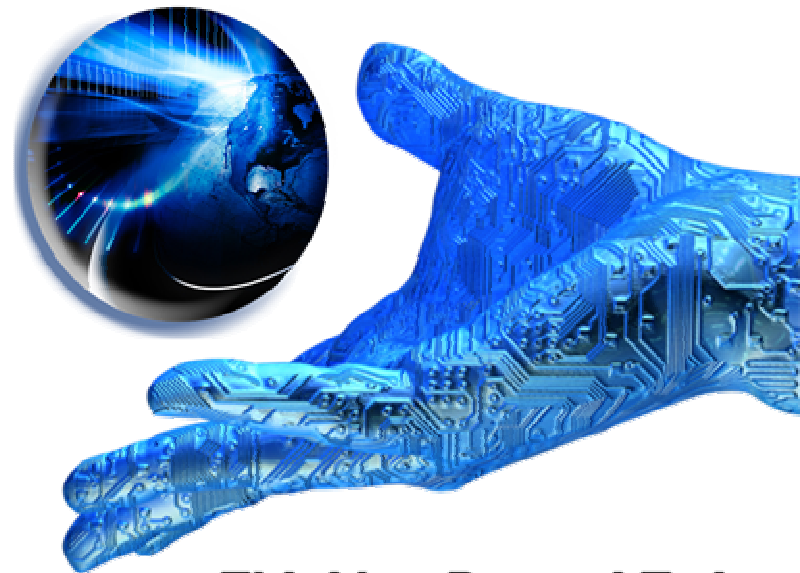


Strategy and Architecture - *Cloud overview*

Created by:
Jurriaan Brandsma
Karl Koll
Joke Koning
Ronald Zoutendijk
Ronald van Teeffelen



Thinking Beyond Today

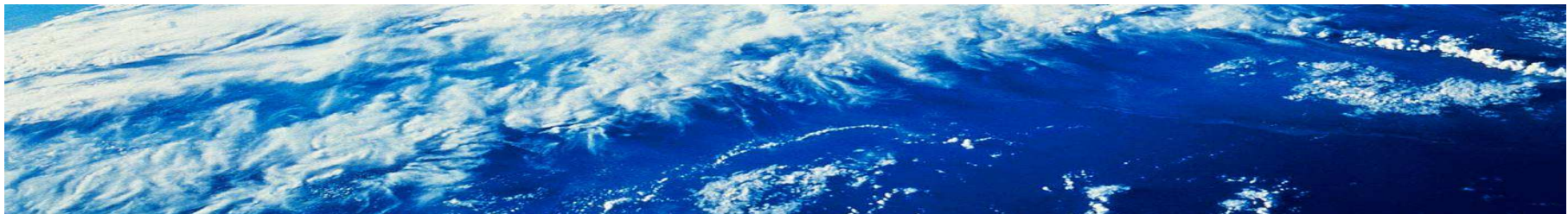
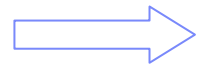
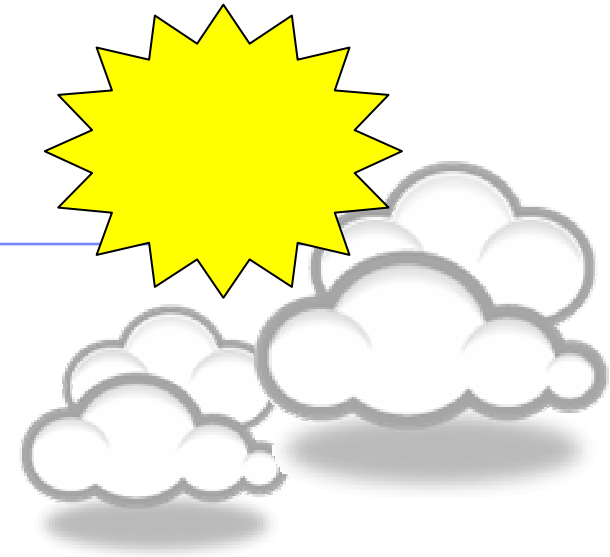


