



Cloud Services – The Network is Key

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Cisco is the leader for Cloud Building

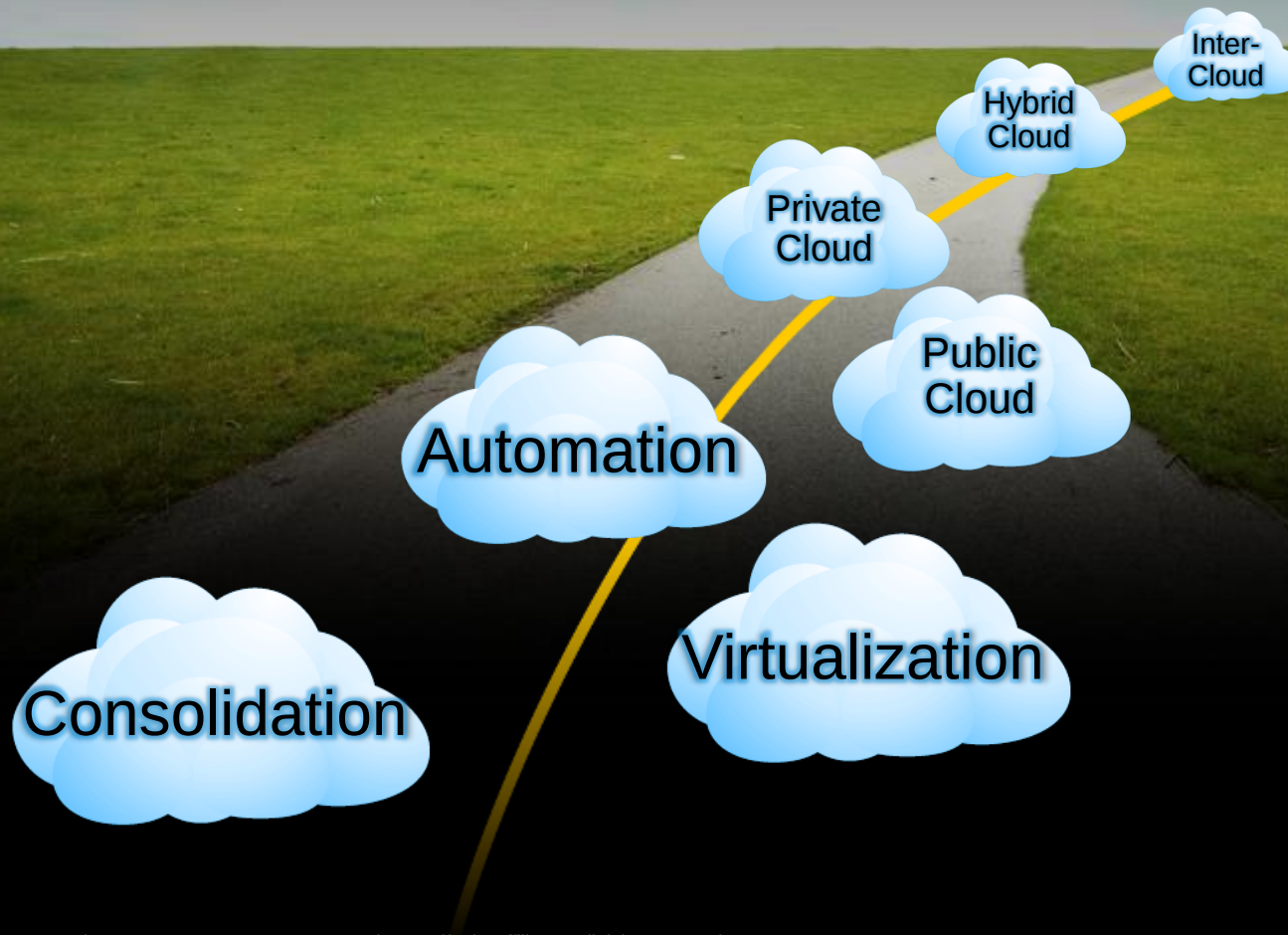
Vision: Lead the **next era of IT** ecosystem in which the **networked cloud** transforms the way we work, live, play and learn

Strategy 1: Enable cloud providers to build a robust infrastructure upon which to offer public and hybrid cloud services

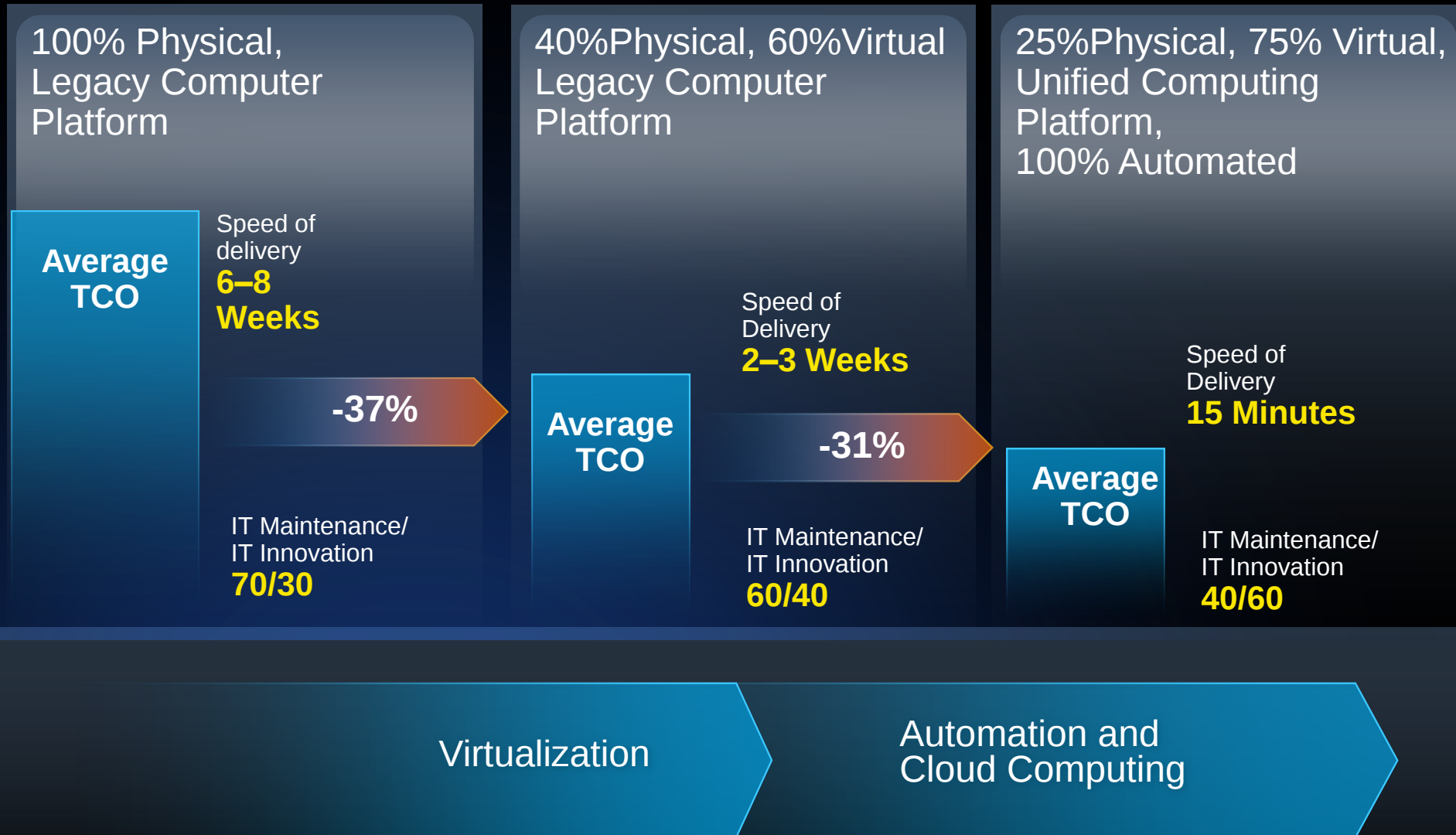
Strategy 2: Enable transformation to agile and secure IT with private and hybrid clouds

