shaping tomorrow with you. FUJITSU

Dynamic Infrastructure ed il nuovo approccio ai clients: “Zero Client”

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Roma, 13 luglio 2010

Agenda

Top 1	Fujitsu Group
Top 2	Dynamic Infrastructure
Top3	Le Opportunità ed i Rischi del Cloud Computing
Top 4	Private Clouds, Workplace e Zero Client
Top 5	Aree di Applicazione e Benefici

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Fujitsu at a glance

Headquarters	Tokyo, Japan
Entities in	70 Countries around the world
Employees	186,000 worldwide
Patents	34,000
R&D spend	US$ 2.6 billion, 5,4 % of net sales
Net Sales	US$ 47.8 billion

IT Services 50,2%	System Platforms 13,4%	Other Products 36,4%

2009 World Ranking	#3 in Global IT Services

Fujitsu in Italy

Employees	300
AD	Pierfilippo Roggero
Offices	Milan, Rome

Note: Fujitsu Group consolidated figures for fiscal year ended March 31, 2009. US$1 = ¥98.
WW employees as of June 2009

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2010 - IT services revenue

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Table 1. Top 20 Worldwide IT Services Market by Revenue, 2009 (Millions of Dollars)

Vendor	2008	2009	AGR (%)	Share (%) 2008	Share (%) 2009	Change in Rank
IBM	58,892	55,000	-6.6	7.3	7.2	-
HP	38,584	34,585	-10.4	4.8	4.5	-
Fujitsu	23,444	23,342	-0.4	2.9	3.1	+1
Accenture	23,732	20,939	-11.8	2.9	2.7	-1
CSC	17,112	16,004	-6.5	2.1	2.1	-
Lockheed Martin	13,404	13,826	3.1	1.7	1.8	-
Capgemini	12,746	11,634	-8.7	1.6	1.5	-

Source: Gartner (April 2010)

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Business Segments and Portfolio

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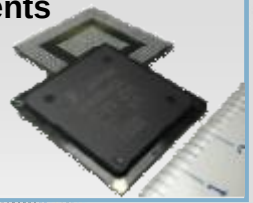
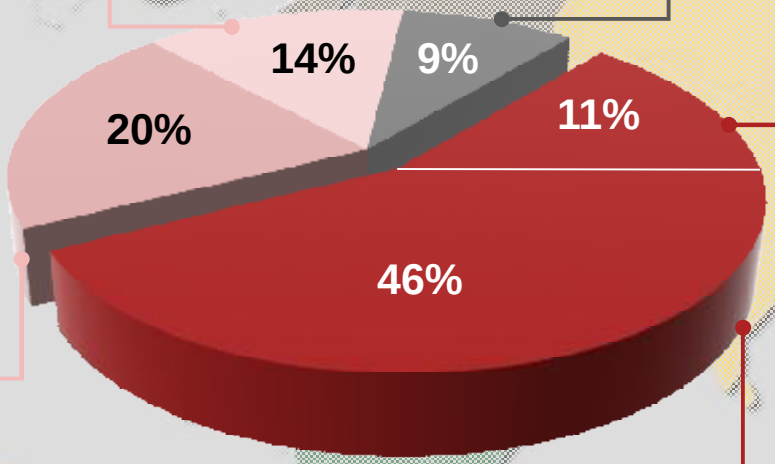
Devices
€5.9 billion

- LSI Devices
- Electronic components



Product Solutions
€8.4 billion

- PCs/Mobile Phones*
- Hard Disk Drives



Green Policy Innovation

- Factories
- Products
- Solutions
- Management
- *Focus on extending programme across all geographies and companies*

Other Operations
€3.8 billion

- Audio equipment
- Navigation equipment
- Automotive control electronic devices

Technology Solutions
€23.9 billion

- System Platforms
- Infrastructure Services
- Application Services
- Outsourcing Services
- Customer Services
- IT Consulting

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Creating value through environmental commitment

We are the first IT vendor with a complete range of environmentally sound products

Green Policy 21
Our long-term environmental vision
"Everything Green"

2009
Launch of world's first 0-Watt PC

2008
Launch of 0-Watt monitor

2007
Environmentally conscious solutions introduced
World's 1st green consumer PC

2010 onwards
Aiming to reduce carbon emissions by a total of 7 million tons

2004
Super green products introduced

2001 to 2003
Focus on enabling a "recycling society"

2002
World's first green motherboard

2007 to 2009
"Green innovation" extended across all areas
Member of Green Grid
Joined Climate Savers Computing Initiative

1998
Green products introduced

1994
ISO14001 accreditation
First IT manufacturer (ICL) to receive Blue Angel eco label

2004 to 2006
Shift to focus on sustainable environment working with customers and partners
RoHS achieved ahead of deadline

1993
First Green PC on the market

1995 – 1998
Rated No.1 by Bund for Green PCs

1993 to 2000
Establishing the foundations for environmental management

1988
European Recycling Centre opened

Green IT

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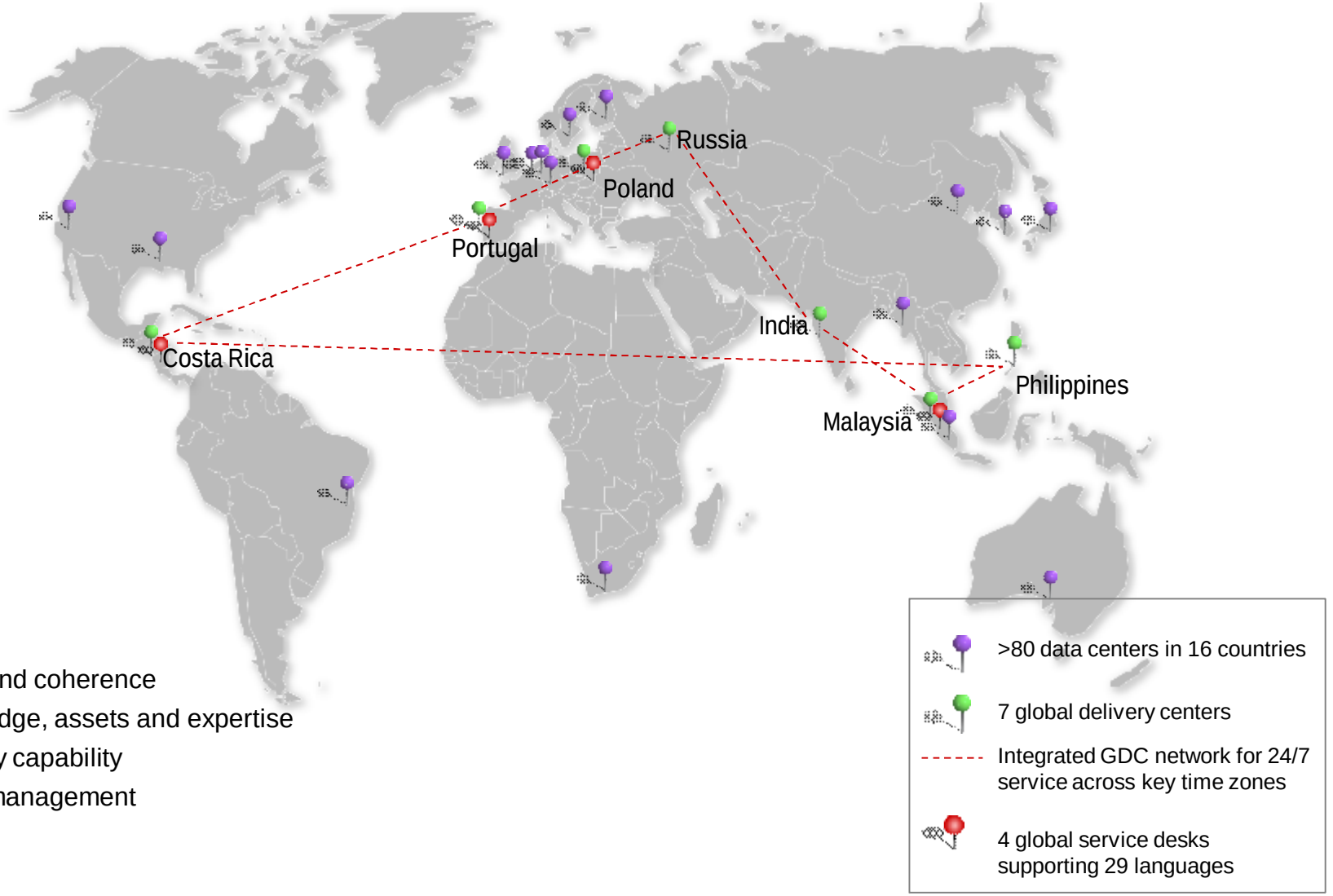
Expanding globally…

Offering the security and confidence that is a function of scale and reach;
a global delivery capability and the option of global client management



Global

- Scale and coherence
- Knowledge, assets and expertise
- Delivery capability
- Client management

