
Cloud Computing
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Oya Şanlı
MCT

Cloud Computing

Agenda

- What is cloud computing? What is its goal?
- Characteristics, service models, deployment models
- Why is cloud so different?
- What are the technologies behind it?
- Scenarios
- Which sectors being influenced?
- Economies of cloud
- Transition to the cloud
- What is going to happen through 2020?

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Cloud Computing

NIST's definition

- On demand
- Shared pool
- Configurable
- Rapidly provisioned

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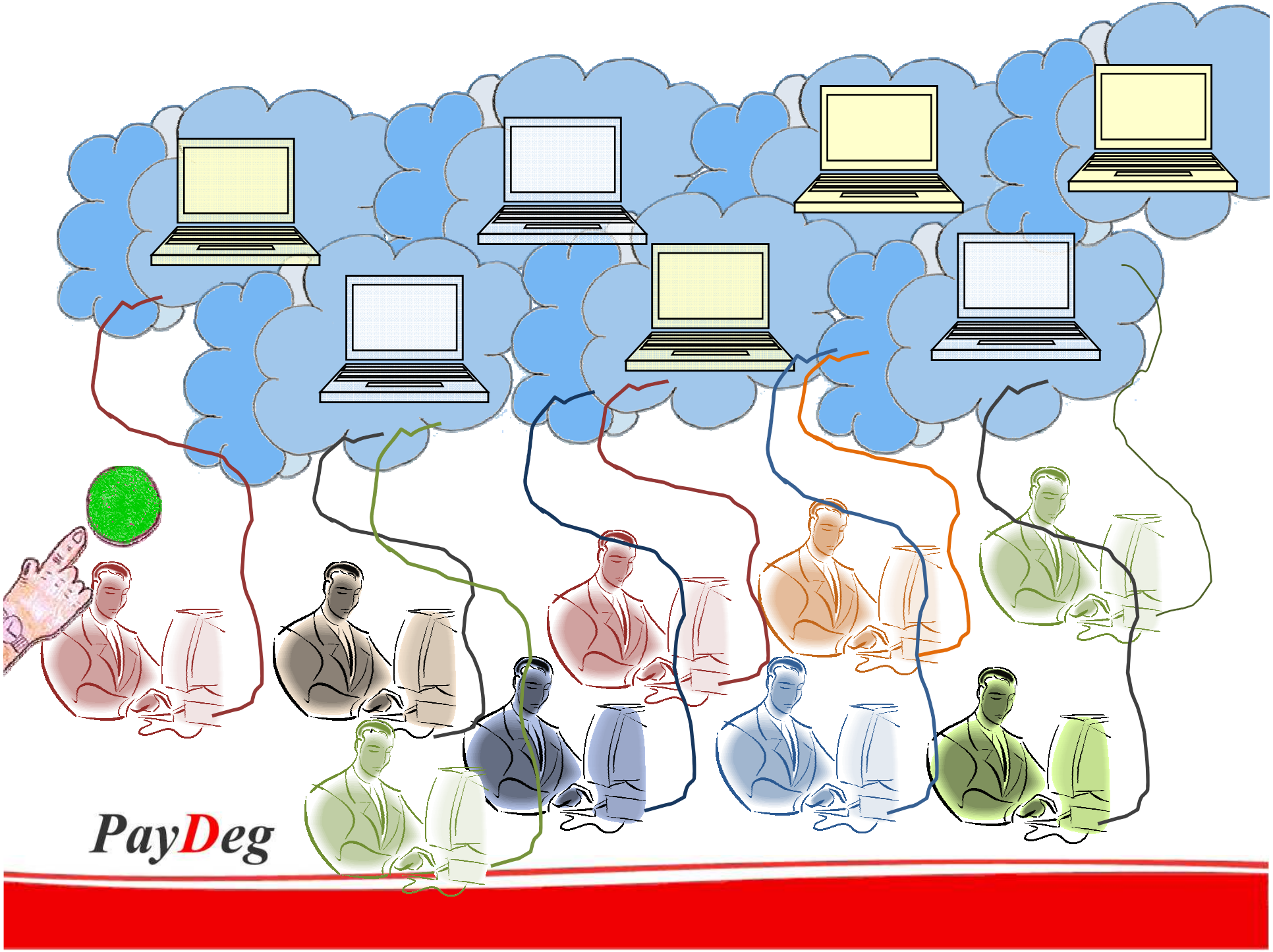
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5 Essential Characteristics of Cloud Computing

- On demand self-service
- Broad network access
- Location independent resource pooling
- Rapid elasticity
- Measured services

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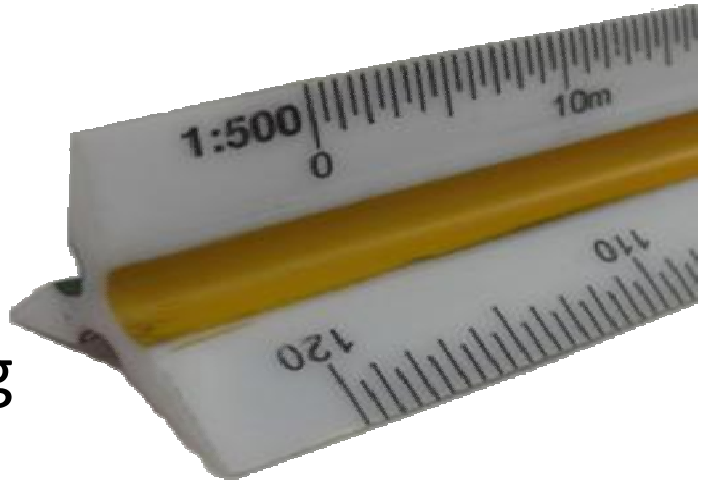
Common Cloud Charecteristics

- Massive scale
- Homogeneity
- Virtualization
- Resilient computing
- Low cost software
- Geographic distribution
- Service orientation
- Advanced security technologies