Strategy 3: Drive innovation and standards in order to provide interoperability between networked cloud providers

The Cloud Computing Journey

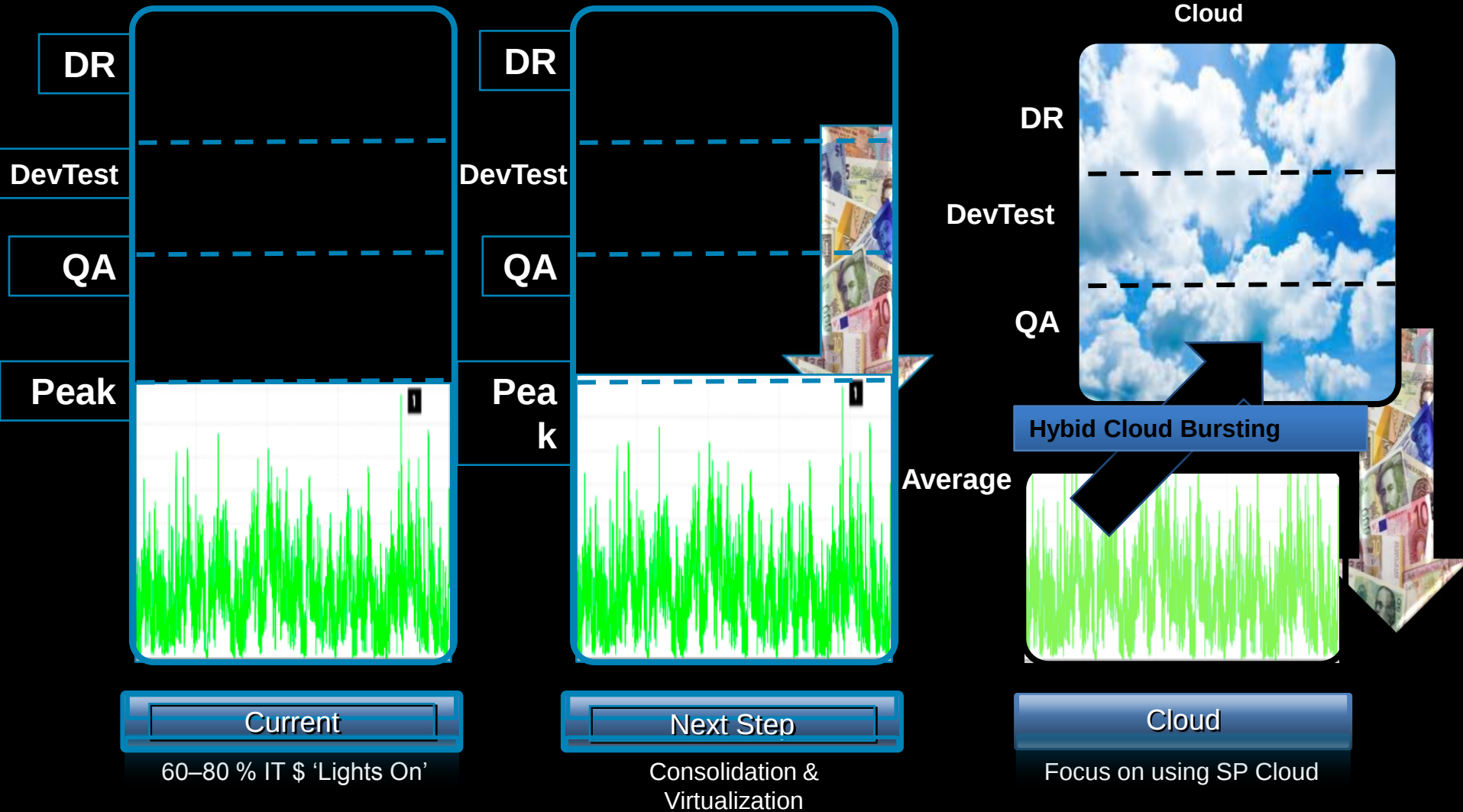


Cisco IT Cloud Journey - CITEIS



Economics of IT investments – Cloud demand side

Idle IT \$\$ Deliver No Strategic or Tactical Benefits



Service Catalogue is the starting point



Service definition including Service Level Objectives and Pricing will influence the fulfillment decision.

Infrastructure
Services

Virtual Desktop
Services

Contact Centres

Business
Continuity
Services

Business
Intelligence

Social
Networking

Video
Conferencing

Data
Services

Dev/Test Lab
Services

Software
Services

Storage
Services

Managed
Services

Typical Questions That Need Consideration...

Applications

WHAT IS MY APPLICATION PORTFOLIO?

Where is the growth/advantage/waste?

Funding

HOW IS INFRASTRUCTURE FUNDED TODAY?

Does the funding model allow/enable transformation?

Cost

WHAT IS THE CURRENT COST BASE OF SERVICE DELIVERY? What are the goals & opportunities?

Risk

HOW DO I SECURE MY ENVIRONMENT?

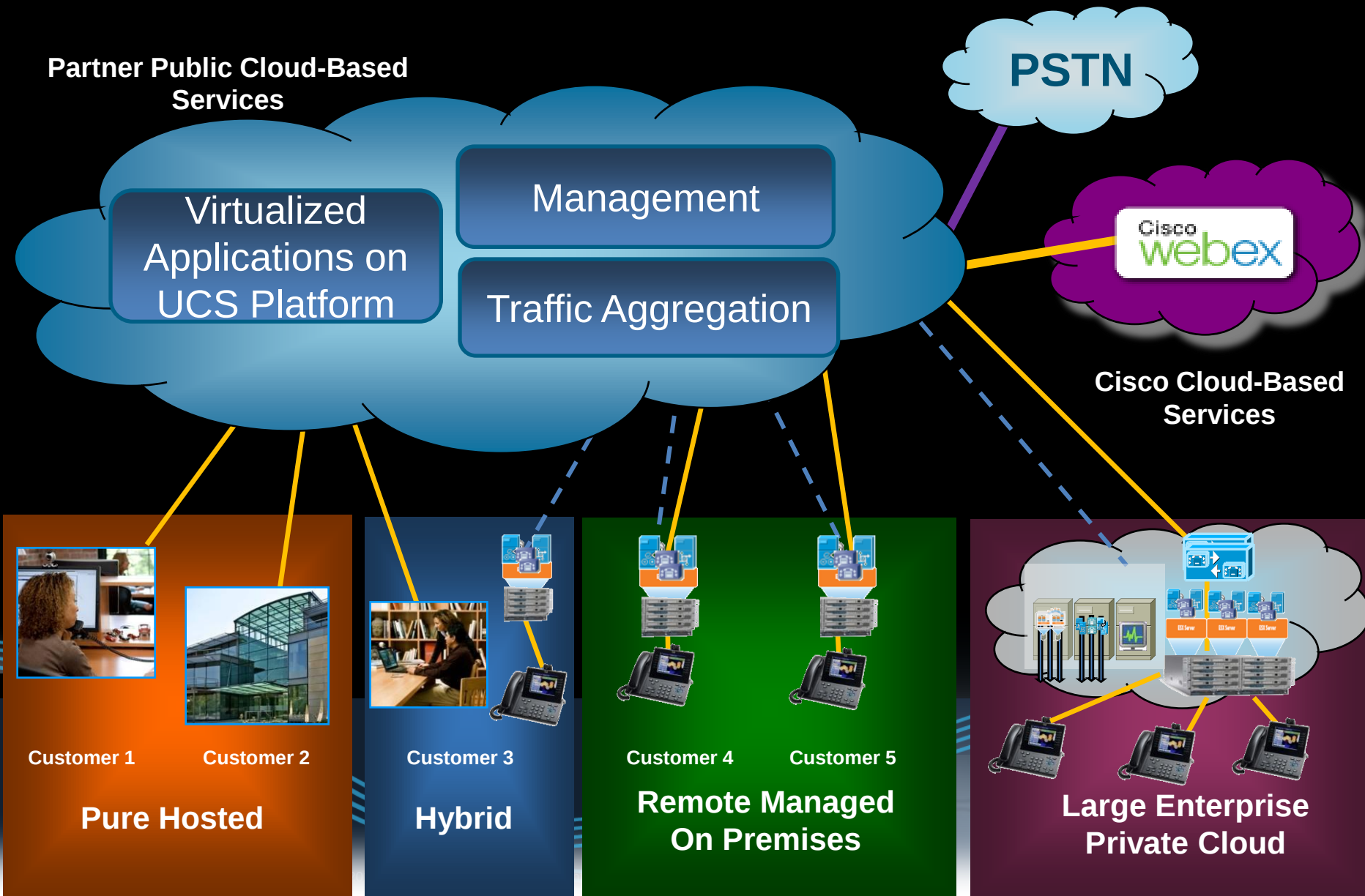
What are the reputational & regulatory considerations?

