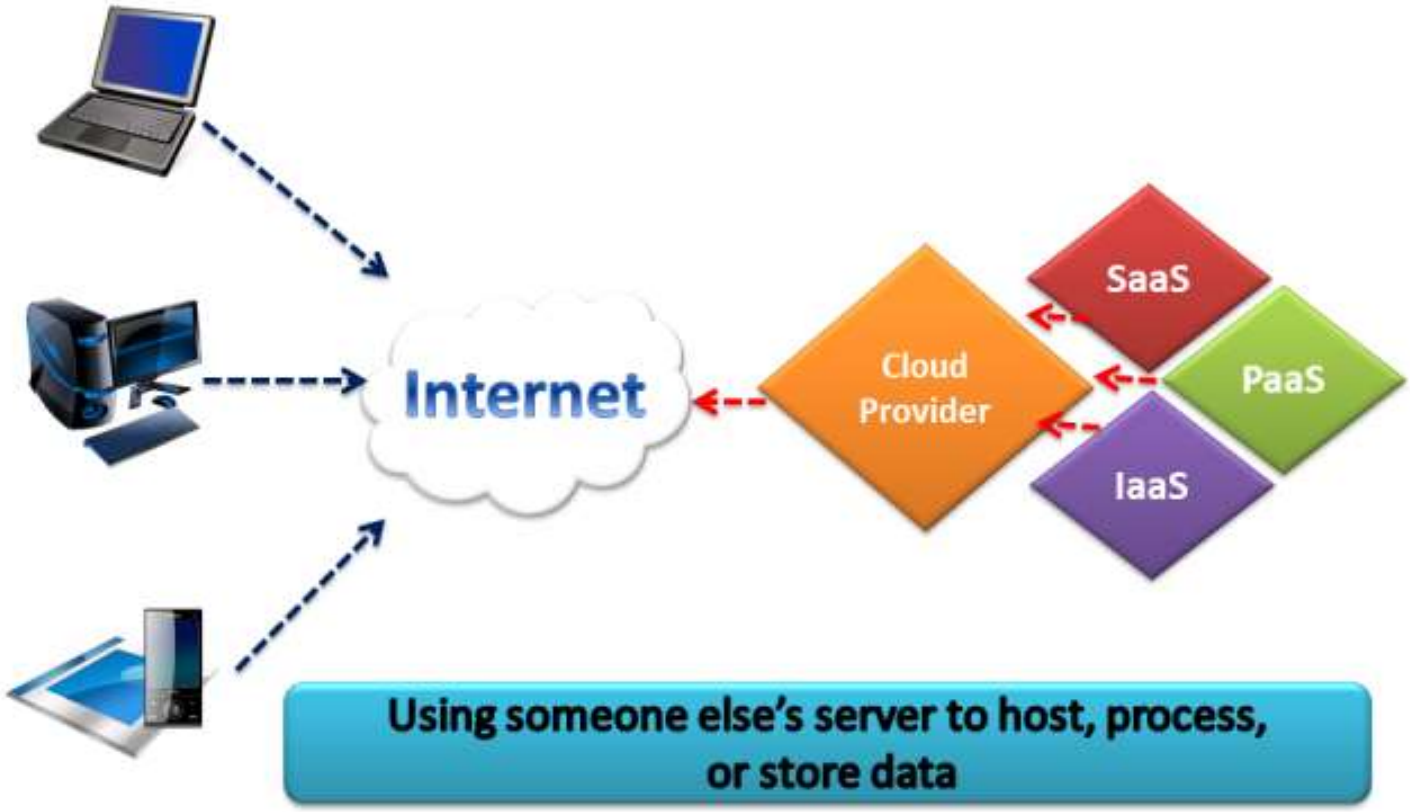