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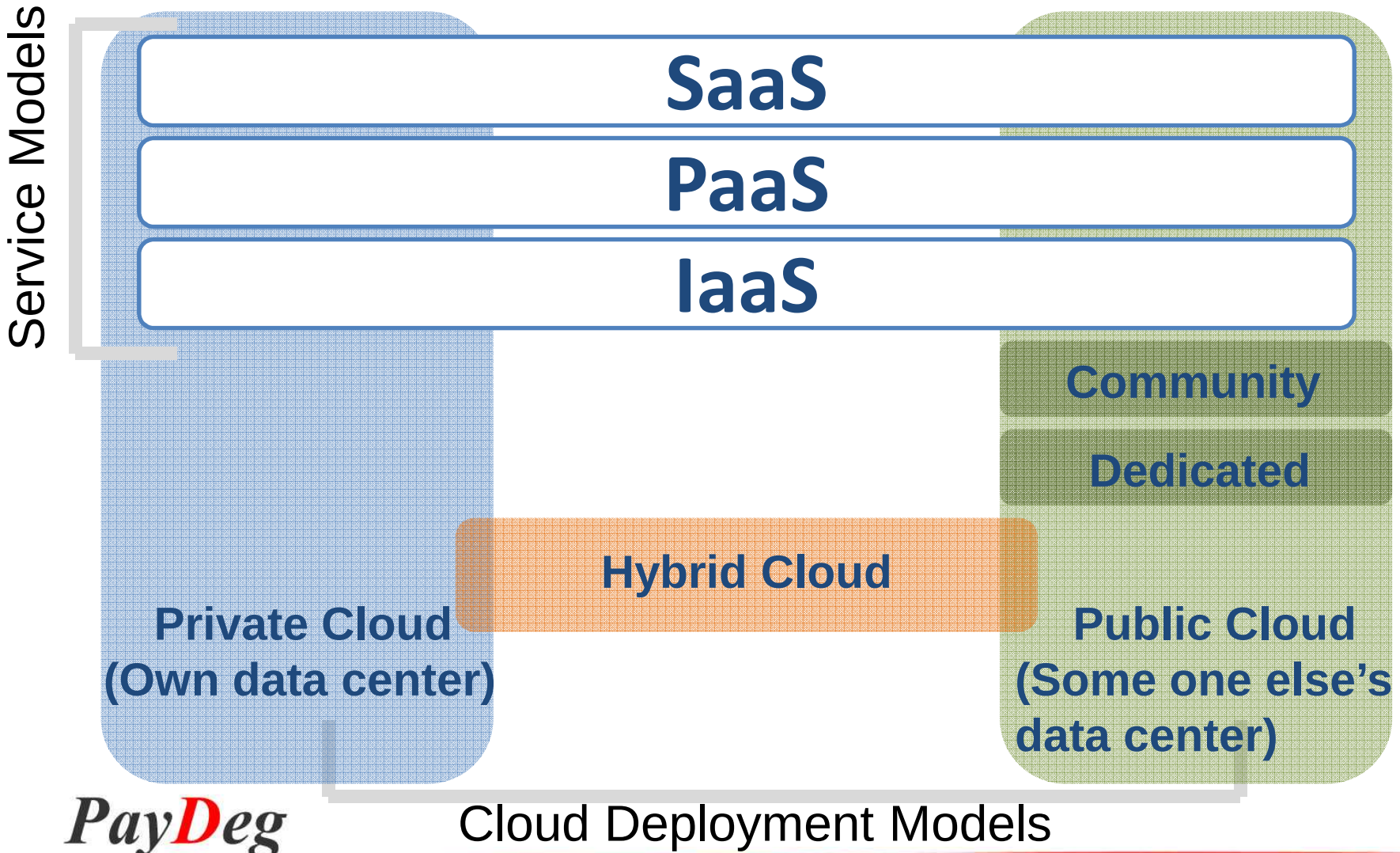

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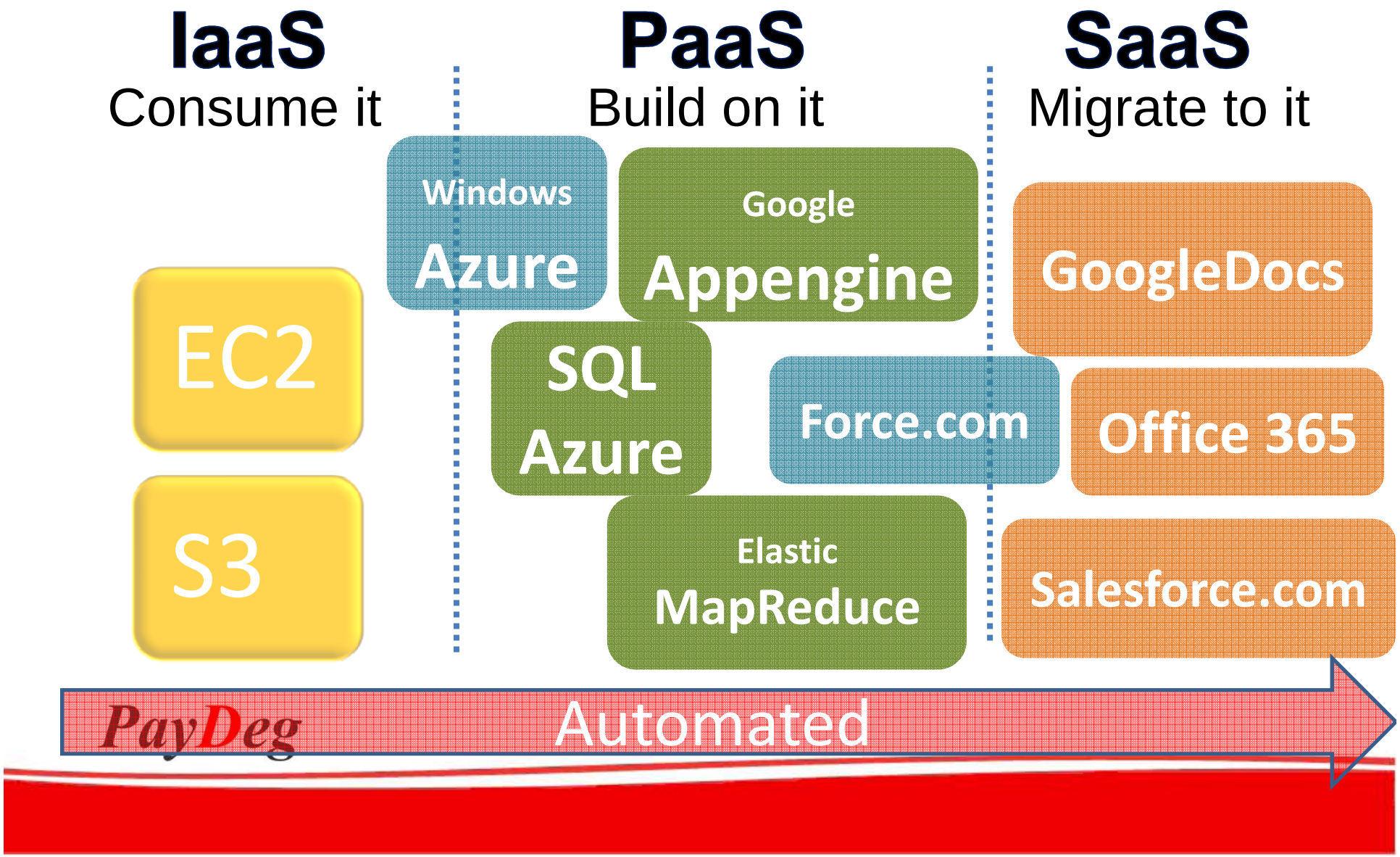