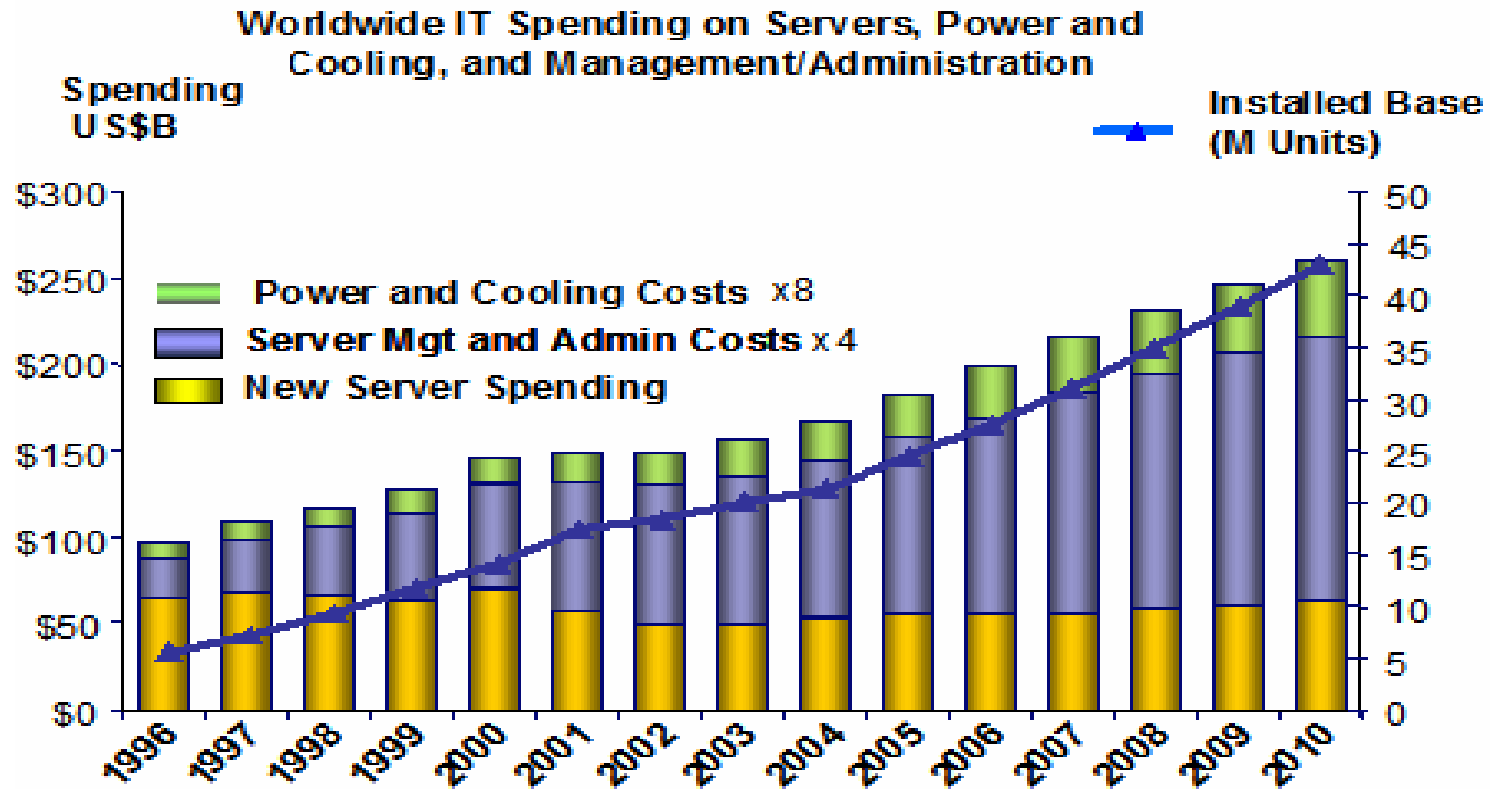
Table of Contents



- **Why cloud?**
 - **What is cloud?**
 - **What are the key Cloud Technologies?**
 - **What does it take to use Cloud?**
 - **Summary**
-



Why cloud? → Operational costs of IT exploded over the last 10 years



Source: IDC 2009

Why cloud? → There is an issue with quality and time to market....

Long implementation times

Instability of infrastructure

Complexity

Inability to implement and test patches in time

Insufficient support for testing

IT infrastructure is reaching a breaking point

85% idle

In distributed computing environments, up to 85% of computing capacity sits idle.



- The number of devices will increase

1.5x

Explosion of information driving 54% growth in storage shipments every year.

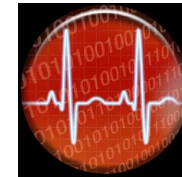


Information Compliance

- Compliancy and rules become more complex

70¢ per \$1

70% on average is spent on maintaining current IT infrastructures versus adding new capabilities.

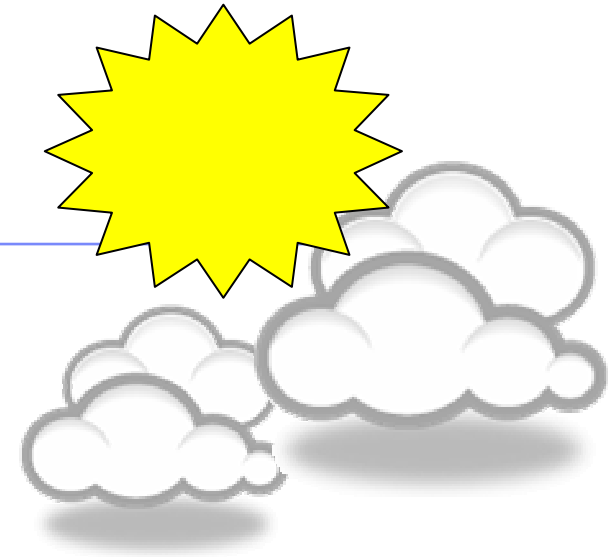


Information Availability

- Demand for information increases

Table of Contents

- **Why cloud?**
 - ▪ **What is cloud?**
 - **What are the key Cloud Technologies?**
 - **What does it take to use Cloud?**
 - **Summary**
-





What is a cloud?

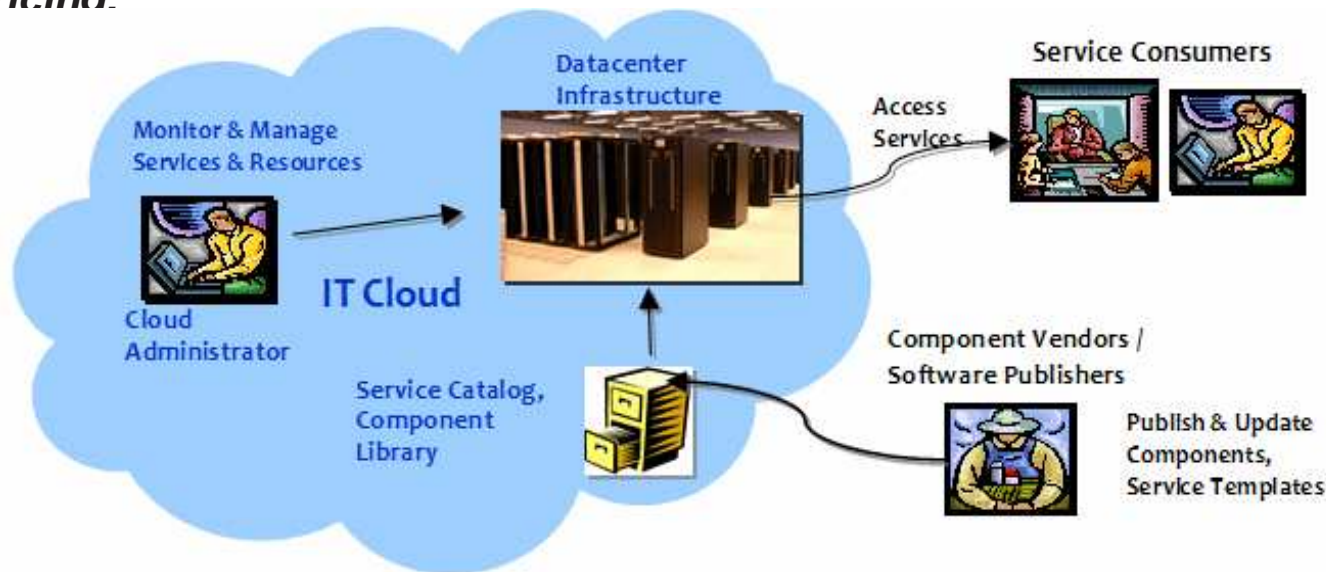
What is Cloud? : it depends who you ask...

