Cloud Computing

SEWP ZG527

BITS Pilani
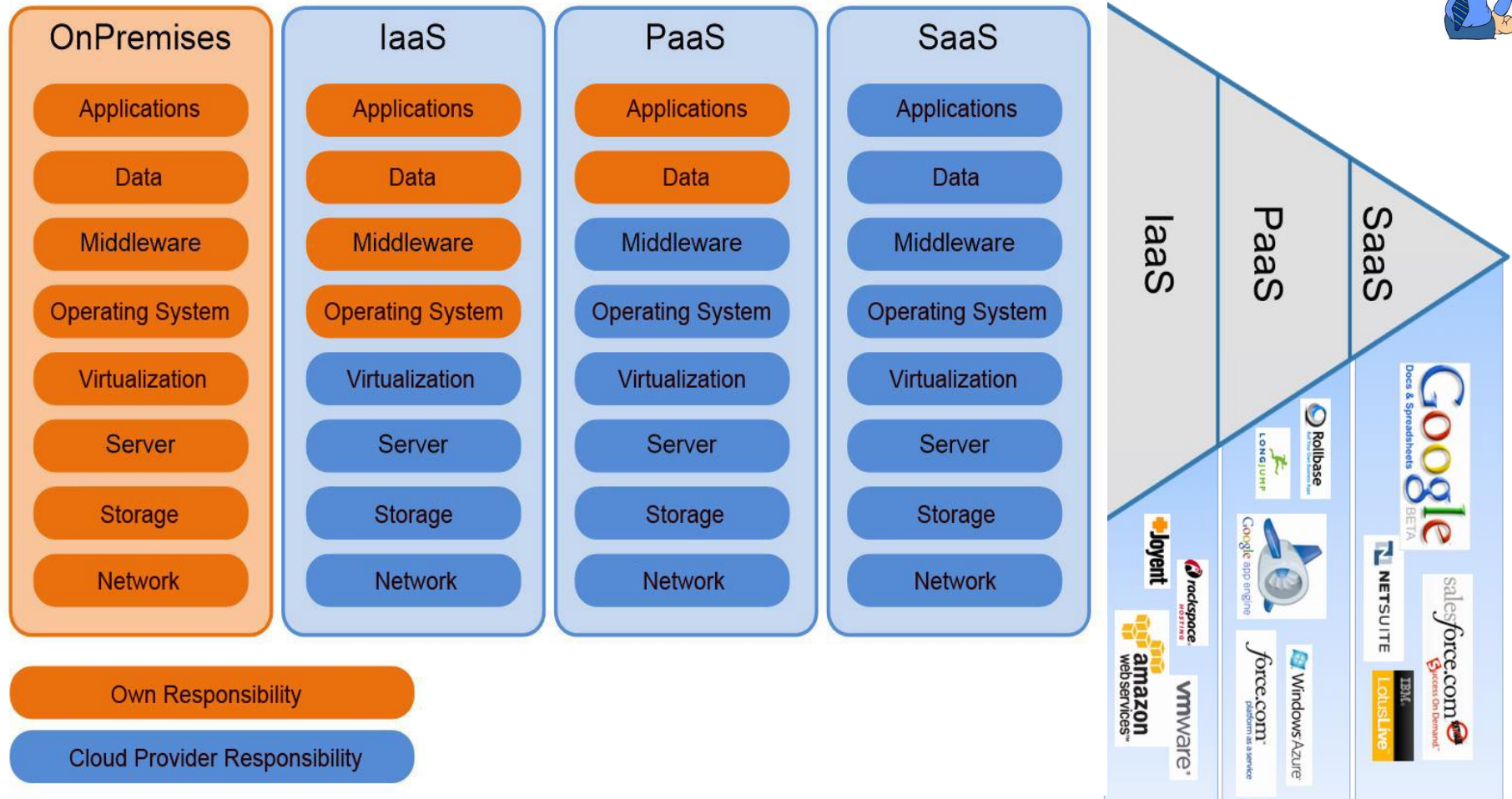
IaaS

Really, what is iaas???

heard of 3 models of Cloud Computing?

Yes, Yes, IaaS, PaaS and SaaS

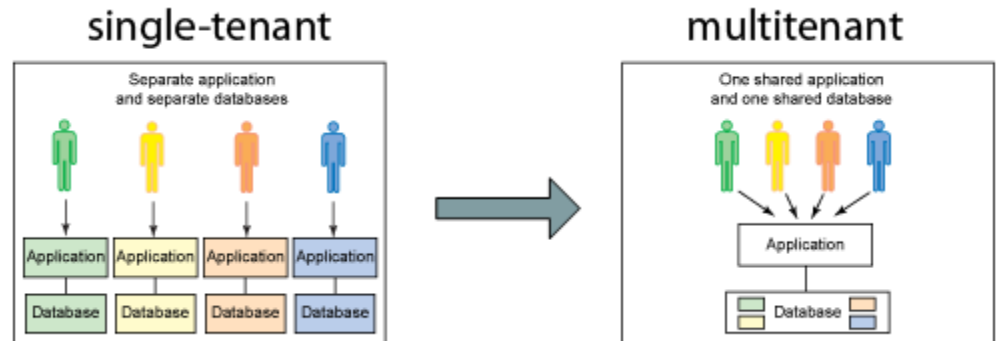| OnPremises	IaaS	PaaS	SaaS
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Middleware	Middleware	Middleware	Middleware
Operating System	Operating System	Operating System	Operating System
Virtualization	Virtualization	Virtualization	Virtualization
Server	Server	Server	Server
Storage	Storage	Storage	Storage
Network	Network	Network	Network