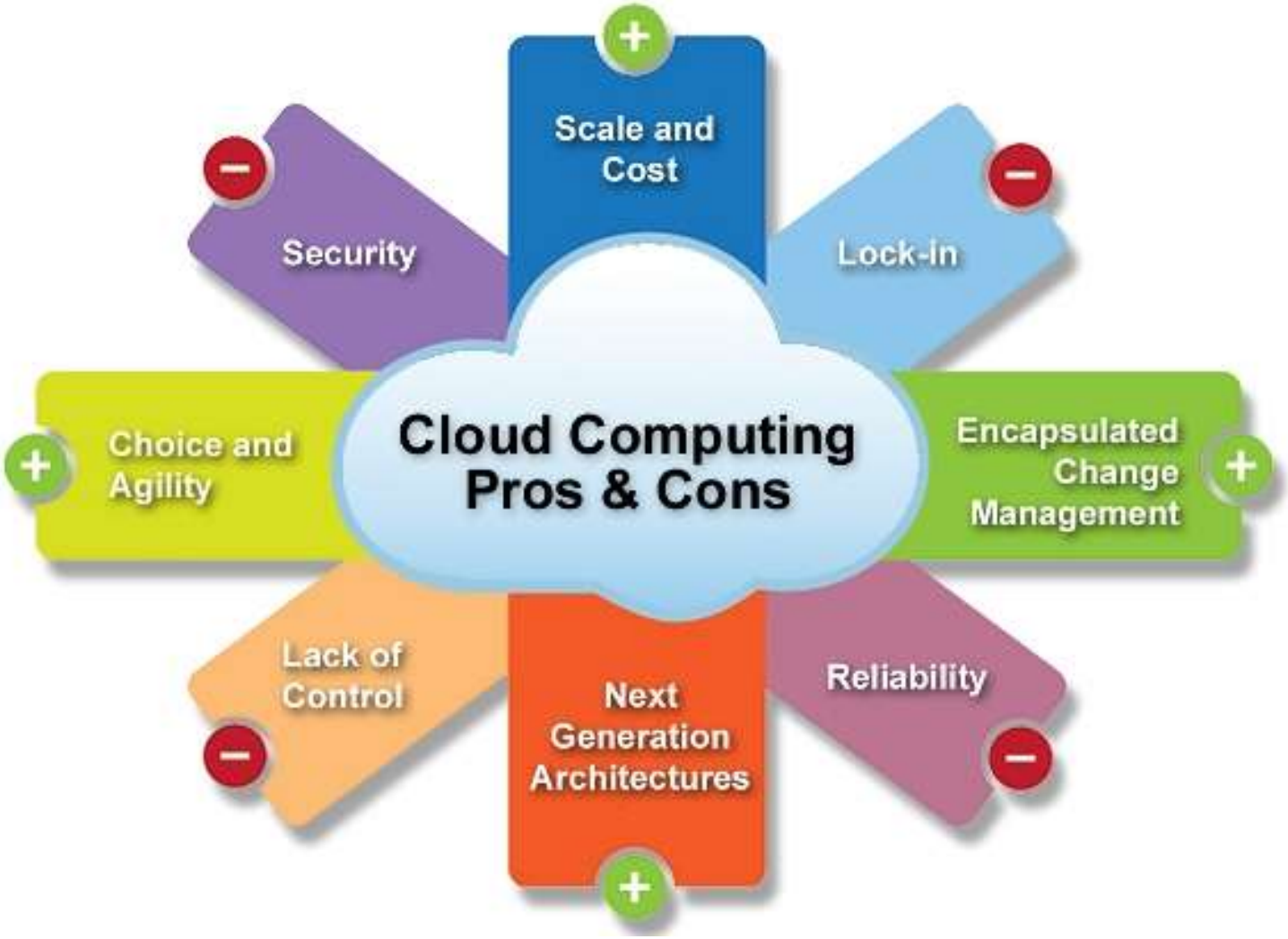
Cloud Computing

