FINANCIAL SERVICES DEPLOYMENTS

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The 5-3-2 Principle of Cloud Computing

Hybrid cloud

PRIVATE

PUBLIC

Application		**SaaS**
Runtime		**PaaS**
Virtual Machines		**IaaS**

On-demand self-service

Ubiquitous network access

Location transparent resource pooling

Rapid elasticity

Consumption-based chargeback model

http://aka.ms/532
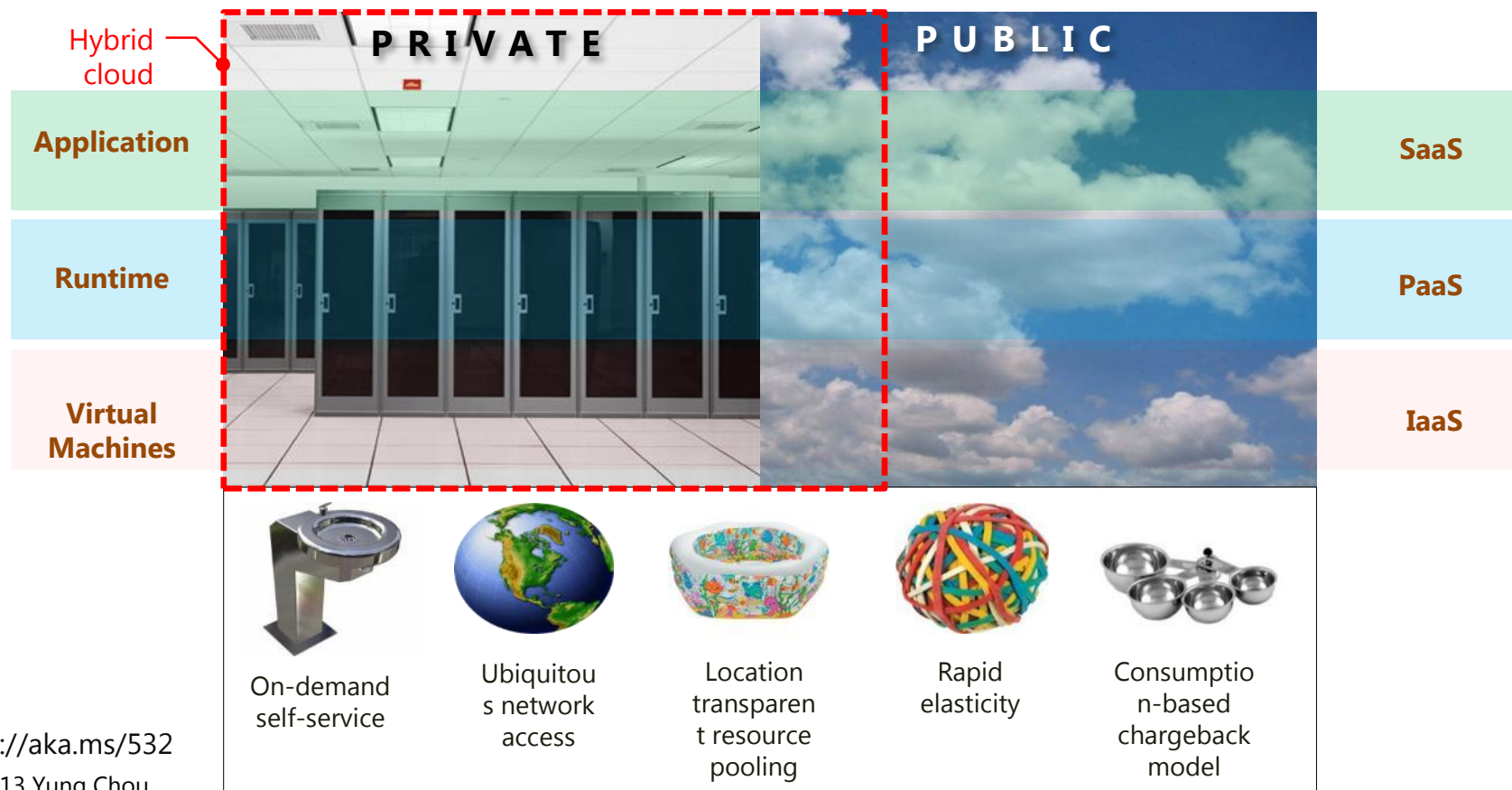
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CLOUD COMPUTING EAST 2013

Revolutionizing Business Processes in Government, Healthcare & Financial Services

MAY 19-21, 2013
Boston Marriott Copley Place, Boston MA

A NIST Definition of Cloud Computing
http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf

Deployment Models:

Private cloud. The cloud infrastructure is operated solely for an organization. It may be managed by the organization or a third party and may exist on premise or off premise.

Community cloud. The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be managed by the organizations or a third party and may exist on premise or off premise.

Public cloud. The cloud infrastructure is made available to the general public or a large industry group and is owned by an organization selling cloud services.