Innovation

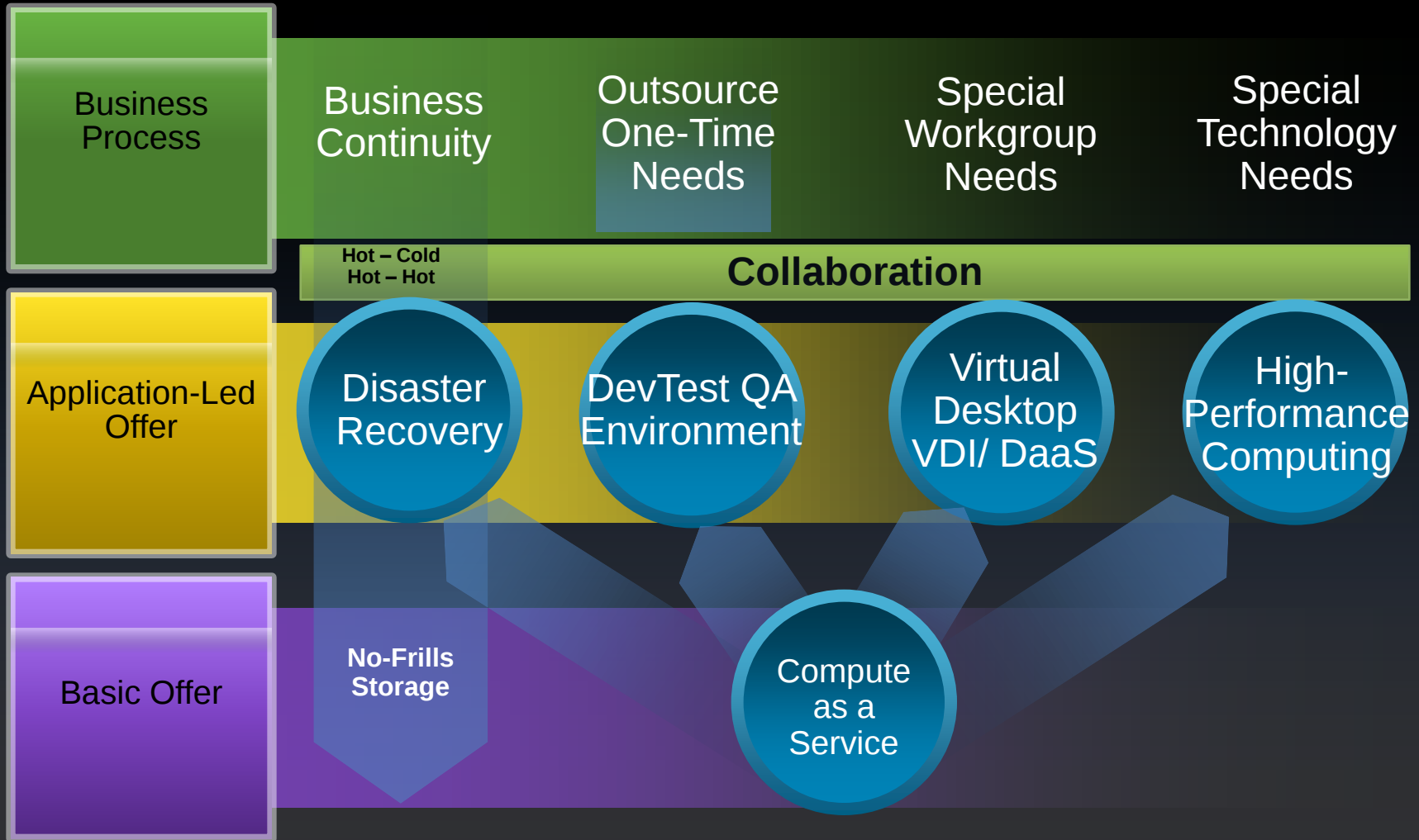
ARE WE MARKET COMPETITIVE?

What is our time to market for new initiatives/products/services/campaigns?
What could/should it be?

