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What is Cloud Computing?

Gartner

“Cloud computing is a style of computing where massively scalable IT-related capabilities are provided as a service across the Internet to multiple external customers”

FORRESTER

“Cloud computing: A pool of abstracted, highly scalable, and managed infrastructure capable of hosting end-customer applications and billed by consumption”



WIKIPEDIA
The Free Encyclopedia

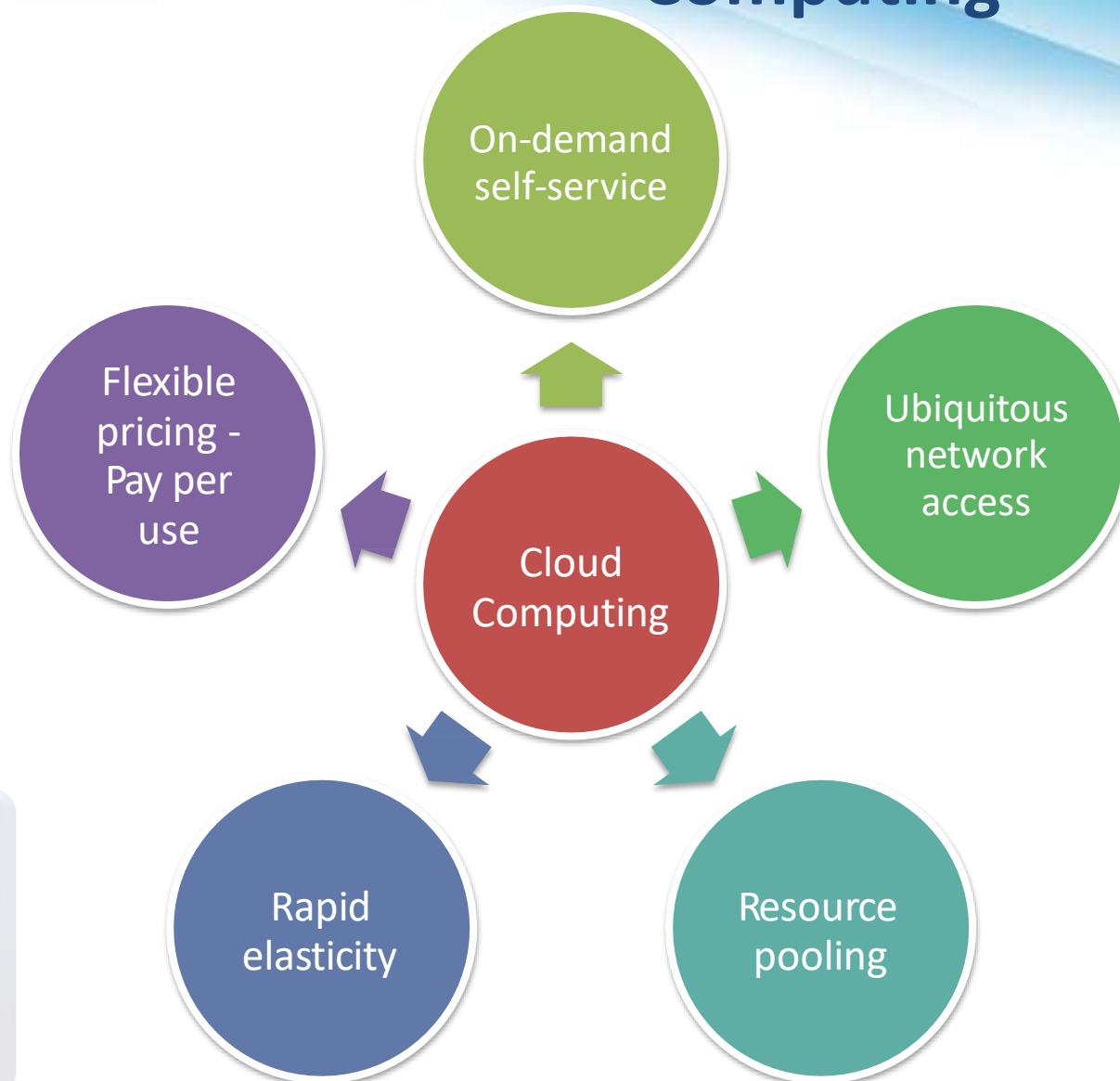
“Cloud computing is Web-based processing, whereby shared resources, software, and information are provided to computers and other devices (such as smart phones) on demand over the Internet.”