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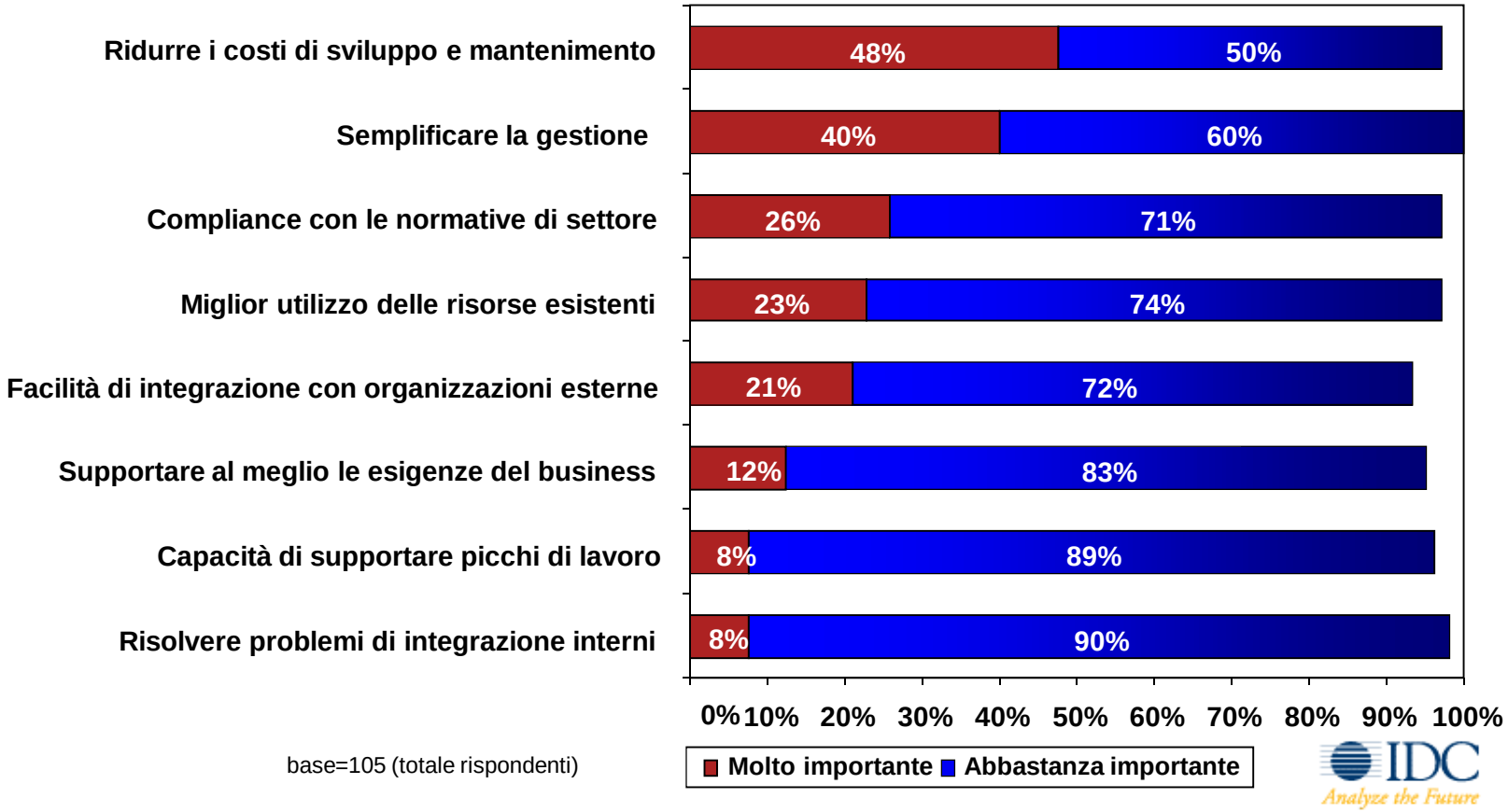
IT al Servizio del Business

Quali priorità guidano lo sviluppo dell' IT?



base=105 (totale rispondenti)

IDC Analyze the Future

Molto importante=4, Abbastanza importante =3, Poco importante =2, Per niente importante=1

Condividete queste indicazioni?

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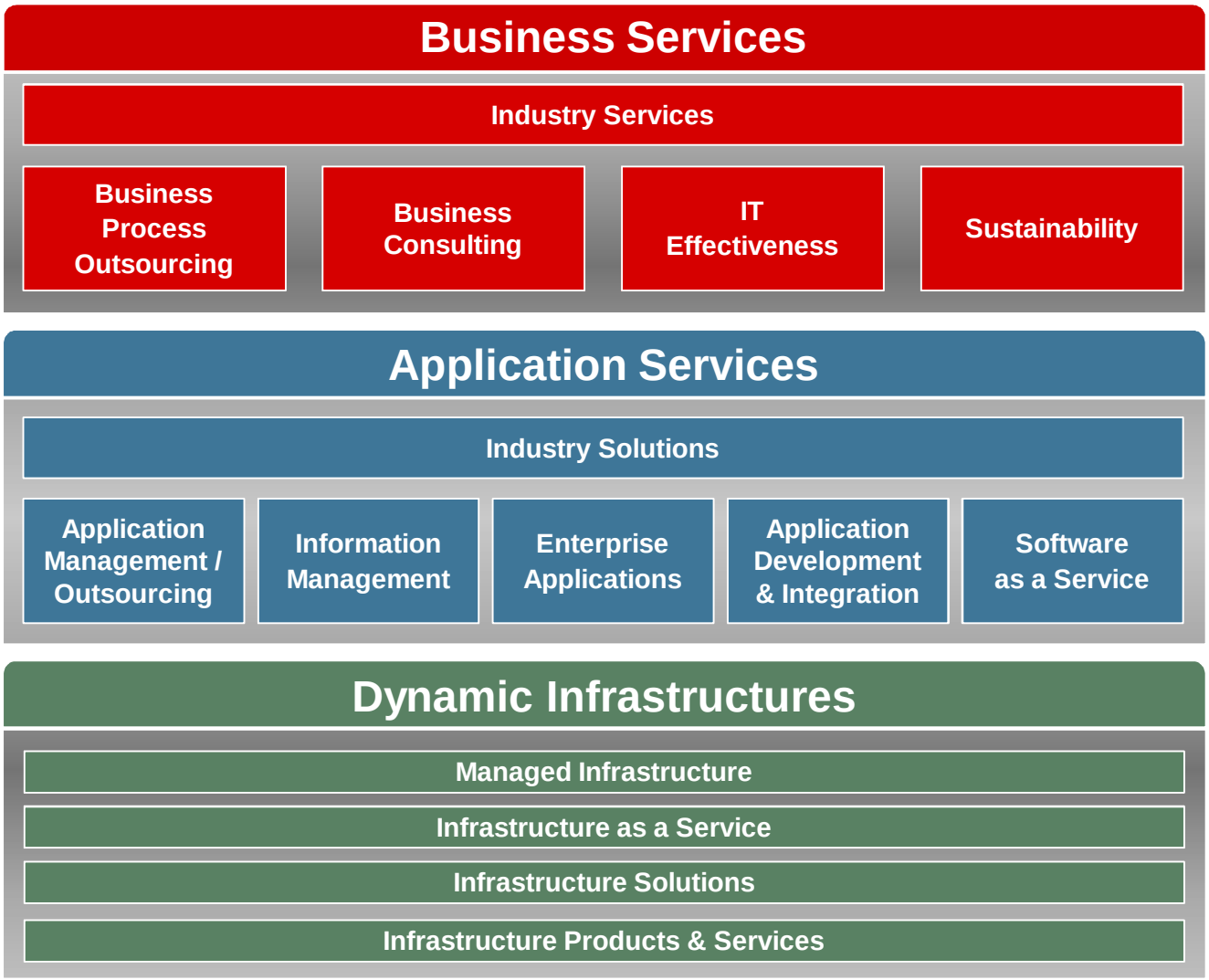
A single product & service portfolio



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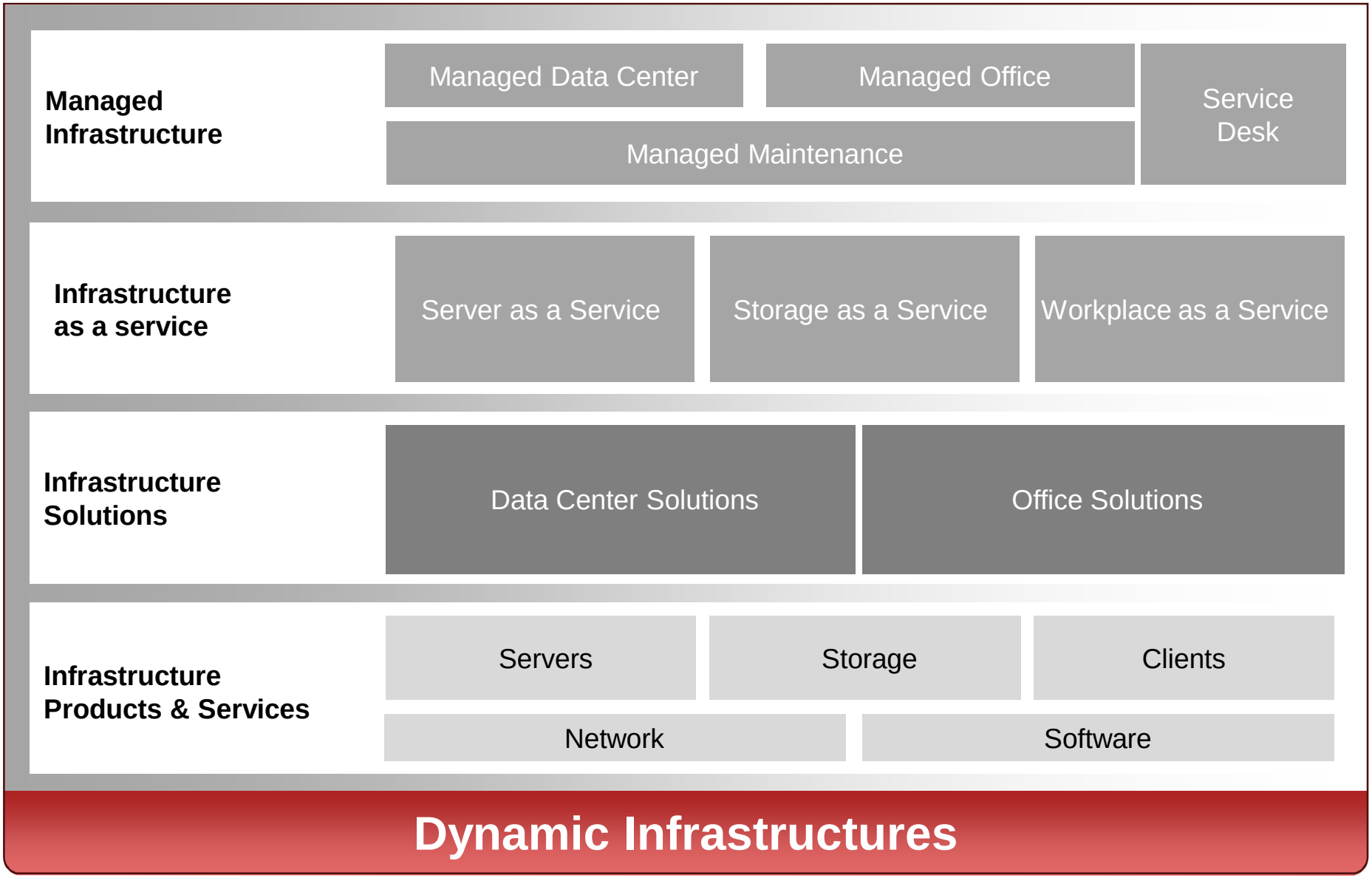
Dynamic Infrastructures portfolio



