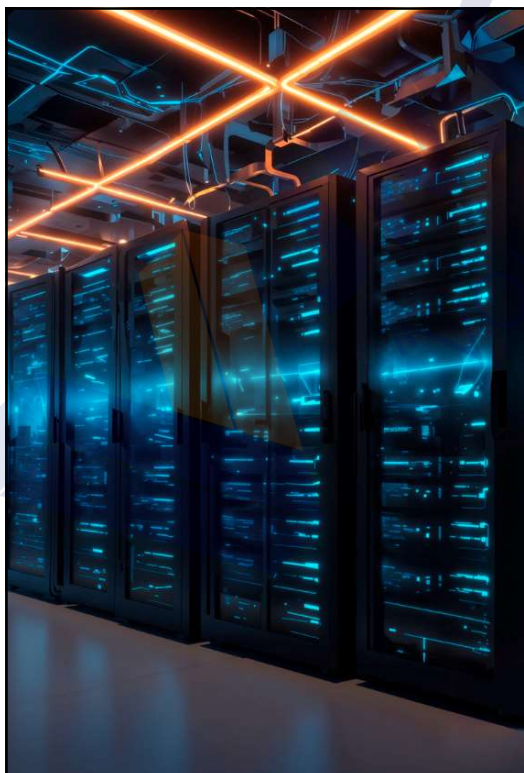




Course Name :	Association of Accounting Technicians – Level II
Subject :	Digital Transformation & Information Systems
Chapter :	02 - Information Technology Infrastructure
Presented by:	Nadinsha Bandara



- 2.1 IT Infrastructure
- 2.2 Mobile Computing Devices
- 2.3 Software Applications
- 2.4 Database Systems
- 2.5 Internet Connectivity Options in Sri Lanka
- 2.6 Choosing Internet Connectivity
- 2.7 Network Services
- 2.8 Data Centers and Cloud Computing