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Essential characteristics of Cloud Computing



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Common characteristics of Cloud Computing

- On-demand self-service
- Ubiquitous network access
- Resource pooling (advanced virtualization)
- Rapid elasticity
- Flexible pricing - Pay per use



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Common characteristics of Cloud Computing

- On-demand self-service
- **Ubiquitous network access**
- Resource pooling (advanced virtualization)
- Rapid elasticity
- Flexible pricing - Pay per use

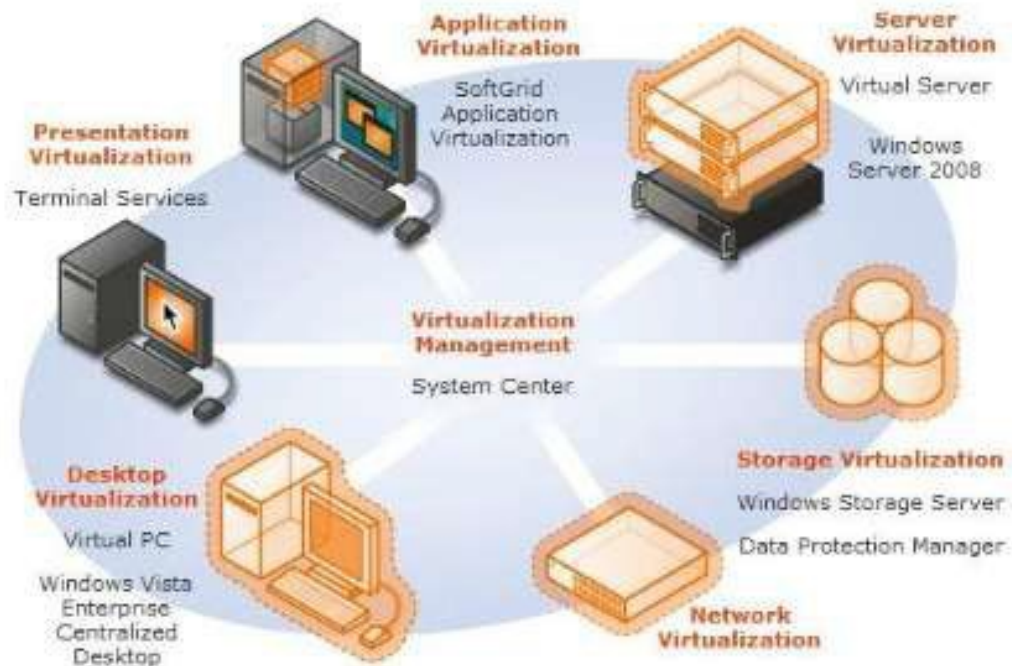


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Common characteristics of Cloud Computing

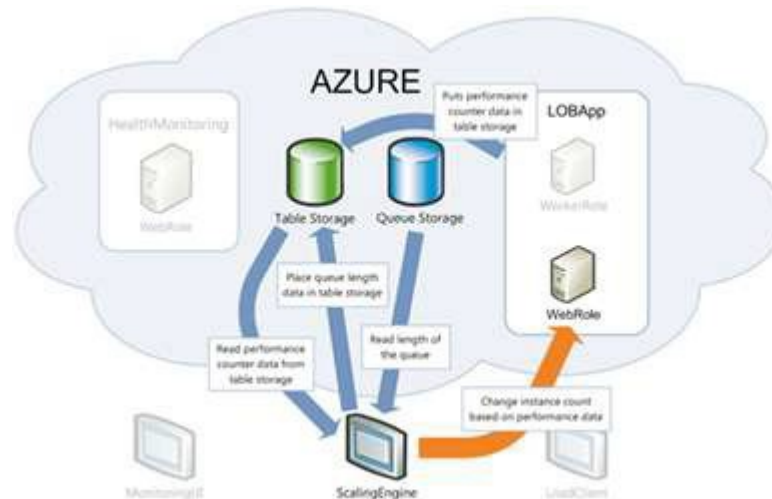
- On-demand self-service
- Ubiquitous network access
- **Resource pooling (advanced virtualization)**
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Common characteristics of Cloud Computing

- On-demand self-service
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Common characteristics of Cloud Computing

