CLOUD COMPUTING AND ITS IMPACTS TO THE SOCIETY

Cloud computing is a technology that allows individuals and organizations to access and use computing resources (like servers, storage, databases, networking, software, analytics, and more) over the internet, which is often referred to as "the cloud." This model enables users to avoid the upfront cost and complexity of owning and maintaining their own IT infrastructure, and instead, they can simply rent or subscribe to the computing resources they need from a cloud service provider.

Key Characteristics of Cloud Computing:

-On-demand self-service: Users can provision computing resources without requiring human interaction with the service provider.

- Broad network access: Services are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops, and PDAs).

- Resource pooling: The provider's computing resources are pooled to serve multiple consumers, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand.

- Rapid elasticity: Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand.

- Measured service: Cloud systems automatically control and optimize resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (e.g., storage, processing, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and consumer of the utilized service.

Service Models of Cloud Computing:

- Infrastructure as a Service (IaaS): Provides virtualized computing resources over the internet. Examples include Amazon Web Services (AWS), Microsoft Azure, and Google Compute Engine.

- Platform as a Service (PaaS): Offers hardware and software tools over the internet, typically for application development. Examples include Google App Engine and Microsoft Azure App Services.

- Software as a Service (SaaS): Delivers software applications over the internet, on a subscription basis. Examples include Google Workspace, Salesforce, and Microsoft Office 365.

Deployment Models of Cloud Computing:

- Public Cloud: Services are provided over the public internet and available to anyone willing to pay for them. The cloud resources (like servers and storage) are owned and operated by a third-party cloud service provider.

- Private Cloud: The cloud infrastructure is exclusively used by a single organization. It can be managed internally or by a third party and hosted either internally or externally.

- Hybrid Cloud: Combines public and private clouds, allowing data and applications to be shared between them. This model provides businesses with more flexibility and more deployment options.

Conclusion:

Cloud computing has transformed the way businesses and individuals use IT resources, offering scalability, flexibility, and cost-efficiency that traditional computing methods can't match.