What is Cloud?

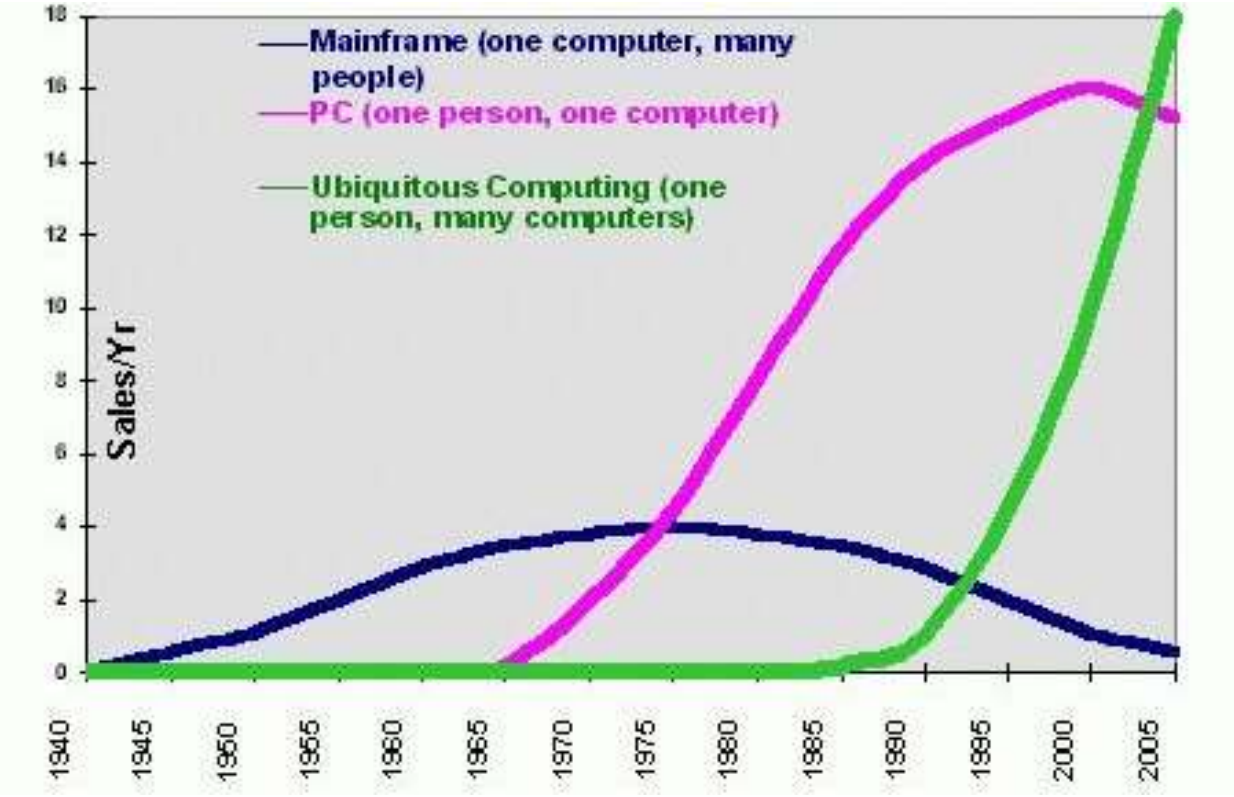


Pros and Cons

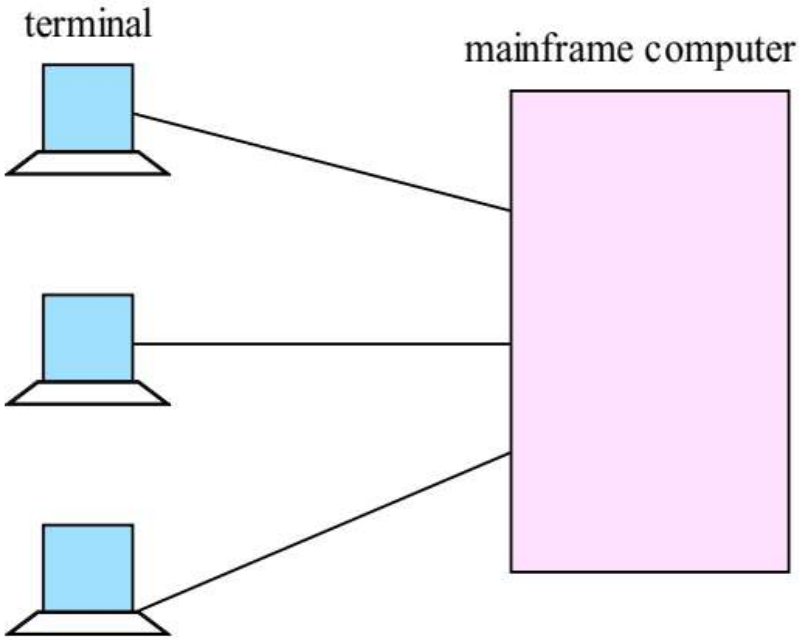


Trends in Computing

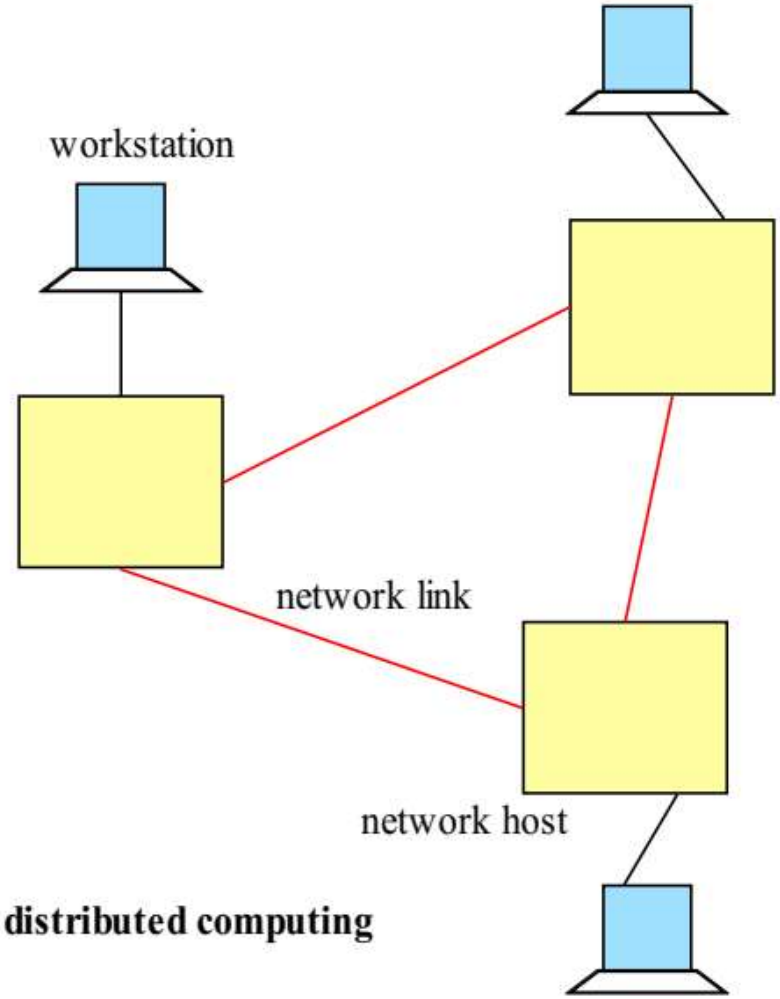
- Centralized
- Distributed Computing
- Cloud Computing



Centralized vs. Distributed Computing



centralized computing



distributed computing

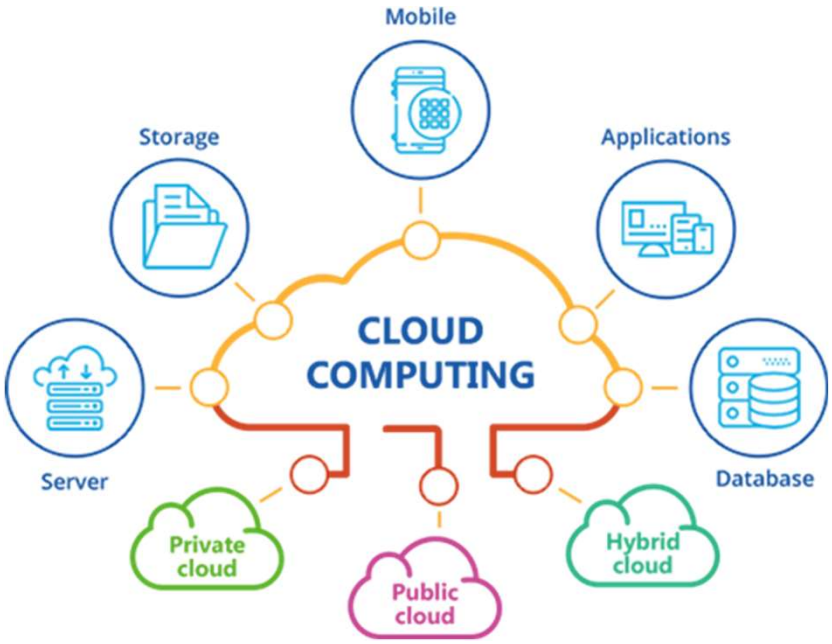
Centralized vs. Distributed Computing

- In a centralized system, there is a
  - Single component
  - Single point of control
  - Single point of failure

- A distributed system is
  - A collection of independent computers, interconnected via a network,
  - Capable of collaborating on a tasks
  - Examples:
    - client-server
    - Peer to Peer

Cloud Computing

- Model for enabling convenient and on-demand network access to a shared pool of computing resources e.g.
  - networks,
  - servers,
  - storage,
  - applications
  - Services