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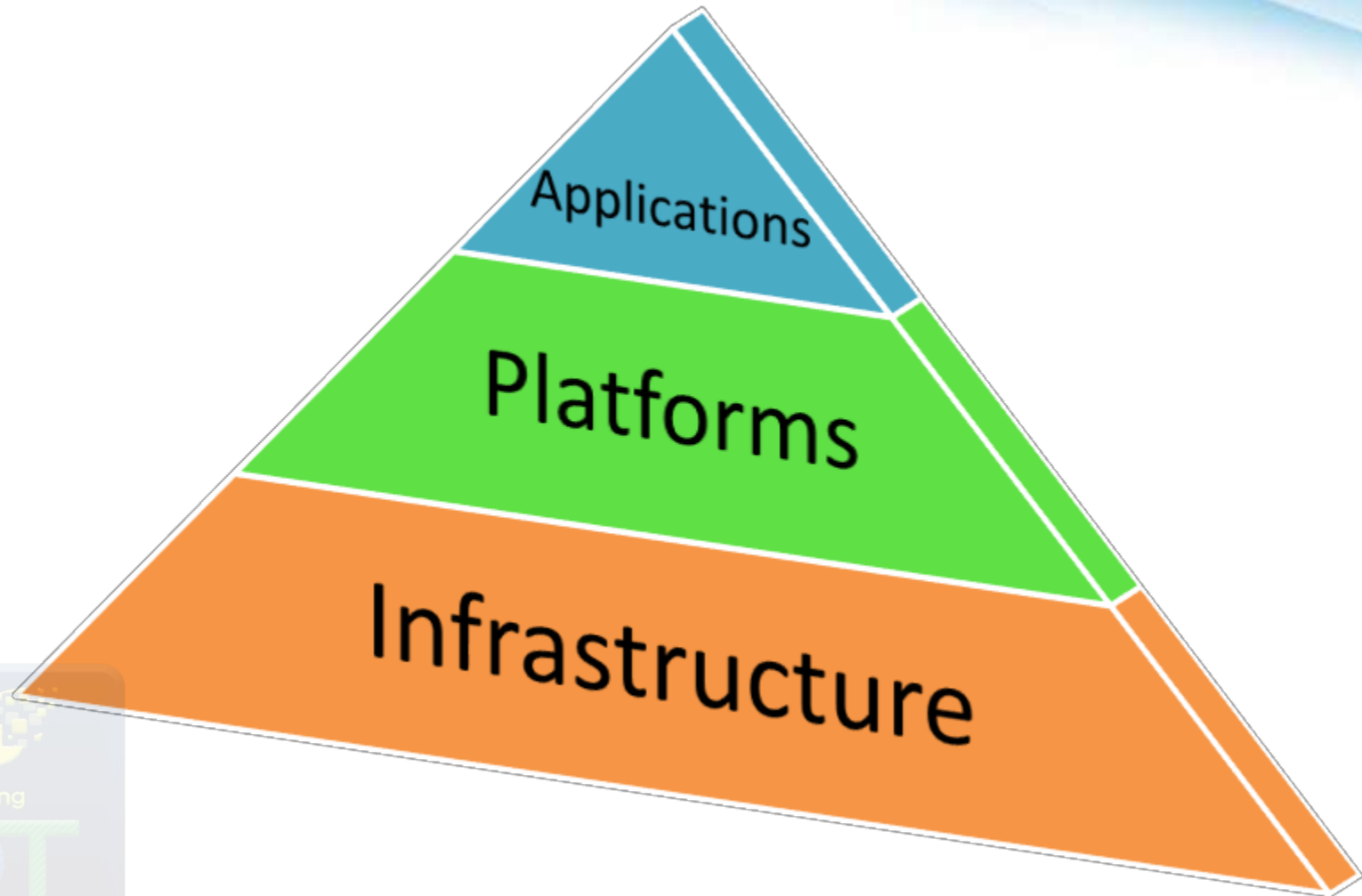
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Cloud Service Layers



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Cloud Service models - Definitions

Software as a Service (SaaS)

- SaaS is a software delivery methodology that provides licensed multi-tenant access to software and its functions remotely as a Web-based service.

Platform as a Service (PaaS)

- PaaS provides all of the facilities required to support the complete life cycle of building and delivering web applications and services entirely from the Internet.

Infrastructure as a Service (IaaS)

- IaaS is the delivery of technology infrastructure as an on demand scalable service.