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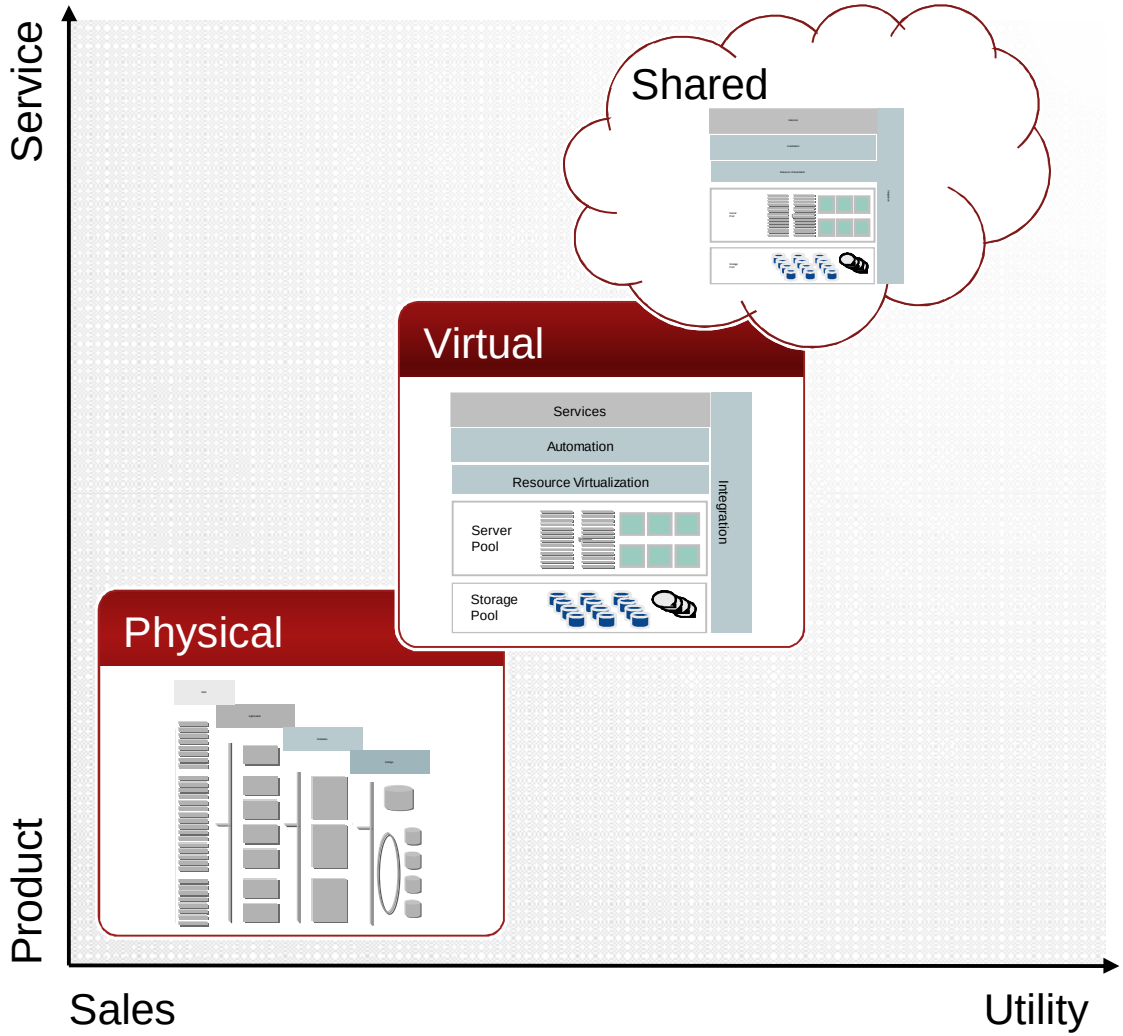
IT moves towards shared Dynamic Infrastructures



- Based on virtualization and automation technologies customers move away from dedicated resources towards virtual or shared environments
- Services and operations are increasingly important
- Integration and orchestration of resources are key prere-quisites for Dynamic Infrastructures

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Cloud computing – what is behind?

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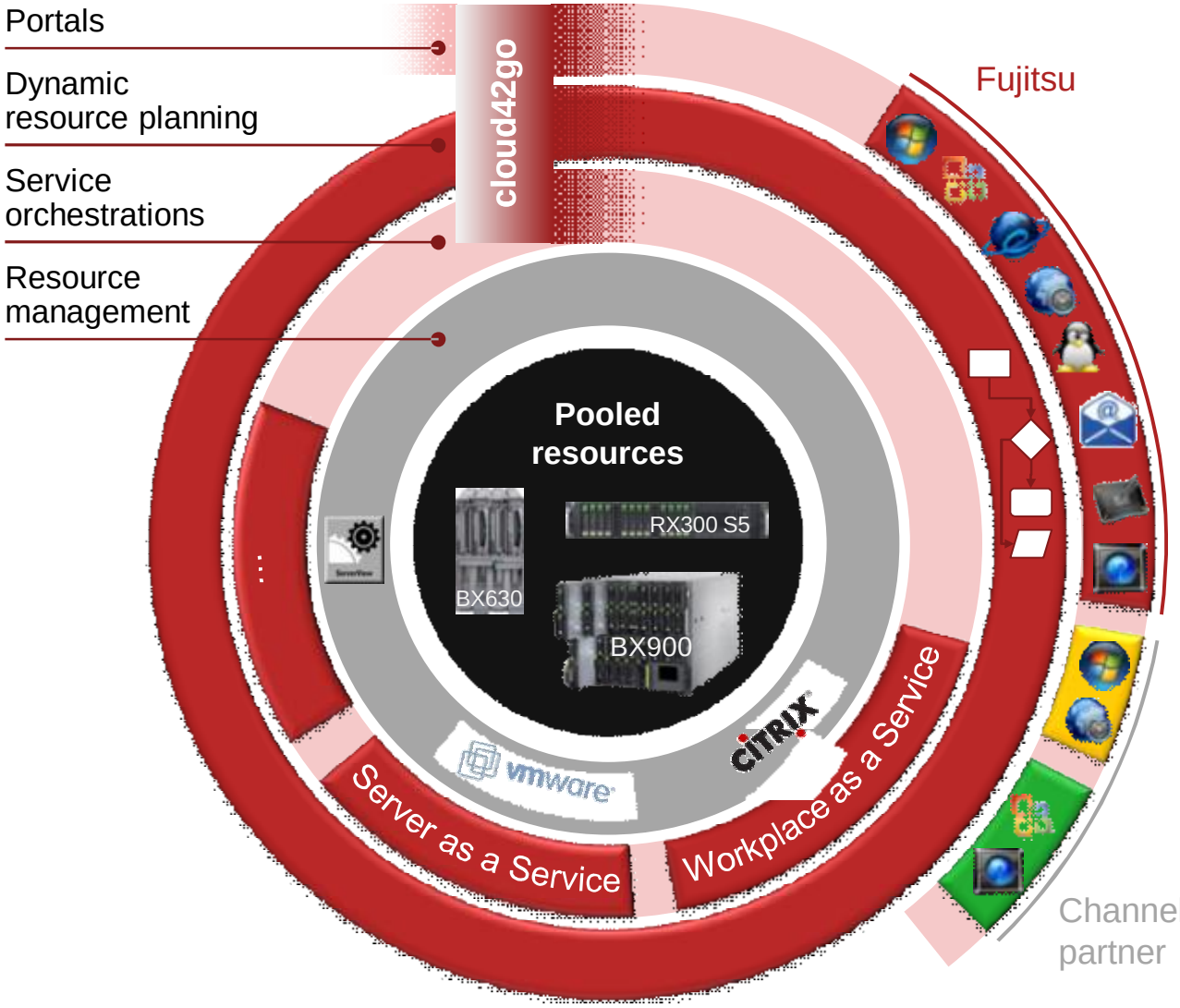
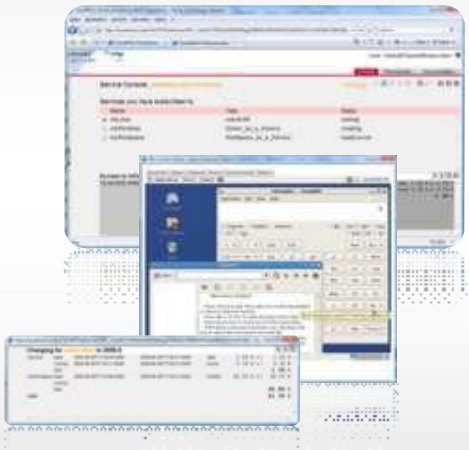
cloud42go – from planning to portal



Cloud42go Platform

- ü Multi channel support
- ü Web presence with promotional information
- ü Infrastructure service catalog
- ü Automated planning and delivery
- ü Integration of resource orchestration
- ü Accounting / reporting



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Cloud Computing:
Most important features (Customer survey)

