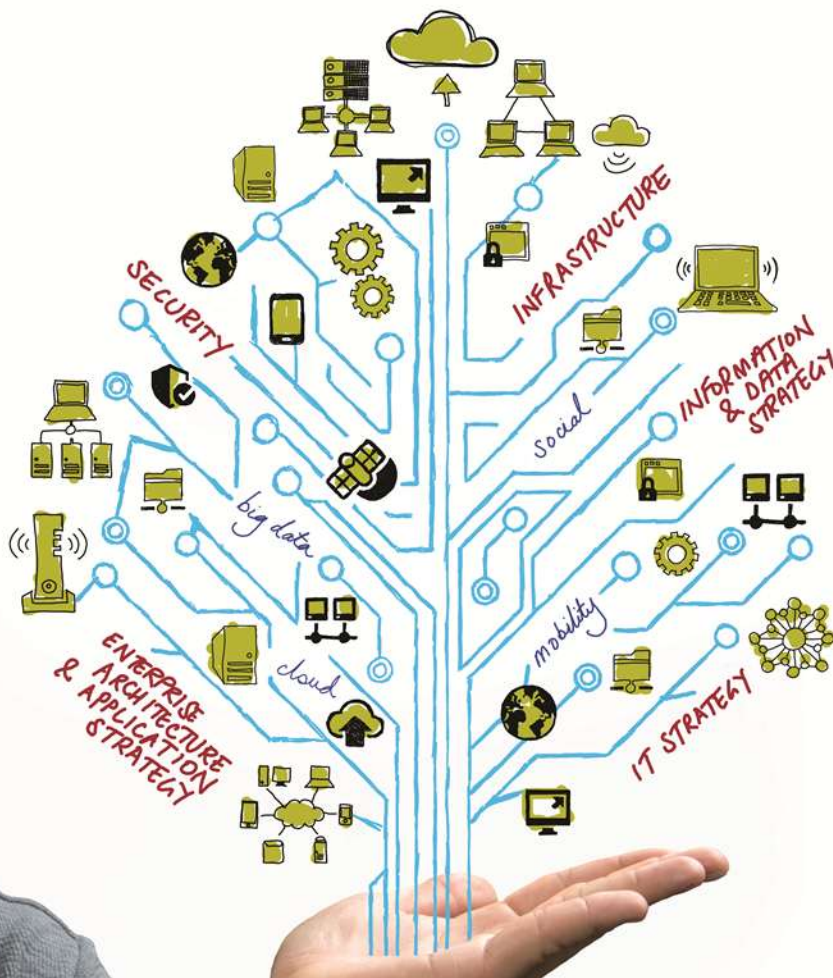


Technology Consulting

Cloud Computing Workshop



High performance. Delivered.



SAPIENZA
UNIVERSITÀ DI ROMA

Rome, 15th April 2013

Speaker: Maurizio Salvaderi

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Accenture Portrait

The Accenture logo features the word "accenture" in a bold, lowercase, sans-serif font. A stylized greater-than sign (>) is positioned above the letter 't'.

High performance. Delivered.

Countries

120

Professionals

259.000

Dollars invested in Research & Development

400 million

A light blue world map is positioned in the background, showing the outlines of continents and countries. The map is centered on the Atlantic Ocean.

Accenture is a global Management Consulting, Technology Services and Outsourcing Company, which combines in a unique way these specialized functional expertise with the experience and know-how of its professionals in different market sectors: Communications & High Tech, Financial Services, Products, Health & Public Service, Resources.

Knowledge, innovation and experience in Italy

Accenture is present in Italy since 1957, thanks to the efforts of a group of Italian entrepreneurs and managers, and relies on an international network for resources, skills and experience.

Today **Accenture** works in Italy for:

- **15** of the top 20 national financial groups
- the first **4** insurance companies
- **11** of the top 15 industrial groups

Accenture in fact funds service excellence to customers on the belief that the evolution of the organization is crucial to anticipate the needs of the market and be prepared to support change.

From September 2001 **Accenture Italia leads the IGEM Region**, a vast geographical area which includes Greece, Turkey, Middle East, Poland, Czech Republic, Slovakia, Hungary, Romania and Russia, accompanying the development through programs of transformation and innovation

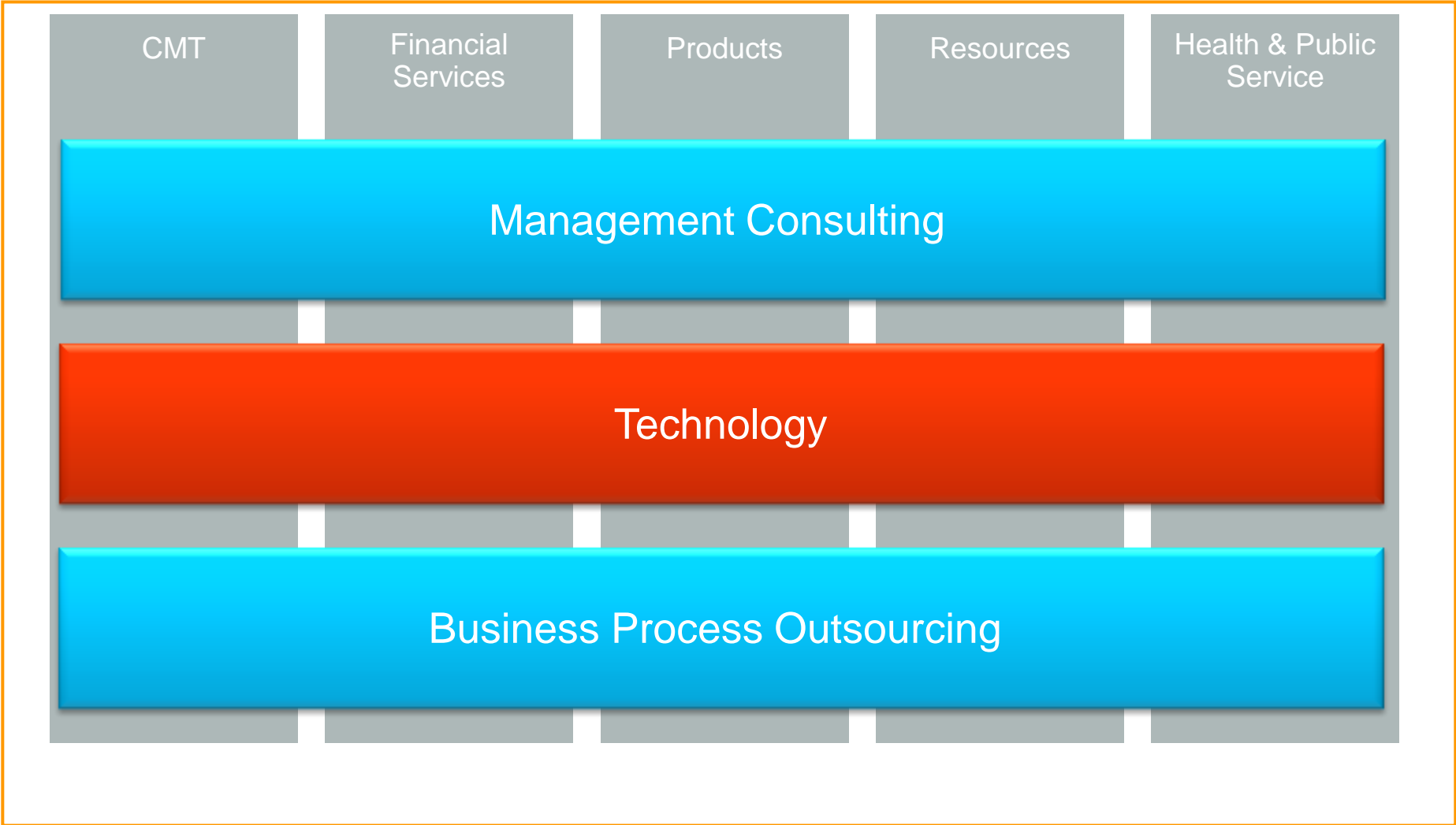
Skills

To meet the needs of our customers, we offer a global network of expertise, solutions and experiences.