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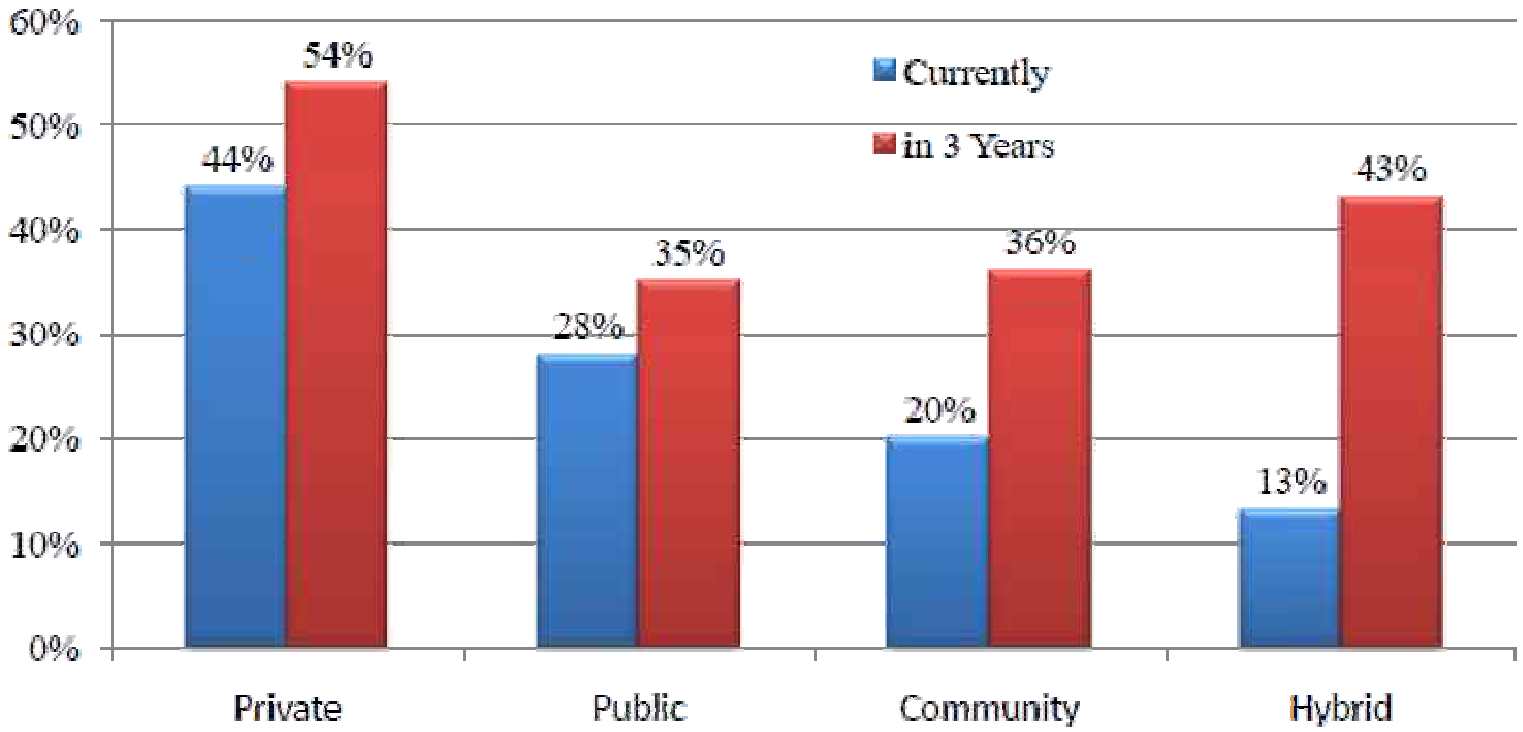

SandHill Group

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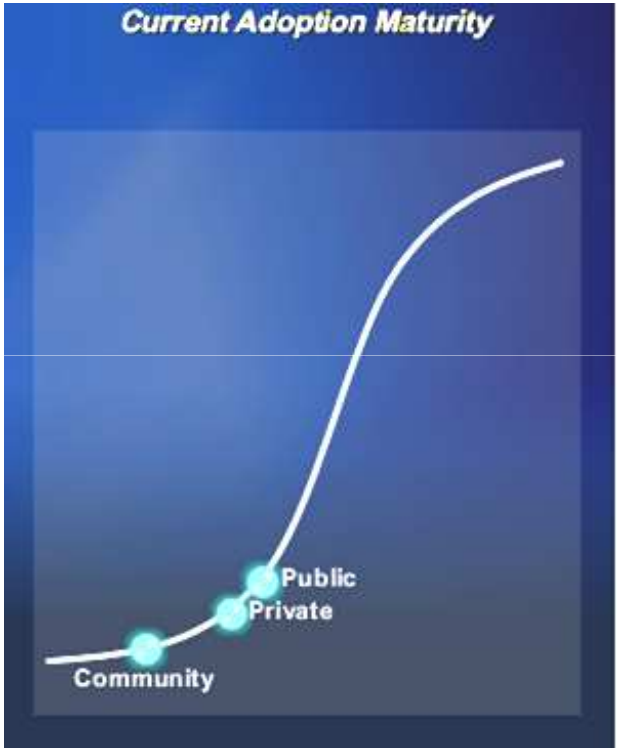
Private
- Opex reduction
- Capex deferral