Hybrid cloud. The cloud infrastructure is a composition of two or more clouds (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).
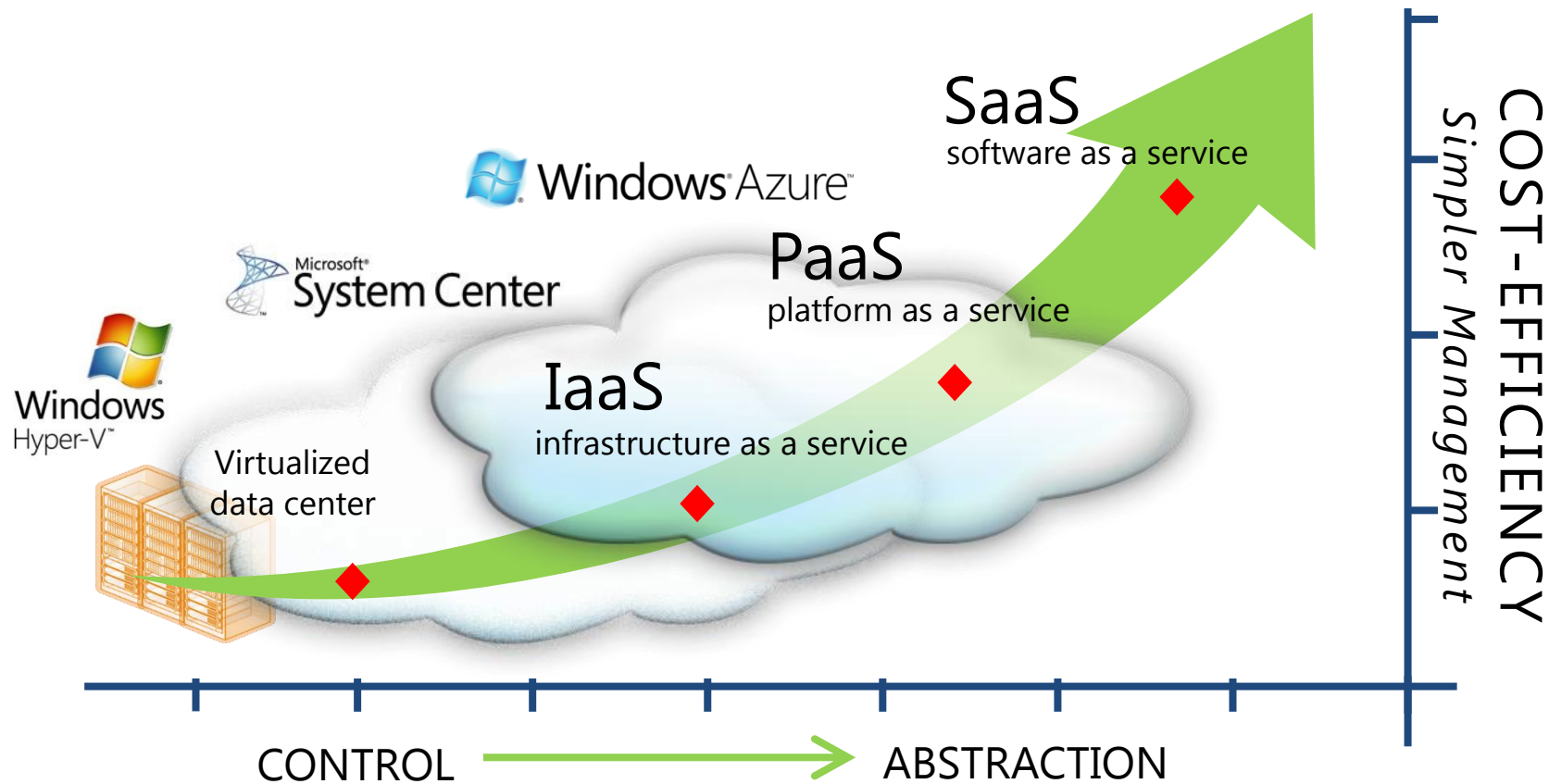
In such case, 5-3-4 instead of 5-3-2

Cloud Delivery Models

Three Cloud Computing Delivery Methods

On-Premises Computing

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Infrastructure (as a Service)

Consumer
- Applications
- Data
- Runtime
- Middleware
- O/S

Service provider
- Virtualization
- Servers
- Storage
- Networking

Platform (as a Service)

Consumer
- Applications
- Data

Service provider
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Software (as a Service)

Service provider
- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Source: http://aka.ms/privatecloud

Financial Services and the Cloud

Pete Manca, Egenera CEO

Agenda

- Introduction to Egenera
- Cloud 1.0: Cloud as a technology platform
  - Perceptions, expectations and workloads for the cloud
  - The future of cloud in the next 5 years
- Cloud 2.0: Cloud as a business model
  - eLynx - SaaS
  - Myanmar Central Bank – Private Cloud
  - American Capital - IaaS
- Summary

About Egenera

- Industry pioneer with over a decade as a management/automation company

  - Mature, Stable technology company delivering solutions for 13 years

  - Delivering cloud + converged infrastructure software

- A pedigree of high-performance, mission-critical installations around the globe