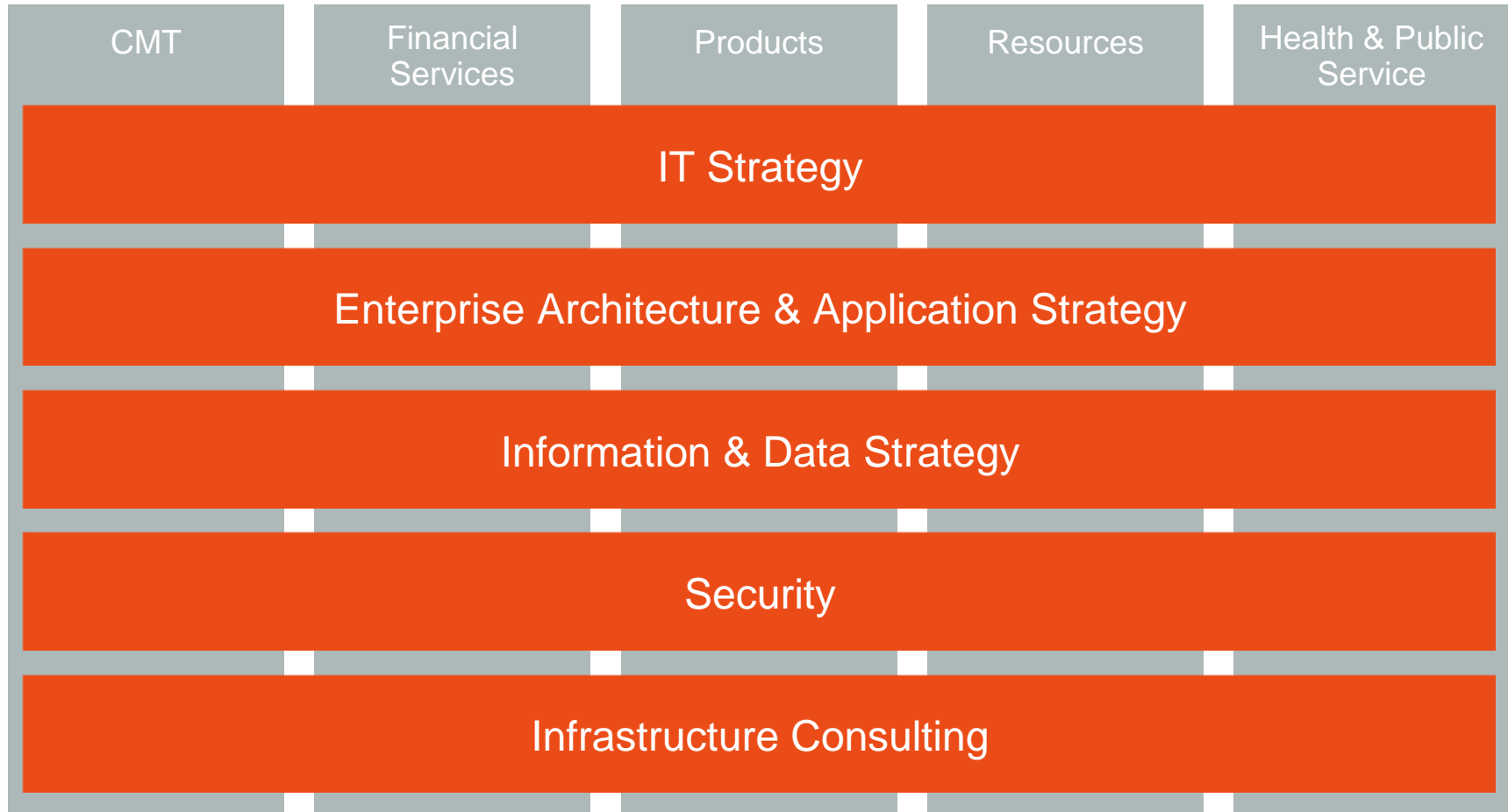
Our skills:

- **Consulting** – new Management Consulting meets the market trend.
- **Technology** – Technology from tool becomes a strategic lever for global competitiveness.
- **Outsourcing** – Integrate business processes, optimize the "end to-end" efficiency and reduce the overall cost.

Accenture Global Offering



Our end-to-end portfolio of **Technology** services transforms IT and transforms how IT enables your business



So that you can become more agile, more quickly

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- **Accenture Technology Consulting**

- **What is Cloud Computing?**

- **Market Trends**

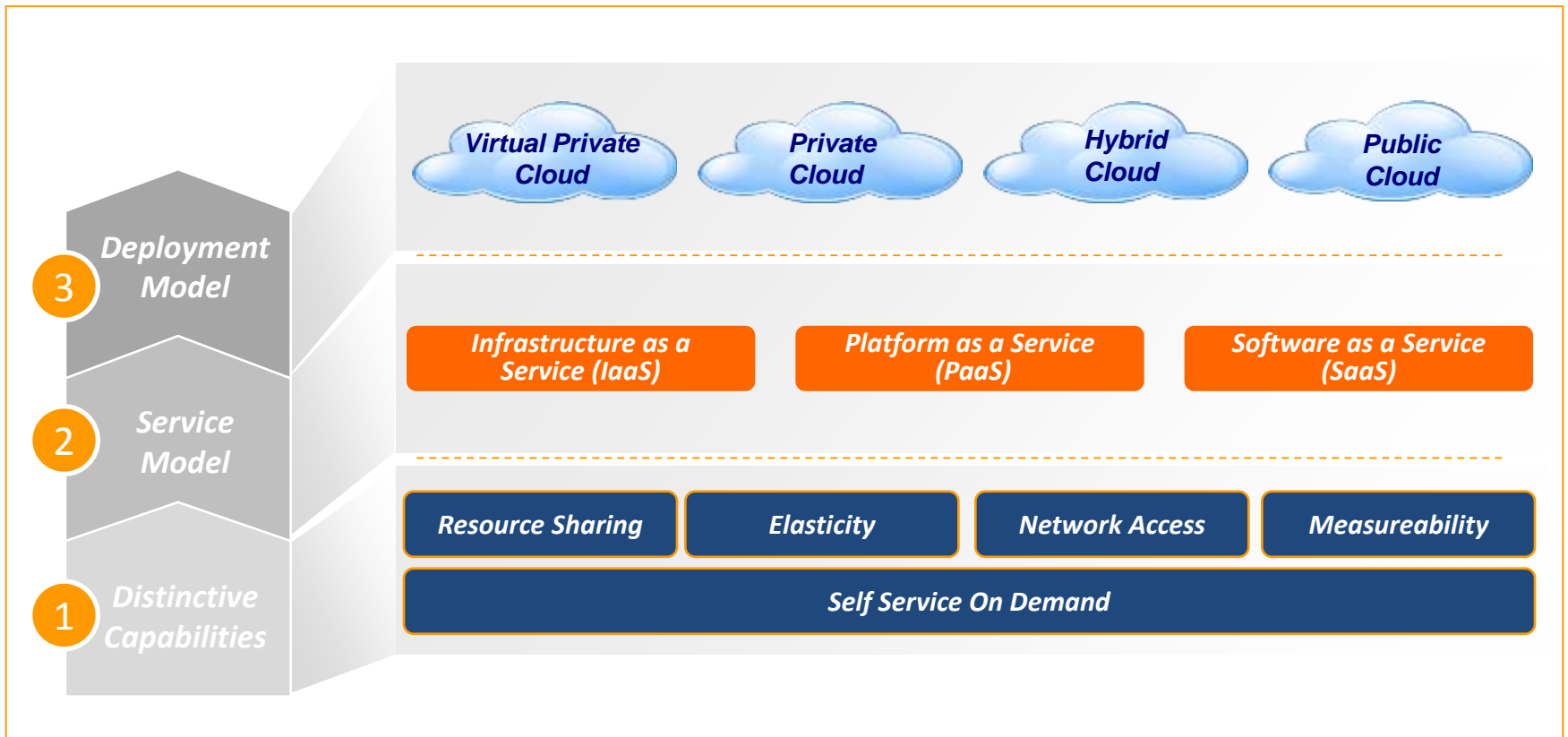
- **Accenture Cloud Point of View**

- **Cloud Enabling Technologies**

- **Q&A**

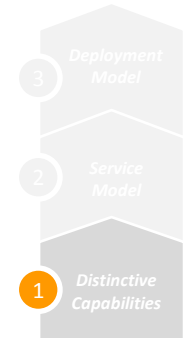
What is Cloud Computing?