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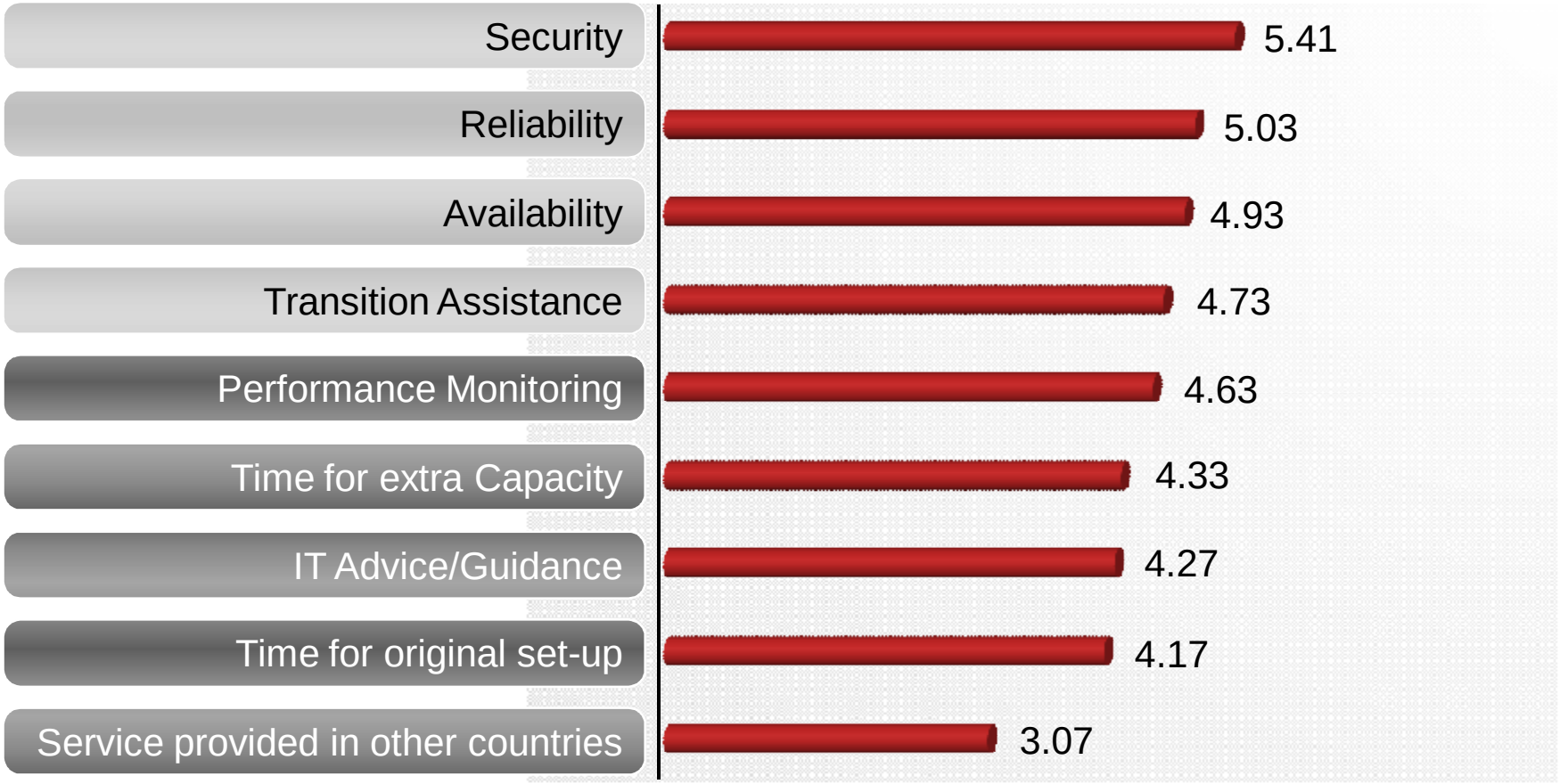

! Benefiting from the cloud type delivery model means to overcome some hurdles, but solutions are at the horizon…

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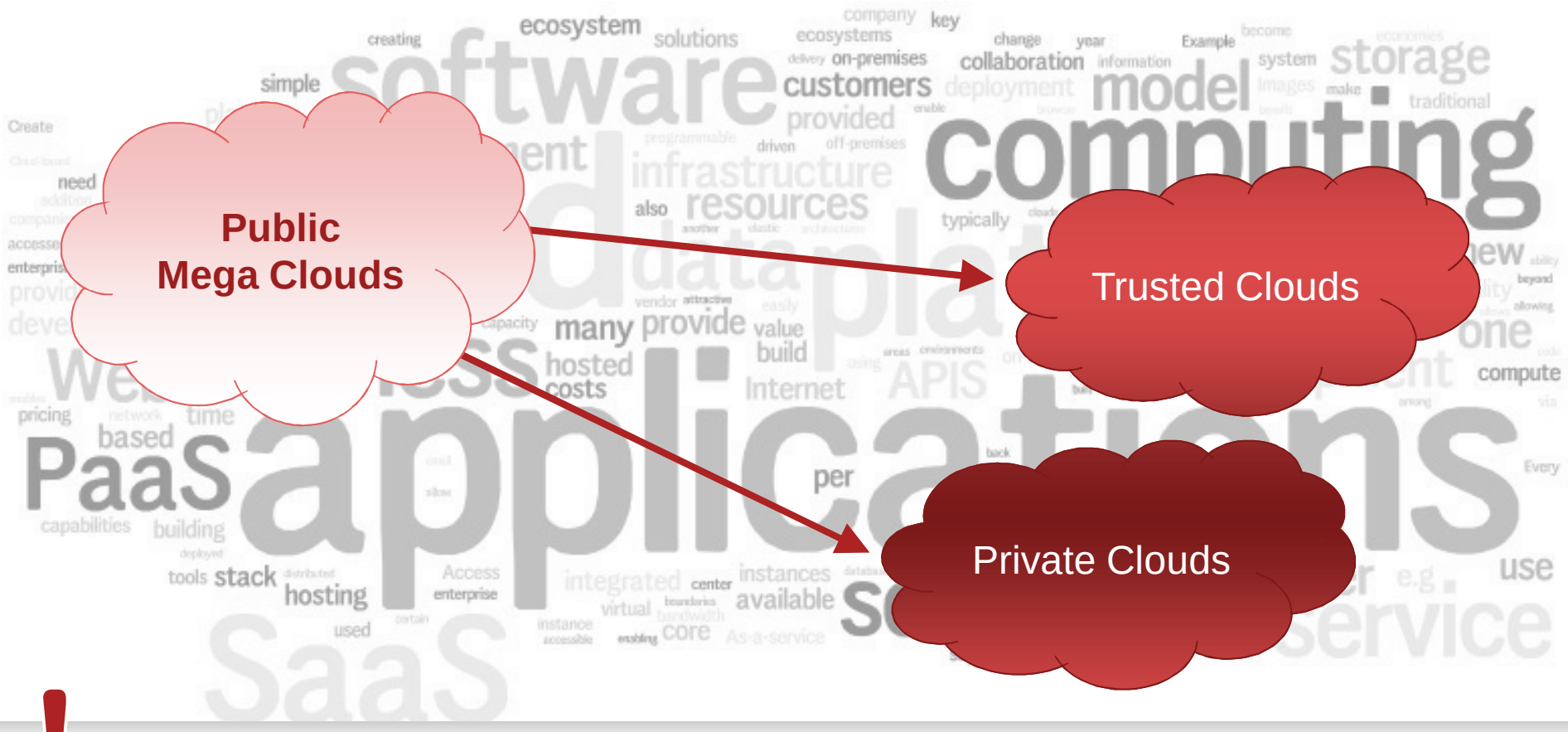
Trusted and Private Clouds enter the game



The question now is: What is the right composition of these different cloud flavors combined with enterprise own IT

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Opportunity & Risk with Cloud Computing

ADVANTAGES	vs	RISKS
1. Scalability		1. Data Security
2. Faster Time to Deploy		2. Infrastructure Availability
3. Economies of scale and scope		3. Privacy
4. Extreme standardization		4. Legislation
5. Cost Shared between users/departments		5. Data Theft and or Loss
6. Cost shifted from fixed to variable		6. Security (virus, patch, firewall..)
		7. Users and identities

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Risk on Data Security and Availability

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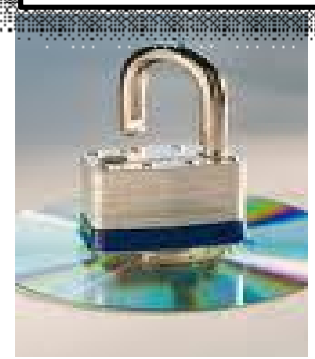
Data Management



Data Access (fisical and logical)

High Availability

Identity management

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Traditional desktop computing

- ***Users love desktop experience***
  - Own environment
  - Separated from other users
  - Local applications without adaptation
  - Multi-media and graphics
  - Offline usage
  - Local data
- ***But there are challenges either***
  - Provisioning, updates, patches
  - Availability, disaster recovery
  - Security, compliance
  - Flexible access
  - Resource utilization
  - Energy consumption

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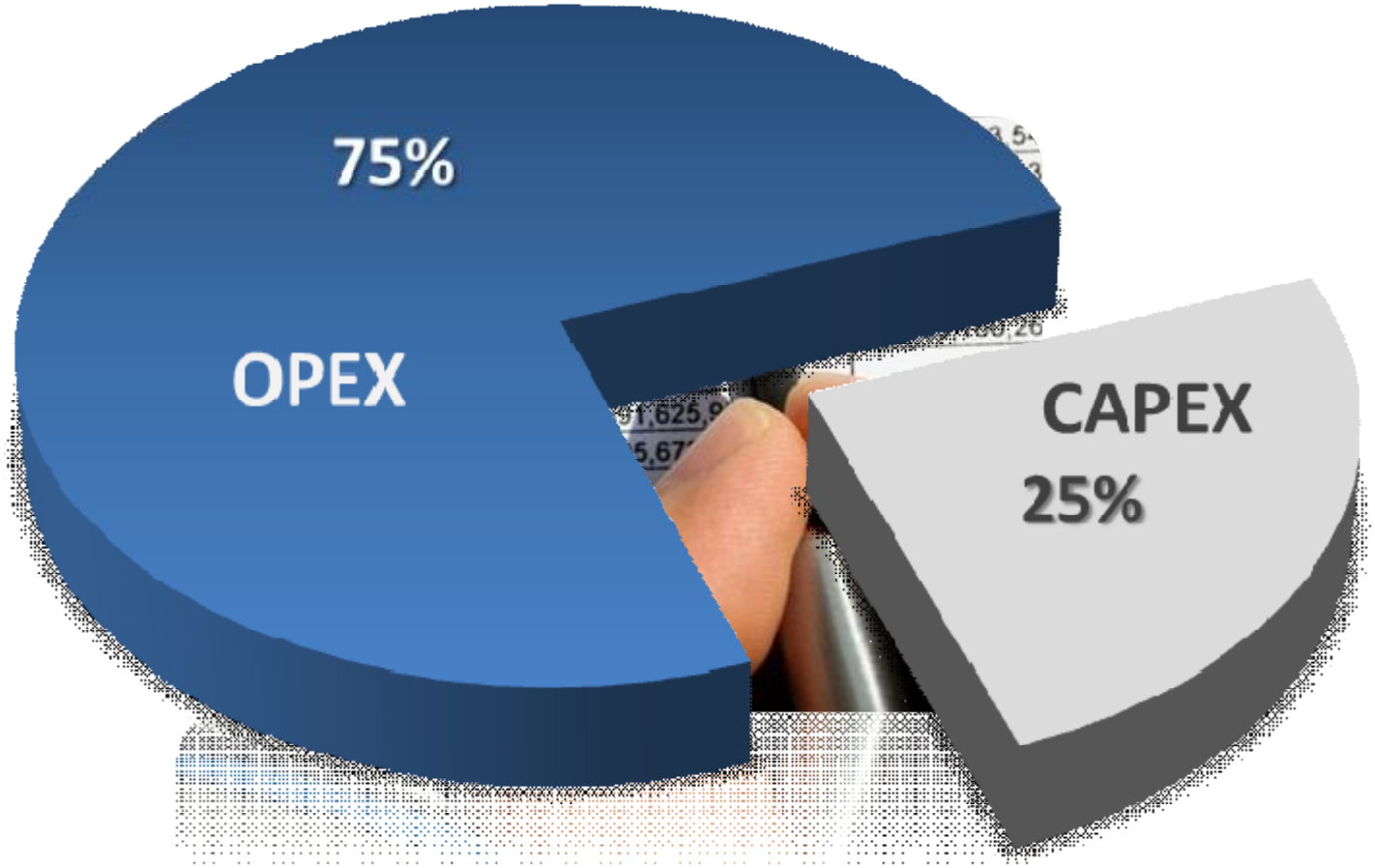
Managing cost for a standard PC