A user experience and a business model

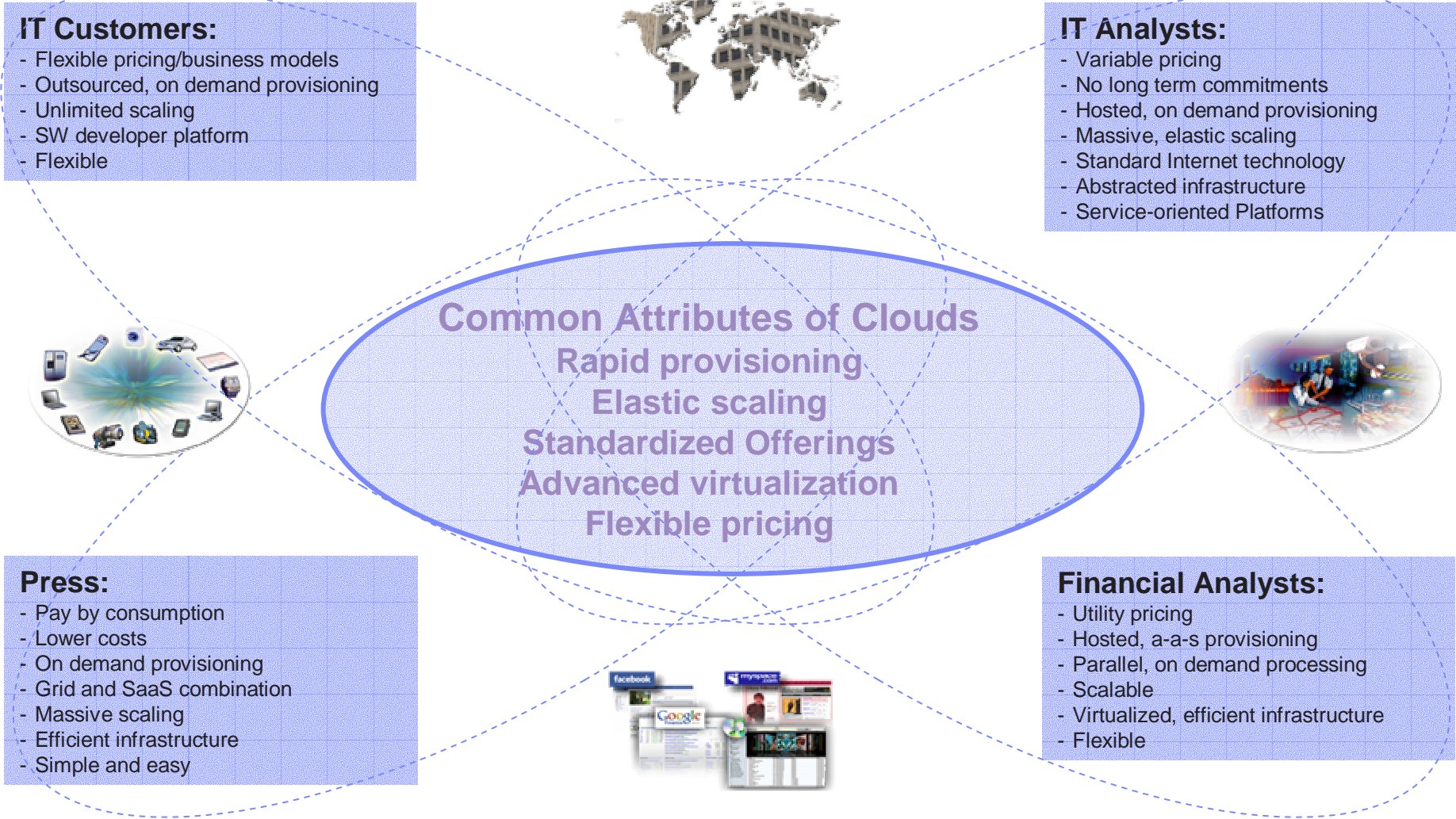
- *Cloud computing is an emerging style of IT delivery in which applications, data, and IT resources are **rapidly provisioned** and provided as **standardized offerings** to users over the web in a **flexible pricing** model.*

An infrastructure management and services **delivery methodology**

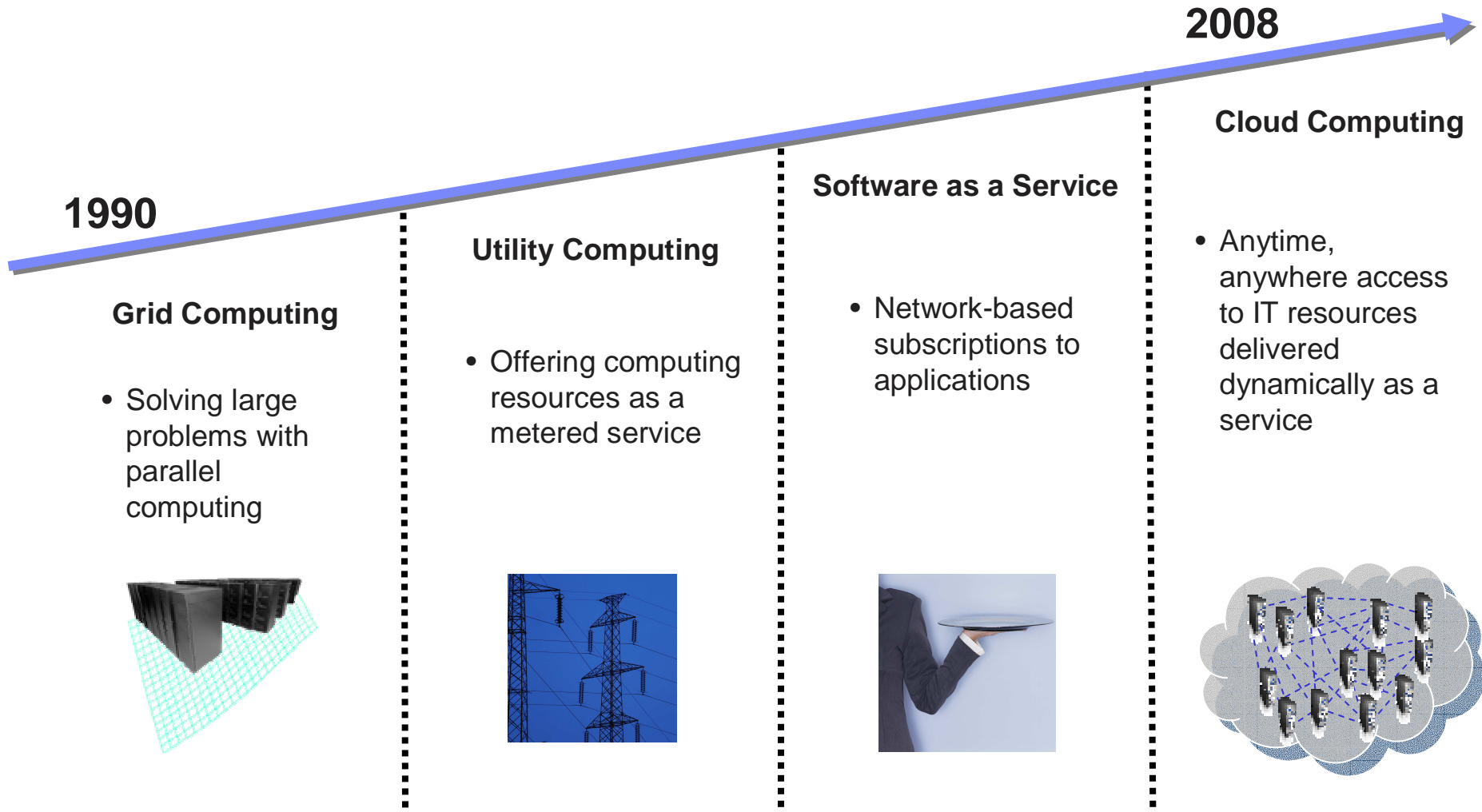
- *Cloud computing is a way of **managing** large numbers of highly **virtualized resources** such that, from a management perspective, they resemble a single large resource. This can then be used to deliver services with **elastic scaling** and **flexible pricing**.*