National Institute of Standards and Technologies (**NIST**) defines **Cloud computing** as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.



Cloud Computing - Capabilities

Cloud model is composed of five essential characteristics, three service models, and four deployment models with following main capabilities:

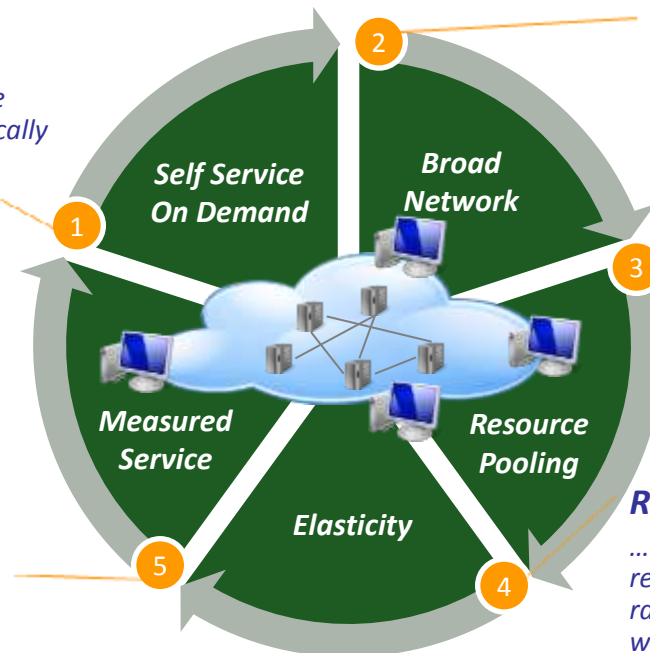


On-demand self-service...

...consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider

Measured service...

...Cloud systems automatically control and optimize resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (e.g., storage, processing, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and consumer of the utilized service



Broad network access...

...Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms

Resource pooling...

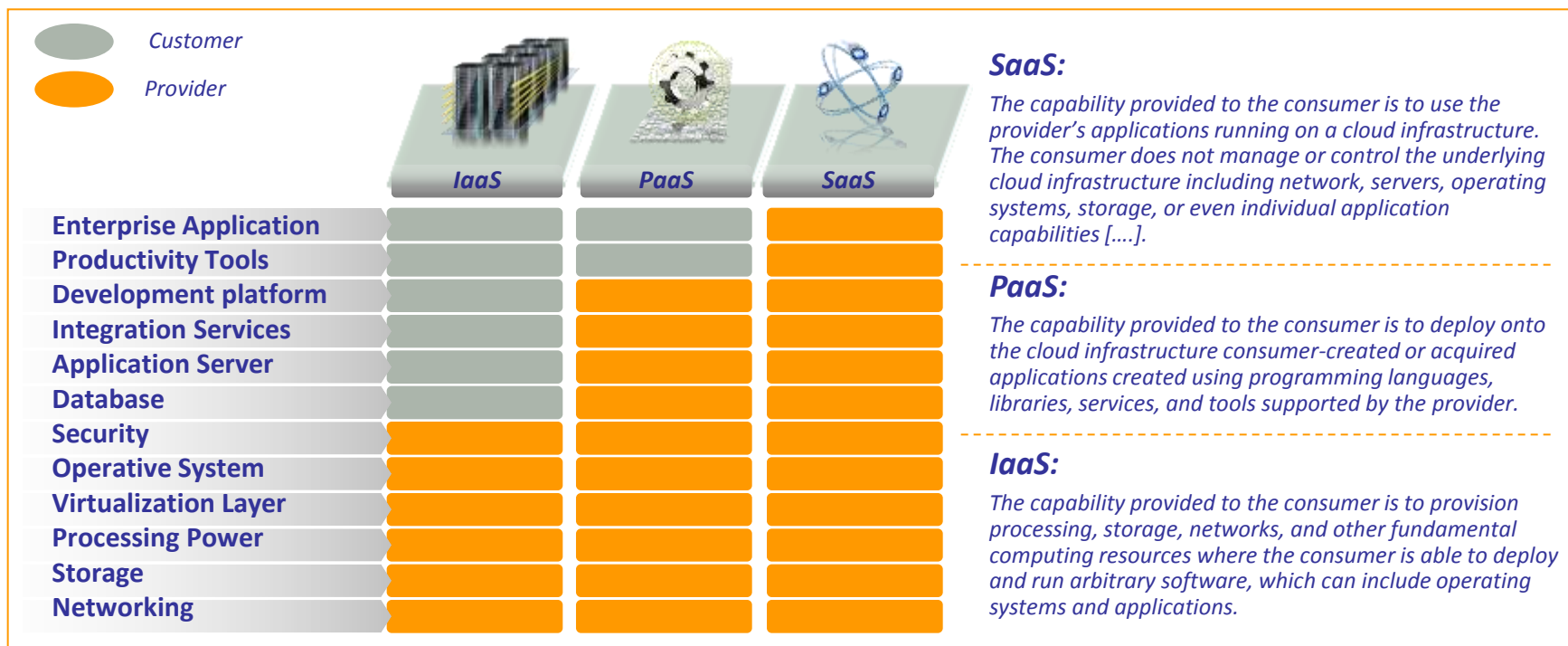
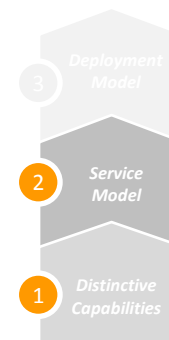
...The provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand.

Rapid elasticity...

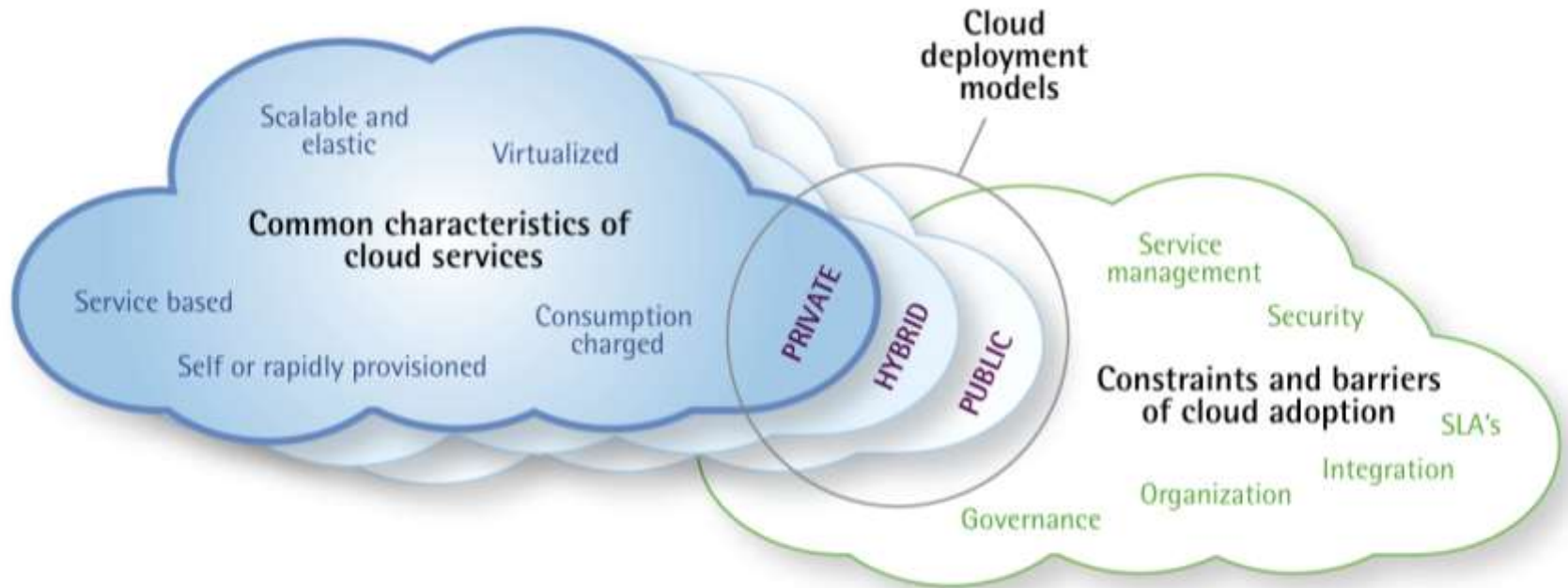
...Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities often appear to be unlimited