Public
- Opex reduction
- Capex deferral
- Speed to market

Community
- Opex reduction
- Capex deferral
- Speed to market
- New value chains



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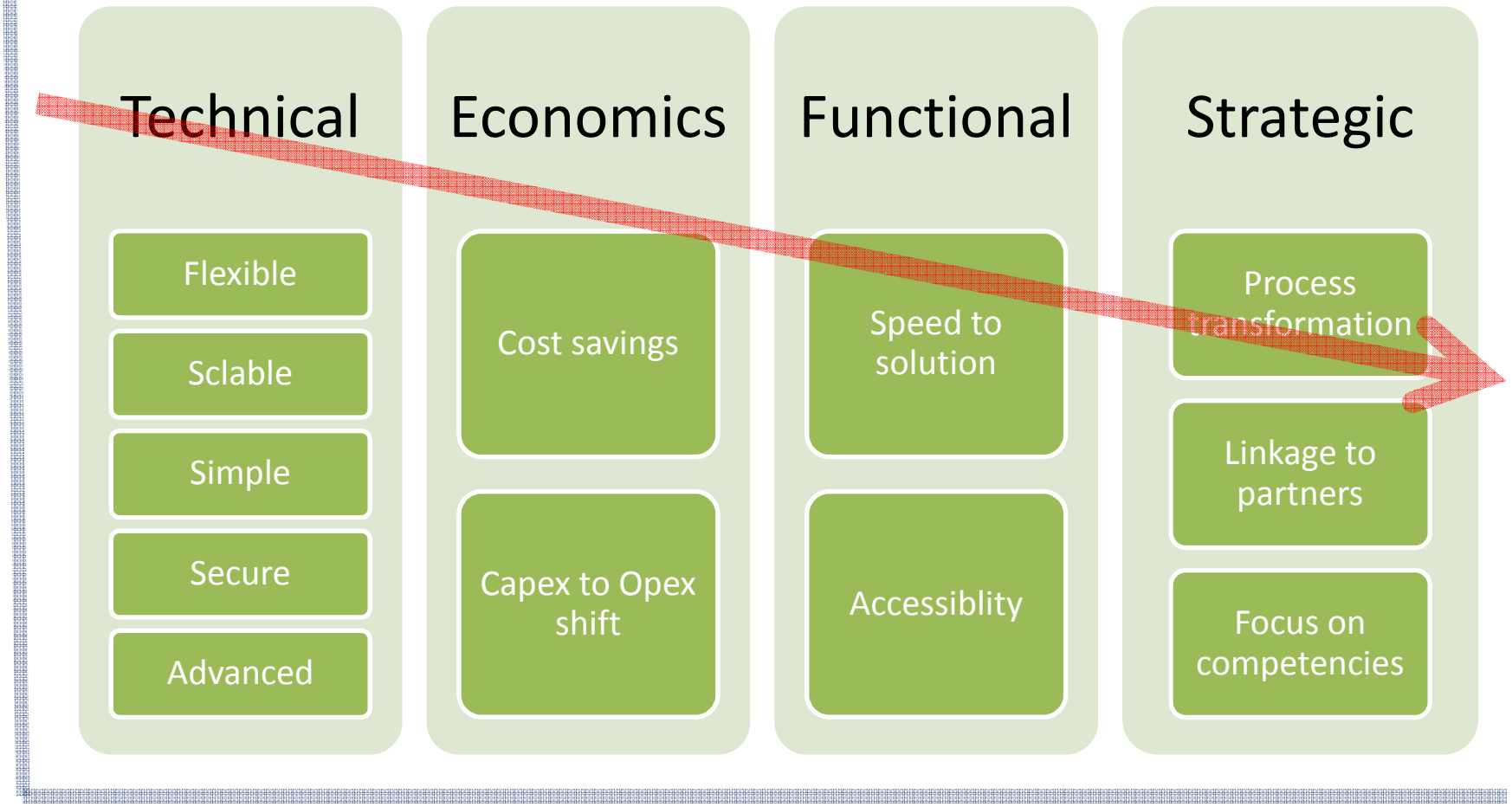
KPMG

Cloud Computing



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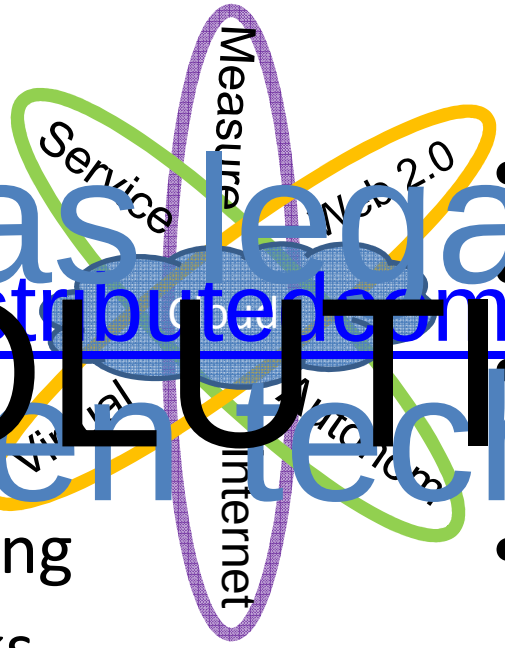
Main Technologies

- Virtualization
- Grid technology
- Service oriented Architecture(SOA)
- Distributed computing
- Broadband Networks
- Browser as Platform
- Free and open source



Other Technologies

- Autonomic systems
- Web 2.0
- Web application frameworks
- SLA

"cloud has legal issues rather then technical"