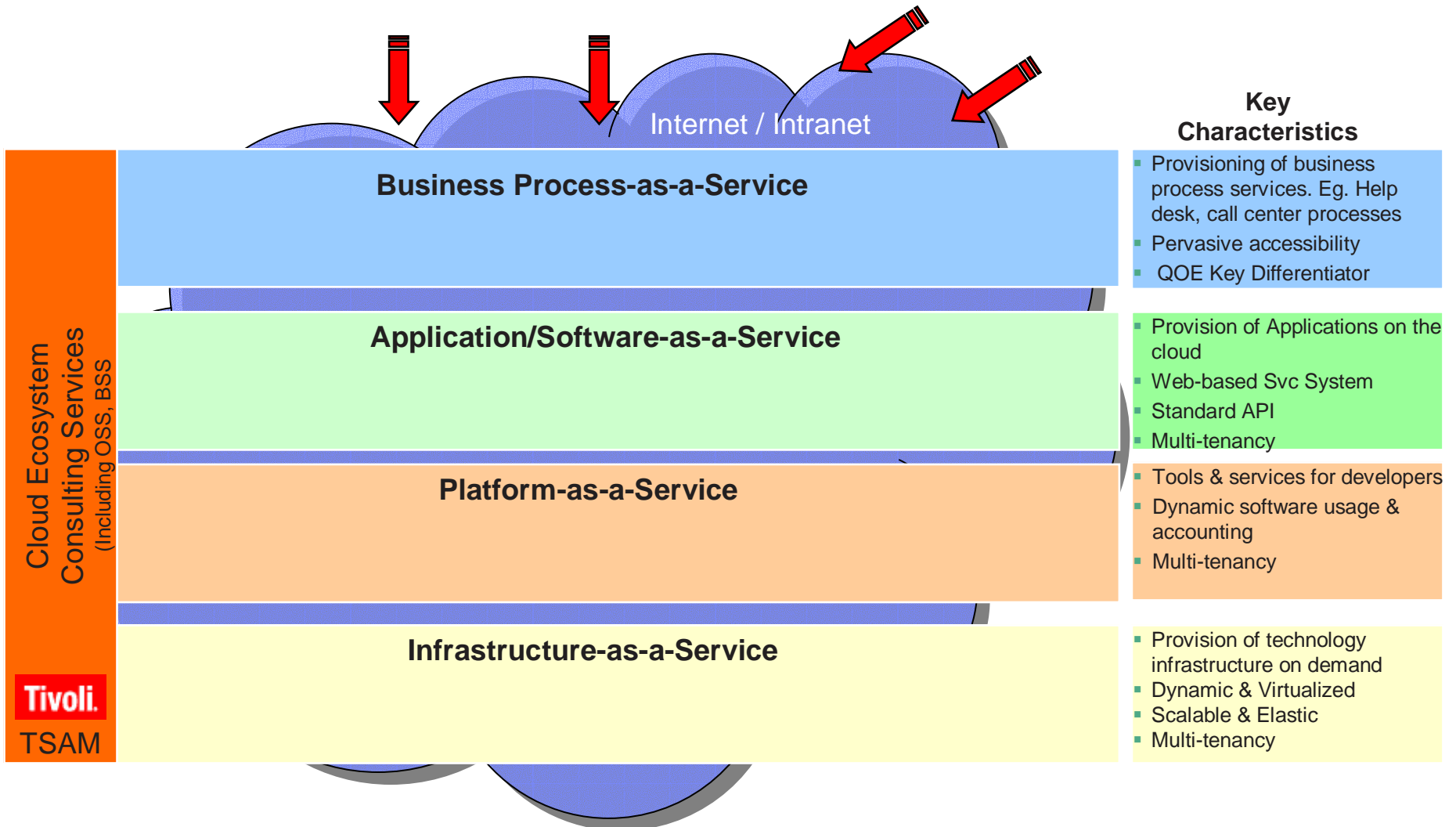
Varying opinions on its definition, but some common attributes are emerging



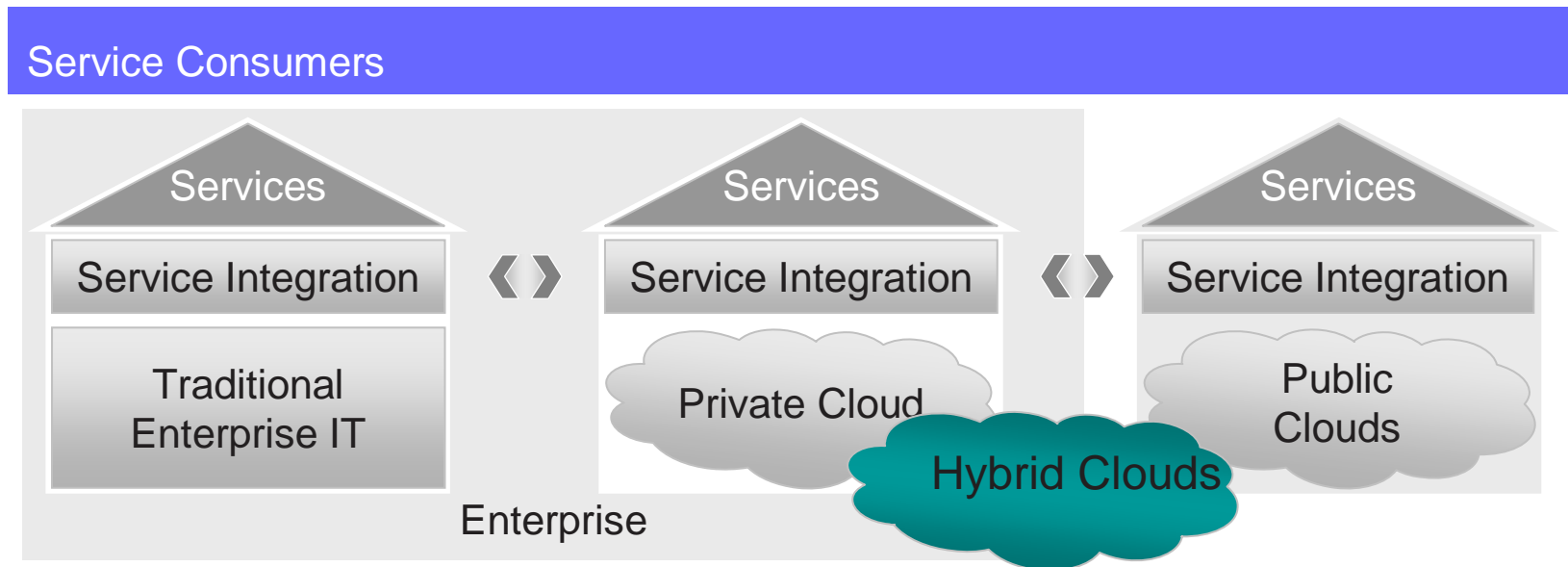
Part of an ongoing evolution in distributed computing