Cloud Computing - Service Models (1/2)

Cloud services can be classified in three main models, depending on the level they are placed, starting from hardware layer up to application layer. The three delivery models also define the organizational and strategic solutions used by Service Provider to acquire competitive advantages.



Cloud Computing - Service Models (2/2)



Cloud Service Models

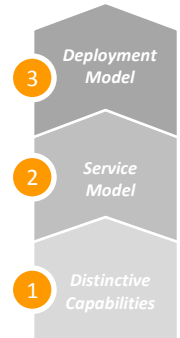
- IaaS – Infrastructure, often further divided into storage, server, or network as a service
- PaaS – Platform providing application server components, database or integration platforms
- SaaS – Software solution as a service
- BPaaS – Business process as a service ... still immature

Cloud Computing - Deployment Models

Deployment Models define how cloud services are installed in data centers.

Services can be installed in

- provider's data center accessible to all users
- users data center
- Reserved machines located in public data center.



Private Cloud

The cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

Public Cloud

The cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

Community Cloud

The cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns [....].

Hybrid Cloud

The cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

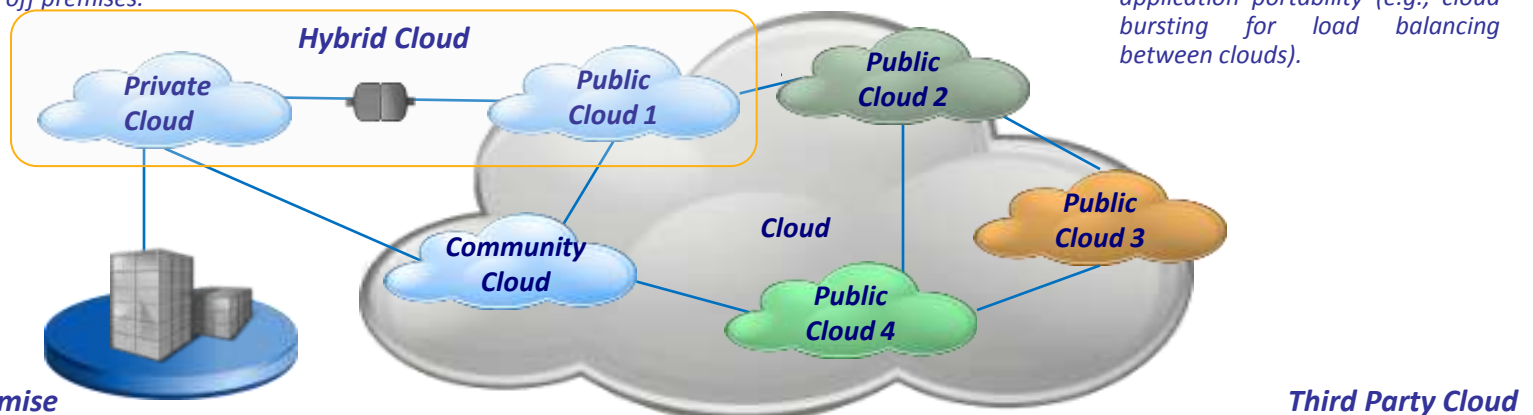


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- **Accenture Cloud Point of View**
- **Cloud Enabling Technologies**
- **Q&A**

Why are organizations considering the cloud?



Cost reduction

- Lower capital and operational costs
- Lower maintenance and energy costs
- Pay as you go



Elasticity/scalability

- Capacity only when you need it
- Ability to handle sudden load changes
- Achieve high business agility



Speed to market

- Reduction of time to pilot and test projects
- Faster availability to customers



High performance computing

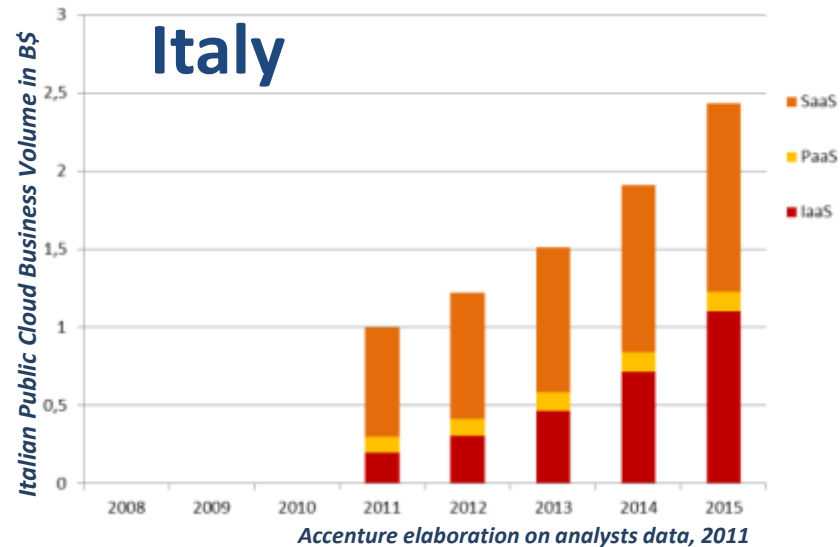
- Increased capacity from your current physical infrastructure
- Avoid provisioning (and paying) for the peak
- “Infinite” computing capacity on demand

Cloud Computing Becomes an Integral Part of IT

As cloud computing continues to mature and becomes an integral part of IT, IT organizations will increasingly look to evolve in ways that demonstrate value in a cloud world

- ✔ IT spending grew year over year, while ICT spending spiked down. Spending shifted, however, as sales of personal computers, PC monitors and servers all declined. Smartphone spending surpassed PCs for the first time.
- ✔ IT spending is still growing organically, but not at the same pace as prior to the financial crisis
- ✔ Businesses are adopting IT solutions such as virtualization, automation and SaaS as a means to reduce the annual increases in their overall IT spending at a time when economic uncertainty remains high

Cloud Computing Market Volumes



In 2011: TotCloud= 2,2B\$

- o/w Public= 1B\$
- o/w SaaS= 0,7B\$

CAGR 2011-15:

- SaaS= 15%
- IaaS= 43%

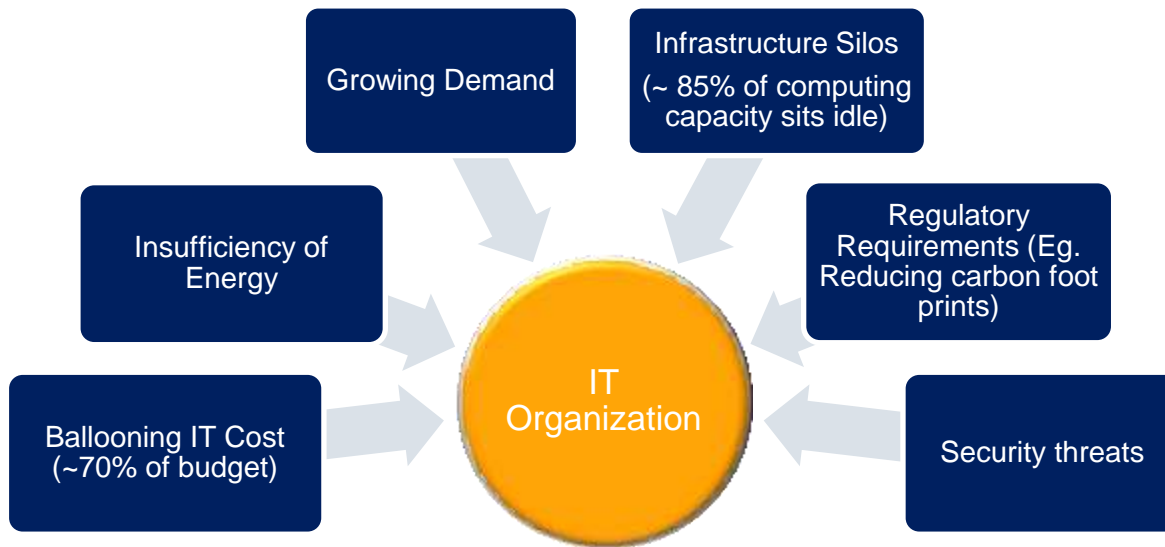
In Italian context cloud growth will mainly involve IaaS solutions

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IT & Business Challenges

Today, IT faces multiple challenges from different fronts – Technology, Business, Regulations. It is at a critical point to find a solution.



Following key questions are in the minds of many CIO's today –

- ? *In the new economic situation, how do I keep up rate of innovation?*
- ? *Is IT aligned to company's business needs?*
- ? *How do I optimize my IT costs?*
- ? *Is CLOUD the solution for my needs?*

Why Cloud makes a difference

The fundamental concept is turning IT costs variable 'pay-per-consumption' rather than fixed!!

- ✓ Lowers IT capital and operational cost.
- ✓ Lowers energy consumption and related costs
- ✓ Optimizes IT investment and removes complexity
- ✓ Improves Asset Utilization and lowers TCO.
- ✓ Minimizes Go-To-Market timelines.
- ✓ Simplifies IT management
- ✓ Provides an elastic IT environment.
- ✓ Access to "infinite" computing capacity on demand
- ✓ Can be used to leverage unifying of HW landscape



Cost Reduction

(Lower infrastructure, energy, and maintenance costs)



High Powered Computing

(Access to almost infinite computing capacity when needed)



Elasticity / Scalability

(Provides on-demand capacity and high business agility)



Speed to Market

(Reduces time required to pilot projects)

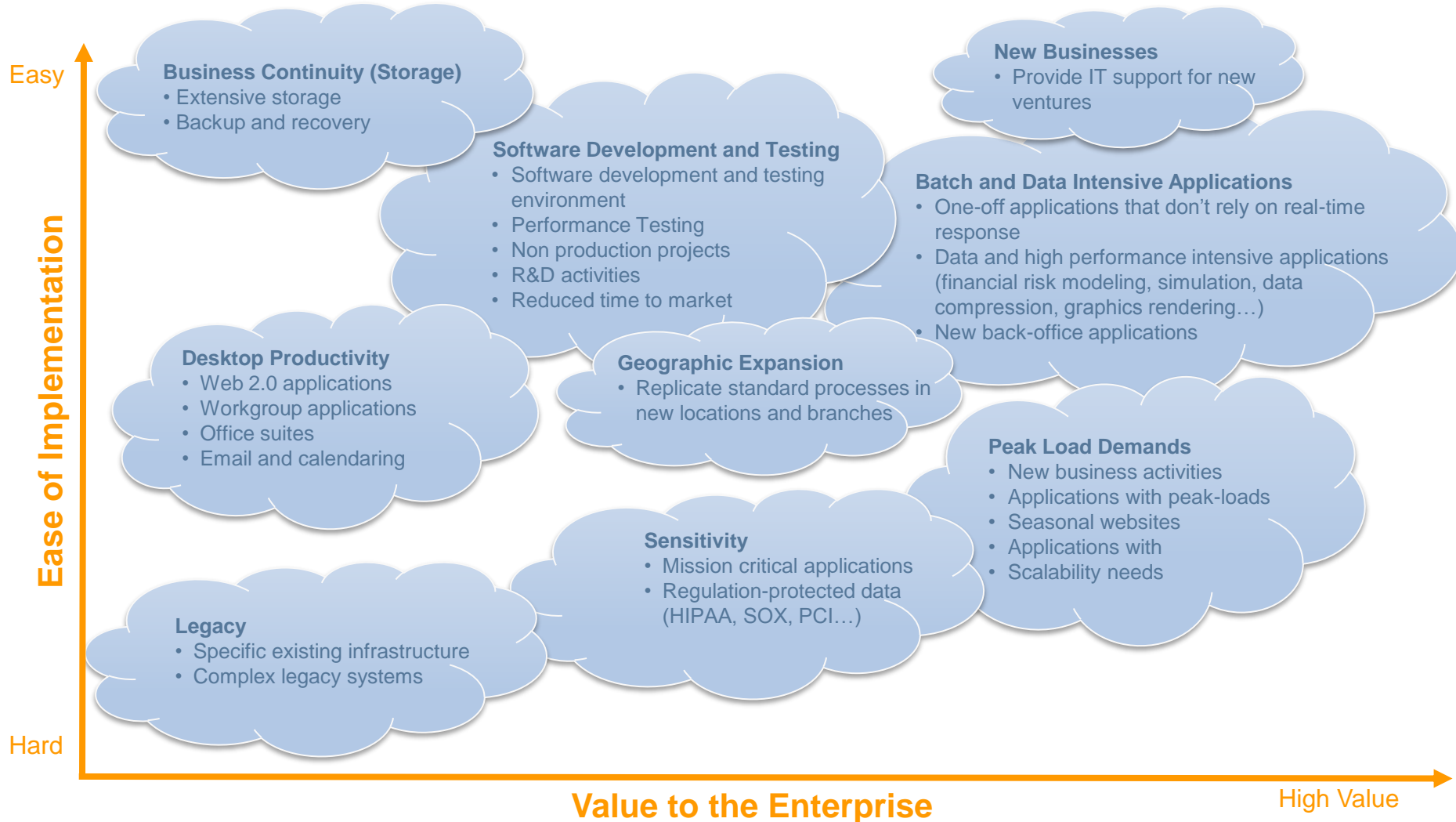


Green IT

(More energy efficient IT from centralized computing)

Identifying cloud opportunities

Accenture has identified different possible uses for cloud computing



Why create a Cloud Strategy

Unlocking the potential of the cloud requires a shared vision and roadmap for business and IT.

Defining the cloud strategy

Our cloud IT strategy services help you shape the direction of IT, taking advantage of cloud computing, to maximize shareholder and business value, while controlling IT spend.



Priorities and business case for cloud

Determine how cloud can be implemented and integrated to deliver greater value to your business:

- Align IT with business strategy to determine how cloud computing can support growth
- Prioritize cloud investments and align to business imperatives to drive bottom-line impact

Agree on the capabilities for cloud

Confirm the new business and IT capabilities, technologies and strategies you'll need to take advantage of new business opportunities created by cloud. Determine the best approach to realizing the cloud-enabled future.

Pragmatic roadmap to the cloud

Generate alignment and buy-in to the pragmatic, actionable roadmap of change required to take advantage of cloud computing. Sequence initiatives for the most efficient and effective journey to cloud.