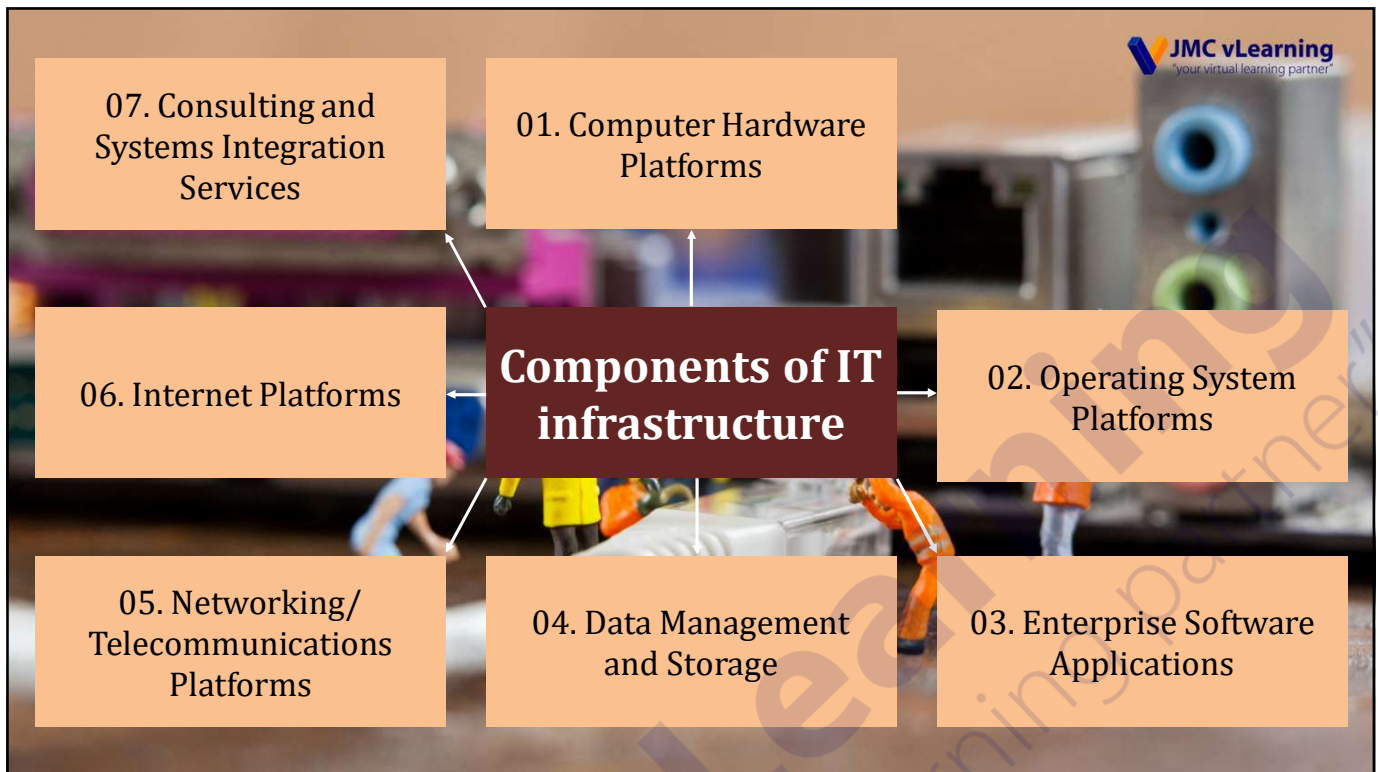
2.1 IT Infrastructure

IT Infrastructure

Information technology (IT) infrastructure can be defined as the shared technology resources that provide the platform for the company's information system applications.

What is it for?

It delivers essential IT based services to the users within an organization. IT infrastructure framework equipped with data centers, networks and other related equipment.



1. Computer Hardware Platforms

- This covers computer hardware, including servers and client devices, computers, data centers, switches, hubs and routers. Mainframes are used to reliably and securely handle huge volumes of transactions, for analyzing very large quantities of data and for handling large workloads in cloud computing centers.



2. Operating System Platforms

- This provides platform for client computers, mostly Windows based operating systems and for servers, dominated by the various forms of the Windows, UNIX or Linux based operating system.
- Operating systems are software that manage hardware resources and activities of the computer and act as an interface for other application software to run and for the users.
- UNIX and Linux are scalable, reliable, and much less expensive than mainframe operating systems. They are compatible and can also run on many different types of processors.

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3. Enterprise Software Applications