http://www.distributedcomputing.info/

EVOLUTION

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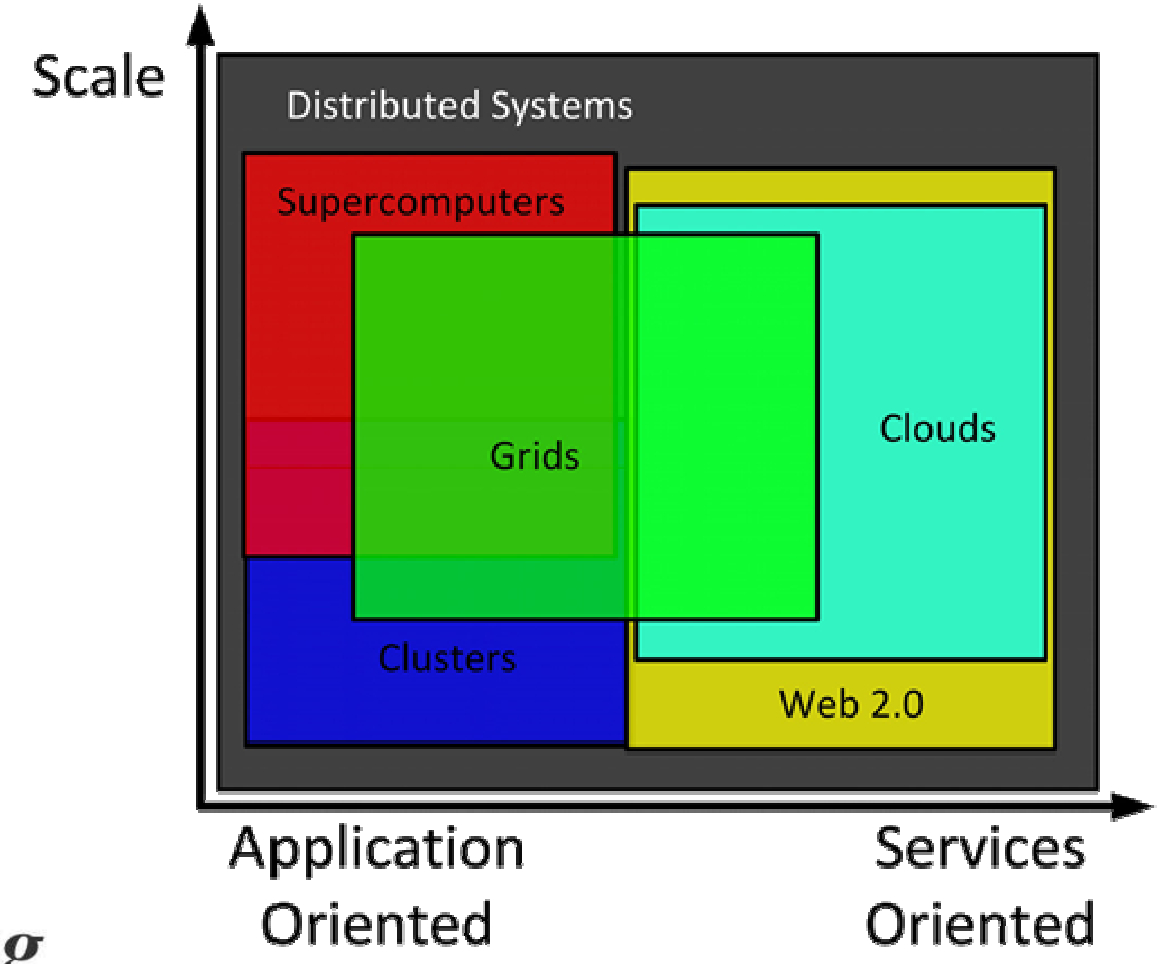

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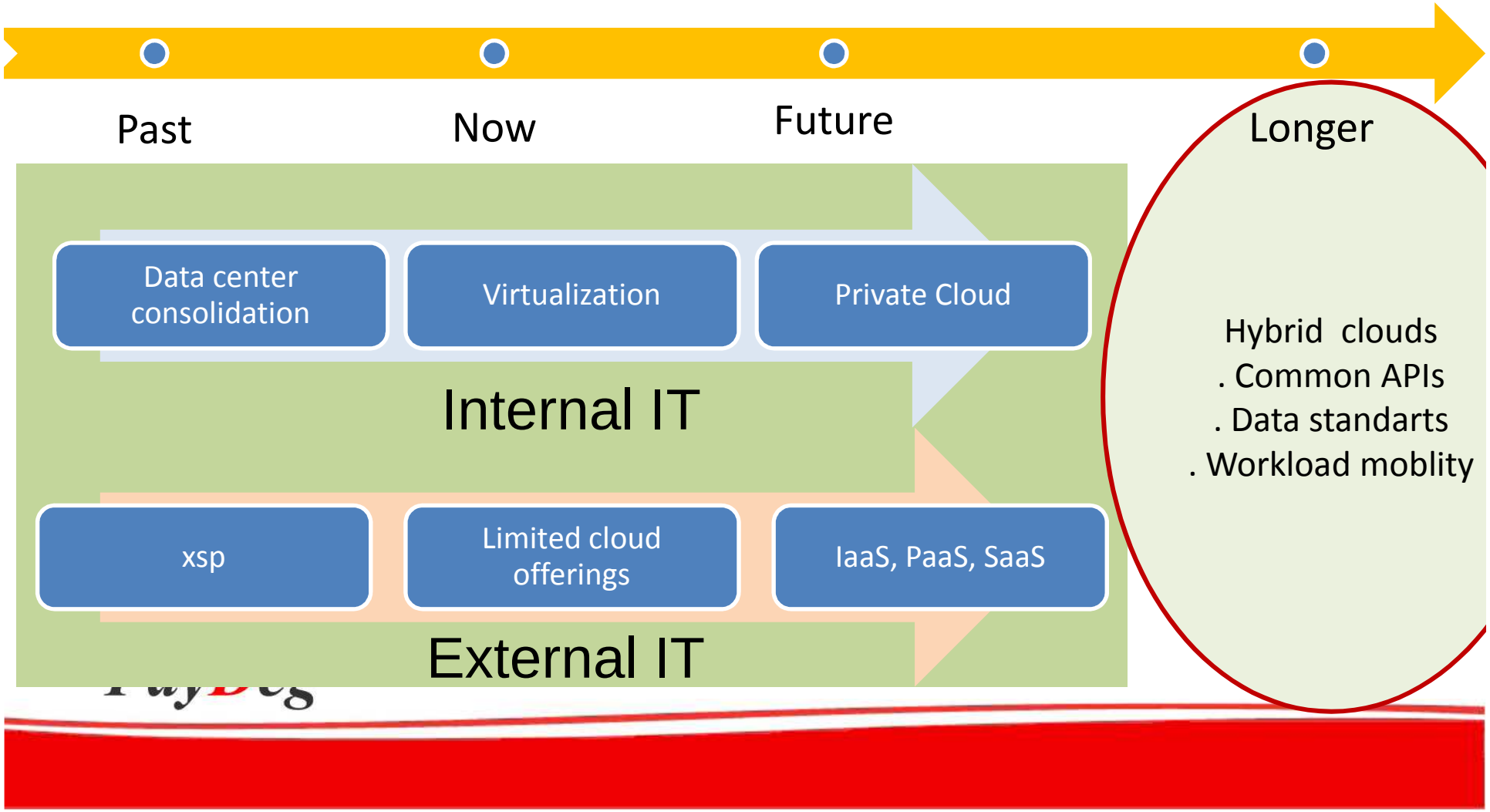
Evolution