Cloud provides many deployment option - HCS



Considering Top 5 Use Cases for IaaS Delivery



Compute as a Service

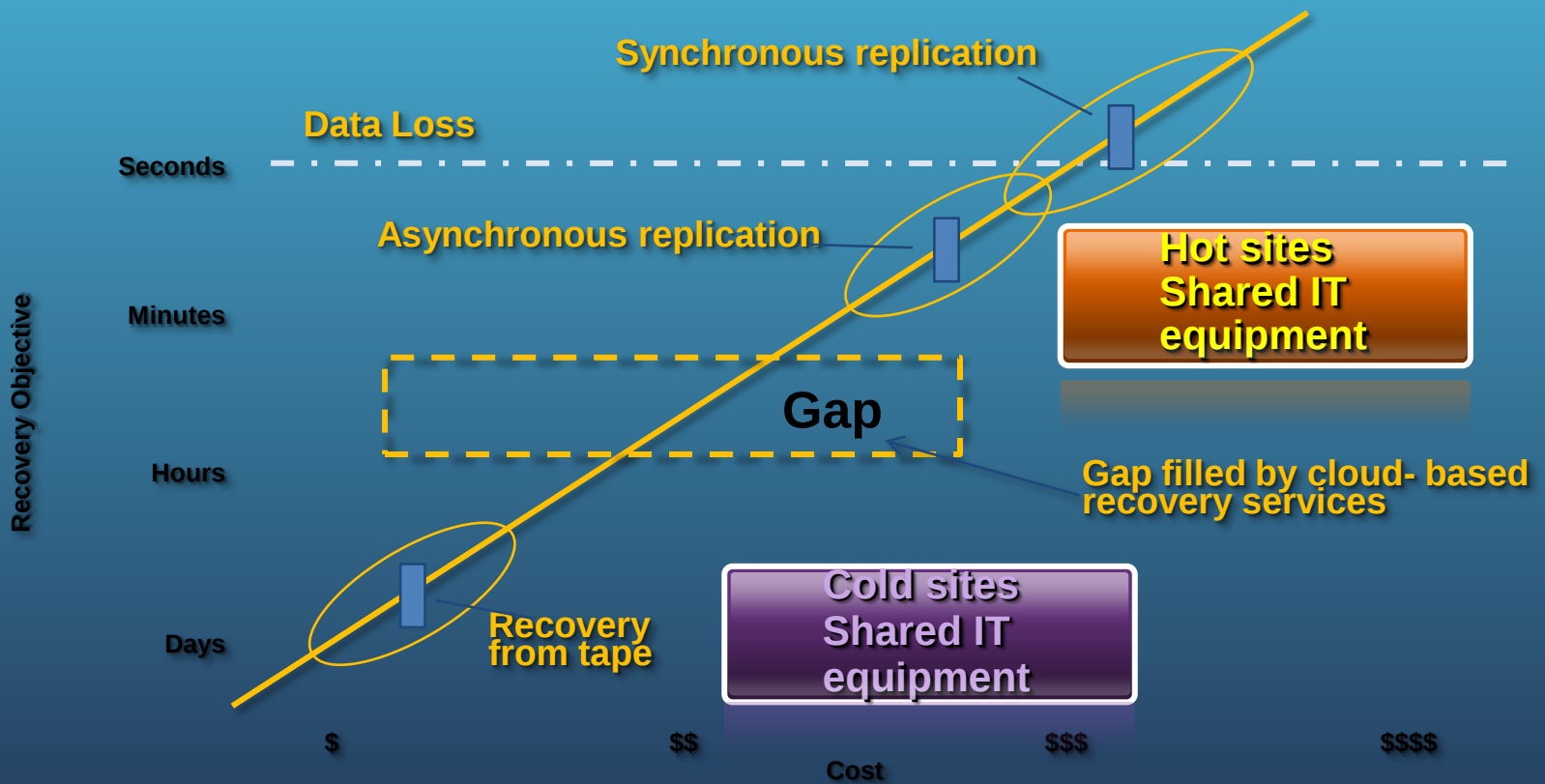
Basic Requirements Checklist

- “On-demand” resources and “at scale”
- Performance, availability, elasticity, and flexibility
- Dynamic resource allocation
- Automated self-provisioning and de-provisioning through web-based and API interfaces
- Ubiquitous network access
- Complete control of Instances and transparent service orchestration
- Multi-tenant infrastructure to support multiple business applications
- Detailed reporting and usage-based billing
- Workload movement; cloud bursting
- Security and SLAs guaranteed
- Added features at extra cost



Disaster Recovery Services

Figure 1: The Gap Filled By Cloud Recovery Services



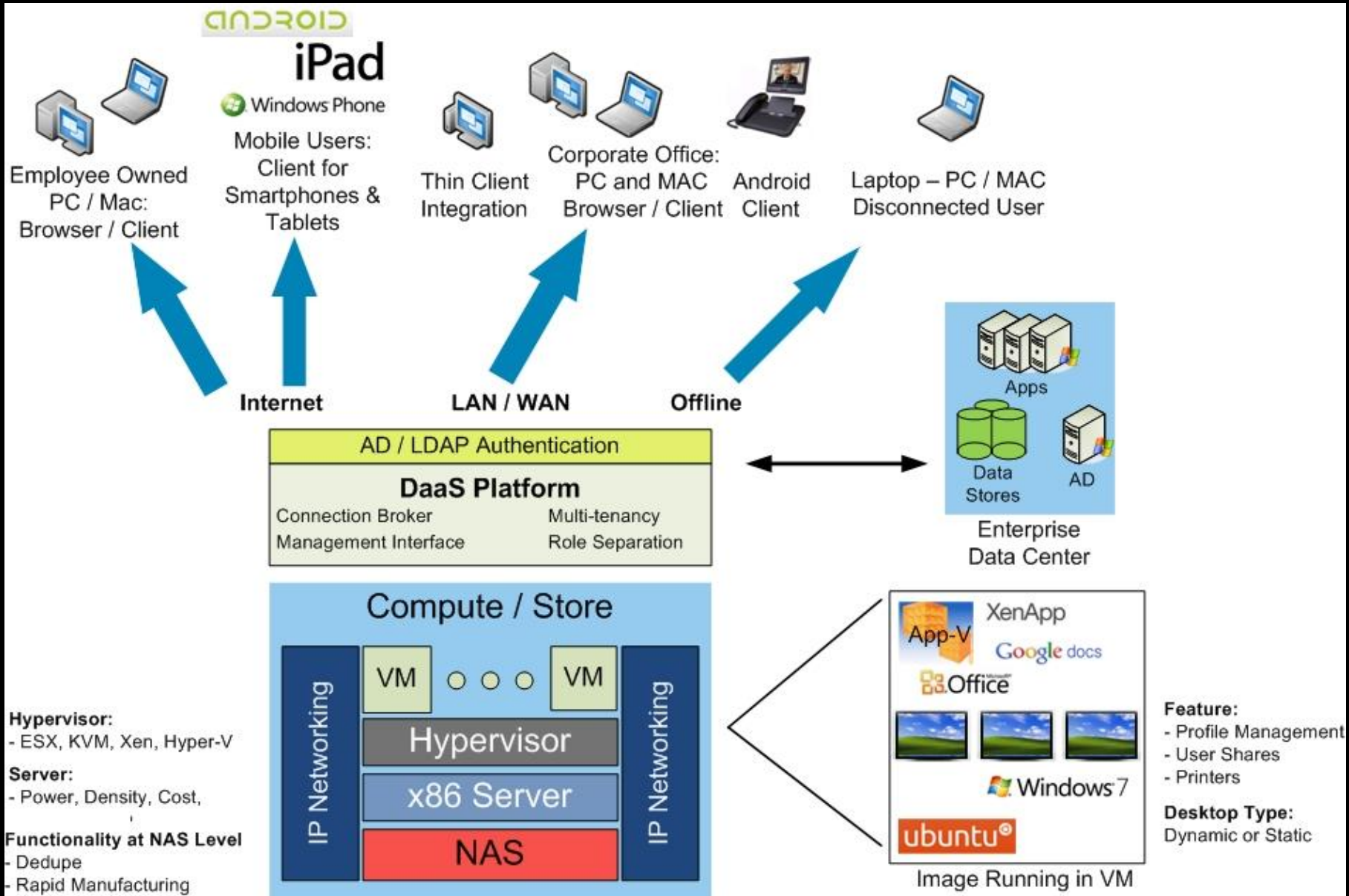
Dev/Test & QA in the Cloud:

Requirements Checklist

- Cloud and data center requirements
 - Multi-tenant environment for develop and test and preproduction rollout
 - Diversity of infrastructure: Replicate production environment as close as possible
 - Management of development platform: Server images, with patching
 - Rich toolset for full application lifecycle management
 - Pay-as-you-use licensing
 - Metrics to define and track application performance
- WAN requirements:
 - Reliability SLAs and performance (latency)
 - Bandwidth on demand for performance testing