A cloud environment consists of four layers



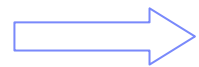
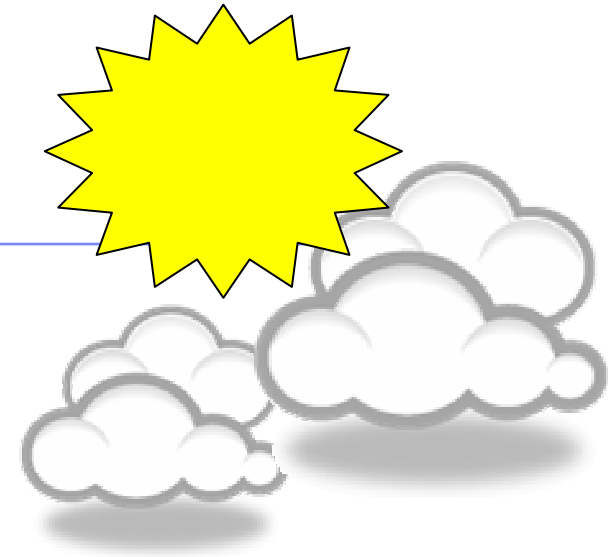
Clouds come in different shapes: private, public and hybrid



Examples of IT suitable for public clouds:

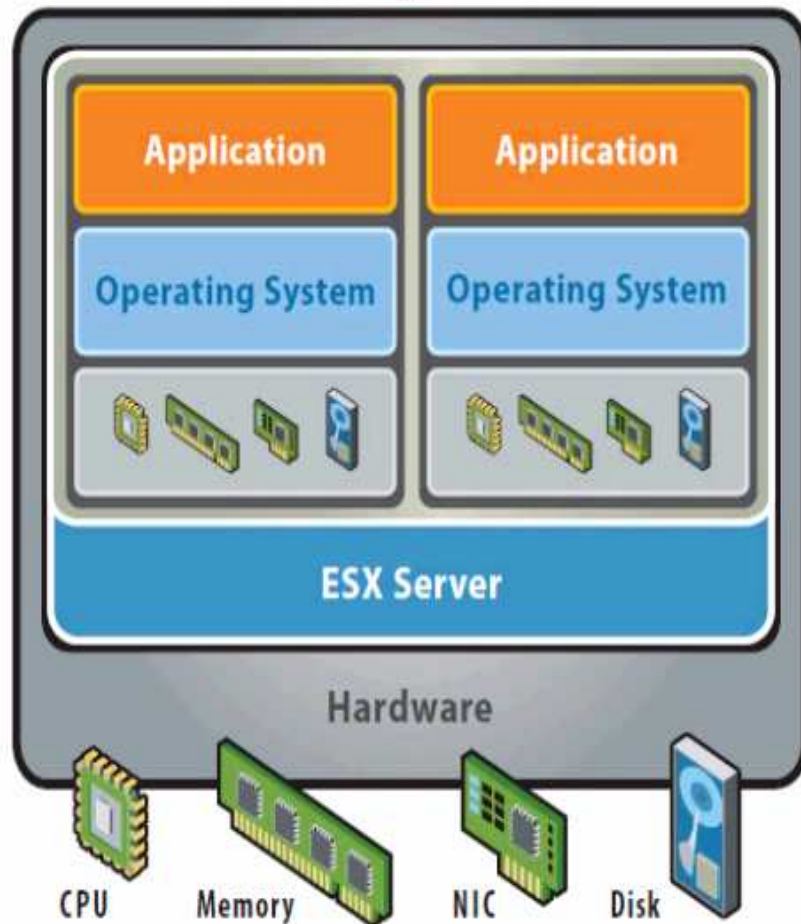
- Commodity IT
- Applications with highly variable loads
- Web applications

Table of Contents



- **Why cloud?**
 - **What is cloud?**
 - **What are the key Cloud Technologies?**
 - **What does it take to use Cloud?**
 - **Summary**
-

Virtualization and provisioning play an important role when it comes to Cloud

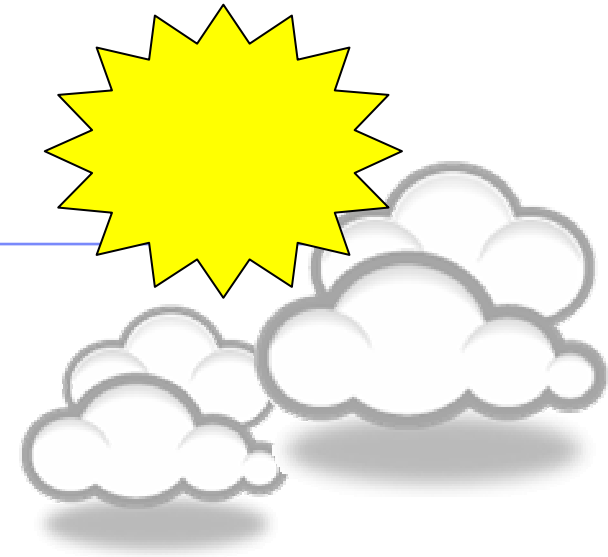


The screenshot shows the 'Intelligent Orchestrator' web interface. The breadcrumb trail indicates the path: 'Customers > EWSM TIO Test Customer > EWSM Trade App > EWSM WAS Cluster'. The main content area displays 'Deployment Requests: EWSM WAS Cluster' with a table of deployment details.

