

Cloud Computing Use Case & Securing The Cloud

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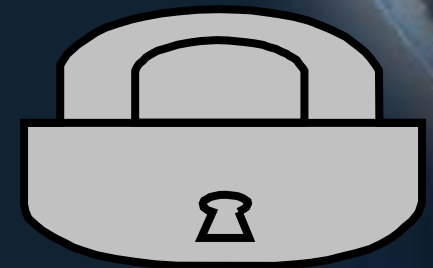
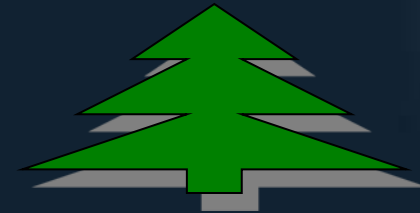
- The leading provider of Information System Solutions and Services for the US Government for 14 years
- Over \$10Billion in annual sales
- 52,000 Employees across every state and 50 countries
- CMMI Level 5, ITIL v2/3, ISO, DMM
- 4,000 Customer programs
- 80 – 120 Vendors Evaluated Yearly

Wouldn't it be nice, if everything was...



Why is the market embracing Cloud Computing?

- Economics
 - Budgets are flat to declining
 - 80% of Budget eaten by O&M
- Mission / Business Enablement
 - Complexity & Demands Increasing, yet agility is not there
 - Energy...Healthcare...Mission
- Power and cooling concerns
- Cyber Security Concerns
 - Need to know information and systems on networks
 - Ability to swiftly respond and fight through the attack is needed



The Value Dream of Cloud Computing

- Innovation Accelerator
- Agility Enabler (Dev/test/production/COOP)
- Improved Performance
- Power Efficiency / Green IT
- Lower Costs
- Scalability
- *Security?*



The Potential Is Great

The Value Is Just Starting To Be Realized One Nugget @ A Time

So, what is cloud computing?

Fundamentally, a new business model leveraging multiple technologies to deliver solutions as a service using internet protocols

Different Types Of Cloud Computing

Public
Cloud is accessible over the public internet for general consumption

Solution As A Service

Private
Cloud is deployed behind corporate firewall

- Software As A Service
- Traditional & Cloud APPs
- Cloud API
- Platform As A Service
- Computer As A Service
- Storage As A Service
- Enterprise Mgmt As A Service
- Security As A Service
- Network As A Service

3 Main Cloud Delivery Types Today

Application/Information- Sometimes referred to as Software-as-a-Service, a wide ranging services delivered via varied business models normally available as public offering.

Development – Sometimes referred to as Platform-as-a-Service, application development platforms enable application authoring and runtime environment.

Infrastructure – Sometimes referred to as elastic compute clouds or Infrastructure-as-a-Service, virtual hardware made available for varied uses.



*VMware & LMCO Definitions

Stay Tuned
More Cloud Computing Types On The Way

Gartner's Definition of Cloud Computing & Critical Attributes of Cloud Services

Gartner defines cloud computing as

"a style of computing where scalable and elastic IT-related capabilities are provided 'as a service' to external customers using Internet Technologies".

5 Attributes that support outcomes

1

Service Based

Consumer concerns are abstracted from provider concerns through service interfaces

2

Scalable & Elastic

Services scale on-demand to add or remove resources as needed.

3

Shared

Services share a generalized pool of resources to build economies of scale.

4

Metered By Use

Services are tracked with usage metrics to enable multiple payment models.