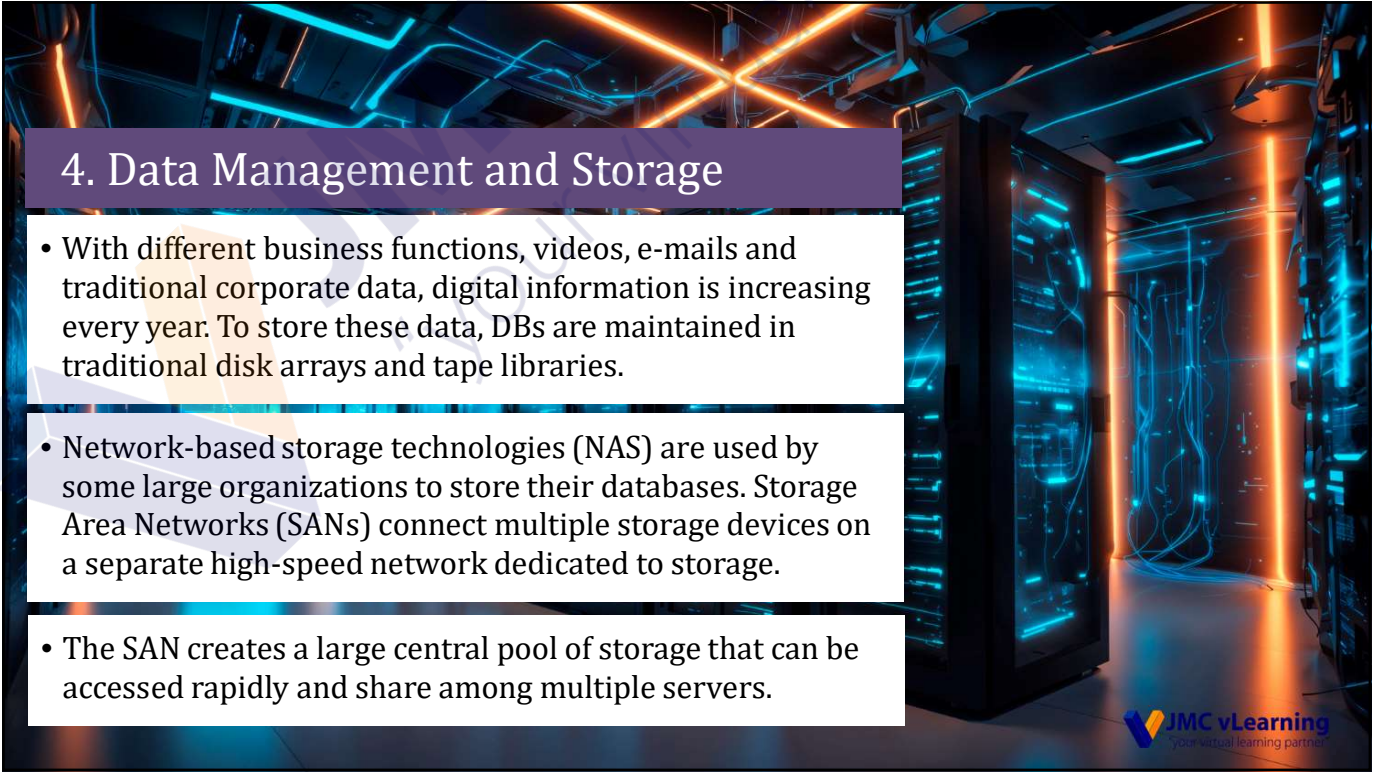
- The largest providers of enterprise application software (ERPs) are SAP and Oracle. Another component included in this category is middleware software, supplied by vendors such as IBM and Oracle, which provide integration facilities for company's existing application systems.

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4. Data Management and Storage

- Enterprise database management software (DBMS) is used for organizing and managing the company's data and information, so that they can be accessed and used efficiently.
- The leading database software providers are Oracle, Microsoft and Sybase.



4. Data Management and Storage

- With different business functions, videos, e-mails and traditional corporate data, digital information is increasing every year. To store these data, DBs are maintained in traditional disk arrays and tape libraries.
- Network-based storage technologies (NAS) are used by some large organizations to store their databases. Storage Area Networks (SANs) connect multiple storage devices on a separate high-speed network dedicated to storage.
- The SAN creates a large central pool of storage that can be accessed rapidly and shared among multiple servers.