- Our typical customers

  - Mission-critical IT operations

  - Highly value uptime

  - Dynamic environment

  - Mixed Environment: physical + virtual + cloud

- Leading edge customers in

  - Service Provider

  - Healthcare

  - Finance

  - Government
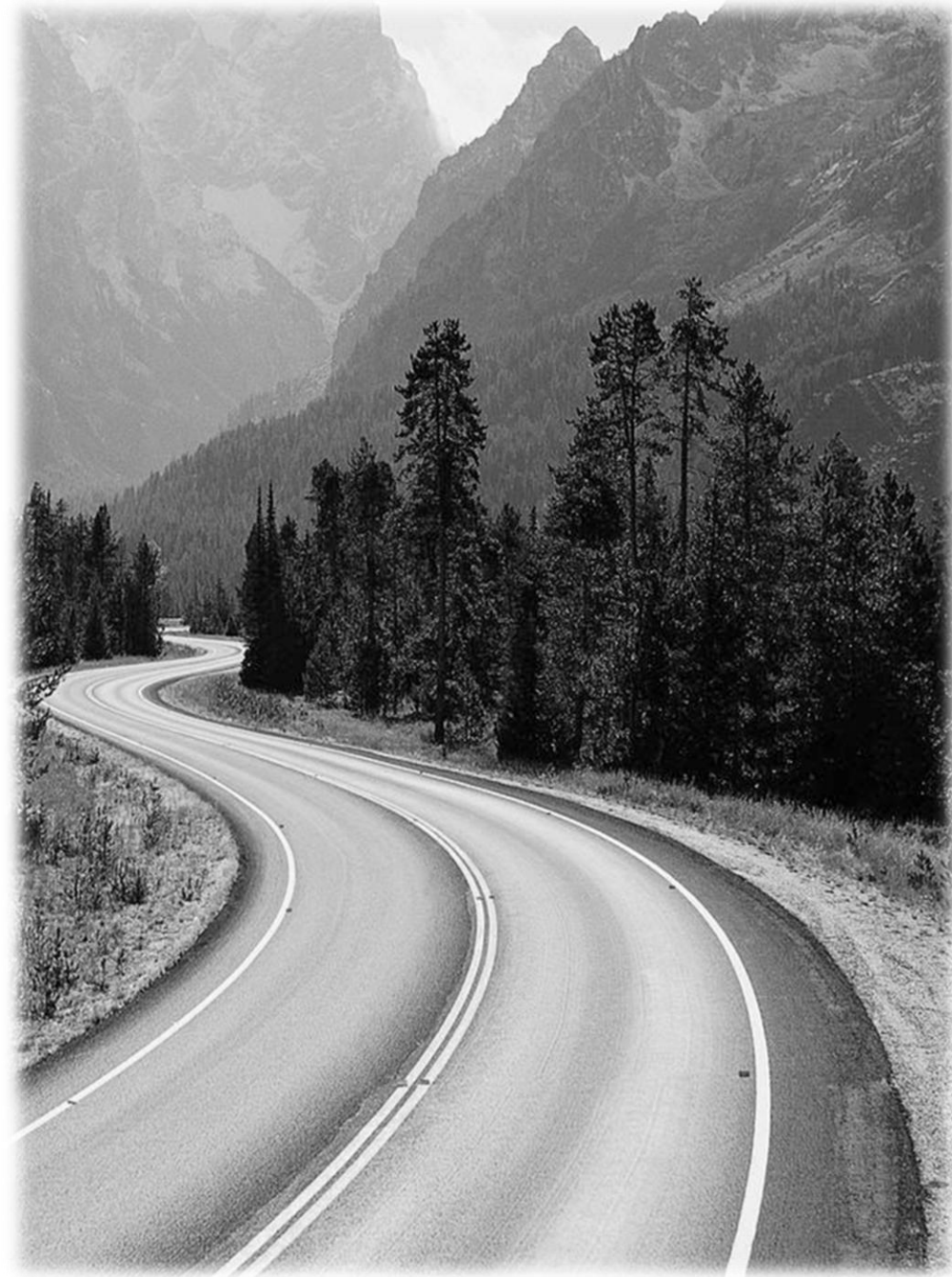
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Egenera's Mission

Help Our Customers Simplify IT Management, Transform IT Operations & Deliver Reliable IT Services Across Public, Private & Hybrid Clouds

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Multi-Year Plan for the Cloud

Platform Support
- Add all leading x86 server vendors as partners
- Leverage channels to offer Openness and Choice

Cloud Features
- Extend our lead in Converged Infrastructure Management
- Expand with unique cloud capabilities

Hybrid Cloud
- Bridge public and private clouds
- Allow workloads to migrate to/from clouds as needed

Phase 1: Converge & Automate

Phase 2: Simplify & Empower

Phase 3: Unify

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Built for Self-Service
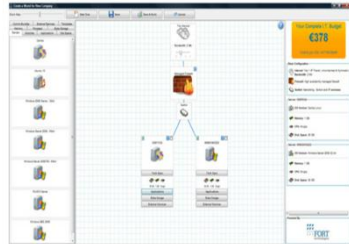
- Design
- Deploy
- Manage
- Protect

PAN CLOUD DIRECTOR

| User Portals | Services Catalogs | Security |

PAN MANAGER

EMC²   IBM   vmware   BROCADE

CISCO   NetApp   hp   CITRIX

Any Storage   Any Network   Any Server   Any Hypervisor

- Cloud management software
  - Design, Price and Build in real time
  - Manage and track usage
  - Chargeback based on consumption

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Unifying Public, Private & Hybrid Clouds
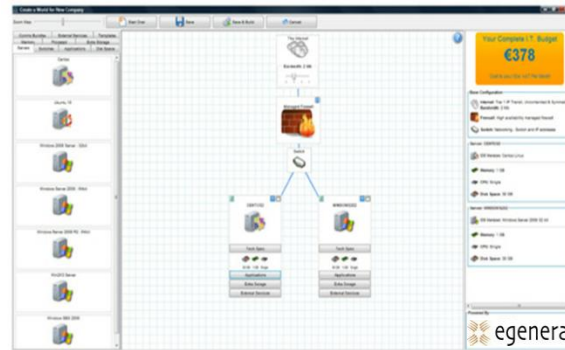
- Design Once
- Deploy Anywhere
  - Price
  - Security
  - Compliance
  - SLAs