- These resources can be rapidly provisioned and released with minimal management effort or service provider interaction

Essential Characteristics

- On-demand self-service
  - A consumer can provision computing capabilities, such as server and network storage, as needed automatically without requiring human interaction.
- Broad network access
  - Capabilities are available over the network
- Resource pooling
  - The provider’s computing resources are pooled to serve multiple consumers
- Measured Service
  - Resource usage can be monitored and controlled providing transparency.
  - Used for billing
- Rapid elasticity
  - Scale rapidly outward and inward

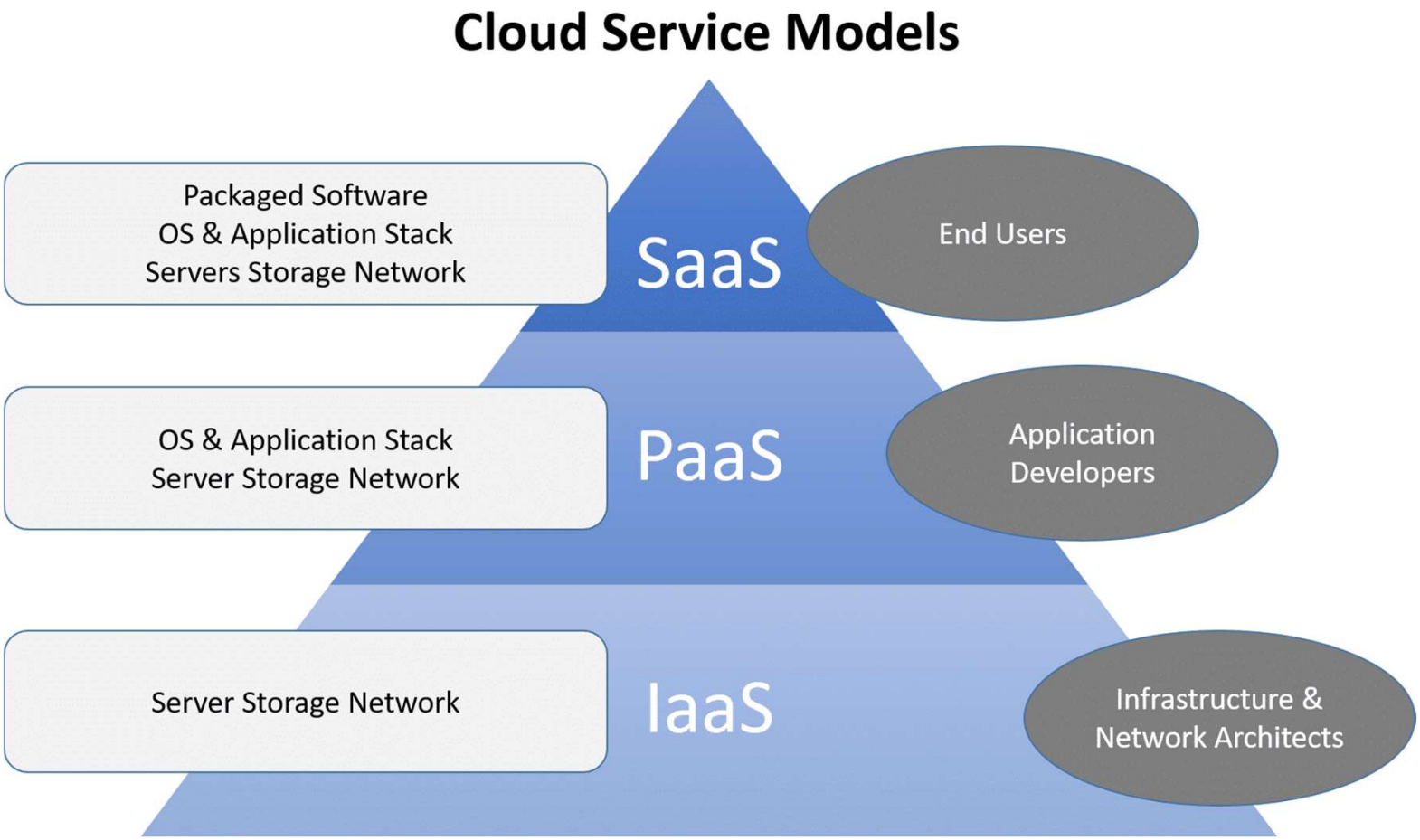
Common Characteristics

- Massive Scale
- Resilient Computing
- Geographic Distribution
- Virtualization
- Service Orientation
- Low Cost Software
- Advanced Security