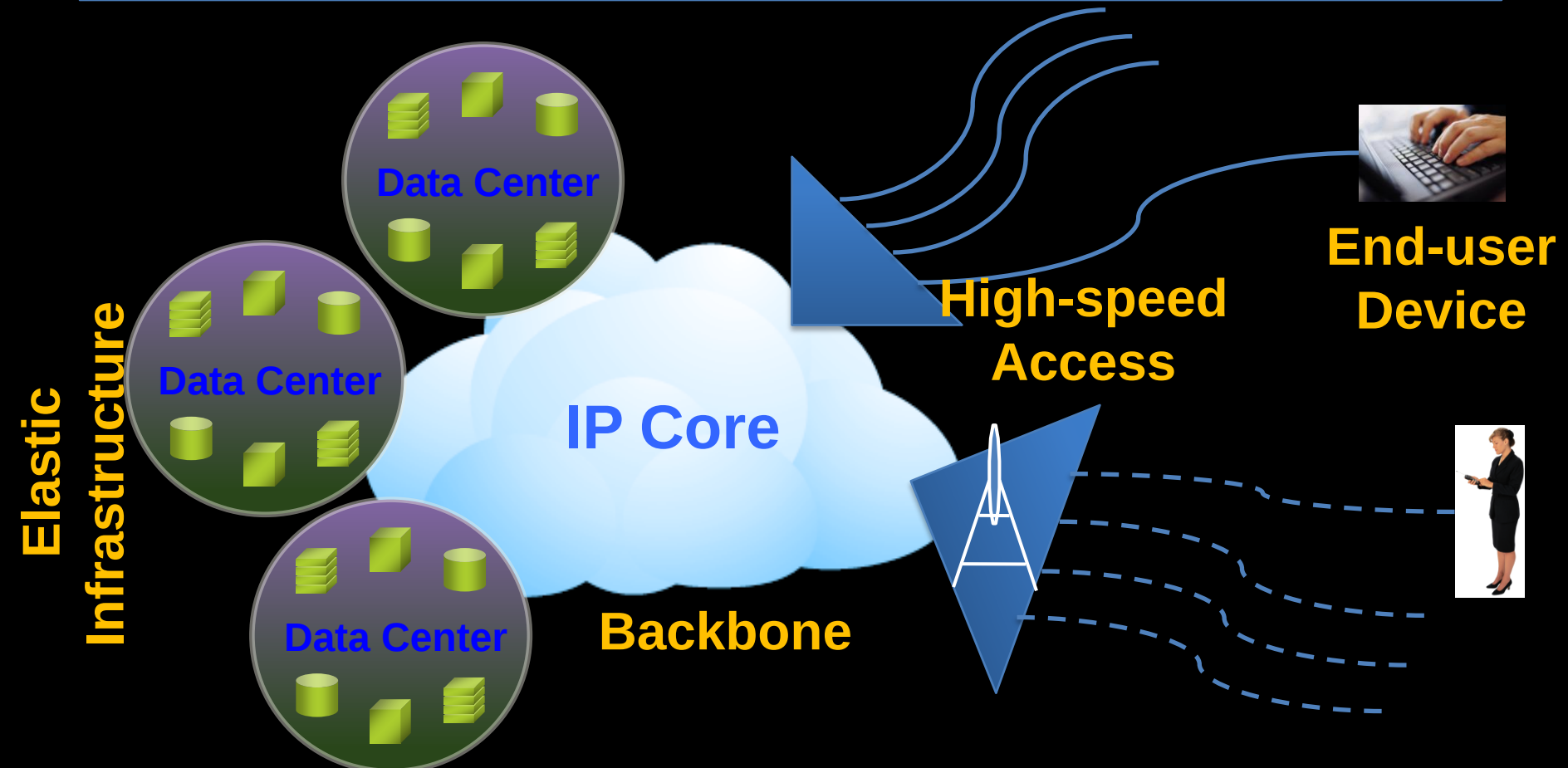


Snapshot of a VDI Cloud Service



Essential elements of a Cloud Service

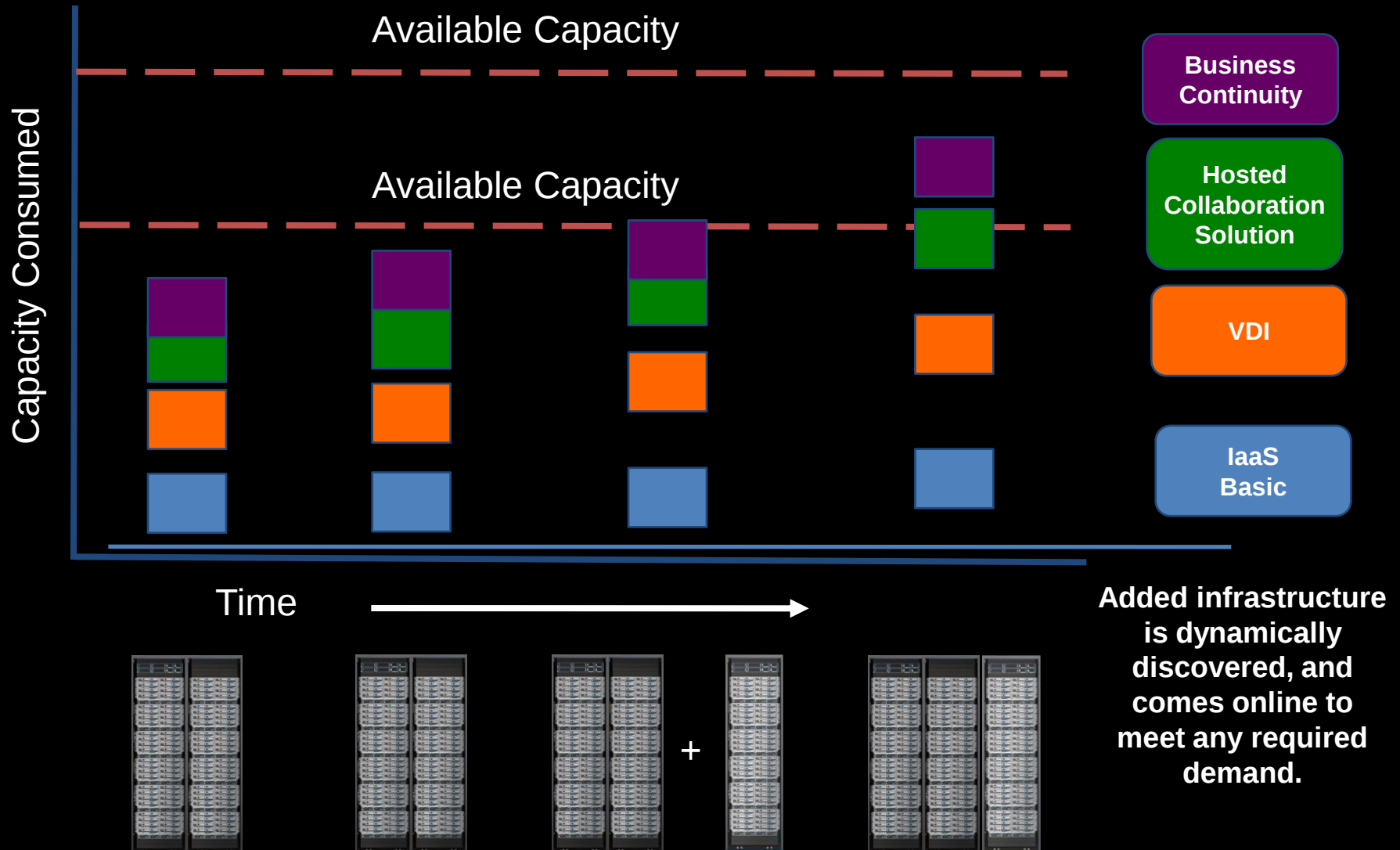
Applications and IT services



Automated Operations and Security

Cloud Infrastructure Built for Scalability

Add Capacity For System, Not Single Service



Cisco Unified Fabric Evolution

Continued Architectural Innovation

2010

SIMPLE

FabricPath

Architectural flexibility and scale

OTV

Workload mobility

FEX-link

Simplified Management

VN-Link

VM-aware networking

DCB/FCoE

Consolidated I/O

EFFICIENT

vPC

Active-Active uplinks

AGILE

2008

Presentation_ID

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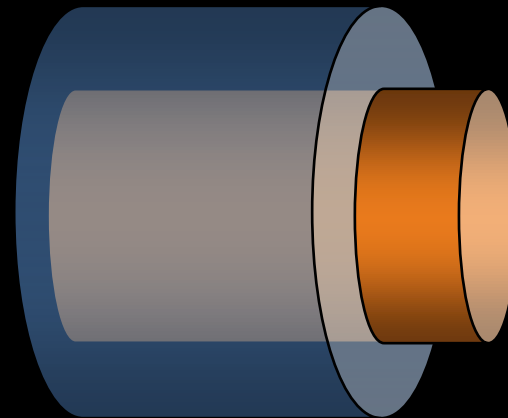
Fibre Channel over Ethernet

Delivering Network Agility in the Data Center

Data Center Bridging Standards

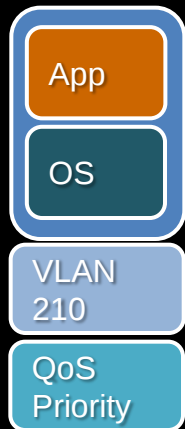
- Mapping FC frames over Ethernet Transport
- Enables Fibre Channel to run over a lossless Ethernet medium
- Single Adapter, less device proliferation, lower power consumption
- NO gateways required

Unified I/O Transport



VM-level Network Platform

Network container implemented by 1000v



- Network policies assigned to each virtual machine instance