Cloud Service models - Characteristics

Software as a Service (SaaS)

- Scalable; Multi-tenant; Metadata driven configurability
- Sometimes free; easy to use; good consumer adoption; proven business models

Platform as a Service (PaaS)

- Highly scalable; multi-tier architecture; Multi tenant environments
- Developers can upload a configured applications and it “runs” within the platform’s framework

Infrastructure as a Service (IaaS)

- Offers full control of a company’s infrastructure; not confined to applications or restrictive instances
- Sometimes comes with a price premium; can be complex to build, manage and maintain



Cloud Service models - Containing

Software as a Service (SaaS)

Email

Business Processes

Industry Applications

CRM/ERP/HR

Platform as a Service (PaaS)

Middleware

Web 2.0 Application Runtime

Development Tooling

Database

Java Runtime

Infrastructure as a Service (IaaS)

Servers

Networking

Storage

Data Center Fabric

Firewalls, load balancers



Cloud Service models - Examples

Software as a Service (SaaS)



Platform as a Service (PaaS)

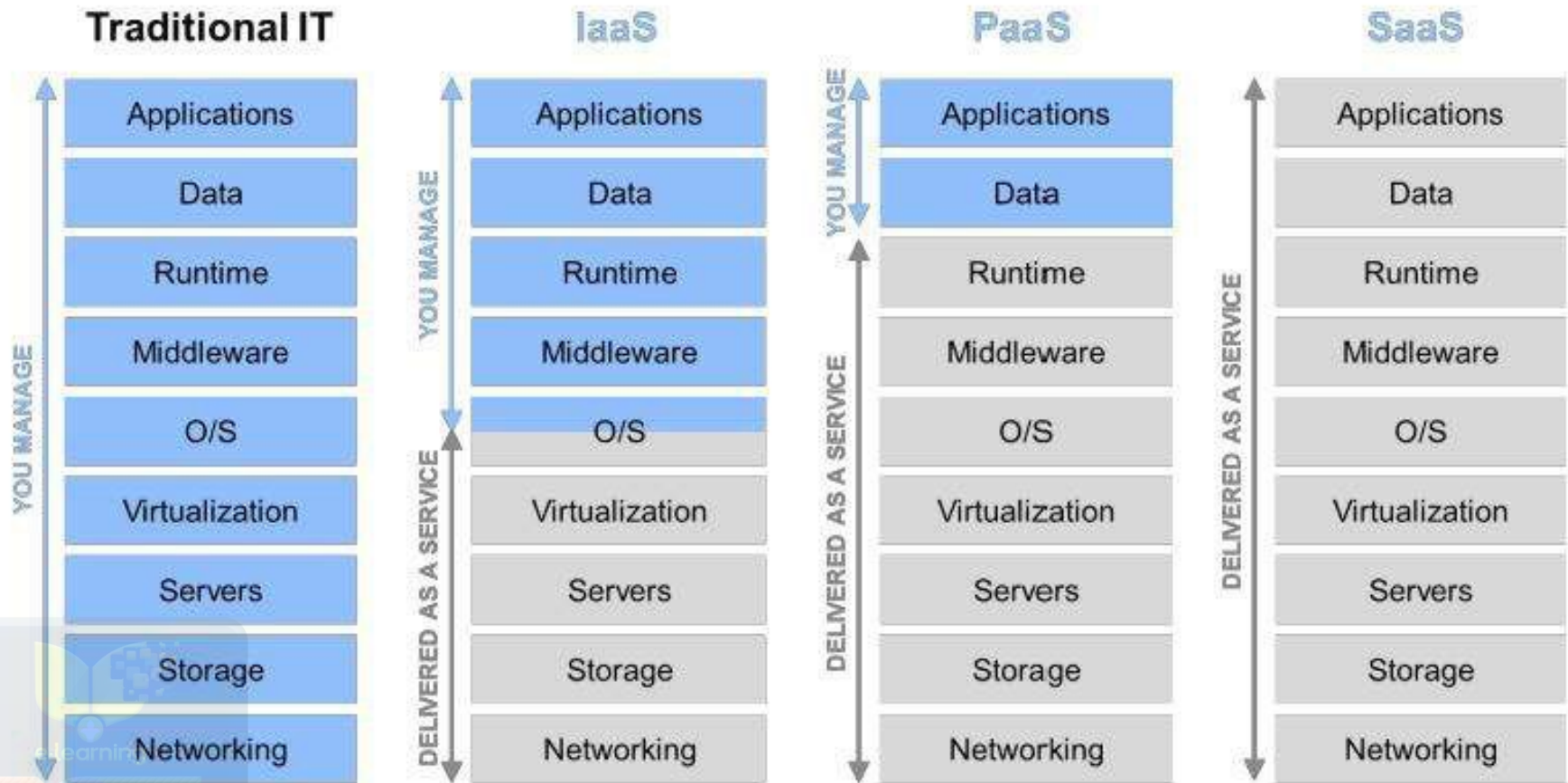


Infrastructure as a Service (IaaS)