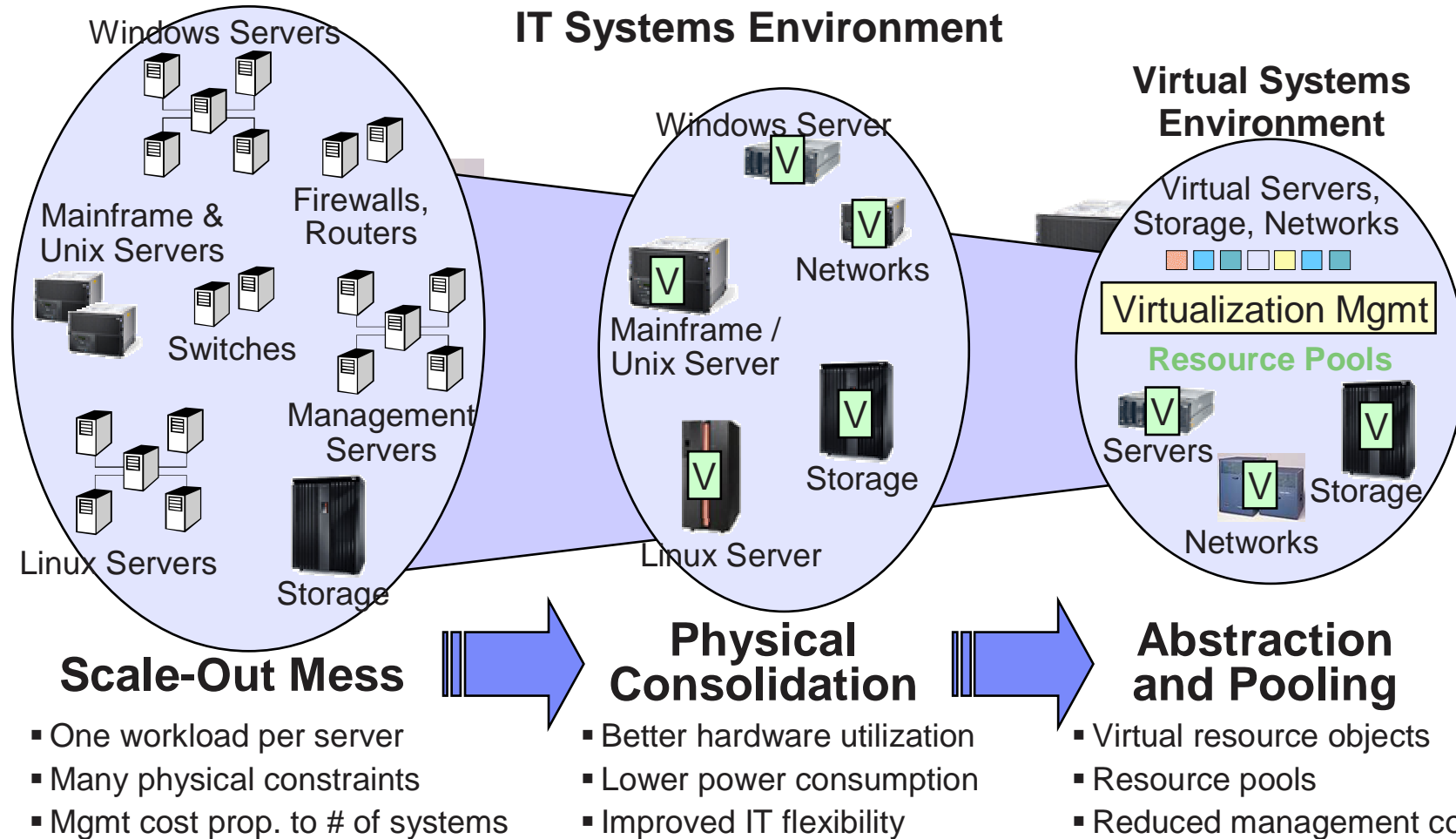
Cluster	Request	Status	Date
EWSM WAS Cluster	+ 1 server	deployed	Posted: October 17, 2005 2:01:07 PM EDT Completed: October 17, 2005 2:03:30 PM EDT
15920 EWSMOWA_AllocSrvToWASCluster_aix_v1			Progress indicators (4 green circles)
EWSM WAS Cluster	- 1 servers	deployed	Posted: October 14, 2005 2:47:28 PM EDT Completed: October 14, 2005 2:48:31 PM EDT
15841 EWSMOWA_DeAllocSrvFromWASCluster_aix_v1			Progress indicators (4 green circles)
EWSM WAS Cluster	+ 1 server	deployed	Posted: October 14, 2005 2:41:28 PM EDT Completed: October 14, 2005 2:43:33 PM EDT
15833 EWSMOWA_AllocSrvToWASCluster_aix_v1			Progress indicators (4 green circles)
EWSM WAS Cluster	- 1 servers	deployed	Posted: October 14, 2005 10:09:20 AM EDT Completed: October 14, 2005 10:10:24 AM EDT
15822 EWSMOWA_DeAllocSrvFromWASCluster_aix_v1			Progress indicators (4 green circles)
EWSM WAS Cluster	+ 1 server	deployed	Posted: October 14, 2005 10:05:14 AM EDT Completed: October 14, 2005 10:07:23 AM EDT
15814 EWSMOWA_AllocSrvToWASCluster_aix_v1			Progress indicators (4 green circles)

Table of Contents

- **Why cloud?**
 - **What is cloud?**
 - **What are the key Cloud Technologies?**
 - ➔ ▪ Virtualization
 - Provisioning
 - **What does it take to use Cloud?**
 - **Summary**
-