- Automatic network configuration based on policies
- Policies travel with VM instances during re-provisioning and vMotion events

Nexus 1000v + vNIC

Nexus 1000v + vNIC

Nexus 1000v + vNIC



Cisco VN-Link: Virtual Network Link

Policy-based VM
Connectivity

Network and Security
Service Portability

Maintains Wire-once
Operations Model

Nexus / UCS / ASA / etc.

Cisco OTV: VMotion Across Data Centers

Live migration of VMs from one data center to another

Data Center A

Ethernet Extension

Data Center B



“

This represents a significant advancement for virtualized environments by simplifying and accelerating long-distance workload migrations.

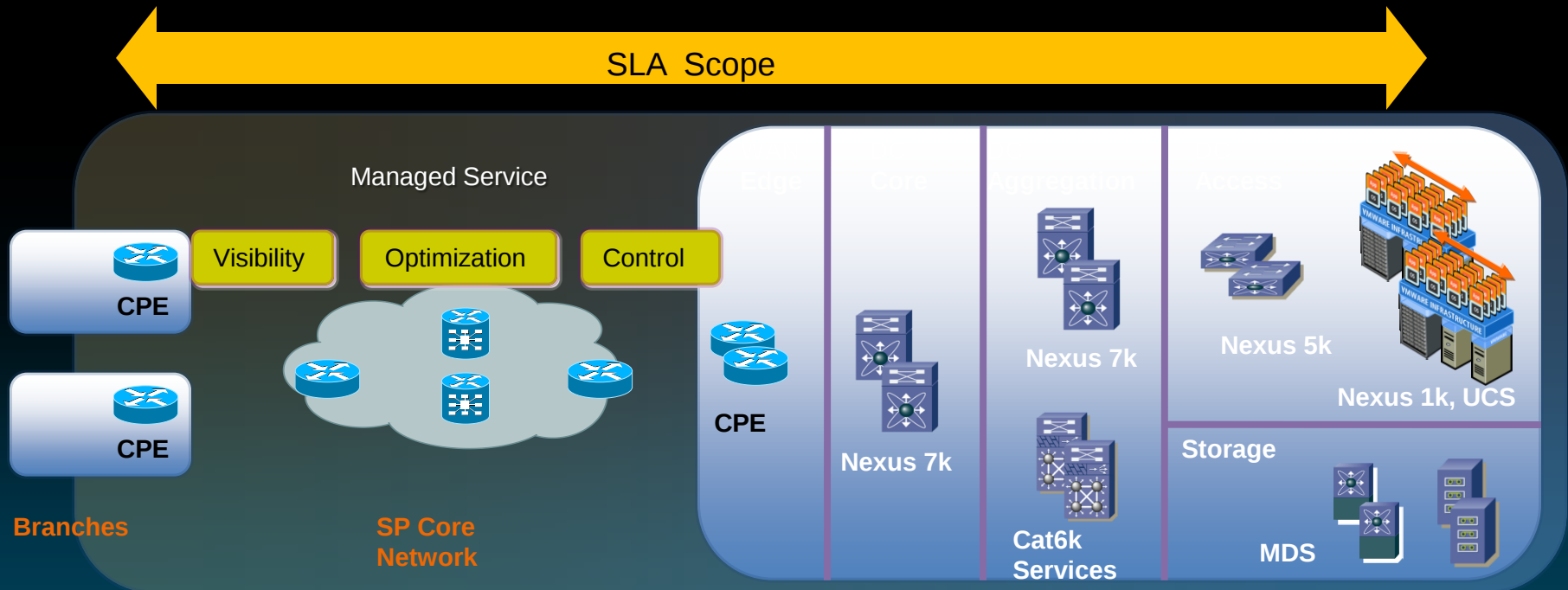
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Ben Matheson, *Senior Director, Global Partner Marketing*

Cloud Network Platform

end-to-end SLA enforcement & monitoring

- SPs/MSPs can differentiate by providing end-to-end SLAs as opposed to resource-specific SLAs
- Cisco can uniquely support end-to-end monitoring and service delivery assurance for Cloud-based services
- APM (Application Performance Mgmt) provides a foundation that is being extended into the Data Center