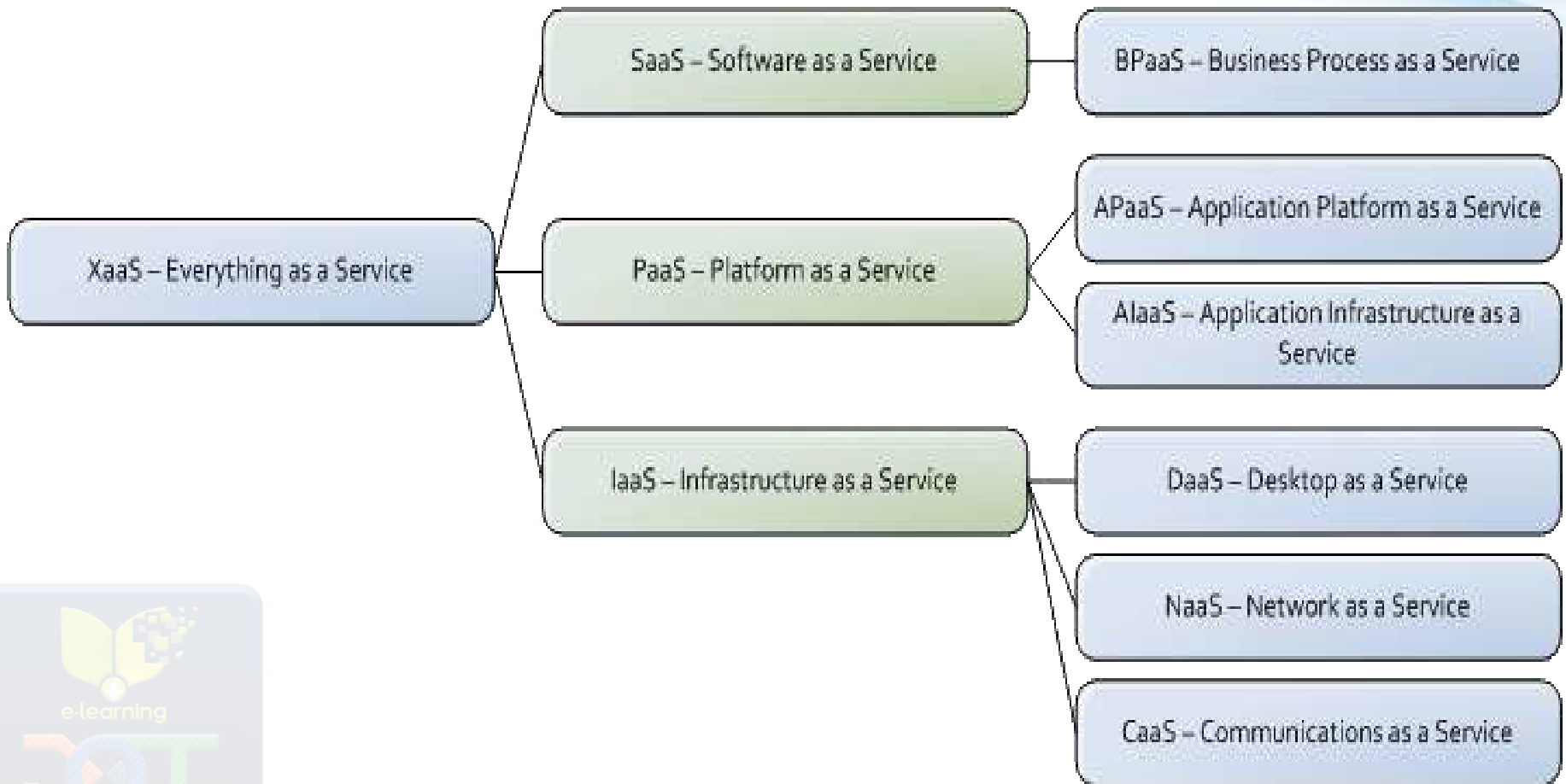


Cloud Service models - Comparison





Cloud Service models



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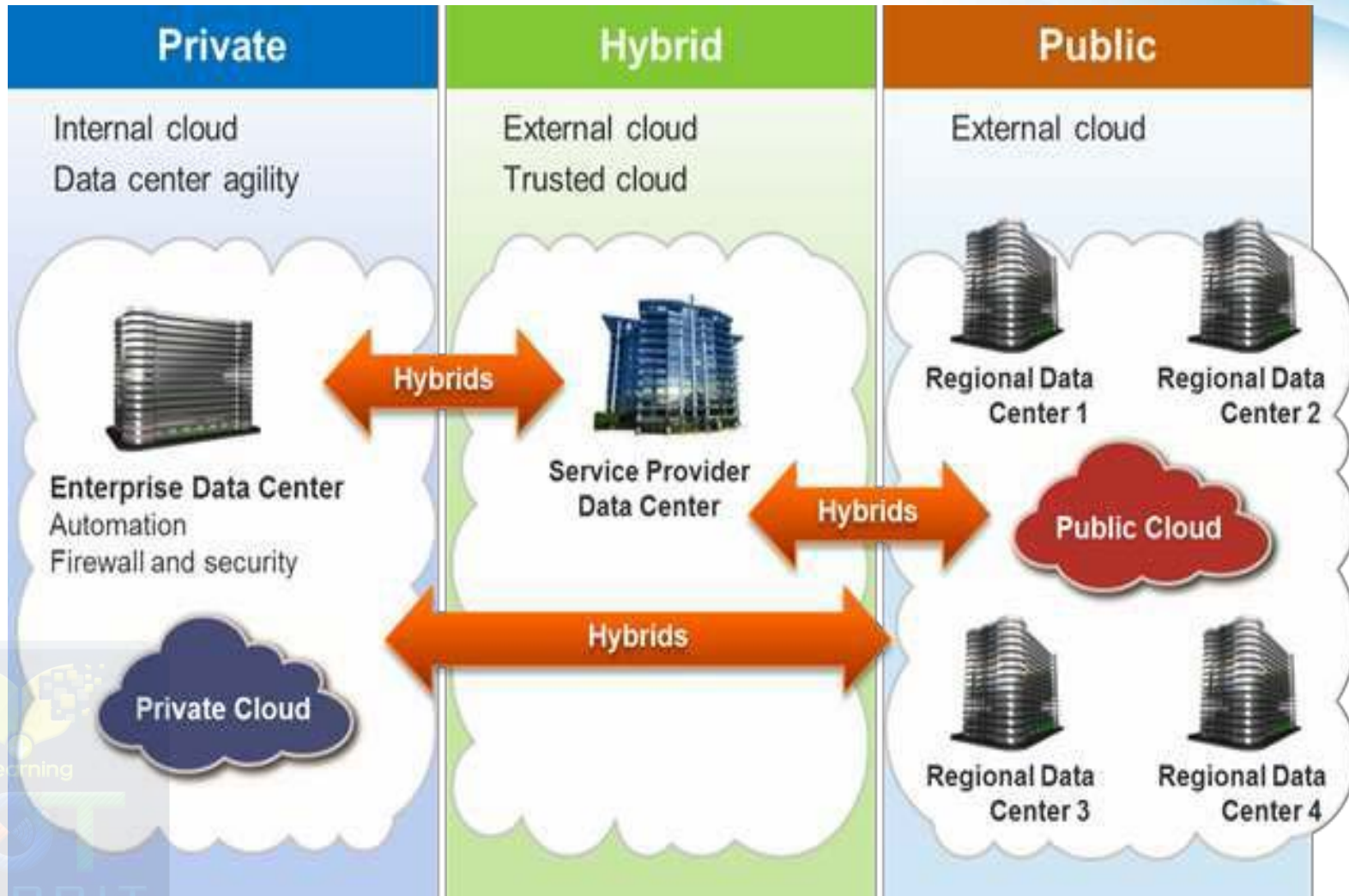


Cloud implementation types





Cloud implementation types



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Public Cloud

- Owned and managed by service provider
- Made available to the general public or a large industry group



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Private Cloud

- Operated solely for an organization
- May be managed by the organization or a third party
- Limits access to enterprise and partner network
- Retains high degree of control, privacy and security



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Community Cloud

- shared infrastructure by several organizations which have shared concerns
- May be managed by the organizations or a third party
- Costs are spread over fewer users than a public cloud but more than a single tenant





Hybrid Cloud

- Composition of two or more clouds (private, community, or public) bound together by standardized or proprietary technology that enables data and application portability



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Govt. of India Cloud

GI Cloud - MeghRaj



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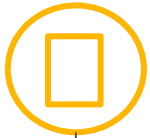
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Govt. of India Cloud

Cloud First Policy published with implementation roadmap



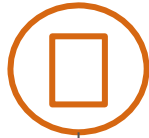
2013



2014



10 CSPs Empaneled



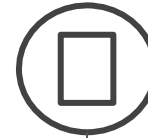
2016



2017



- **CMO Setup**
- **Onboarding of Cloud packages on GeM**



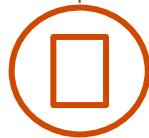
2018



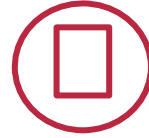
2019



NIC - First National Cloud Launched



- **3 Additional CSPs Empaneled**
- **SLA, MSA & Procurement Guidelines published**