5

Internet Technologies

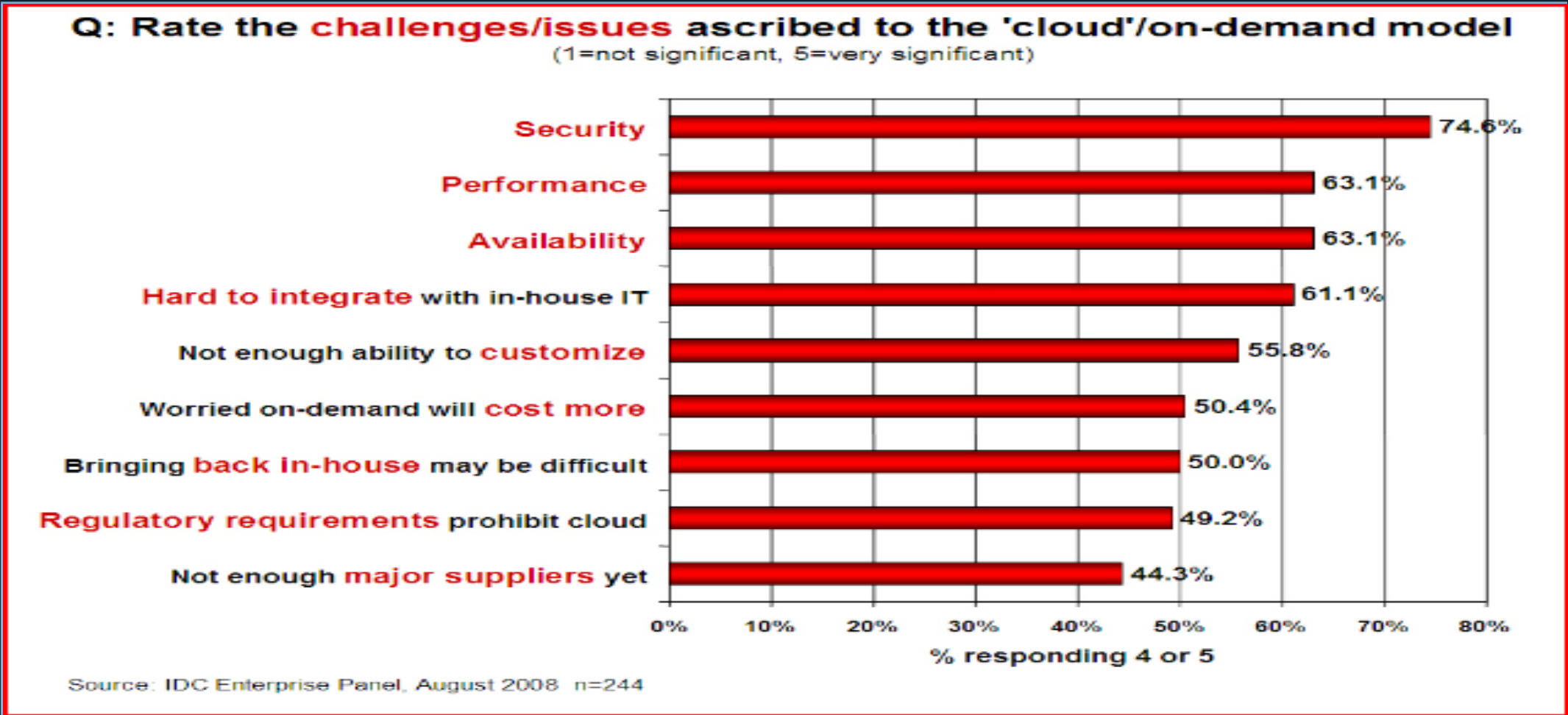
Services are delivered through use of Internet Identifiers, Formats, and Protocols.

More of a business model than a technology

Challenges

Understanding challenges of today enable better solutions for tomorrow

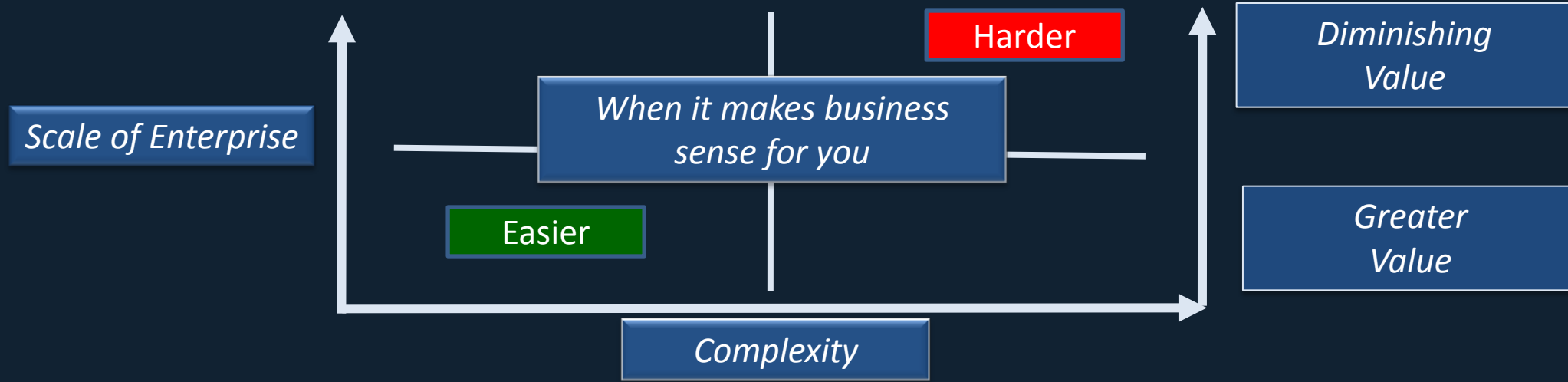
Challenges With Clouds Today



Once We Recognize The Challenges...We Can Address Them To Maximize Cloud Technology For Its High Value Potential

When is public cloud computing something to consider?

When you do not mind being a renter for life



Is your data center, associated business applications and services a differentiator for your business or a burden? How important is security?