5. Networking/ Telecommunications Platforms

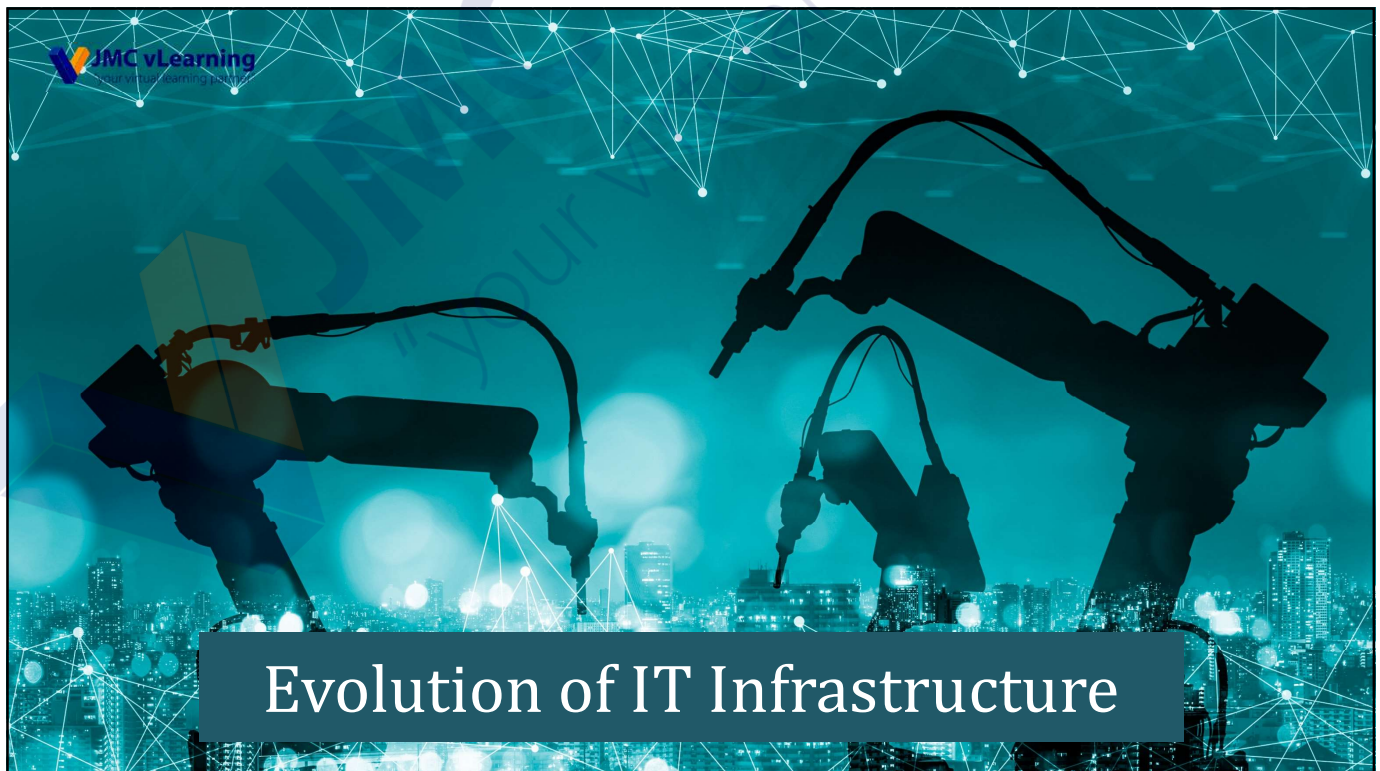
- Provide backbone for connecting nodes with in the business network as well as the outside world.
- Most local area networks, as well as wide area enterprise networks, use the TCP/IP protocol suite as a standard.
- Telecommunications platforms are typically provided by telecommunications/telephone services companies that offer voice, video, wide area networking, wireless services and internet access connectivity to employees, customers and suppliers.