- **Cloud Service Bouquet Onboarding on GeM is under process**
- **Open empanelment process to be initiated**



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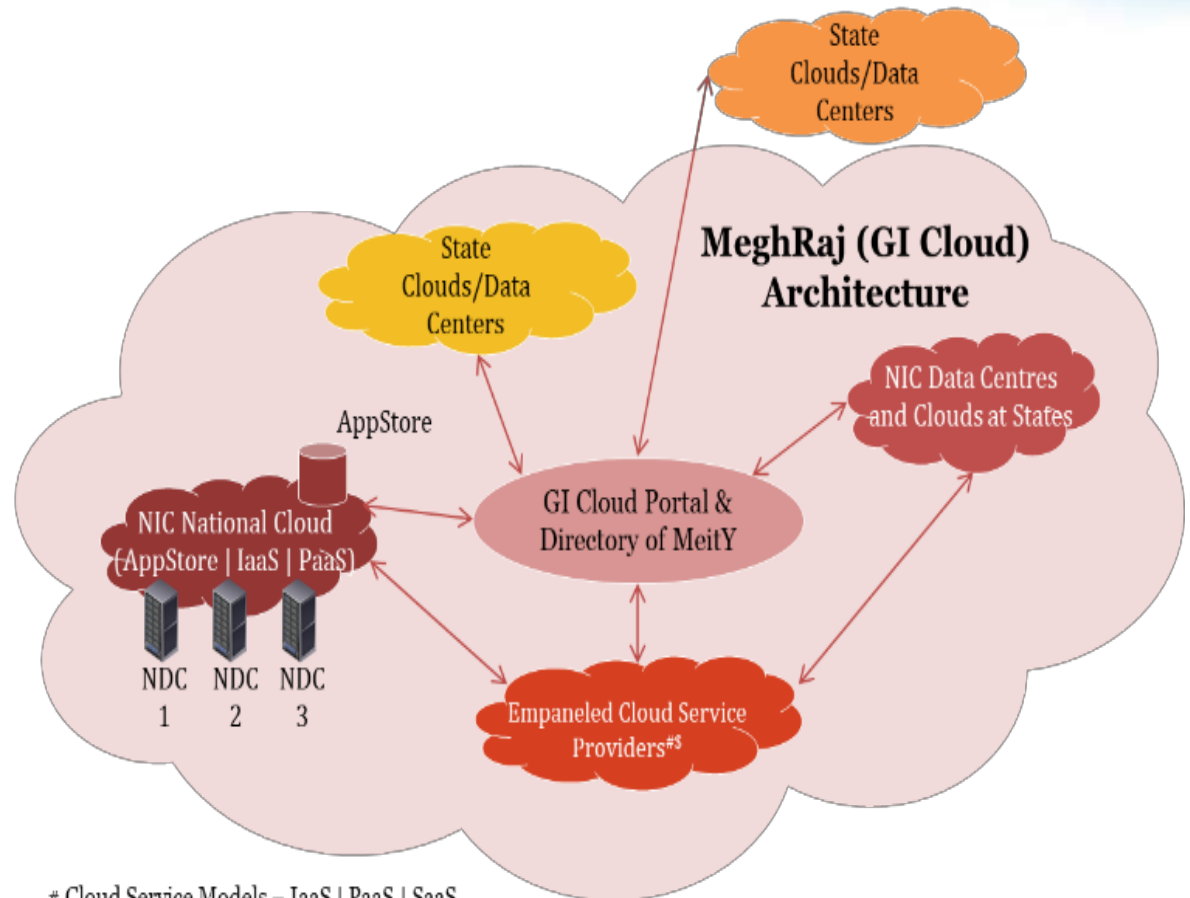
Govt. of India Cloud

To accelerate delivery of e-services provided by the Government and to optimise ICT spending of the Government.

Cloud enabled SDCs
Size of SDCs in India
: 1500 sq. ft. to 4000
sq. ft.