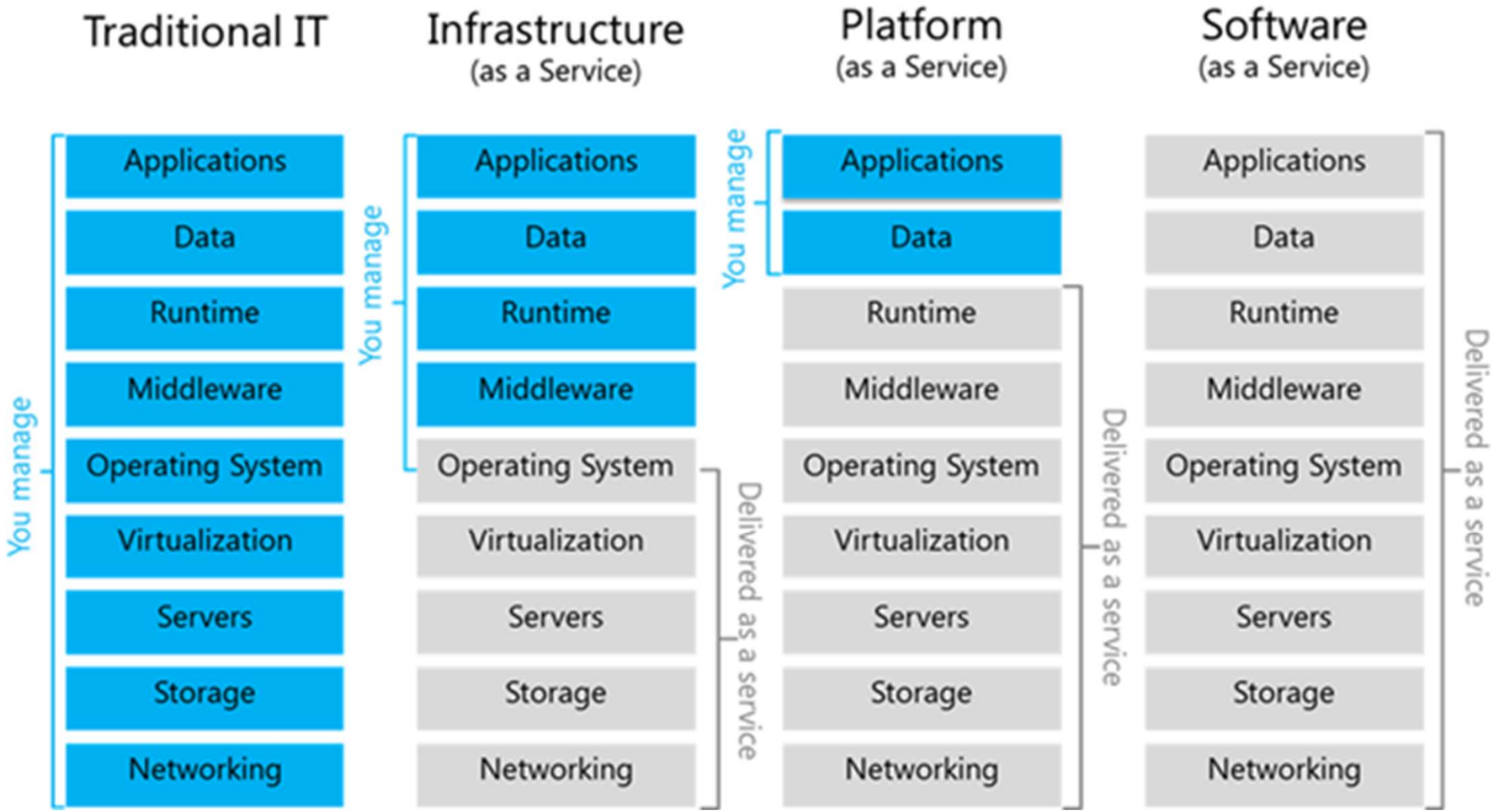
Cloud Services Models

- Software as a Service (SaaS)
  - e.g: Google Spread Sheet
- Cloud Infrastructure as a Service (IaaS)
  - DigitalOcean
  - Azure
  - AWS
- Platform as a Service (PaaS)
  - The consumer does not manage or control the underlying cloud infrastructure:
    - network, servers,
    - operating systems, or storage
  - Has control over the deployed applications and
  - Configuration settings