Private Cloud   EC2   OpenStack

Cloud in Financial Services Today

SaaS – 72%

IaaS – 28%

Using public cloud
19%

Don't know enough
17%

No Interest
14%

Considering
31%

Private cloud
19%

N = 642

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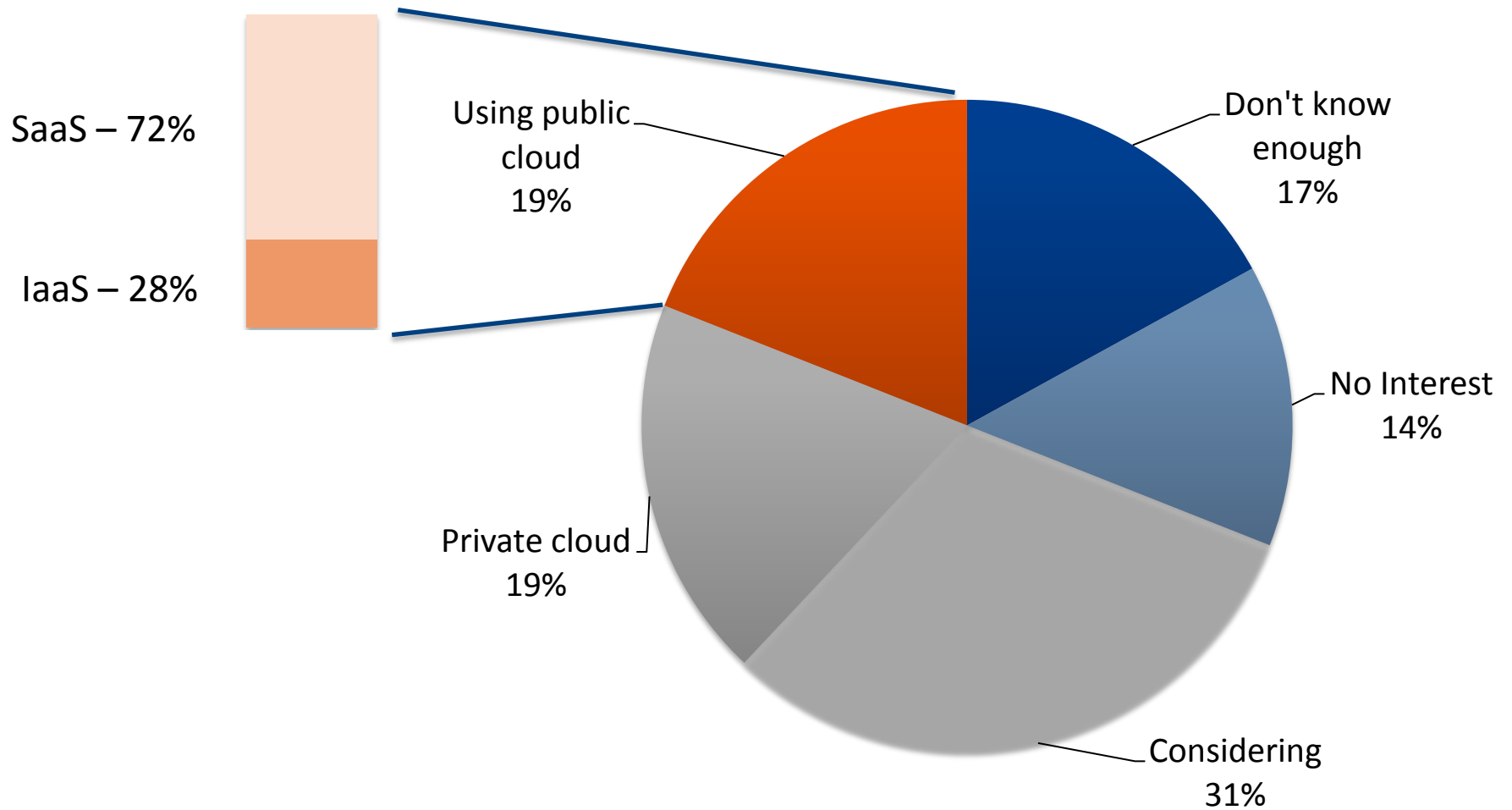
Cloud Factors Driving Financial Services

Ability to meet user demands quickly...
Abilty to save money
Avoid capital costs
Burst capacity
Support specific FS applications
Developing new IT Mgmt best practices
Abstraction of applicaton from...
Going green