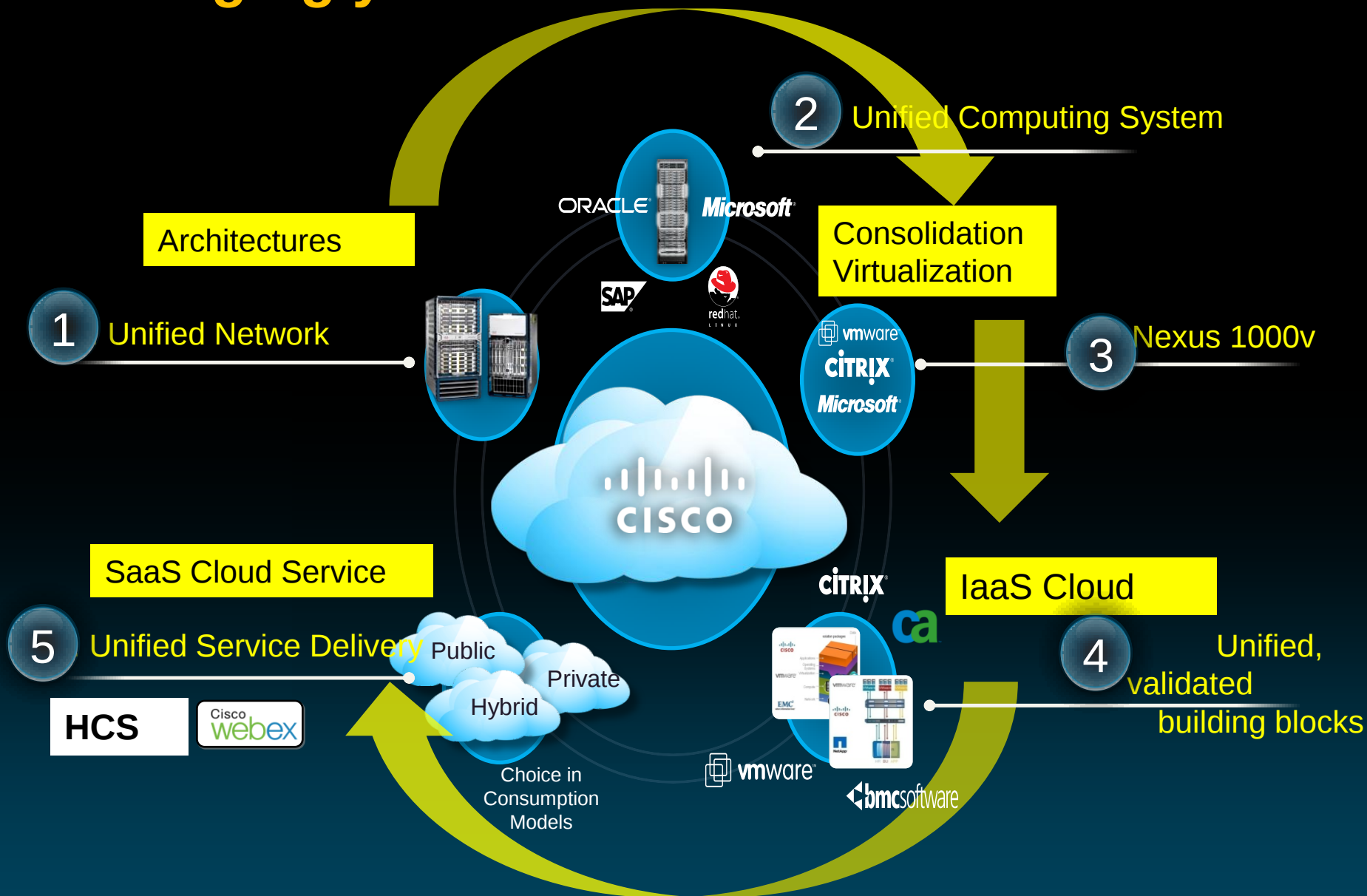
Multi-Tenant Virtualized
SP Data Center

Key to Broader Adoption of Cloud: **Trust**



Cisco has developed Network Trust solutions delivered
in the Cloud and by the Cloud

Journey to the Cloud Roadmap: Leveraging your DC Architecture Investments



Cisco Advanced Services: Cloud Enablement

*“What can cloud do for my business?
Costs? RoI?
Process impact?”*

*“What architecture maximizes virtualization,
orchestration speed &
chargeback capability?”*

*“How do we realize our Cloud architecture –
on-time, within budget
and in our environment?”*

*“How do we ensure Cloud evolution
and ongoing cost
reduction?”*

Cloud Strategy Service

Cloud Planning & Design Service

Cloud Implement & Integrate Service

Cloud Optimization Service

Assess Strategy

- Technology & Security
- Management Tools
- Operational Readiness
- Chargeback Approach
- Program & Architecture Management Offices

IaaS Design

- Technology & Security
- Tools Architecture
- SLA Design
- Chargeback Design
- Program & Architecture Management Offices

Implement & Integrate

- Technology & Security
- Tools
- Staging & Validation
- Program & Architecture Management Offices

Optimize via...

- Architectural reviews
- Security Audits
- Cost reduction exercises
- Process Improvements
- Tool customization

Accelerate Time
to Value

Worldwide Expertise
Worldwide Presence

Proven Delivery
Capability

Delivering Unique
Cisco Insight

Cisco's Cloud Strategy

Addressing Our Customers' Business Challenges

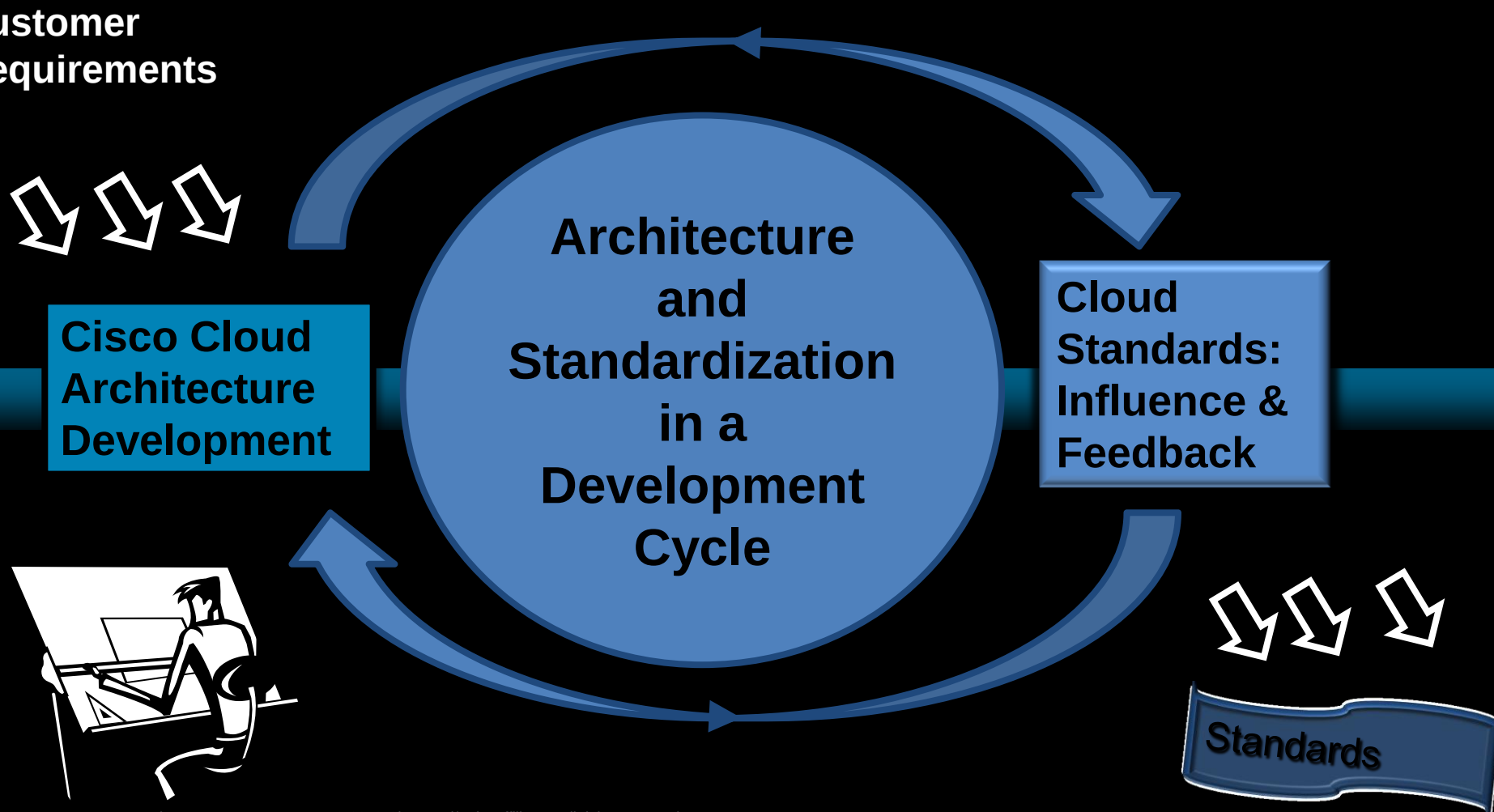


Deliver products, solutions & services to organizations to build secure Clouds

Enable Service Providers to deliver secure Cloud solutions & services to their customers