Virtualization takes place in two steps: Consolidation → Abstraction



Two types of virtualization: sharing and aggregation

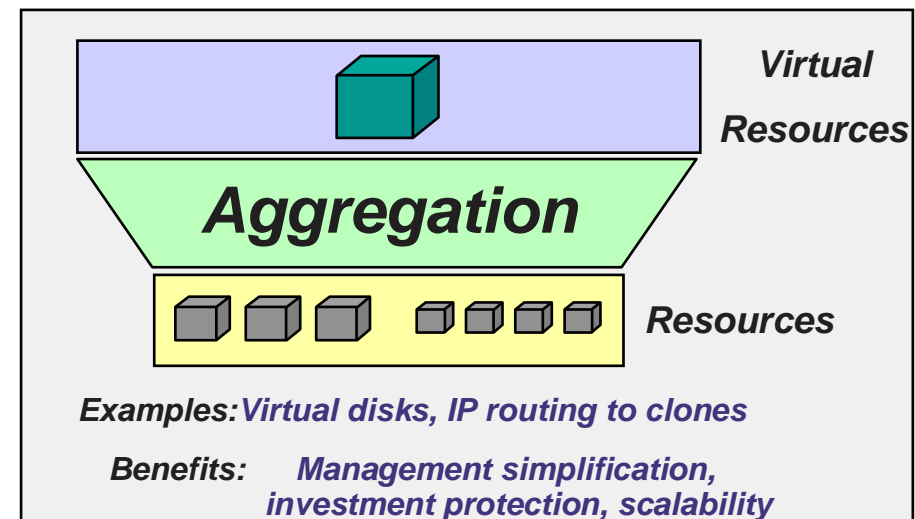
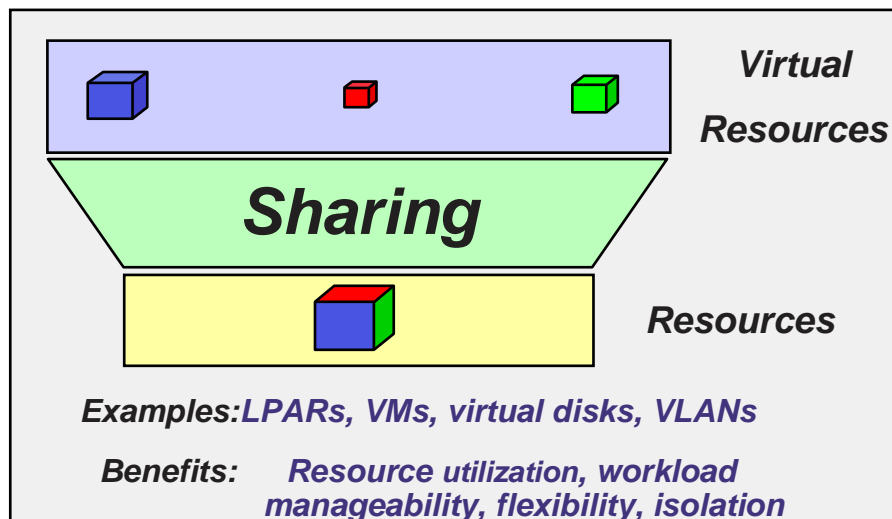
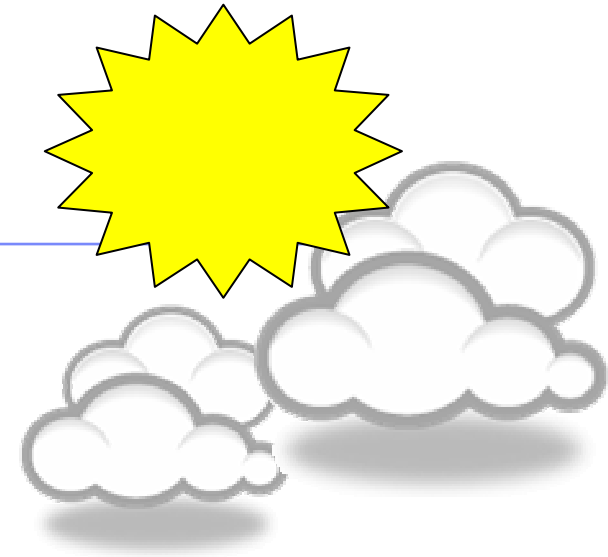
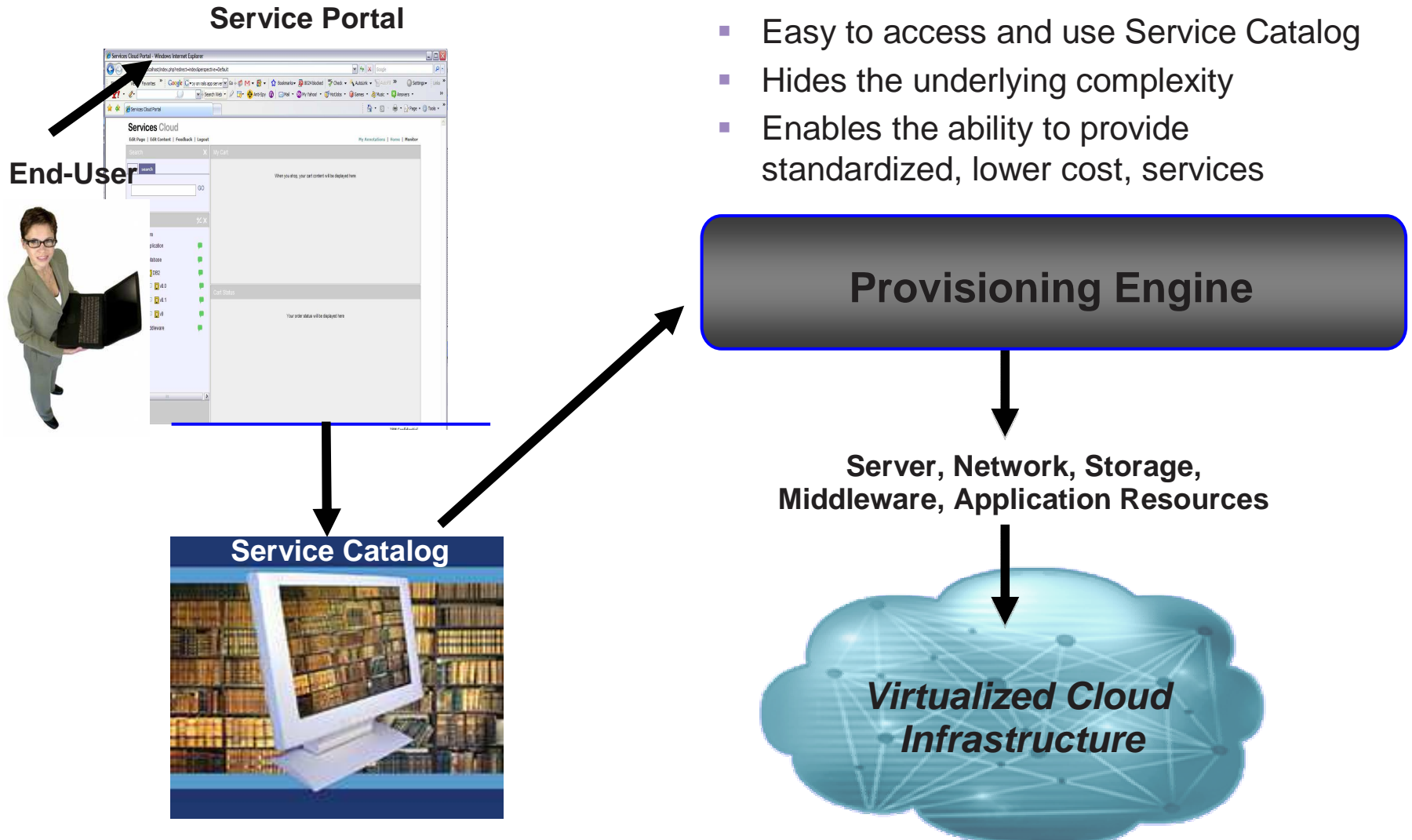


Table of Contents

- **Why cloud?**
 - **What is cloud?**
 - **What are the key Cloud Technologies?**
 - Virtualization
 - Provisioning
 - **What does it take to use Cloud?**
 - **Summary**
-



Service Provisioning, A base capability of cloud services...