0%   20%   40%   60%   80%   100%

■ Very Important   ■ Somewhat Important   ■ Not Important

InformationWeek Survey of Cloud Adoption in Financial Services

N = 642

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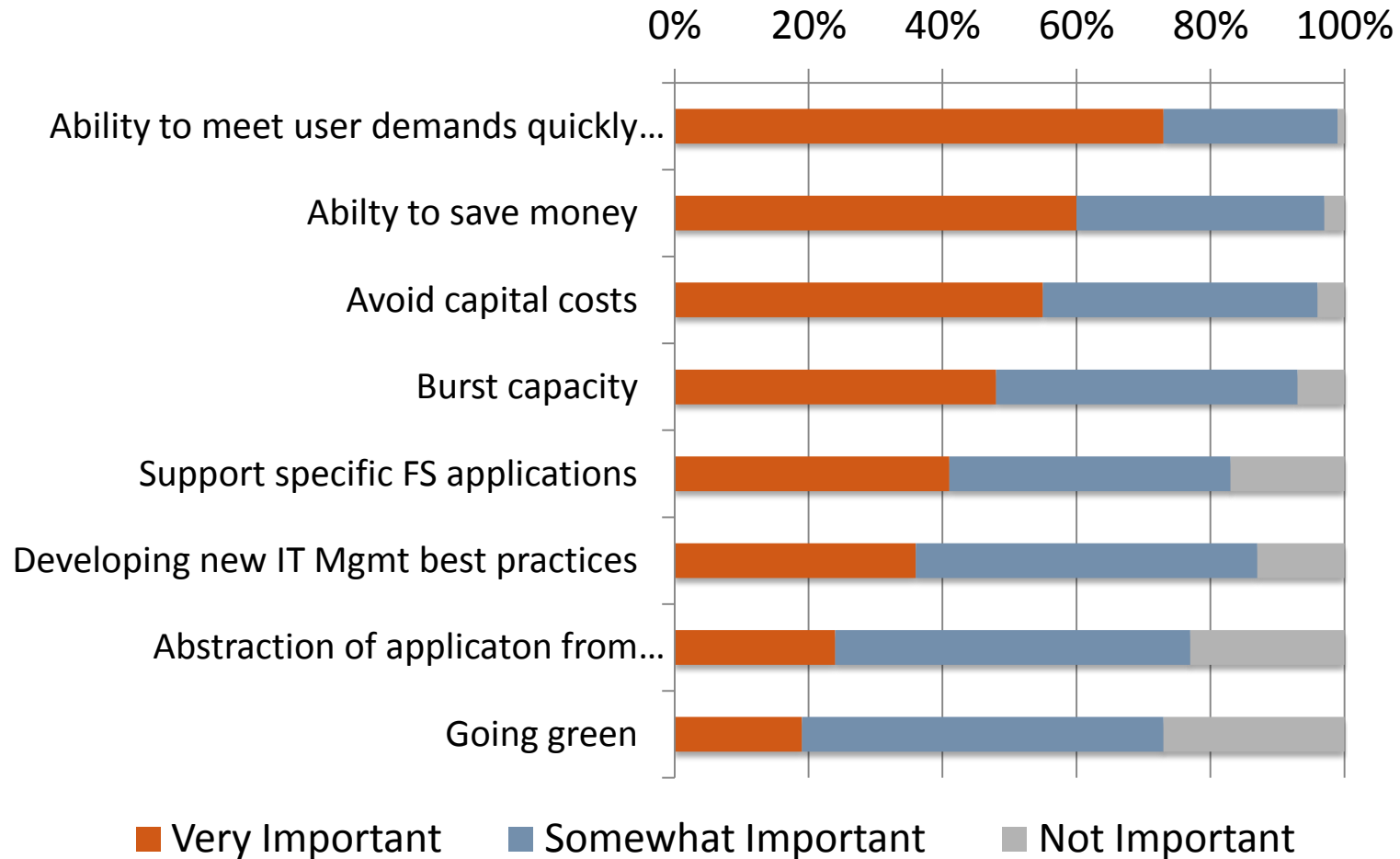
Cloud Perceptions in Banking

Banking Tech, October 2012

N = 120
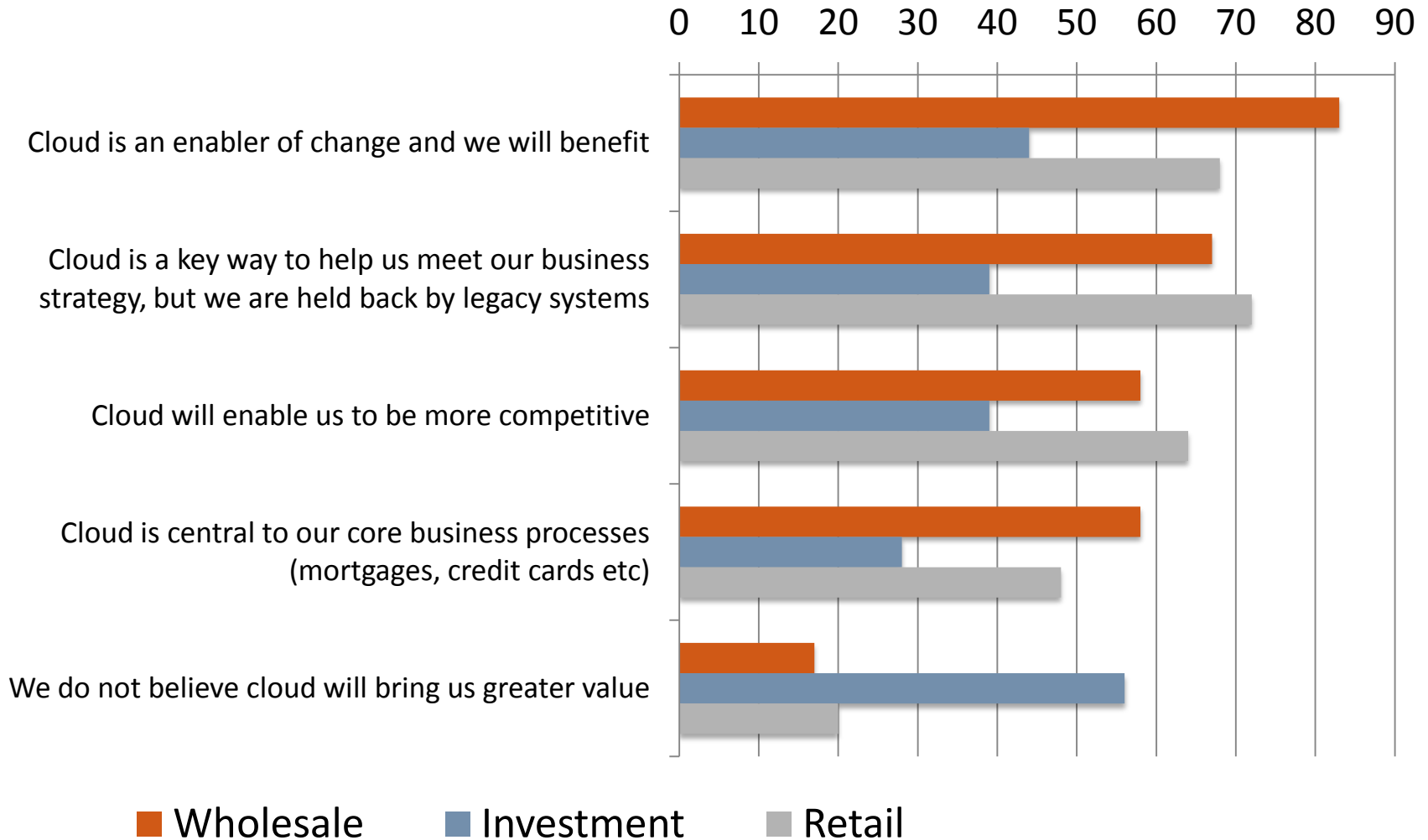
Different Functions, Different Clouds