Advance the market for Cloud by driving technology innovation, open standards and ecosystem development

Cloud Standards in an interdependent Cycle with Customer Architecture & Requirements

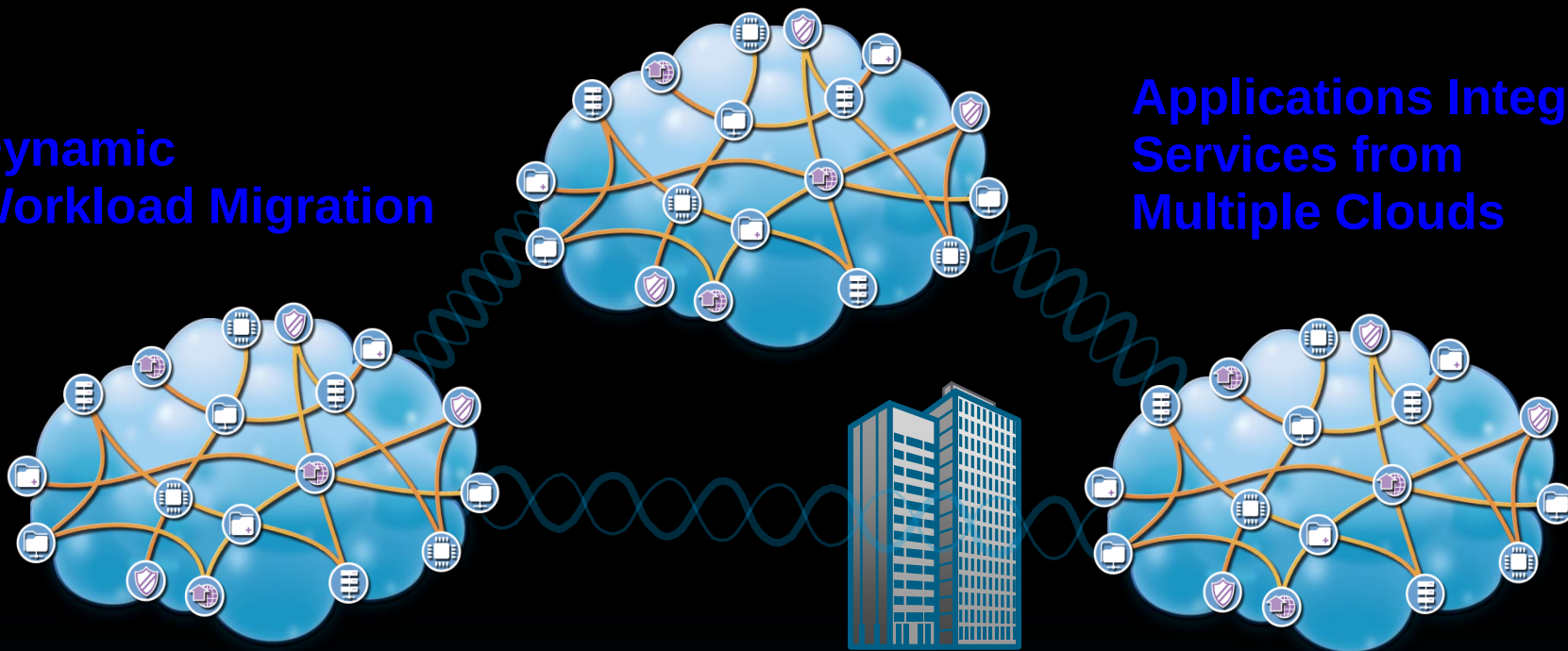


Cisco Long Term Vision — The Intercloud

Flexible Infrastructure and a New Application Platform

Dynamic
Workload Migration

Applications Integrate
Services from
Multiple Clouds



A Federation of Clouds Based on Open Standards:

- Naming and Discovery
- Trust
- Exchange and Peering

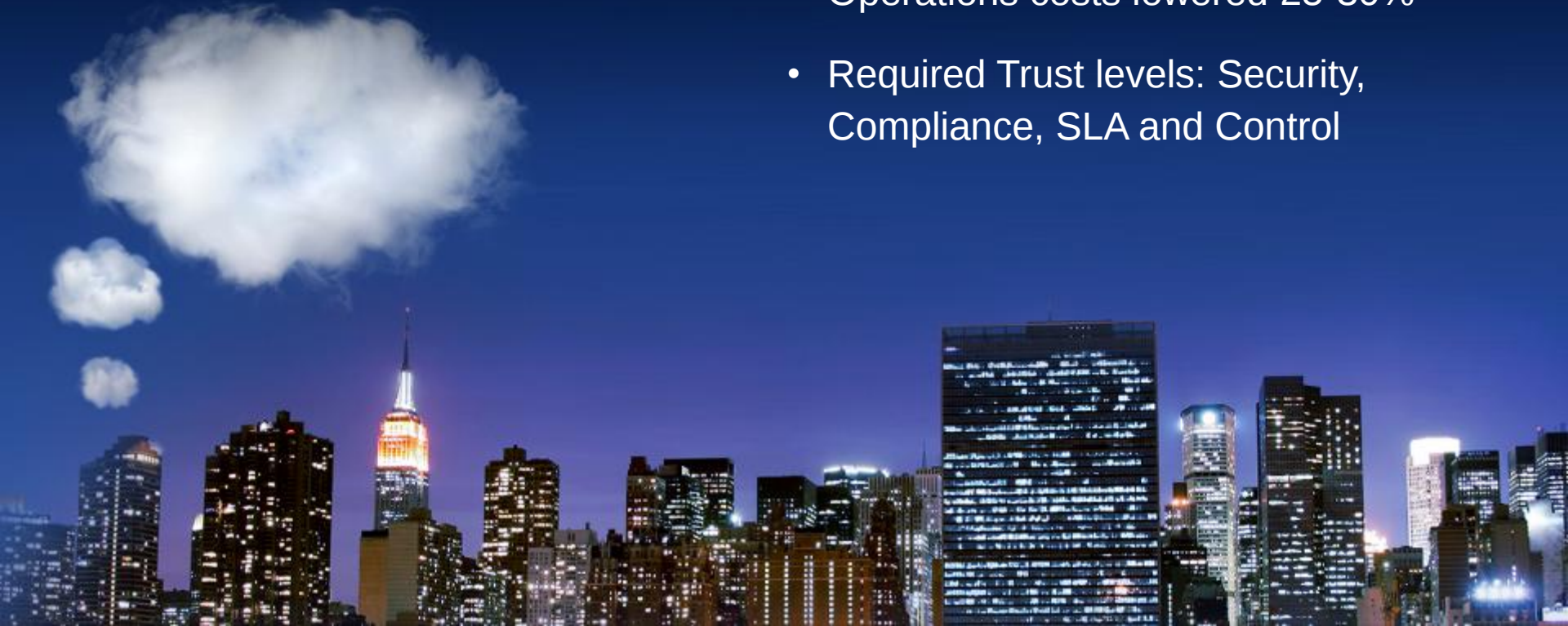
Cisco Builds Clouds which Simplify IT for Business

Providing

- Flexibility of resource allocation
- Efficiency of resource allocation
- Democratization of resource allocation

Enabling

- Agile IT service delivery
Time to market reduced 50+%
- Cost Optimization
Higher server and storage utilizations
Operations costs lowered 25-30%
- Required Trust levels: Security, Compliance, SLA and Control





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