Cloud Benefits on IT Spending

Revenue Growth



Revenue growth can be enhanced via the cloud, through:

- Greater value incorporated into the product or service
- Greater market penetration through the global reach of the cloud
- Greater availability through replication of data and application resources
- Greater conversion of sales through scalable online channel resources
- Greater customer engagement through richer experiences delivered via the cloud
- Greater revenue, allowing for the time value of money, by accelerating future revenue streams into the present

Cost Reduction



Cloud technology saves money through:

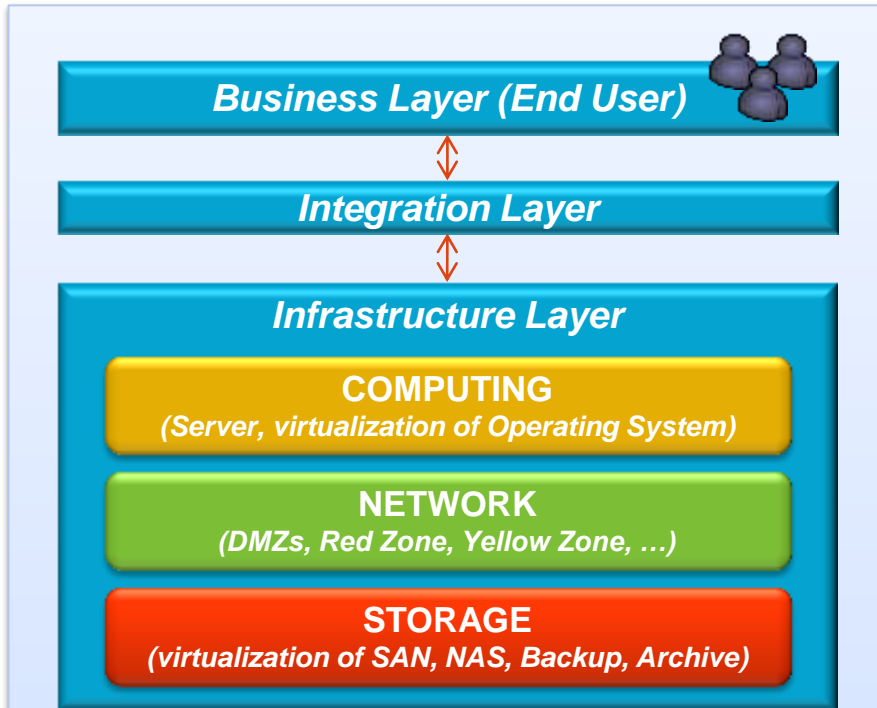
- *An array of services at shared costs* – You minimize heavy spending on capital investment while having varied options for the services your business needs. You do not have to invest in expensive hardware or software but can use the cloud to change or enhance your internal computing resources.
- *More with less* – Cloud providers can take care of computing system, HW/SW maintenance, capacity issues and security so that Internal IT Staff can better focus on productivity goals.
- *Organizational agility* – Increasing capacity to suit the needs of a new project or accommodate the requirements of a new department involves sizable up-front capital budget.
- *Elimination of redundancy* – No need of additional staff, extra equipment and redundant data processes.

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Cloud Computing Technology Benefits

IT STACK



Benefits

- Standardization
- Time to market reduction
- Innovation and commoditization
- Pay per use pricing model
- Computing on demand
- Flexibility
- Commercial & Technical catalogues

ICT OPERATION PROCESS



Benefits

- Standard & Efficient processes
- Flexibility
- ICT Operation cost reduction
- Automation of repetitive task
- User satisfaction

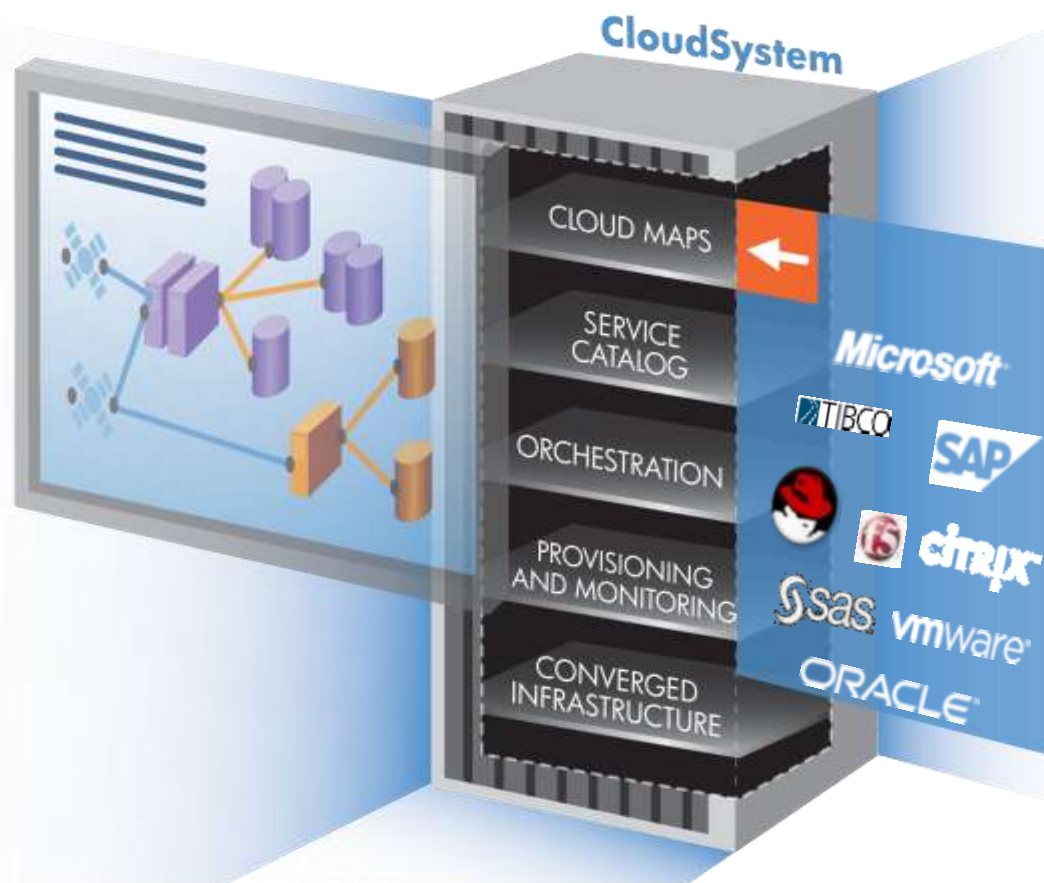


Converged Infrastructure for Private Cloud

Complete, open and integrated system to build and manage clouds

Key Differentiators

- Single services view across private, public and hybrid cloud
- Multi-hypervisor, multi-OS, heterogeneous infrastructure
- Intelligent automation and lifecycle management; application-to-infrastructure
- Scalability with built-in bursting
- Converged Infrastructure built for the cloud