Cloud Services Models

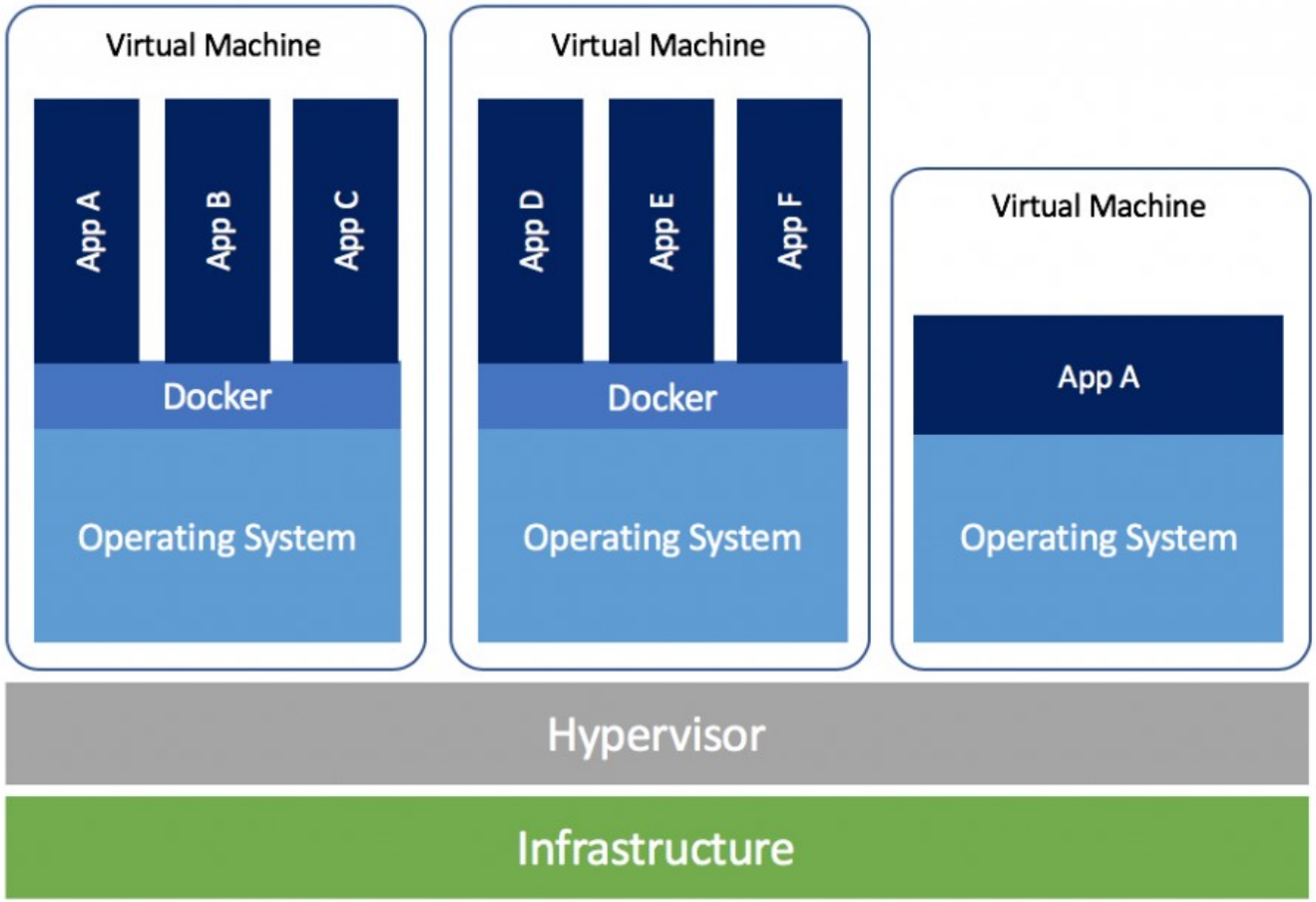


Cloud Services Models



Virtual Machines

- VM technology allows multiple virtual machines to run on a single physical machine



Top cloud applications

- Mail and Messaging
- Archiving
- Backup
- Storage
- Security
- Virtual Servers
- CRM (Customer Relationship Management)
- Collaboration across enterprises

Thanks