Our Approach To Cloud Computing

Partner, First, Real, Secure
Solutions Tailored To Our Customer Needs

2009 IS&GS Cloud Computing Strategy: *Top of The Cloud*



*Reproducible Ecosystem*Business Models*Reference Architecture* Secure Cloud of Cloud Management*



Anywhere, Any Device, Secure, High Performance Rich Access

Partner Architectures

COTS and Open Source Partner Technology

Nimbus

Cloud of Cloud Management

Thunder Cloud Apps

Nimbus

Hybrid Clouds & Cloud

Bursting

Public Clouds

LM Nimbus, Google,
Amazon, Microsoft,
EMC SAAS

**Nimbus Private
Clouds**

VMware*NetApp*Cisco
Microsoft*EMC
Key Partners

Defending & Adapting End To End Mission Security

Creating Value For Our Customers

Cloud Computing...With Opportunity Comes Risk



Threat	Risk	Mitigation
Cloud computing vendor pulls a "DOT.COM" and goes chapter 11 or closes division	Loss of data and systems that impedes ability to execute mission.	<ul style="list-style-type: none"> • Use a private cloud • Check financial health of company and cloud computing division • Use of multiple cloud providers • Reverse cloud the DR/BC/COOP
Mission / Business Impact Management – Availability Loss	Unable to access your information or run you mission / business	<ul style="list-style-type: none"> • Use a private cloud • Use of multiple cloud providers
Privacy Of Data	Competitors and those of nefarious intent	<ul style="list-style-type: none"> • Use a private cloud • Bulk encryption of data at rest and in motion
Loss of Data & Integrity	Intellectual property loss or misinformation introduced that adversely effects your mission/business	<ul style="list-style-type: none"> • Use a private cloud • Use of Data Leak Protection • Use of Digital Rights Management
Insider Threat	All controls perfect, internal team with root/admin access compromises systems	<ul style="list-style-type: none"> • Background check on all cloud computing employees • Robust and secure auditing • Ensure vendor compliant with ISO 9001, 27001, ITILv3, CMMI
Change of cloud vendors	Your data never "destroyed"	<ul style="list-style-type: none"> • Use of crypto shredding • Use of virtual machine file and web application standards • Use of Active – Active Cloud vendors
Legal / Industry Compliance	Loss of customer confidence, financial loss, even chapter 11 (your job)	<ul style="list-style-type: none"> • Use a private cloud • Automated Cyber Security Systems • Robust and secure auditing

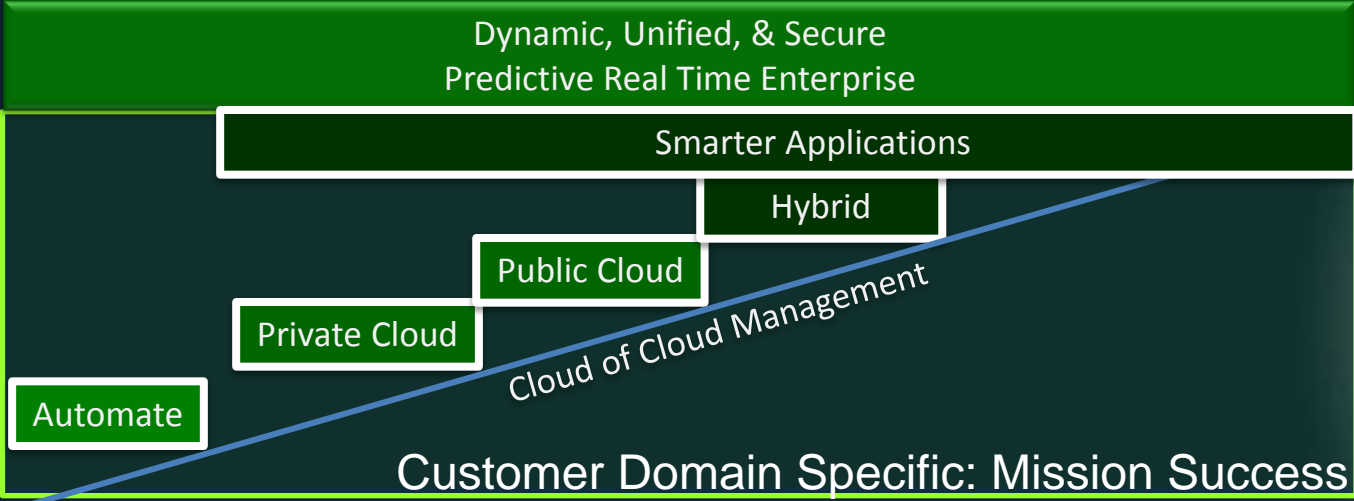
Transformation Roadmap: Evolve Or Jump



Customer Value

Each Infection Point Provides Opportunity For

- Lower costs
- Increase Performance
- Improve Security
- Increase Agility
- Increased Energy Efficiency
- New Capabilities & Innovations



Consolidate

Optimize

Virtualize

Where to start is highly customer dependent both on their goals & maturity of their enterprise

Time

Dynamic Mission Relevant Solutions

Enabling The Right Data, Right Application, To The Right Person, On Any Platform

Road Map Applied For Success

Sample Customer...IS&GS CIO Office RESULTS



Approach

Results

Optimize

- Optimized Processes
- Cultural Out Reach



- LM21 Validated Project Savings
- \$1.8M Annual Occupancy Savings
- \$199K Annual Capital Savings
- \$20K Annual Maintenance Savings
- Faster SOA Project Startup & Completion

Consolidated & Virtualized

- Set Standards - VMware ESX
- Seamless Transition
- 450 Physical Servers
- Large number of sites



- 854 Virtual Servers
- 101 ESX 3.5 Servers
- Large Scale Consolidation Completed

Thank You