No Cloud	Private Cloud	Public Cloud	SaaS
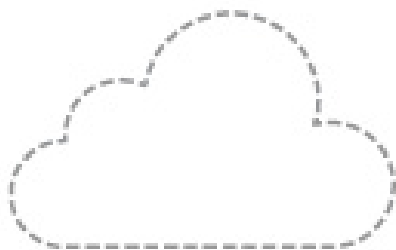
Risk management
Order management
Proprietary trading
applications
Real-time logic and
analytics
Portfolio accounting

Personnel and HR
Front- & back-office
applications
Internal
line-of-business
applications

Utility computing
Administration
Enterprise emails
Storage

SaaS applications
(such as NYSE
Technologies Capital
Markets Community
Platform)
Trading
Asset management
Market data

Future of the Cloud: Key Milestones
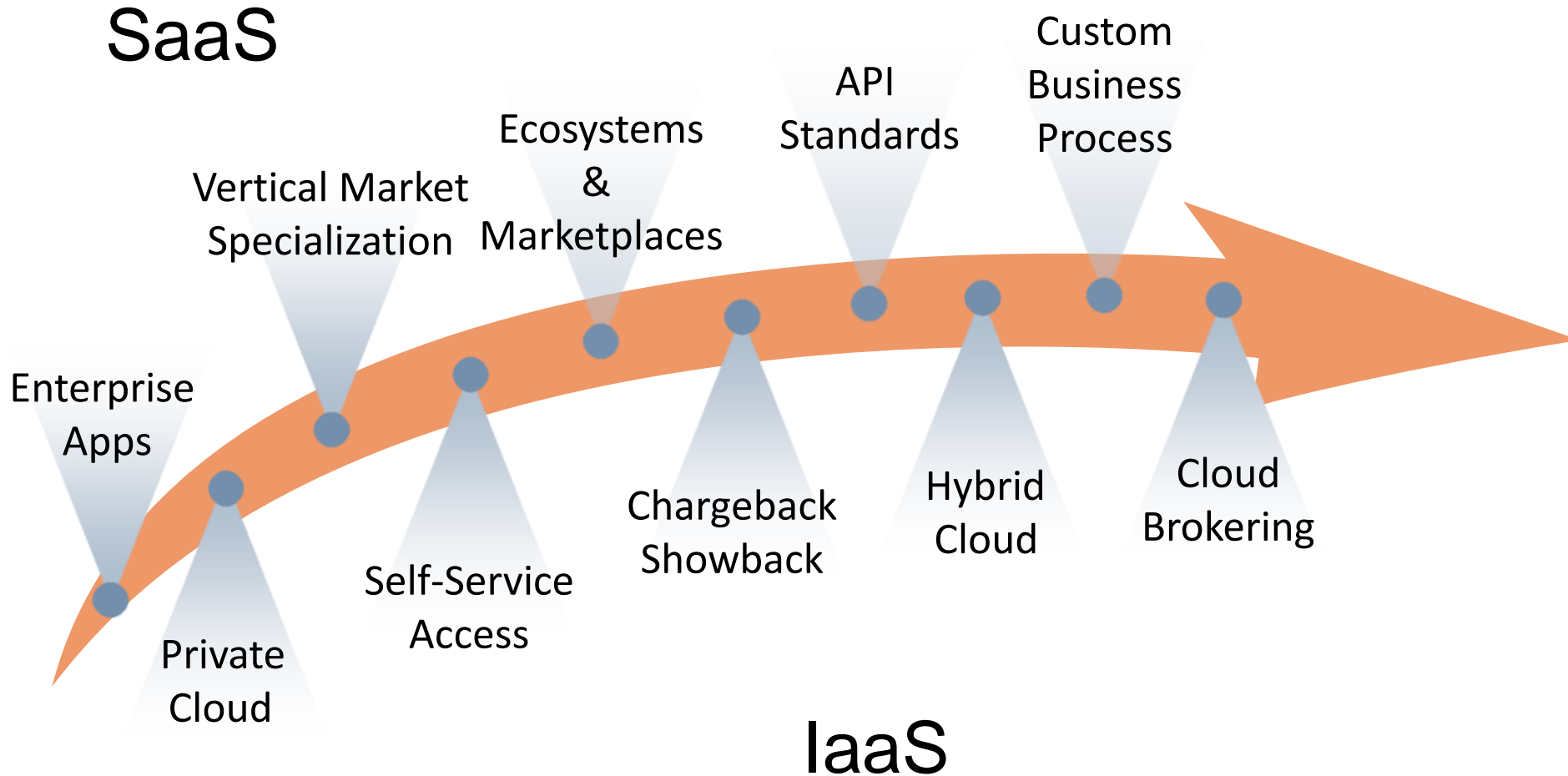
Investment is rocking