For every $1 spent on hardware, companies spend $3 to manage...

Source: IDC Study 2009

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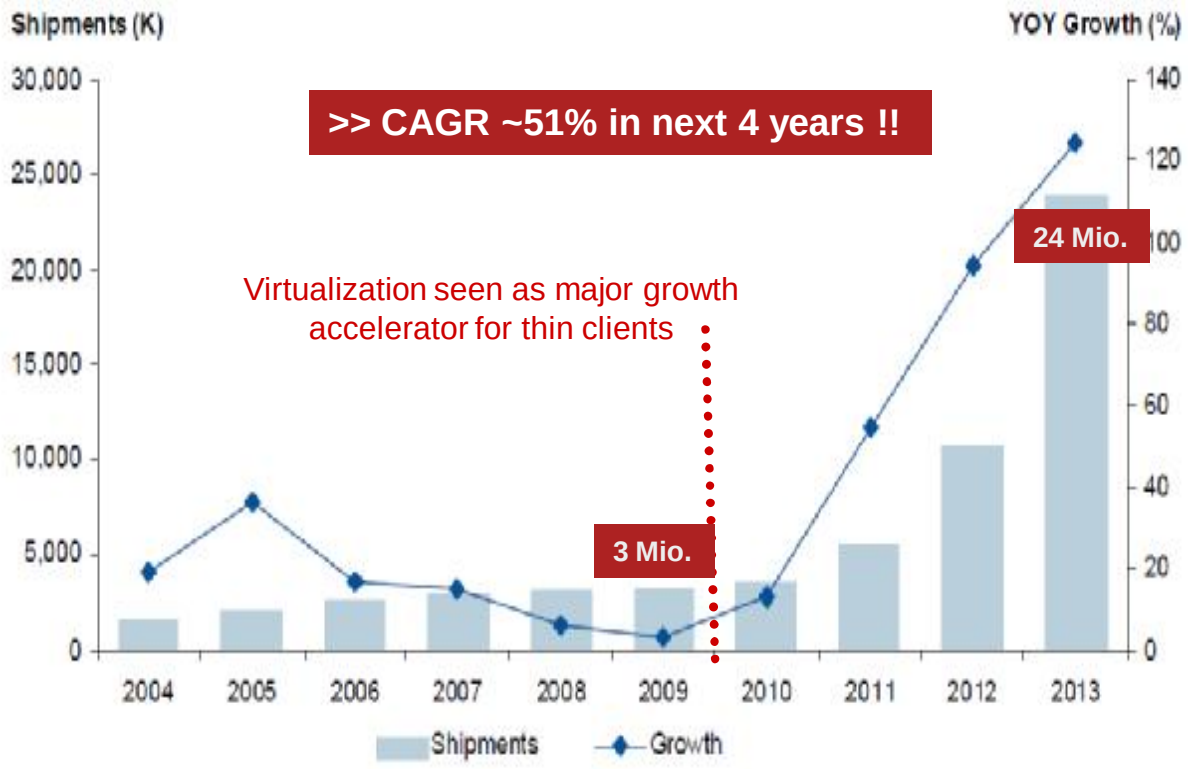
Thin Client Market Development Gartner

Gartner keeps up the positive market forecast for Thin Clients

Worldwide expected Thin Client Market (unit shipments and forecast (Gartner)



- App. 50 mil. user licenses for HVD will be purchased by 2013 (Gartner)
  - WW Market to grow from 3.4 Mio ('09) to 24 Mio units (2013) **(CAGR ~51%, 2009 to 2013)**
  - currently pilot & testing stage, few large-scale deployments
  - **Thin clients will account for 40% of user devices for HVD by 2012**

source: Gartner, June 2009

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Zero Client: The next level of virtual workplaces

FUJITSU

November 18, 2009

85%

Traditional CLIENT

- Data
- User Profile
- Applications
- OS
- Fat Device

Today

15%

Thin CLIENT

- Limited User Profile
- Some OS
- Some CPU

Tomorrow

- No User Profile
- No OS
- No CPU

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So, what is Zero Client?

The **Zero Client** is a **front-end** device designed from the ground up for a **server-based desktop virtualization** environment.

"A smart display for accessing your virtual workplace…"

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What components are in the Zero Client?

- There is **no local operating system, processor, chipset, memory, flash or moving parts** such as a fan or hard disk drive.
- The display contains a **chip** which establishes the connection with the desktop virtualization server.
- **3 x USB**, **Audio Out** and **LAN connector are available**
- Builds on Fujitsu's **B22W-5 ECO**
- It supports a **wireless connection for keyboard and mouse** with an encrypted protocol

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Power consumption

- The Zero Client is very efficient in comparison with a standard PC, **consuming only 27W**

- Reduced energy costs
  - More than 60% energy savings
  - More than 80% reduction of carbon footprint

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How many noisy is a monitor?

- The Zero Client has **no moving parts** so is absolutely silent during operation, providing a working environment conducive to concentration and productivity

- Zero Clients provide a **more spacious**, **quiet working environment** than a traditional PC

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Reliability has a new name: Fujitsu Zero Client

It is as simple as changing a monitor !

- **Extremely reliable** and **very low Average Failure Rate**.
- **No moving** parts reduces mechanical failure
- User profile **maintenance performed at the backend**
- The user will have **no more interruption or inconvenience** from hardware faults

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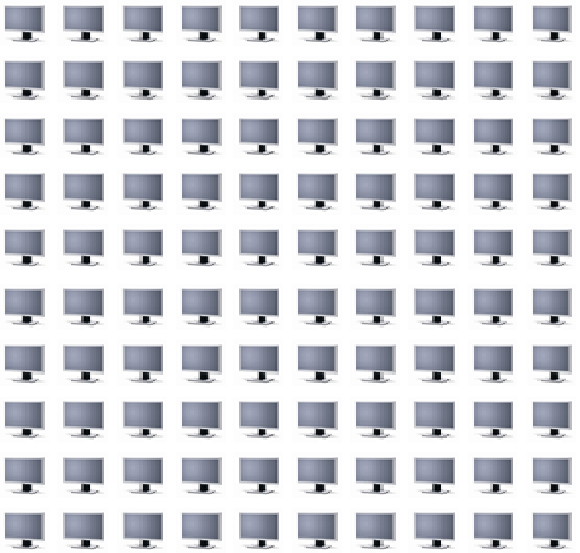
Roll-outs

- No local software installation unlike a PC
- Get a new user workplace running in just five minutes
- No inconvenience when device is installed
- Save installation time - up to 100 devices installed per day
- Fully integratable into existing infrastructures



1 day

Quick rollouts + minimized user downtime
Increased Productivity

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Cost saving

More than 30% savings

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Lifecycle

- No need for refreshes
- No need for upgrades
- Excellent performance throughout the lifecycle
- All computing power is based on the server

a Zero Client can remain “on the wave” for 10 years!!!

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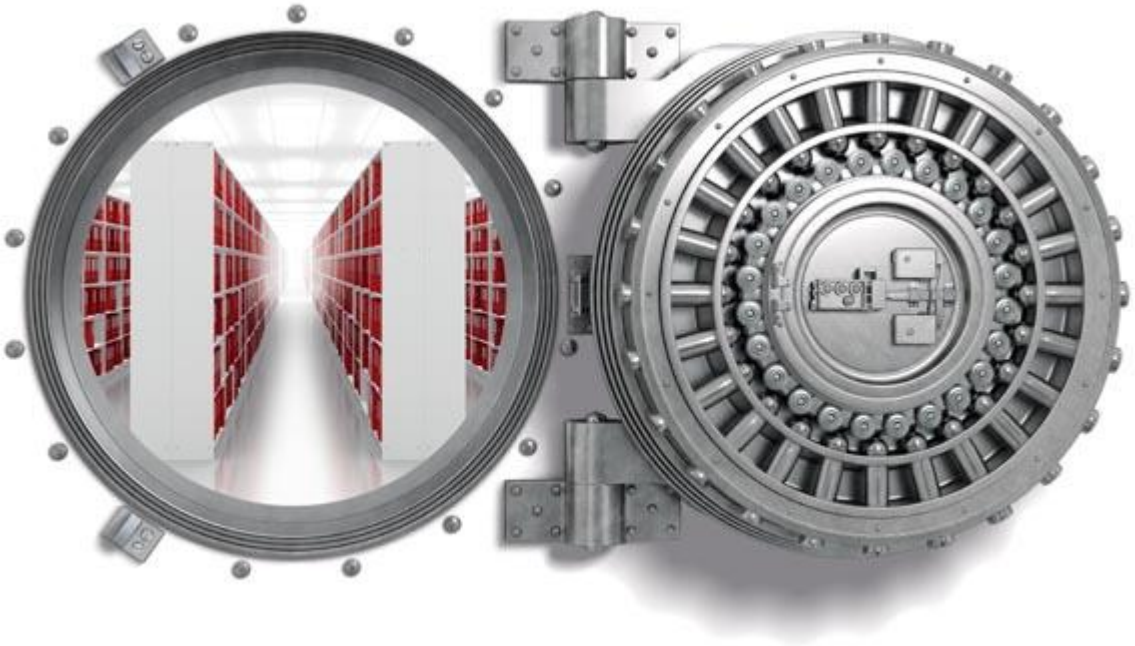
Security