Architectural Model for Cloud Computing

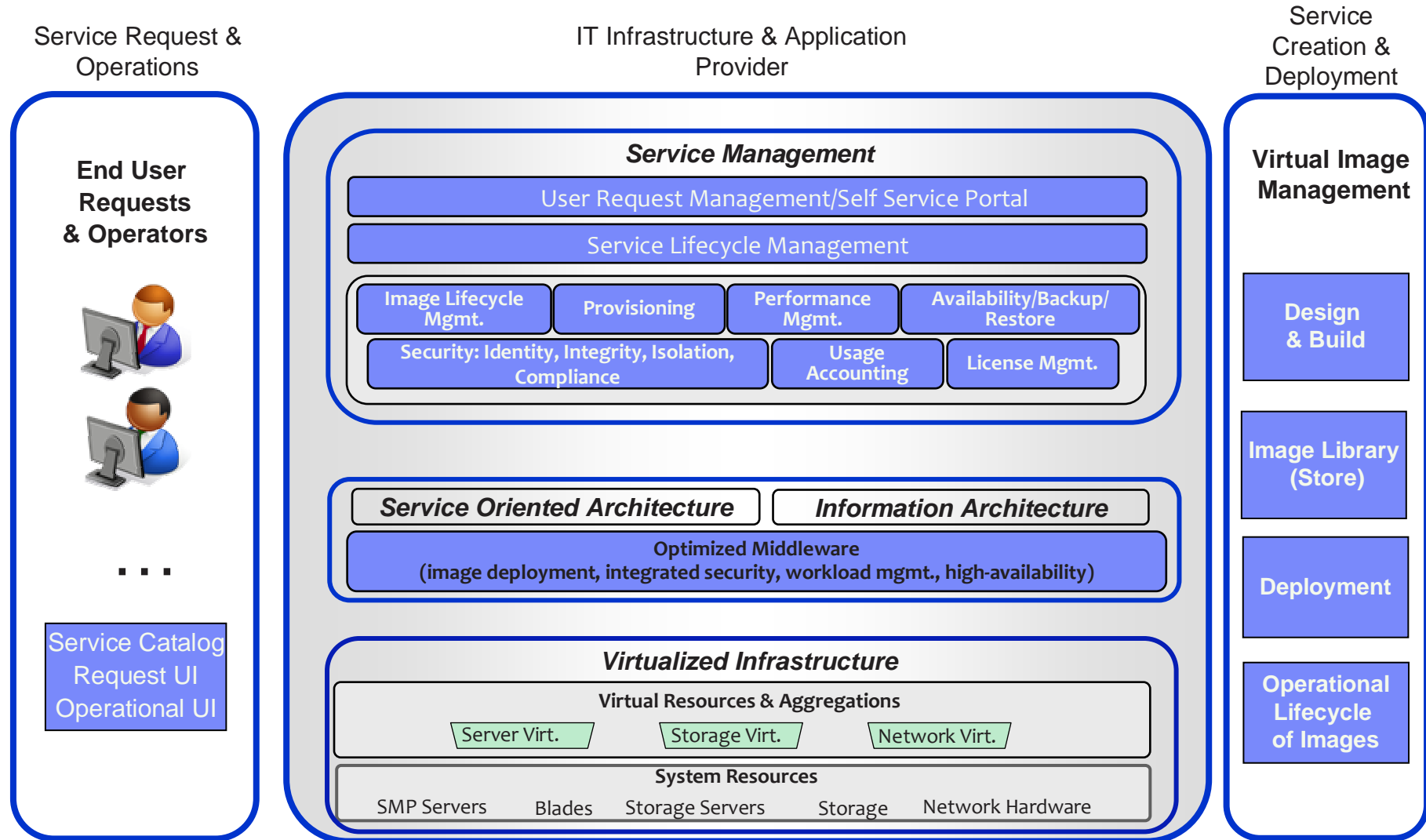
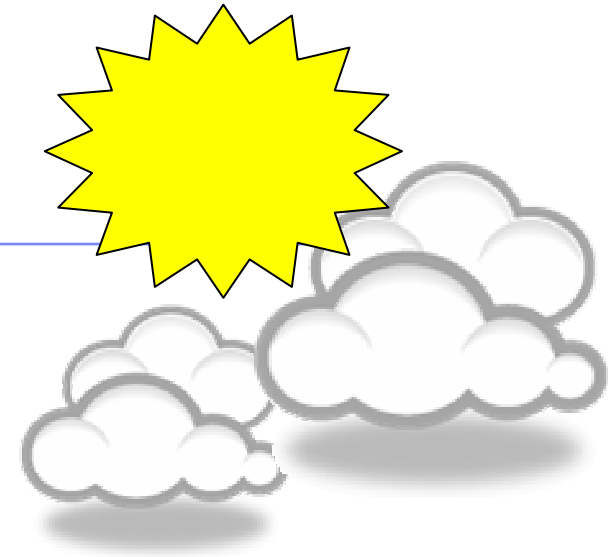


Table of Contents



- **Why cloud?**
- **What is cloud?**
- **What are the key Cloud Technologies?**
- **What does it take to use Cloud?**
- **Summary**



In order to be able to use public / hybrid clouds, an organization must meet a number of criteria.

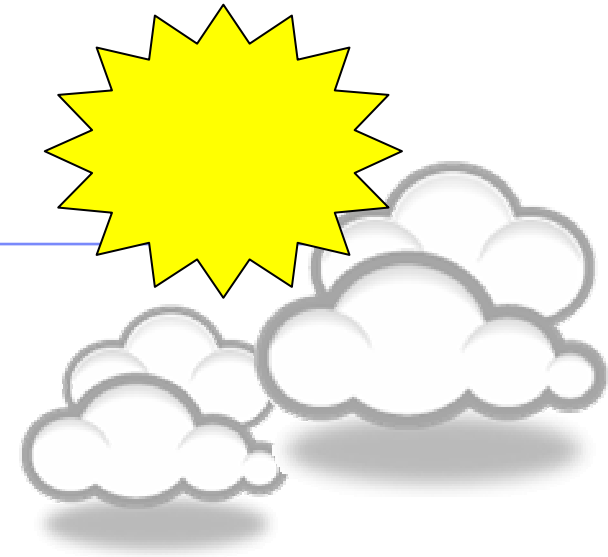
In order to be able to use public / hybrid clouds an organization must at least have the following in place:

- Technological:
 - IT Standardization fully worked out
 - Well developed Systems Management Infrastructure
 - Implemented integration infrastructure
 - Proper security infrastructure
 - Virtualized infrastructure
 - Implement automated provisioning

- Organizational:
 - Well organized Service management (including ITIL processes)
 - Implementation of an IT 'usage based' cost accounting model

Table of Contents

- **Why cloud?**
- **What is cloud?**
- **What are the key Cloud Technologies?**
- **What does it take to use Cloud?**
- ➔ **Summary**



Cloud computing is a promising delivery model

Cloud computing is a delivery model that must help to:

- Reduce cost
- Improve quality and speed of delivery of IT

In order to implement a cloud, the most important technologies are:

- Virtualization
- Provisioning

In order to become 'cloud enabled' it is important to pay attention to:

- Preparing your processes and governance
- Implementing the technology to make use of the cloud