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Use Case Scenarios

Requirement	End User toCloud	Enterprise toCloud toEnd User	Enterprise toCloud	Enterprise toCloud toEnterprise	Private Cloud	Hybrid Cloud
Identity	✓	✓	✓	✓		✓
Open Client	✓	✓	✓	✓	✓	✓
Federated Identity		✓	✓	✓		✓
Location Awareness		✓	✓	✓		✓
Metering and Monitoring		✓	✓	✓	✓	✓
Management and Governance		✓	✓	✓	✓	✓
Security	✓	✓	✓	✓	✓	✓
Deployment			✓		✓	✓
Transactions and Concurrency				✓		
Interoperability				✓		✓
Industry-Specific Standards			✓	✓		✓
VM Image Format		✓	✓	✓	✓	✓
Cloud Storage API		✓	✓	✓		✓
Cloud Database API		✓	✓	✓		✓
Cloud Middleware API		✓	✓	✓		✓
Data and Application Federation		✓	✓	✓		✓
SLAs	✓	✓	✓	✓	✓	✓
Lifecycle Management		✓	✓			

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Customer Scenarios

Customer Scenarios	Customer problem solved	Requirements & Capabilities	Applicable use case
Payroll processing	•Processing time reduced •Hardware requirements Reduced •Elasticity enabled for future expansion	IaaS(VMs), Cloud Stroge	Enterprise to Cloud
Logistics & Project Management	•Processing time reduced •Manual tasks eliminated •Development environment updated and streamlined	PaaS (app framework), Cloud storage	Enterprise to cloud to End user
Central government	•IT expertise consolidated •Hardware requirements reduced	IaaS, PaaS	Private Cloud
Local government	•IT expertise consolidated •Hardware requirements reduced	IaaS, PaaS	Hybrid Cloud
Astronomic data processing	•Hardware expense greatly reduced (processing power and storage) •Energy costs greatly Reduced •Administration simplified	IaaS(VMs), Cloud Stroge	Enterprise to Cloud to End user

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Cloud Computing in diffrent industries

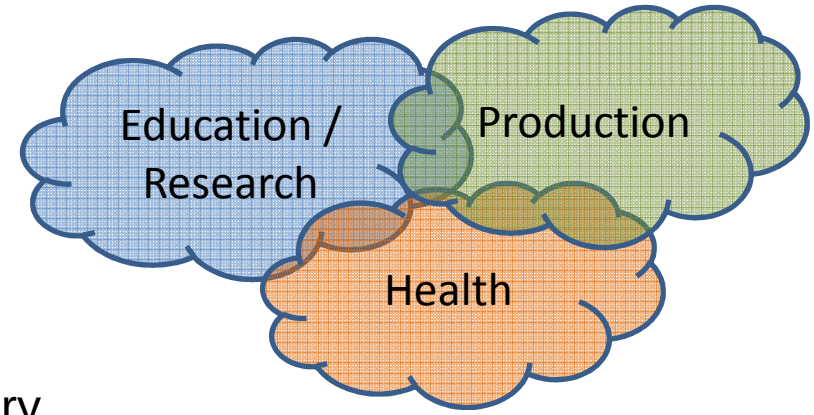
Interactive & Collaborative learning

Rapid & Collaborative design

Improved processes

Global resources accessiblity

Simulation low cost



Supply chain coordination

Health monitoring & alert distribution

Drug discovery
Massive & flexible computing

Health & insurance services

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WORLD ECONOMIC FORUM
COMMITTED TO IMPROVING THE STATE OF THE WORLD

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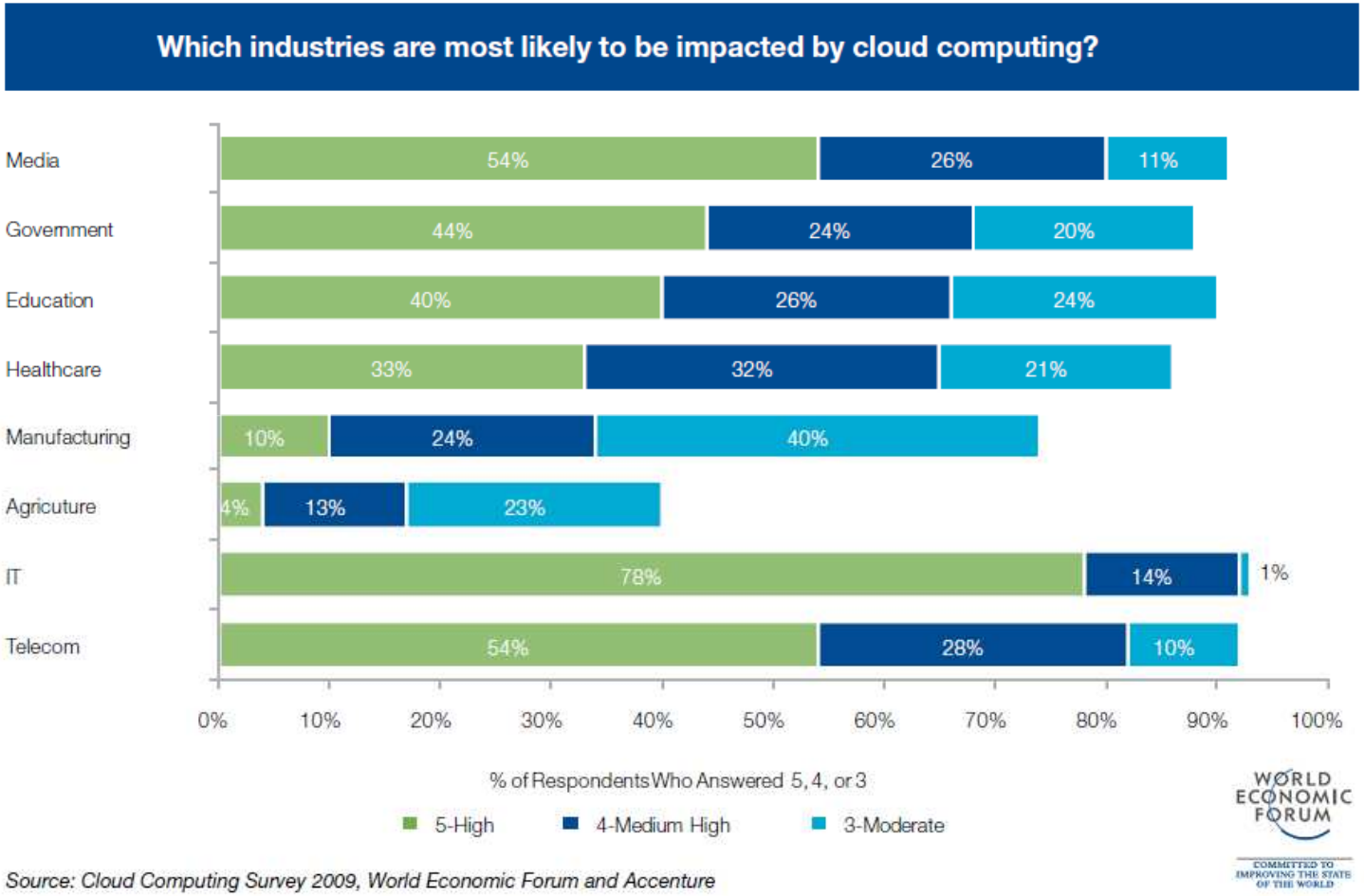