Converged Infrastructure Solution Details

Official vendor link



<http://www.vce.com/products/vblock/overview>



<http://www.oracle.com/us/products/database/exadata/overview/index.html>



<http://www.oracle.com/us/products/middleware/exalogic/overview/index.html>



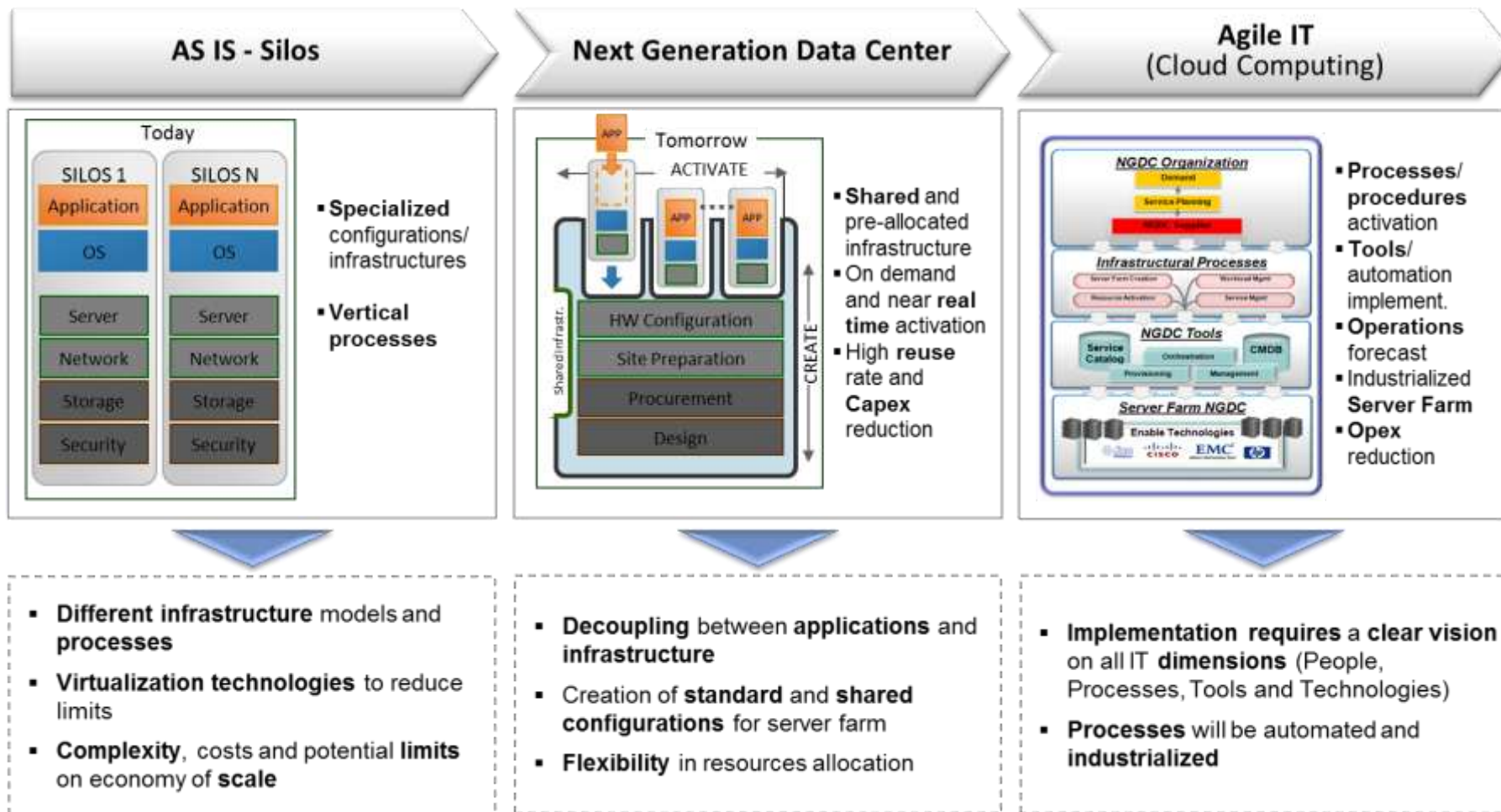
<http://www.ibm.com/ibm/puresystems/us/en/>



<http://www.netapp.com/it/solutions/cloud/flexpod/>



Private Cloud - Datacenter Automation Approach



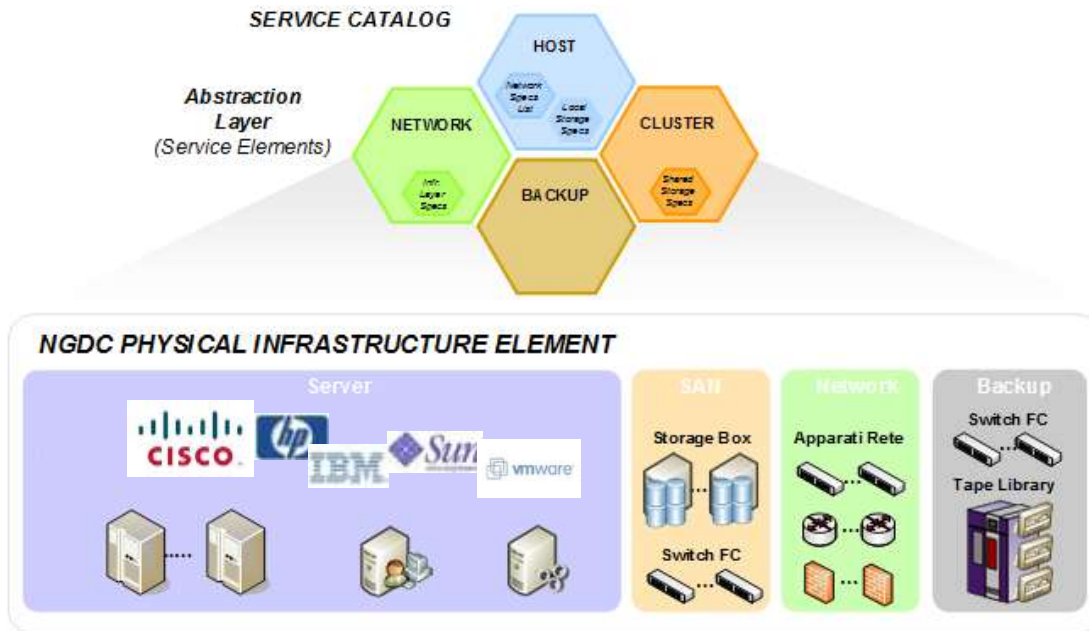
- **Different infrastructure** models and processes
- **Virtualization technologies** to reduce limits
- **Complexity**, costs and potential limits on economy of **scale**

- **Decoupling** between applications and infrastructure
- Creation of **standard** and **shared configurations** for server farm
- **Flexibility** in resources allocation

- **Implementation** requires a clear vision on all IT **dimensions** (People, Processes, Tools and Technologies)
- **Processes** will be automated and **industrialized**



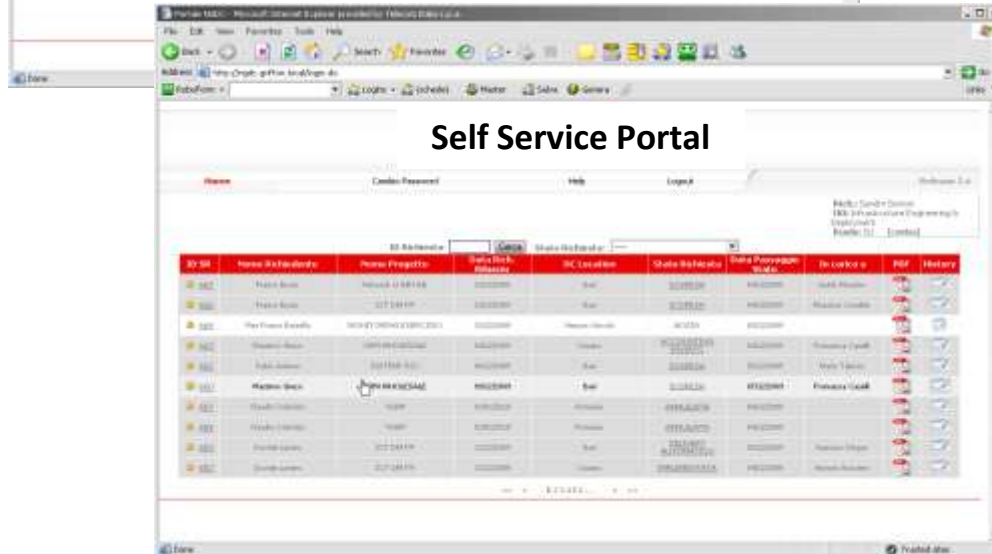
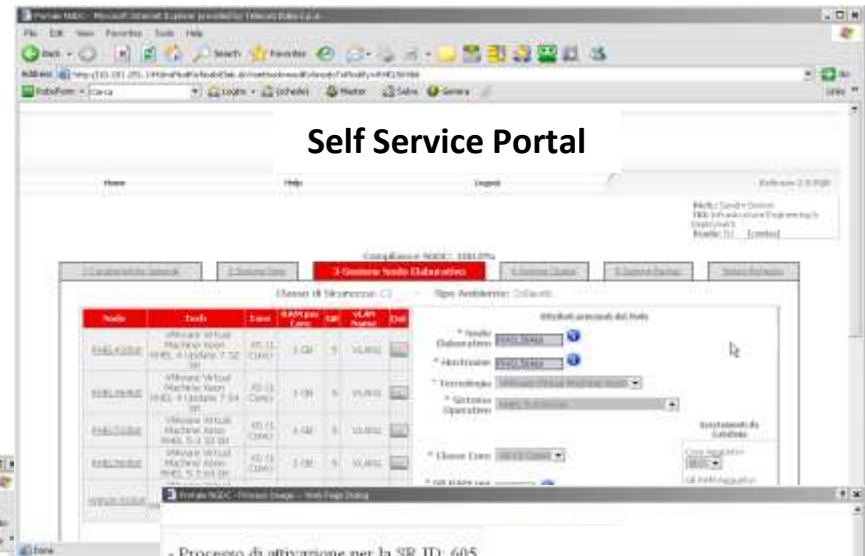
Cloud Service Catalog