4 NDC already Setup
with overall capacity
of 1000 racks
Guwahati & Bhopal
NDC to be set up

13 CSPs empaneled



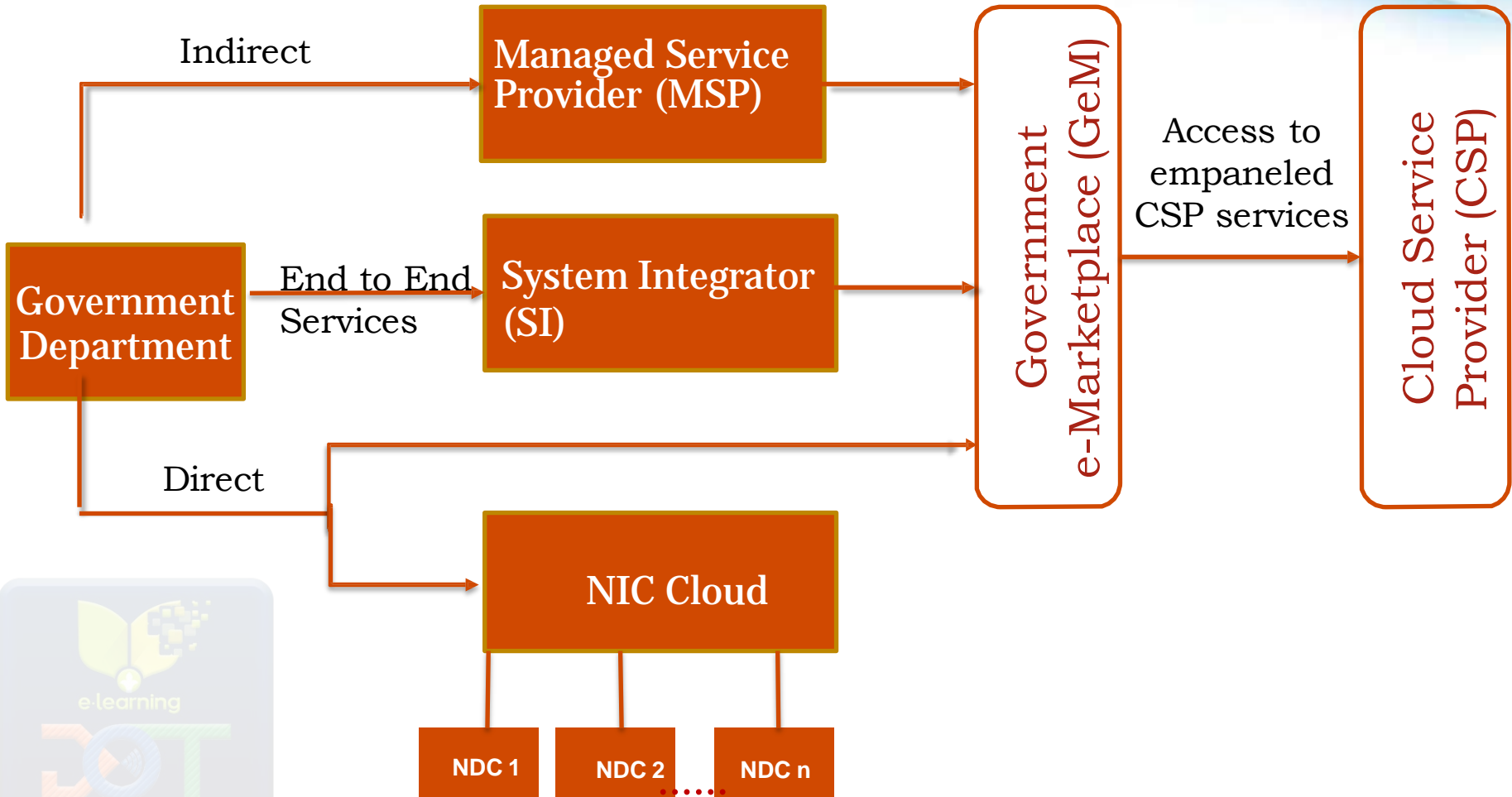
Cloud Service Models – IaaS | PaaS | SaaS

\$ Cloud Deployment Models – Public Cloud | Virtual Private Cloud | Government Community Cloud



Govt. of India Cloud

Modes of Procurement



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Global Compliances

ISO 27001:2013

ISO/IEC 27017:2015
Certification

ISO/IEC 27018:2014
Certification

ISO 20000:1 Certification
Details

Min. Tier III Uptime
Certification

Compliances specific to India

Data Center
Facility must be
within India
only

Adherence
to IT Act
2000

Adherence to security
guidelines specified by
CERT-In/MeitY/ GoI

99.5%
availability

Audit of CSPs by
STQC



The cloud lets you focus on
what differentiates you in
the marketplace.

*Not, servers,
networking, real-
estate, etc.*

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THANK YOU

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