20

15

10

5
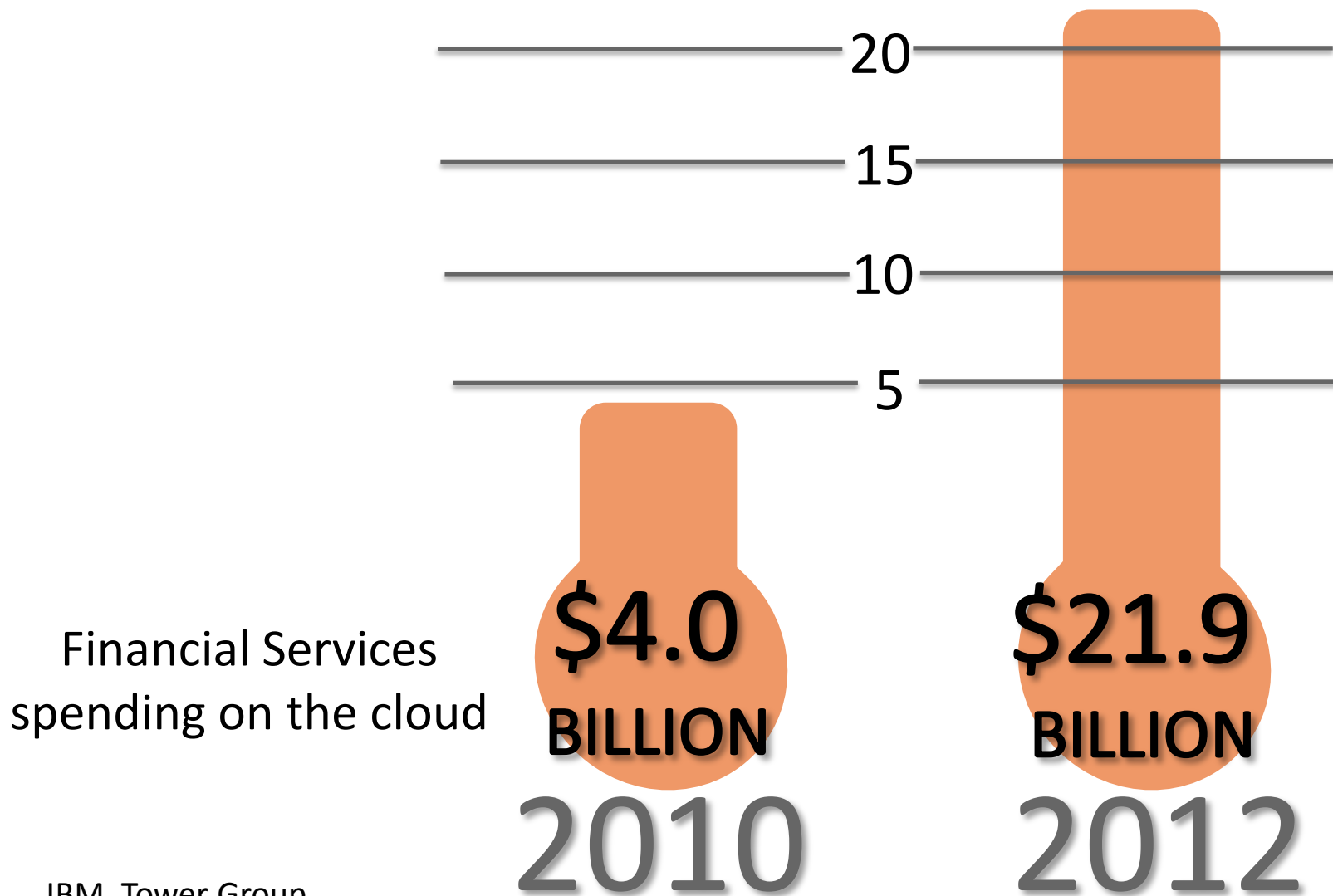
Financial Services
spending on the cloud

$4.0
BILLION
2010

$21.9
BILLION
2012

IBM, Tower Group

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Requirements in the Cloud

1. Open
2. Automation
3. Simplicity
4. Self-Service
5. Hybrid

Cloud 2.0

1/3rd

of financial services executives see the cloud as enabling new business

eLynx
Loan Fulfilment as a Service (SaaS)

CRITICAL BUSINESS ISSUE:

- Use the cloud to reinvent the loan process to speed cycle times and improve loan quality

REQUIREMENTS:

- Multi-tenant and secure – eLynx serving 25 of top 50 banks in US
- Scalable – have over 100,000 registered settlement agents
- Always On – eLynx service processes 1/3rd of US loan volume
- Automated – service must be aggressive priced for competitive market

BENEFITS:

- Can now provide instant capacity to handle real time spikes in demand
- Guarantee clients security through hardware isolations
- Improved service availability – now over 5 - 9's
- Reduced operational costs by 65 percent
- Cut recovery times in half though run book automation

Daiwa Research Institute
Myanmar Central Bank

CRITICAL BUSINESS ISSUES:

- Use the cloud to modernize the financial systems so that the financial industry can accelerate – not hamper – the country's growth

REQUIREMENTS:

- Create a hybrid cloud service spanning multiple geographic data centers
- Hardware agnostic solution to support infrastructure from many providers
- Provide for quick and easy provisioning and scaling
- Multi-tenancy for isolated cloud zones
- Support cloud running both physical as well as virtual workloads
- Single management processes to reduce TCO

BENEFITS:

- Can migrate workloads across unified multi-vendor resource pool
- Automated failover between server vendors for both P+V workloads
- Secure consolidated development environment for on and offshore developers
- Success internally at DIR has led to a financial infrastructure modernization project with Myanmar Central Bank – multi-phase project with DaaS, IaaS, & SaaS

American Capital
Cloud for Portfolio Companies

CRITICAL BUSINESS ISSUES:

- Use the cloud to set up a new business that provide value addedcloud services (IaaS, SaaS) to portfolio companies

REQUIREMENTS:

- Differentiate company by offering a secure self-service cloud to clients
- Provide high service levels for key business applications
- Minimize staff costs needed to provide and manage a cloud IaaS offering
- Minimize the infrastructure costs needed to rapidly grow this type of service

RESULTS:
- Reduced CapEx by $1 million in first year
- Reduced operational costs by 50%
- Ability scale service quickly by adding capacity on demand
- Cut recovery times in half though run book automation
- Provided differentiation via a new private cloud service

