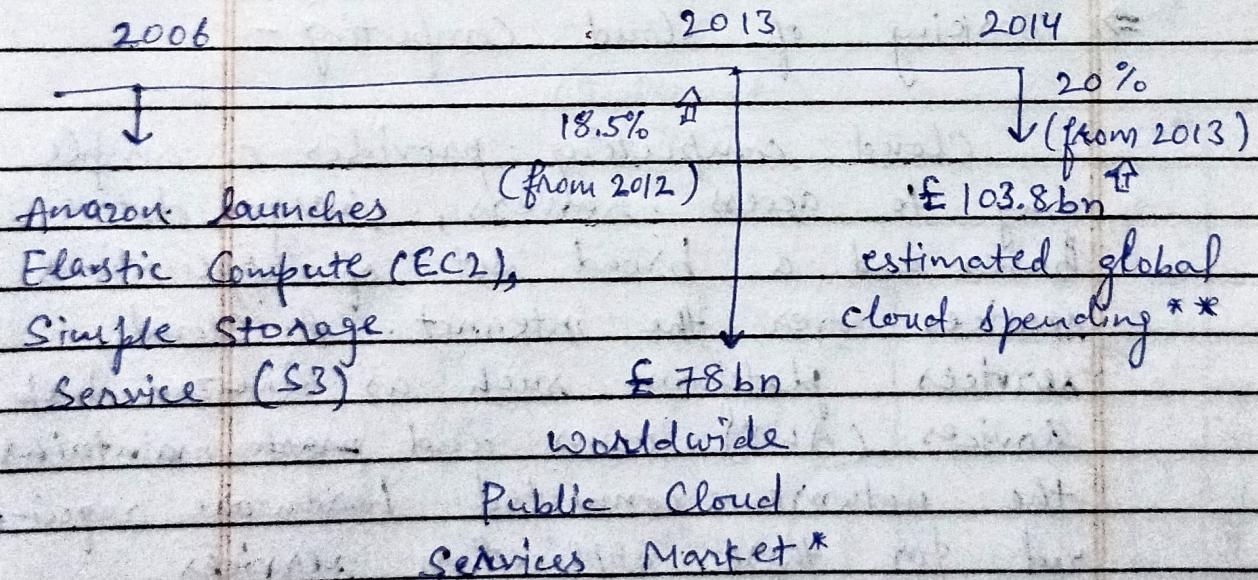
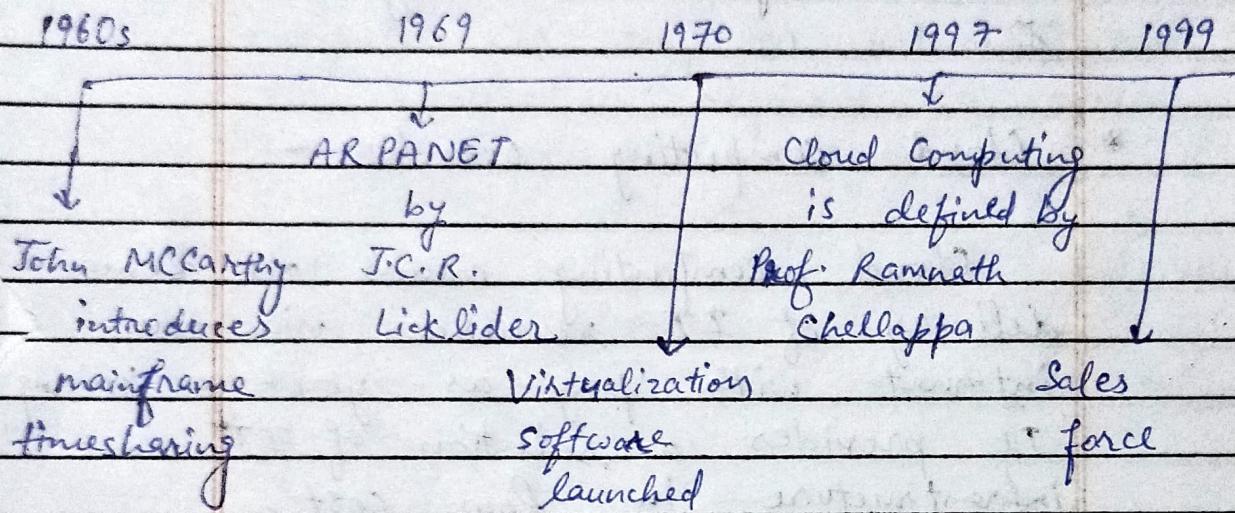


Unit - 2

History and Evolution of Cloud Computing

* The History of the Cloud



* The Evolution To Cloud Computing :

The basic concepts behind cloud computing have been part of the IT industry all along. Dust off an old mainframe concepts book and you will be surprised by the similarities to the computer industry as well.

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* Cloud Computing overview -

Cloud computing means on demand delivery of IT resources via the internet with pay-as-you-go pricing. It provides a selection of IT infrastructure in low cost.