“PC on Server” - No integrated storage or operating system **reduce risk of corruption** from viruses or failed installations

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Zero Client based infrastructure

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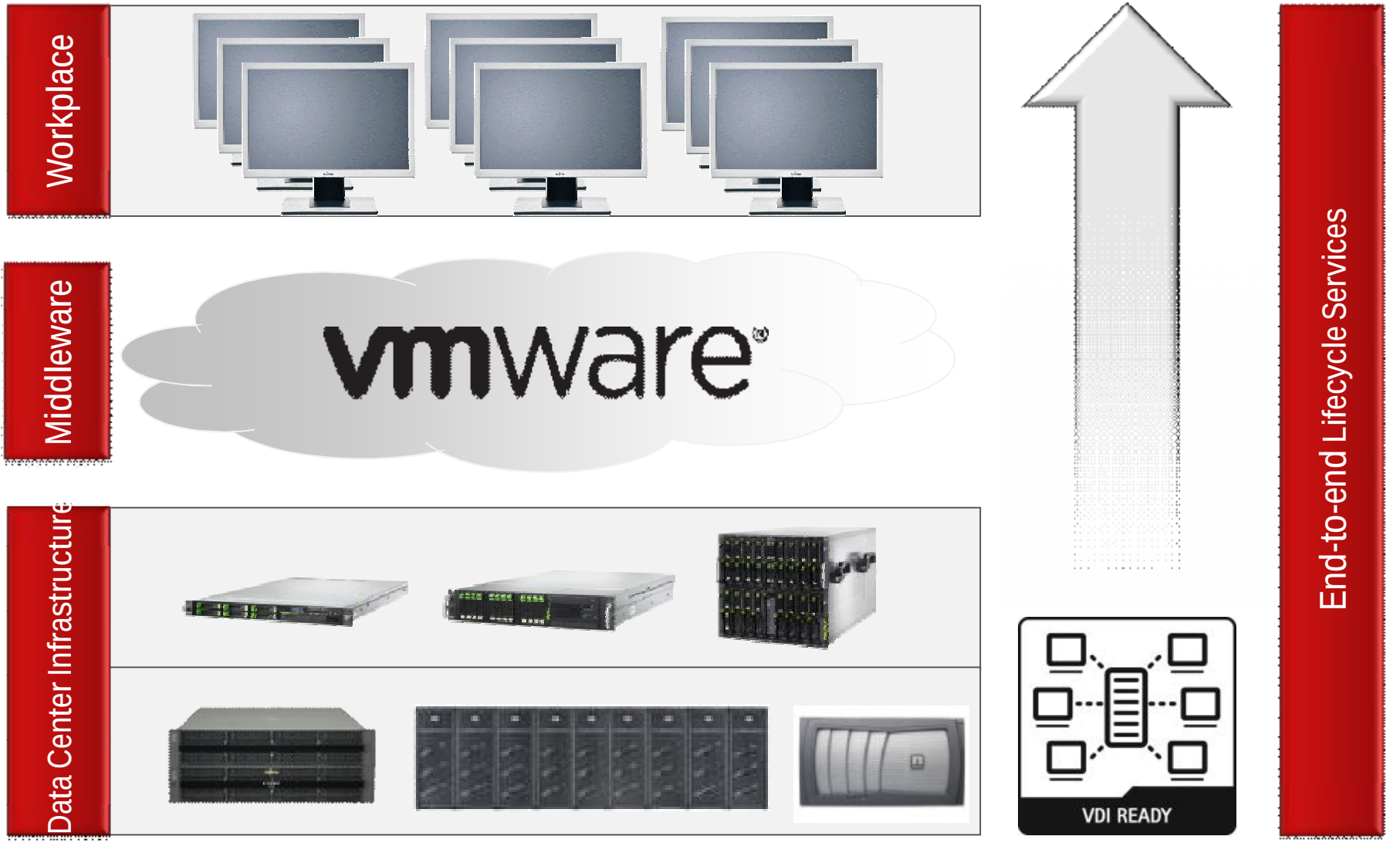

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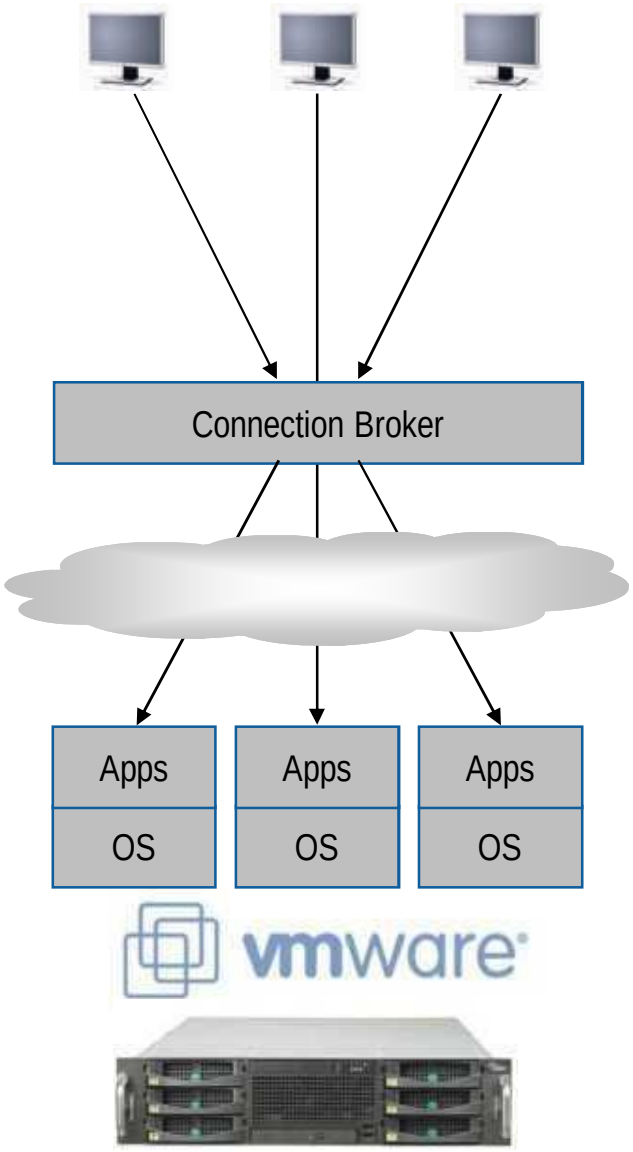
Desktop Virtualization

- Supports VMware® ESX/ESXi based desktop virtualization
- Software, drivers and operating system remain on the server
- Service benefits:
  - Easy provisioning and update
  - Fast recovery after failure
  - Secure data (controlled backup)
  - Higher productivity and satisfaction
- Cost reduction:
  - Save administration costs
  - Reduce user downtime



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Fujitsu innovative Cloud Technologies

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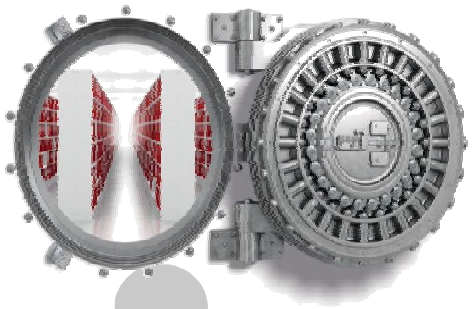
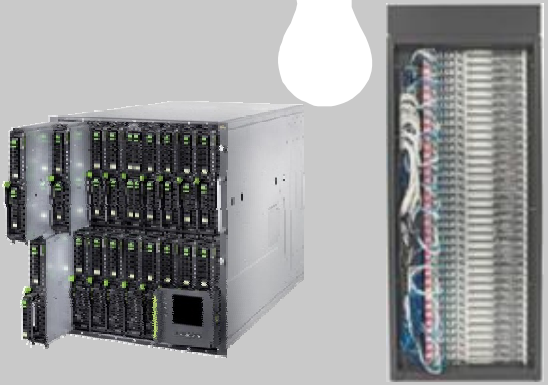
New Services lead to new Technologies

Data Protection & Security



ETERNUS STORAGE

Server as a Service



PRIMERGY CX1000

Client as a Service

ZERO CLIENT

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The Dynamic Cube

PRIMERGY BX900

or “the most “dynamic” server…

- **216** Cores in 10 U
- **3.456** GB Memory
- **6.400** Gbit/s Midplane Bandwidth

- Dynamic Power & Cooling
  - Embedded Cool-safe™ Technology
  - Super efficient power suppl. >90%
  - ServerView Power Management
- Dynamic Virtualization
  - Highest Processor, Memory & Network Density in a 10U Design
  - Latest INTEL virtualization
  - For all leading hypervisor platforms
  - ServerView Virtual IO Manager
- Dynamic High Availability
  - Fully redundant design (MMB’s, NIC’s, Fans, PSU’s)
  - ServerView Resource Coordinator
  - Prefailure Detection and Analysis
- Dynamic Performance
  - MMB & switch stacking