Source: Cloud Computing Survey 2009, World Economic Forum and Accenture

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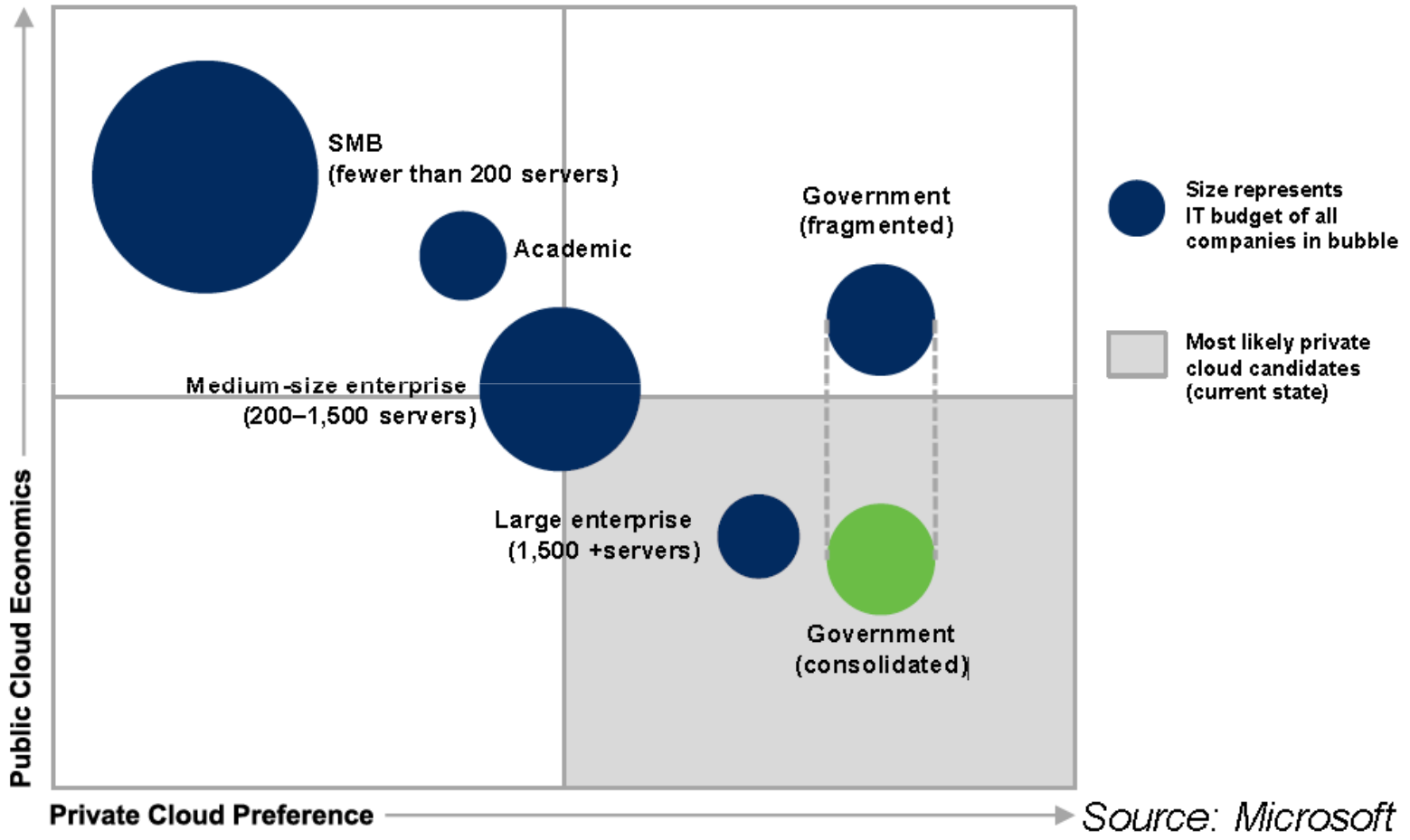

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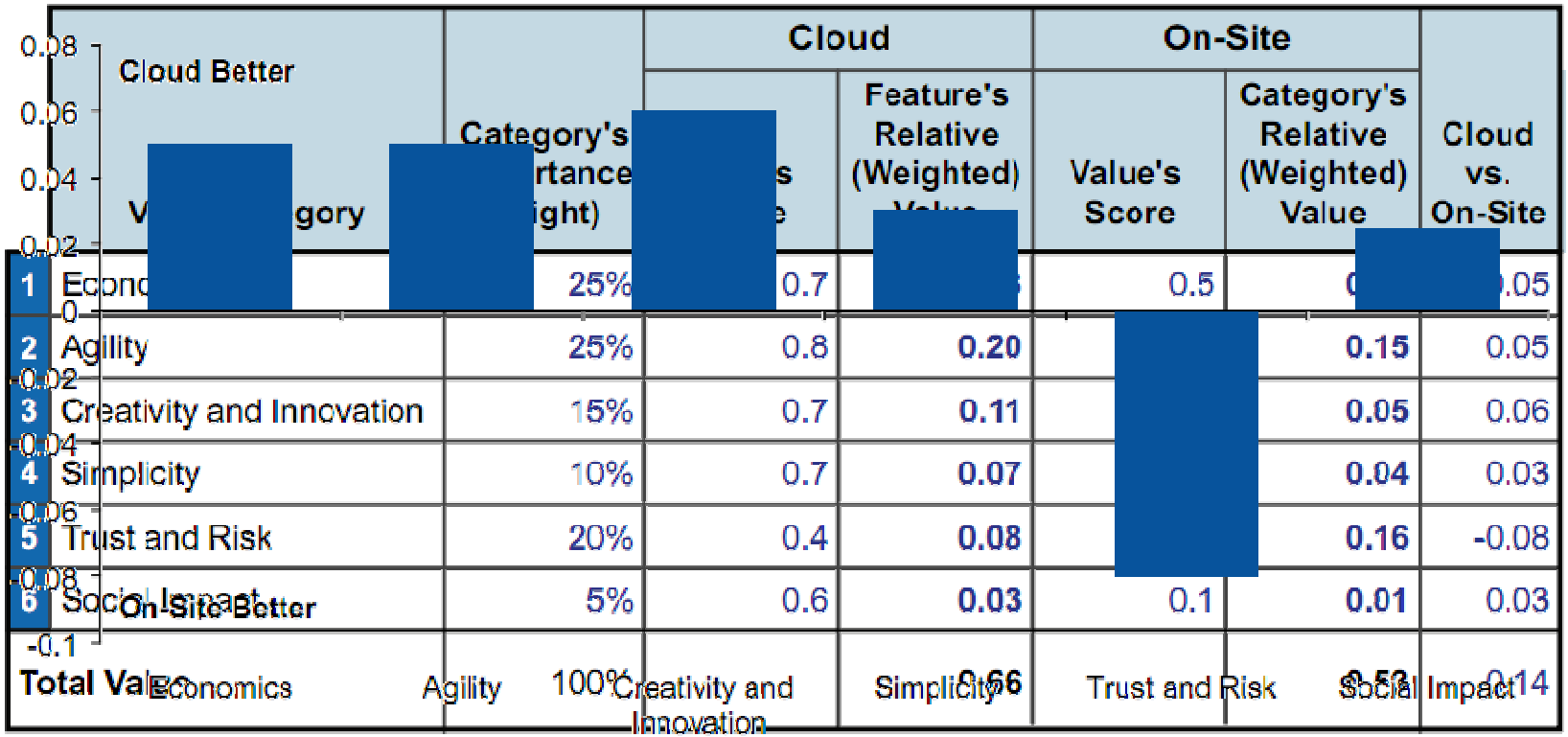