6. Internet Platforms

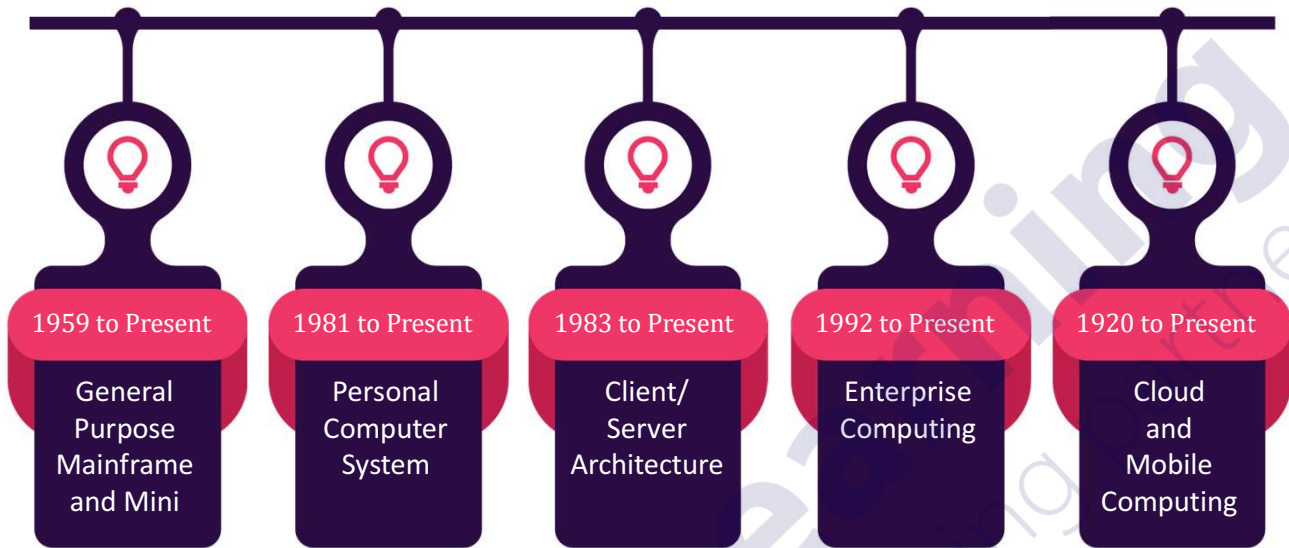
- They include hardware, software and management services to support company's websites and other web related facilities such as, web hosting services, routers and cabling or wireless equipment.

7. Consulting and Systems Integration Services

- Implementing a new infrastructure requires substantial amount of changes in existing business processes and procedures, training and education and software integration.
- Software integration is a process which ensures the new infrastructure works smoothly with the organization's existing older systems (called legacy systems) and confirm that new elements are compatible.



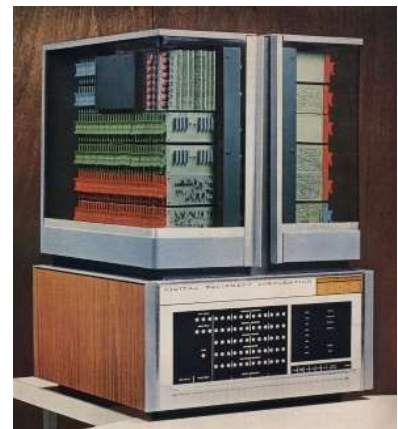
Evolution of IT Infrastructure



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General Purpose Mainframe and Mini Computers (1959 to Present)

- In 1965, IBM Introduced mainframe series 360 which was the first commercial computer with powerful operating system.
- This pattern began to change with the introduction of mini computers produced in later 1965 by company called DEC.
- DEC minicomputers offered powerful machines at comparatively lower prices than IBM Mainframes.



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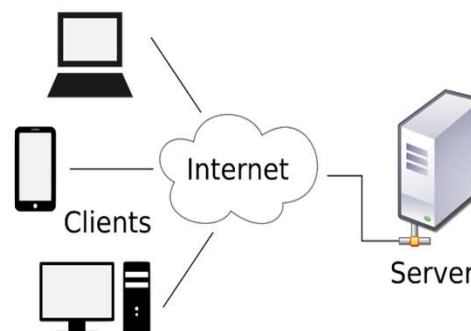
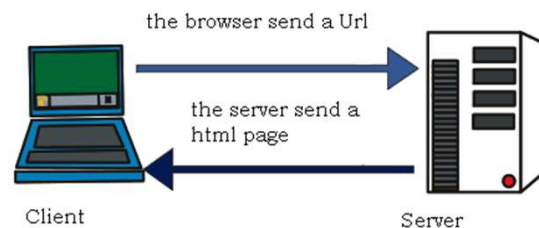
Personal Computer System (1981 to Present)

- The first PC's appear in 1981 with PC's manufactured by IBM Corporation.
- This was widely used by business. In the beginning this was completely text-based command language.
- Later it was provided with the Windows OS. The Wintel PC Computer (Windows OS with Intel Processor) became the standard personal computer.
- These were standalone for the longest time till 1990 where it was made possible to connect into networks.