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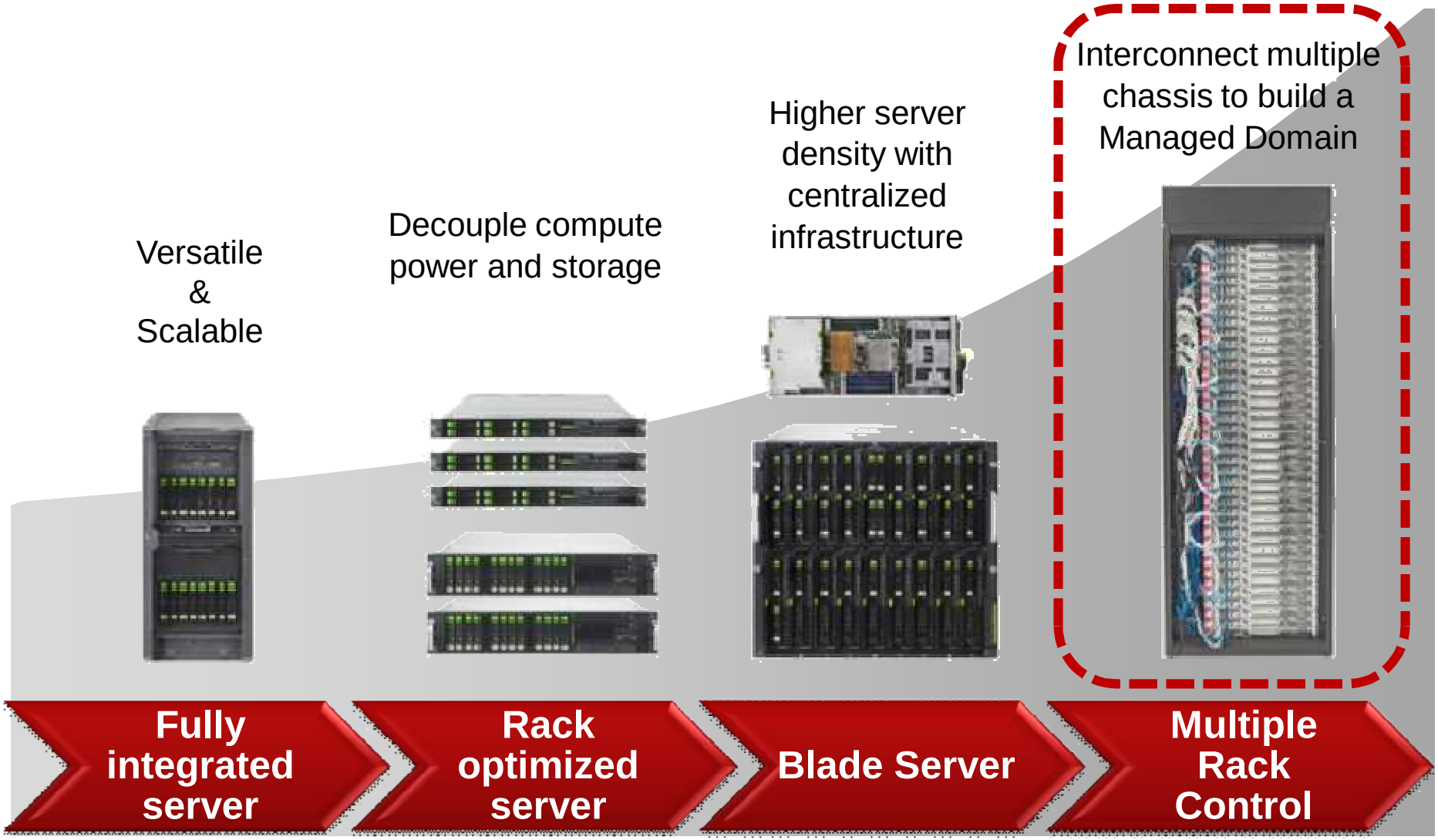
Server-Evolution



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PRIMERGY CX1000 – The Cloud eXtension

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Massive and easy Scale-out: 100s, 1000s of nodes

Power saving >20% versus Rack servers

Innovative cooling concept to save on DC space: up to 40% vs. traditional Rack servers

CAPEX saving up to 20% versus Rack servers

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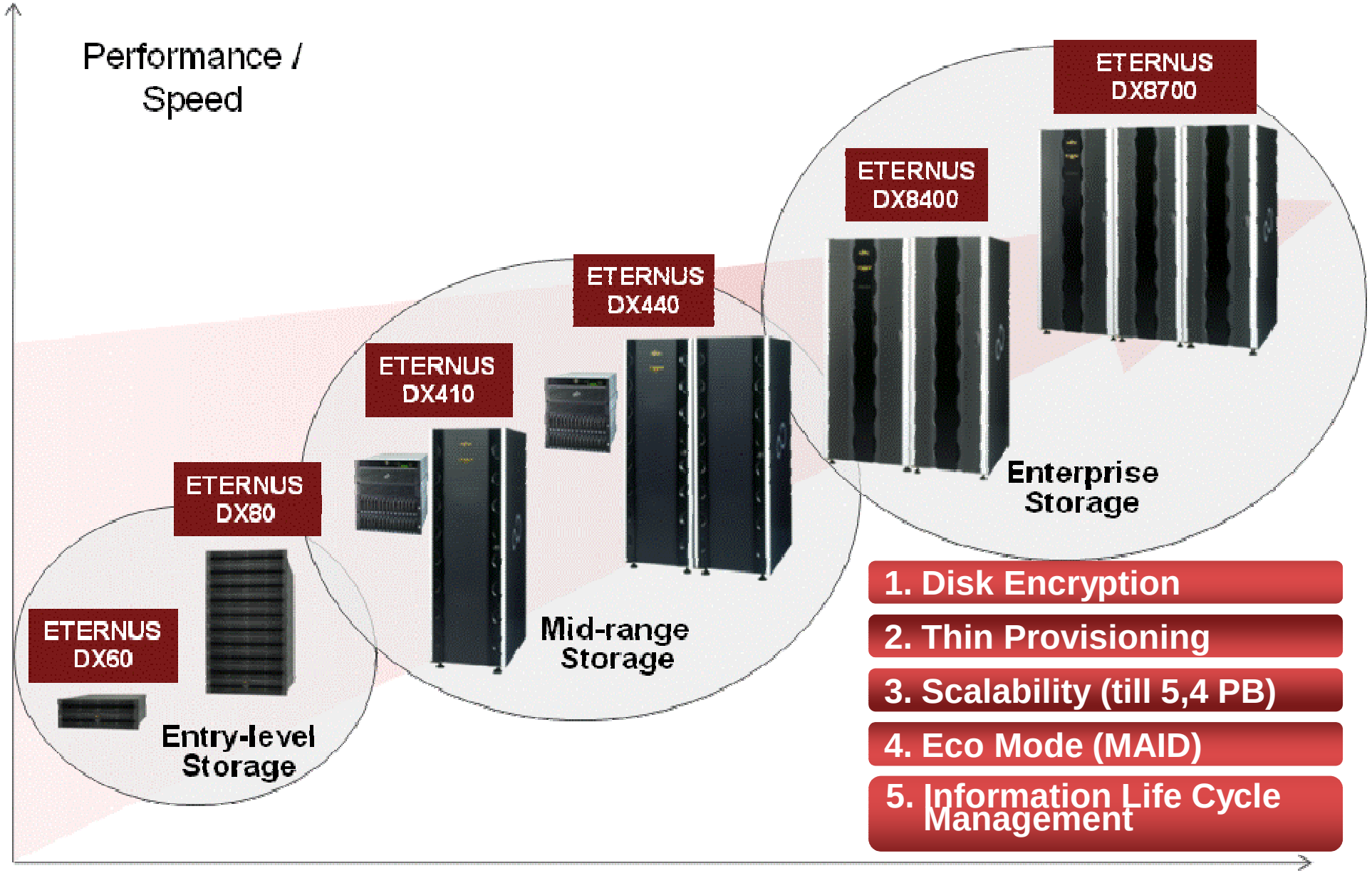
Storage Eternus: Cloud Aware



1. Disk Encryption
2. Thin Provisioning
3. Scalability (till 5,4 PB)
4. Eco Mode (MAID)
5. Information Life Cycle Management

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Device initialization: 5 Step for a DVI

Step 1
DHCP
Server

Step 4
Active
Directory
Autentication

Step 2
CONNECTION
BROKER

Step 3
Fujitsu LOGON
screen

Step 5
Obtain a VDI from
Vmware
hipervisor

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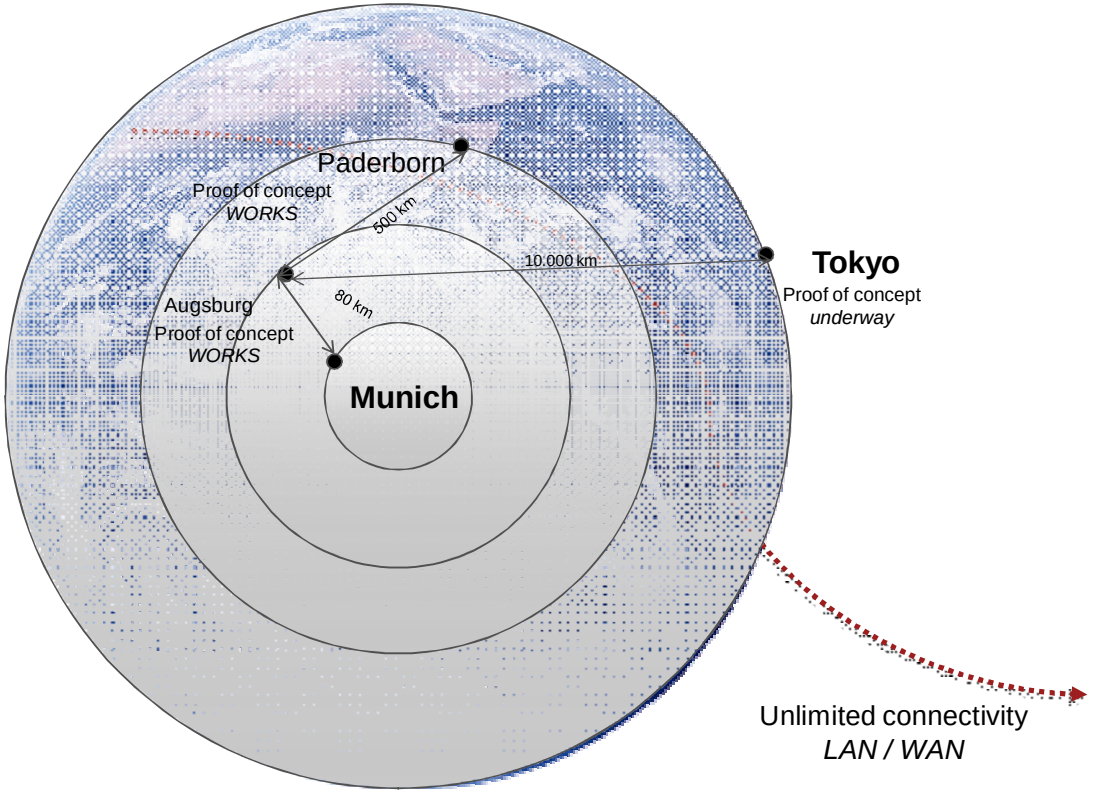
Working with Zero Client - Roaming