		Category's Importance (Weight)	Cloud		On-Site		Cloud vs. On-Site
			Value's Score	Feature's Relative (Weighted) Value	Value's Score	Category's Relative (Weighted) Value	
1	Econ	25%	0.7		0.5		.05
2	Agility	25%	0.8	0.20		0.15	0.05
3	Creativity and Innovation	15%	0.7	0.11		0.05	0.06
4	Simplicity	10%	0.7	0.07		0.04	0.03
5	Trust and Risk	20%	0.4	0.08		0.16	-0.08
6	Social Impact	5%	0.6	0.03	0.1	0.01	0.03
	Total Value	100%		0.66		0.53	0.14

Source: Gartner (September 2009)

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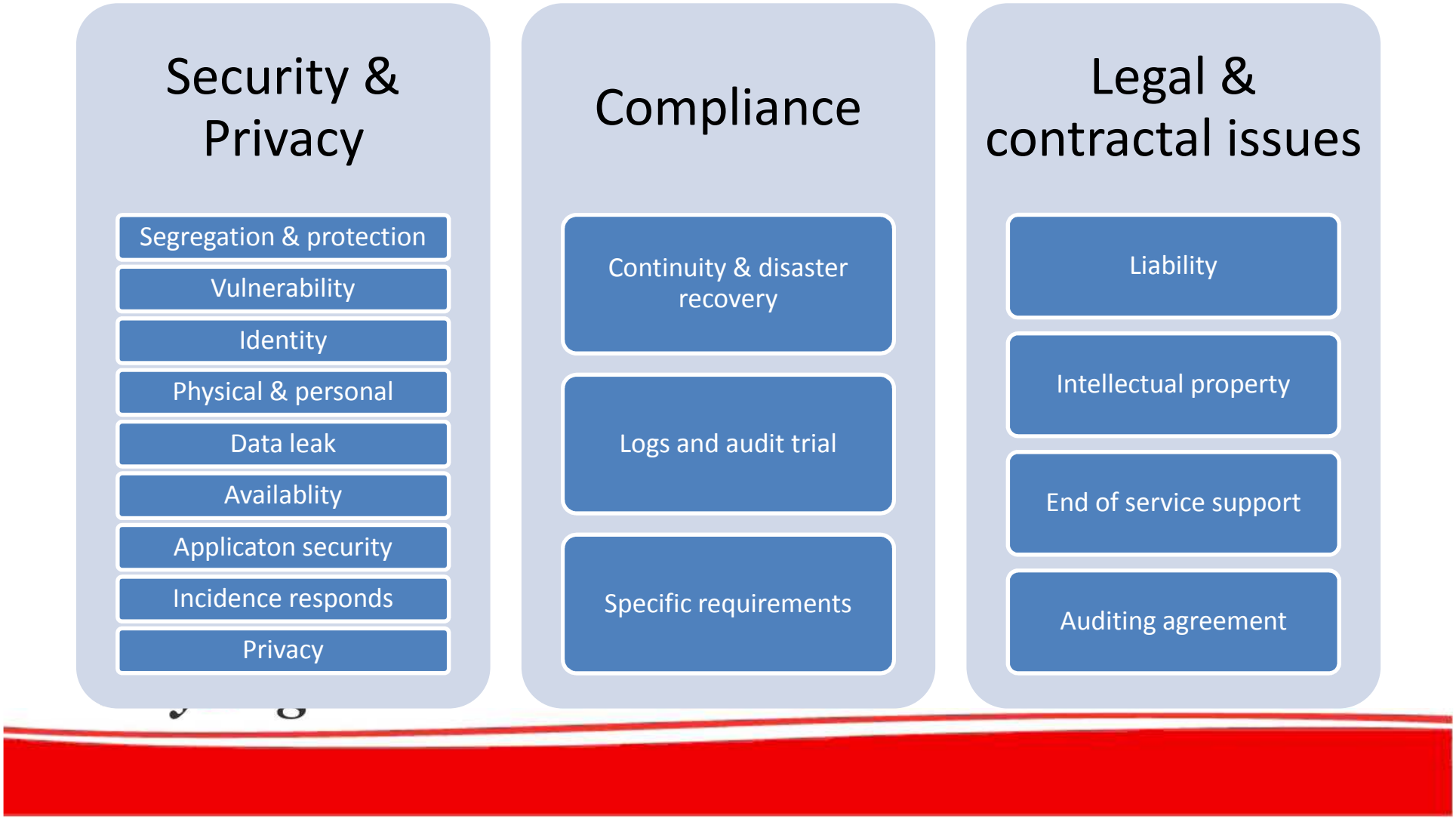
Issues check list



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- Just **11 %** of enterprises plan to implement cloud computing in the coming **12 months**.
- **75%** prefer the **private** cloud, with **52%** implementing both on-premises and off-premises cloud.
- Approximately **70 %** of enterprises rate IT automation disciplines as highly important to **cloud** computing.

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Source: "The Responsible Cloud," Enterprise Management Associates, 2010

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