Own Responsibility

Cloud Provider Responsibility

IaaS   PaaS   SaaS

Key concepts of IaaS

- Cloudbursting: The process of off-loading tasks to the cloud during times when the most compute resources are needed

- Multi-tenant computing

- Resource pooling: **Pooling** is a resource management term that refers to the grouping together of resources (compute(cpu), network(bandwidth), storage) for the purposes of *maximizing advantage* and/or *minimizing risk* to the users

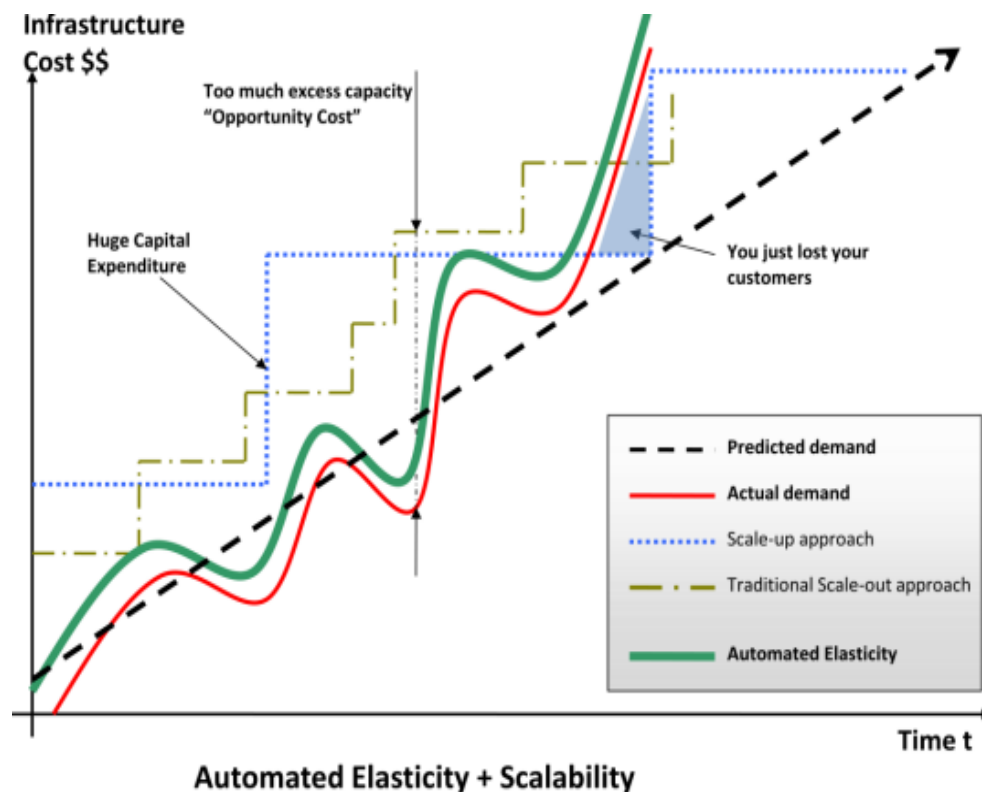- Hypervisor

Two primary facets that make IaaS special

Elasticity:

Wikipedia: "In **cloud** computing, **elasticity** is defined as the degree to which a system (or a particular **cloud** layer) autonomously adapts its capacity to workload over time"

OR simply put "Ability of a system to **expand** or **contract** its dedicated resources to meet the demand"

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Virtualization

Infrastructure Cost $$

Too much excess capacity "Opportunity Cost"

Huge Capital Expenditure

You just lost your customers

- - - - Predicted demand
— Actual demand
······· Scale-up approach
— · — Traditional Scale-out approach
— Automated Elasticity

Time t

Automated Elasticity + Scalability

4 considerations:

- Developing for a specific vendor's proprietary IaaS could prove to be a costly mistake

- The complexity of well-written resource allocation software is significant and do not come cheap

- What will you be sending off to be processed in the cloud? Sending data such as personal identities, financial information, and health care data put an organization's compliance at risk

- Understand the dangers of shipping off processes that are critical to the day-to-day operation of the business.

- http://www.ibm.com/developerworks/cloud/library/cl-cloudservices1iaas/