- Access your desktop from any Zero Client device
- Start working instantly
- Users can work anywhere
- Excellent workforce flexibility
- No need to move PCs with users
- Desktop access, even over large distances



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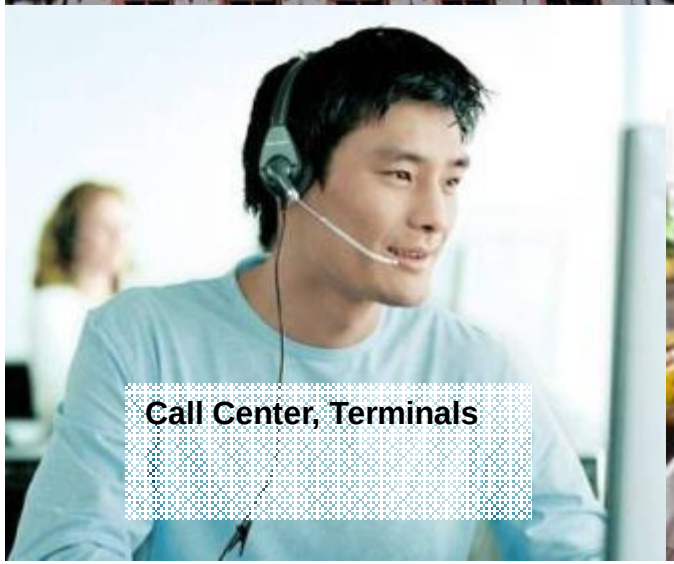
Zero Client application areas



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Zero Client, Thin Client & Fat Clients

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	Zero Client	Thin Client	Standard PC
Cost	Low	Moderate	High
Acquisition Cost	Moderate	Moderate	Moderate
Operating expenses p.a.	Low	Moderate	High
User Experience	Good	Good	Best
Pros	§ Lifecycle – no migration issues! § Instant on § Security § No noise § High availability § Virus proof	§ Security § No noise § High availability § Virus proof	§ Expandability § User experience
Local Memory	§ No offline capability	§ No offline capability § User acceptance	§ Cost § User downtime § Administration effort

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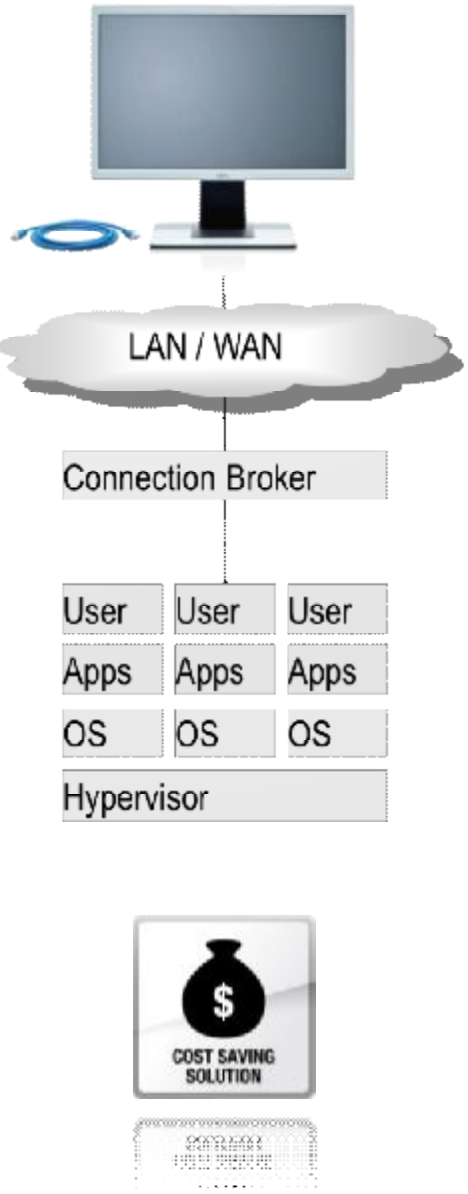
Cost advantages of VDI

The major cost benefit of virtual desktop infrastructures results from operation:

Customers moving from a well managed infrastructure: 22% saving

Customers moving from an unmanaged infrastructure: 51% saving



*values calculated in average

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Zero Client – The Benefits

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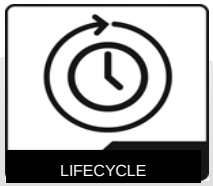

For the user

- Traditional workplace, without needing a PC
- Instant on
- Full flexibility
- Secured data, no synchronization
- Every-desk access (Roaming)

For IT manager

- No lifecycle management in the field – “the forever PC”
- No migration issues
- Quick and smooth rollouts
- User satisfaction
- Reduced workload **à** lower cost

For the business

- Reduced cost
- Improved security
- Full flexibility of workplaces
- Reduced complexity
- Less environmental footprint

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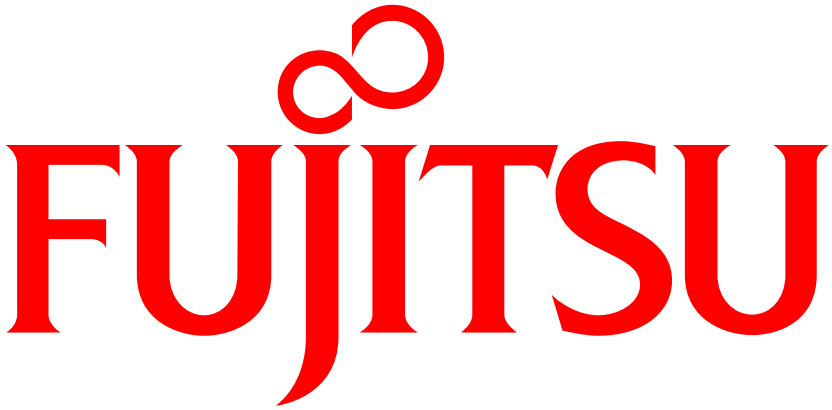
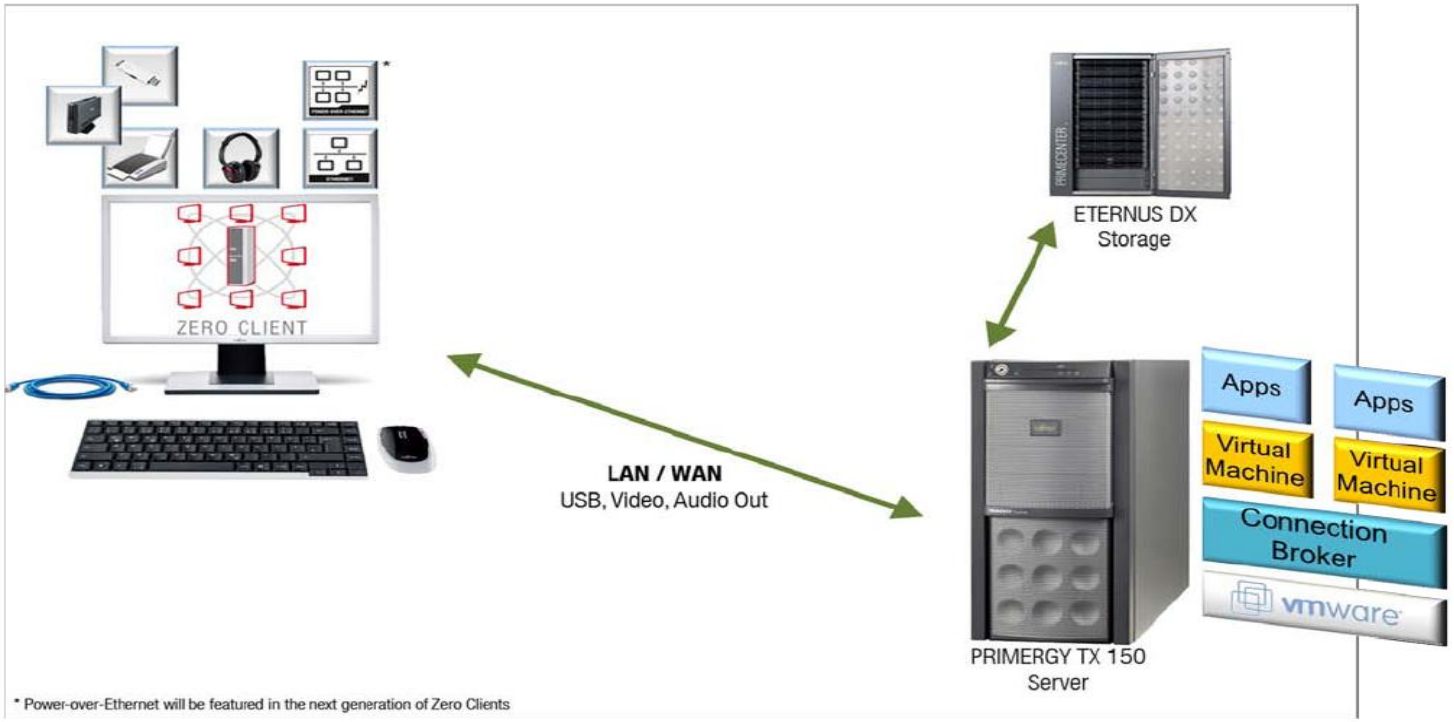


shaping tomorrow with you

Zero Client based infrastructure



INFRASTRUCTURE REQUIREMENT:

1. **VMware based desktop virtualization environment.**
   - **Requires servers installed with a VMware hypervisor (ESX / ESXi)**
2. **Fujitsu Zero Client manager is used as connection broker**
3. **Microsoft Active Directory for User authentication**

In addiction, VMware View is fully integrable with Zero Client environment

Questions & Answers

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