⇒ Working of Cloud Computing -

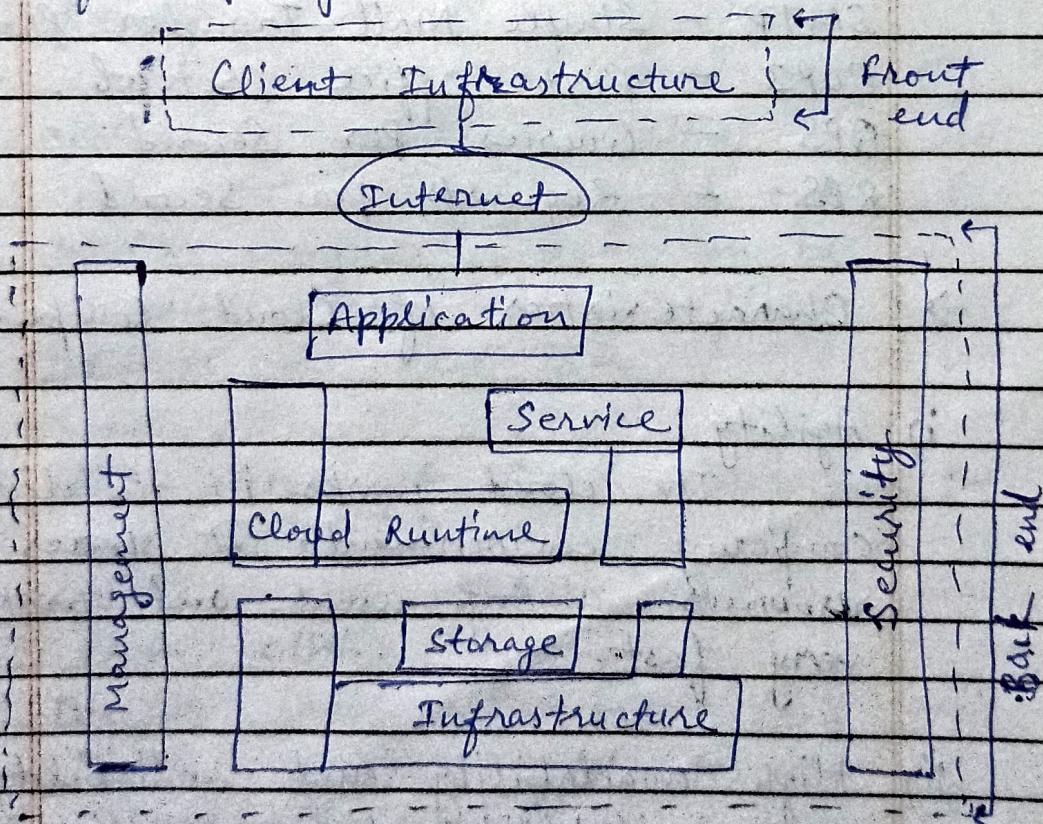
Cloud computing provides a simple way to access servers, storage, databases and a broad set of applications services over the internet. A cloud services platform such as Amazon Web Services (AWS) owns and maintains the network-connected hardware required for these application services, while you provision and use what you need via a web application.

→ Cloud Computing Architecture -

We can divide it into two sections:

- i) Front end
- ii) Back end

- i) The front end includes the client's computer (or computer network) and the application required for accessing the cloud computing system.
- ii) The back end of the system are the various computers, servers and data storage systems that create the "cloud" of computing services.



⇒ Affect of Cloud on Human Lives -

- Application became cheaper, easier to find and use.
- New application became easier to develop & create based on a standard modular front.
- Cloud will provide new social services by connecting through social networks.
- Lesser the usage of proprietary operating system in our daily computing.
- Connection to the cloud can be done whenever we want.
- Full forms -

SMTP - Simple Mail Transfer Protocol

POP3 - Post Office Protocol.

QPS - Queries per Second

RPS - Requests per Second

⇒ Characteristics of Cloud Computing :-

i) Agility :

The cloud works in the distributed computing environment. It shares resources among users and works very fast.

ii) High availability and reliability :

Availability of servers is high

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and more reliable, because chances of infrastructure failure are minimal.

iii) High Scalability:

Means "on-demand" provisioning of cloud computing, multiple users and applications can work.

iv) Device and Location Independence:

Cloud Computing enables the users to access systems using a web browser regardless of their location or what device they use e.g. PC, mobile phone etc.

v) Maintenance:

Maintenance of cloud computing applications is easier, since they do not need to be installed on each user's computer and can be accessed from different places. So, it reduces the cost also.

⇒ Applications of Cloud Computing:-

- Online file storage
- Photo editing software
- Digital video software
- Twitter - related applications
- Creating image - album

- Web applications for antivirus
- Word processing application
- Spreadsheets
- Presentation software.
- Finding a way on the map.
- E-commerce software
- Miscellaneous applications.

⇒ Benefits of Cloud Computing -

1. Managed service contracts replaced with cloud service providers at less cost, less risk to consuming organization.
2. Organizations pay for the usage of cloud which is carefully monitored and measured.
3. Centralized compute resources, within the cloud provider, are managed by fewer personnel with heavy use of automation and consistent processes resulting in lower cost to the consumers.
4. Consuming organizations do not need a sophisticated IT staff which is expensive, hard to find and keep - internal technical talent / personnel will either focus on mission critical, core business services or leave / transition to work for a cloud provider. This

improve quality, maintainability, security and reduce cost to the consumer of cloud.

→ Challenges of cloud computing :-

- Not enough proven cloud providers at this time to truly give customers a wide selection of providers to choose from.
- Organizations have significant legacy computing resources (servers, data centers, and IT personnel) that will need to be transitioned or eliminated in order to achieve true cost savings and flexibility provided by cloud providers / services.
- Mission critical applications that are core to the business or the consuming organization must be transitioned to the cloud, this is neither quick nor easy and will take some time. Businesses need to evaluate whether their custom/ legacy application is legacy truly needed and worth the re-investment, or if an alternative already cloud-enabled service is a better fit in the long-term.

- Procurement and budgeting for cloud services is a challenge to some commercial and government organizations. Existing procurement policies may need to be adapted.
- Existing security, operations and other processes within consuming organization need to adapt to this new cloud computing model.