Key Take-Aways

- Cloud 1.0 – Cloud as a Technology
  - All about lowering cost and increasing agility
  - Happening selectively across industry segments and applications
  - Driving this is adoption of private clouds and use of SaaS
- Cloud 2.0 – Cloud as a Business Model
  - This is where it gets interesting
  - Cloud is the catalyst to transform business models
  - Cloud has the potential to disrupt competitive landscapes
  - Winners among those that adopt early and redefine themselves and their role in the markets they serve

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About NaviSite

Managed Application Services	Managed Hosting Services	Managed Cloud Services

NaviCloud Service Delivery Platform

Differentiated by…

- The industry leading, high performance, enterprise class cloud platform
- A suite of elastic, scalable and feature rich "as-a-service" offerings
- Solutions customized for the specific requirements of every customer
- Superior customer service with unparalleled service level agreements
- Unparalleled breadth and depth of managed services skills and experience
- Flexible, dynamic, responsive and entrepreneurial culture

NaviSite

Global Presence

Managing Complex Infrastructure and Application Environments for 15+ years

- A Time Warner Cable Company
- Approximately 900 employees
- 1200+ Customers

- Ten data centers
- Three US cloud nodes
- 130,000 SF data center space

London
Andover
San Jose
Charlotte
New Delhi

- Flag ship cloud-enabled data center
- Co-location / POP
- Network Operation Center & Regional Office

NaviSite

Industry Credentials

SSAE 16 Type II Audit

- Assures NaviSite customers that its processes, procedures and controls have been formally reviewed
- Demonstrates compliance with Section 404 of Sarbanes-Oxley Act

ISO 27001 Certification

- In process

Microsoft Gold Certification

- Demonstrates that an application outsourcer meets high levels of service readiness, competency, capacity, and scalability

Oracle Certified Platinum Partner

- Demonstrates NaviSite's superior product knowledge, technical expertise and commitment to Oracle products

Cisco Advanced Managed Services Provider

- Cisco Managed Services Advanced Partners use Information Technology Infrastructure Library (ITIL) Foundation processes, practices, and tools to support advanced Cisco technologies.

VMware Service Provider Professional

- NaviSite has reached VMware Sales Professional and Technical Sales Professional certification status

HP Cloud Agile Partner

Other Industry Certifications

NaviSite

Financial Services Customer Case Study

GLOBAL ASSET MANAGEMENT FIRM
OVER 600 BILLION MANAGED ASSETS
OVER 3000 EMPLOYEES

Objectives

- **Transition majority of corporate shared services to affiliate organizations**

- **Moving commodity services to a Service Provider model**

- **Reduce overall cost while improving operational global efficiencies**

Proposed Solution

- **600 + Managed Systems**

- **Full IT Outsourcing of Managed Services (Production and DR) including Service Desk**

- **Managed Application Services (ERP and Messaging) with Cloud as the delivery mechanism**

- **Adjacent Cloud applications – Desktop as a Service, Back up as a Service**

- **Program Management**

NaviSite

Solution Overview

□ **LAN/WAN support**
□ **Firewall/IDS**
□ **Load balancing**
□ **Internet bandwidth**

Network Services
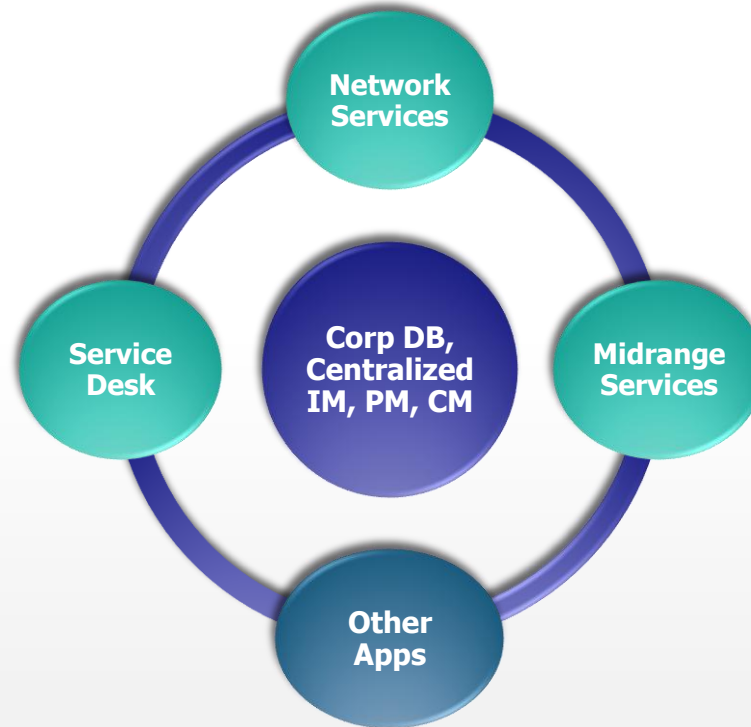
□ **Help Desk Support**
□ **Image Management**
□ **Patch Management**
□ **Anti-Virus**
□ **Asset Management**
□ **Service-now.com**
□ **Bomgar**
□ **Right Answers**

Service Desk

Corp DB, Centralized IM, PM, CM

Midrange Services

□ **OS Support**
    □ **LINUX**
    □ **Windows**
□ **Hardware Break/Fix**
□ **Patching, Updates**
□ **Backups**
□ **BC/DR**
□ **DBA**
□ **Dedicated & Cloud Servers**

Other Apps

□ **Exchange and LYNC**
□ **SharePoint**
□ **PeopleSoft**
□ **Hyperion**

NaviSite

NaviSite
Results

- NaviSite committed and delivered total solution in 100 days – on target

- Client has met and exceeded all internal financial objectives as a result of partnering with NaviSite

- Compliance adherence and reporting has been enhanced

- Client is a strategic member of NaviSite Customer Advisory Board

- NaviSite is a key enabler to client's continued global growth and expansion

NaviSite