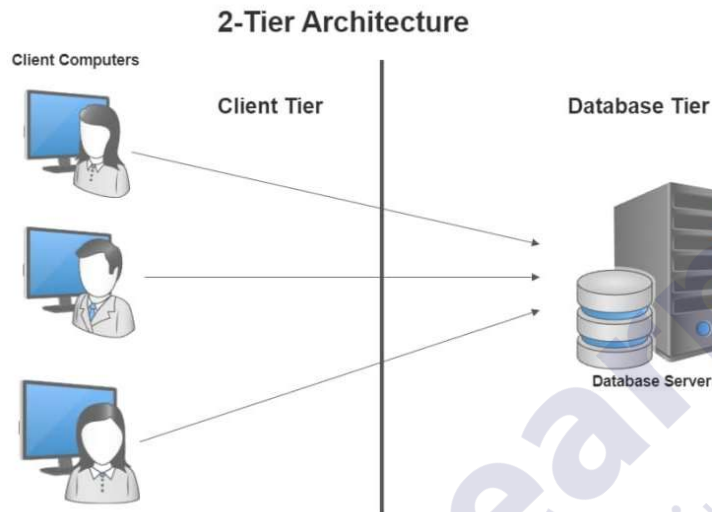


Client/Server Architecture (1983 to Present)

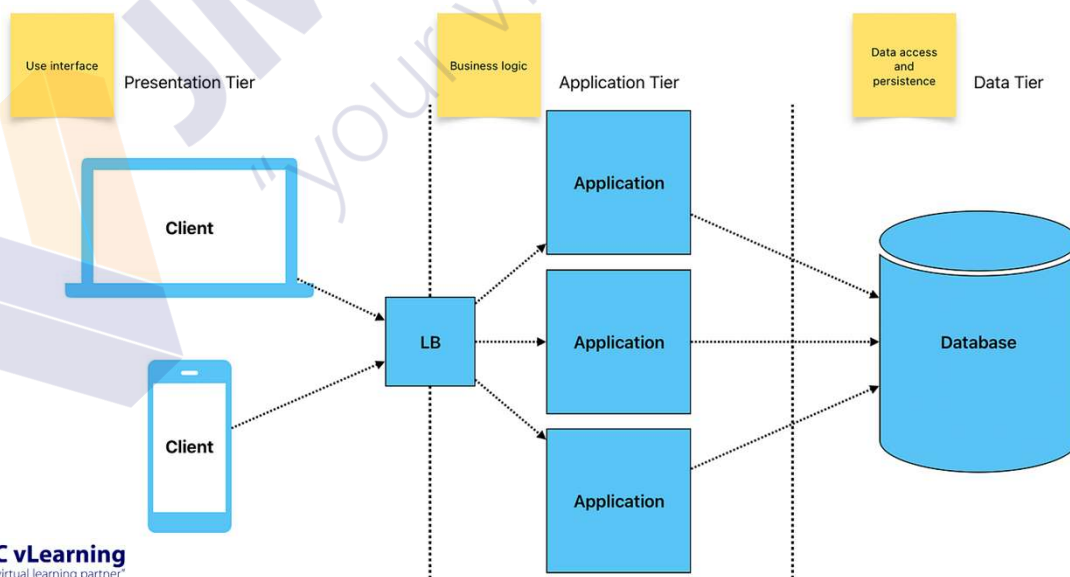
- Clients are connected to network where powerful server computers.
- The application processing is divided into two types of machine;
 1. Client: Machine used by end user for data inputs, to the application.
 2. Server: Refers to both the software application and physical computer on which the network software runs.



Client/Server Architecture : Two Tier



Client/Server Architecture : Multi Tier



- In early 90's organizations adhered to networking standards and used software tools that could integrate different networks and applications spread across the company into an enterprise wide infrastructure.
- After the emergence of internet organization started using TCP/IP standard to connect isolated network.



- With the availability of higher network bandwidths and capabilities of the internet has moved to cloud computing architecture.
- Cloud Computing Refers to a model of computing that provides