- ▶ **Server:** the catalog offers computation resources as virtual machine in order to abstract the physical resources of a farm as CPU and RAM. The catalog has a set of configurations that do not impose limitations at the common application architectures to host over the farm.
- ▶ **Network:** the catalog offers standard vLAN size and routing rules in order to enable the customer to define the virtual wiring resources for the virtual machine.
- ▶ **Cluster:** the catalog offers the basic rules to define the cluster relationship between nodes of the system.
- ▶ **Backup:** the catalog offers the basic rules to book and reserve backup resources for the systems.

The services catalog enables the Server Farm Administrator to maintain the standardization of configurations reducing the infrastructure management costs

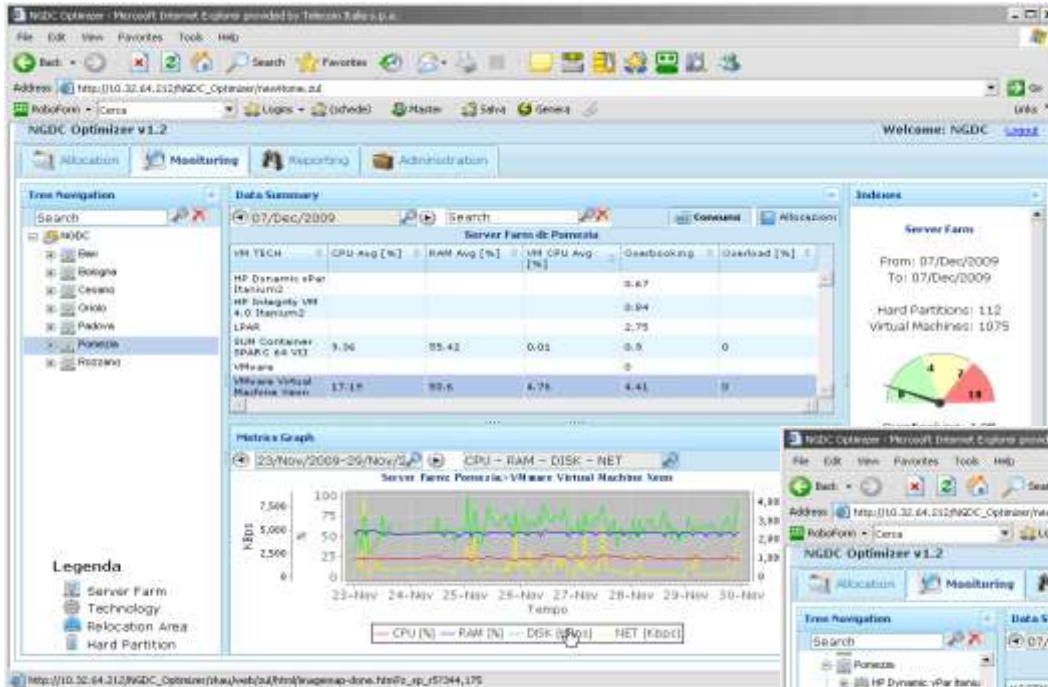
Service Delivery and Automation



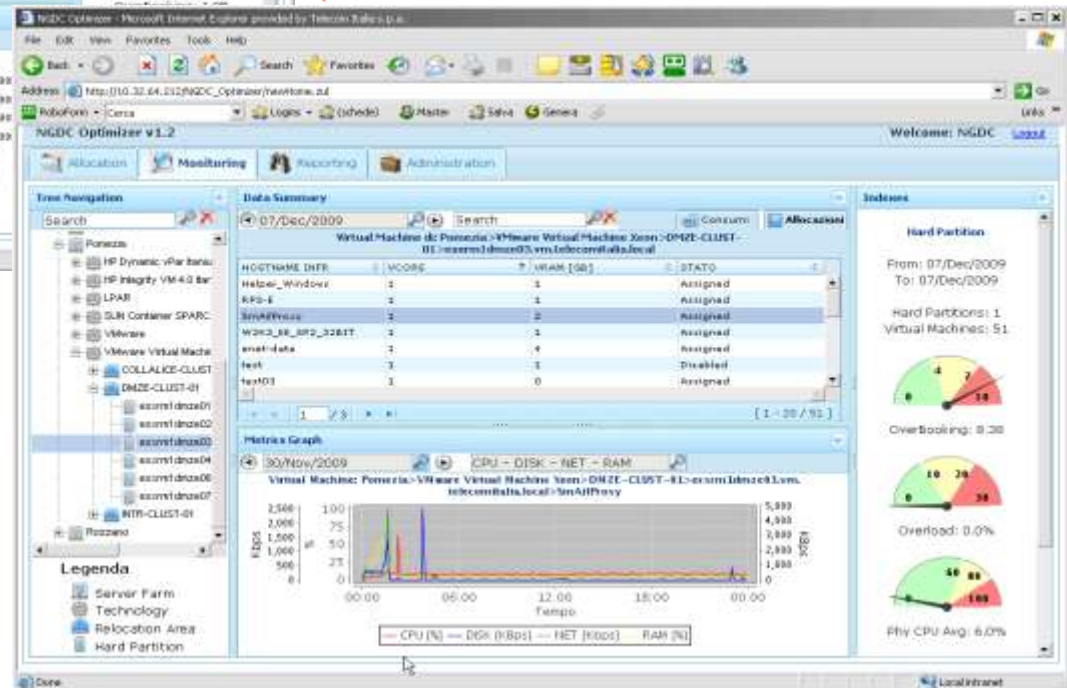
- Processo di attivazione per la SR ID: 605



Cloud Service Optimizer



3 dimensions analysis (CPU, RAM e Storage)





Cloud Self Service Portal

Intranet Telecomitalia - Microsoft Internet Explorer provided by Telecom Italia s.p.a.

File Edit View Favorites Tools Help

Address <http://noiportal.telecomitalia.it/light/noistatic.asp> Go

RoboForm Cerca Logins Employ Self Service (+3) Master Salva Genera Links >>

Ingegneria Applicativa: Sell to Delivery
Utente: Giovanni Santini
Codice Contratto: COL-CRIM-A-10-003
Classe di Sicurezza: C3

Backup [Service Firewall](#)

Internet	DMZ Esterna	DMZ Interna	Backend
	Add vLAN Add Server	Add vLAN Add Server	Add vLAN Add Server
Internet	DMZExt DMZExt2	DMZInt2 DMZInt3 DMZInt4	SERVER.1 SERVER.2

Opening page <http://noiportal.telecomitalia.it/light/noistatic.asp...> Unknown Zone

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Questions & Answers



Questions & Answers

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