



# SP CLOUD SERVICES

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# Headlines for 2009

**Verizon Eats  
Its Own  
Clouds**

**Cisco Beckons  
Carriers to the  
Cloud**

**Orange Unveils  
Cloud  
Formation**

**AT&T Joins  
Cloud  
Computing Set**

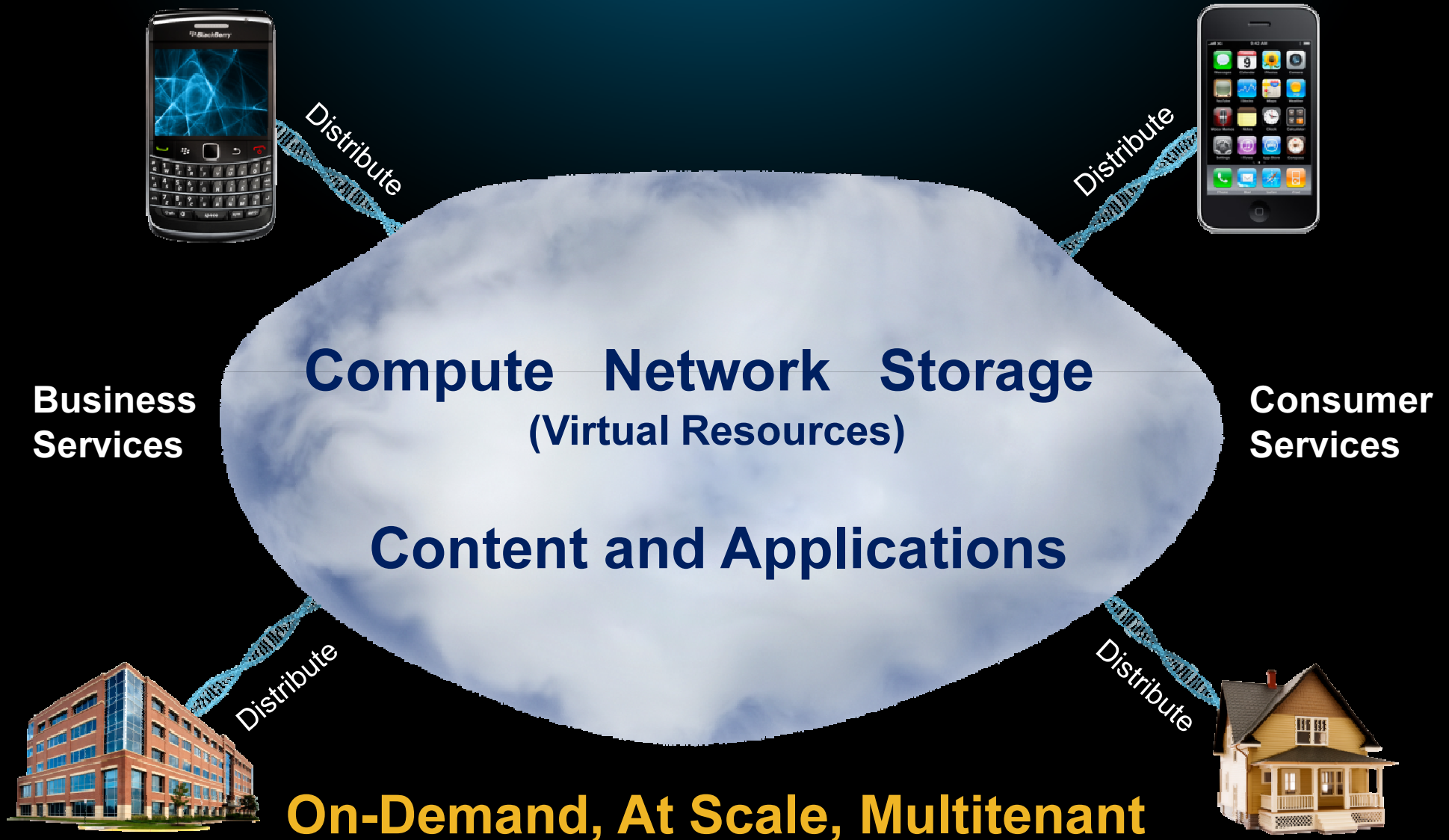
**BT, Cisco  
Claim Cloud  
Coup**

**Cisco Plays  
in the  
Clouds**

**TWC's Outlook: Cloud,  
With a Chance of  
Ethernet**

**NTT, OpSource  
Bring Cloud  
Services to US**

# Cloud Services are the Ultimate Destination



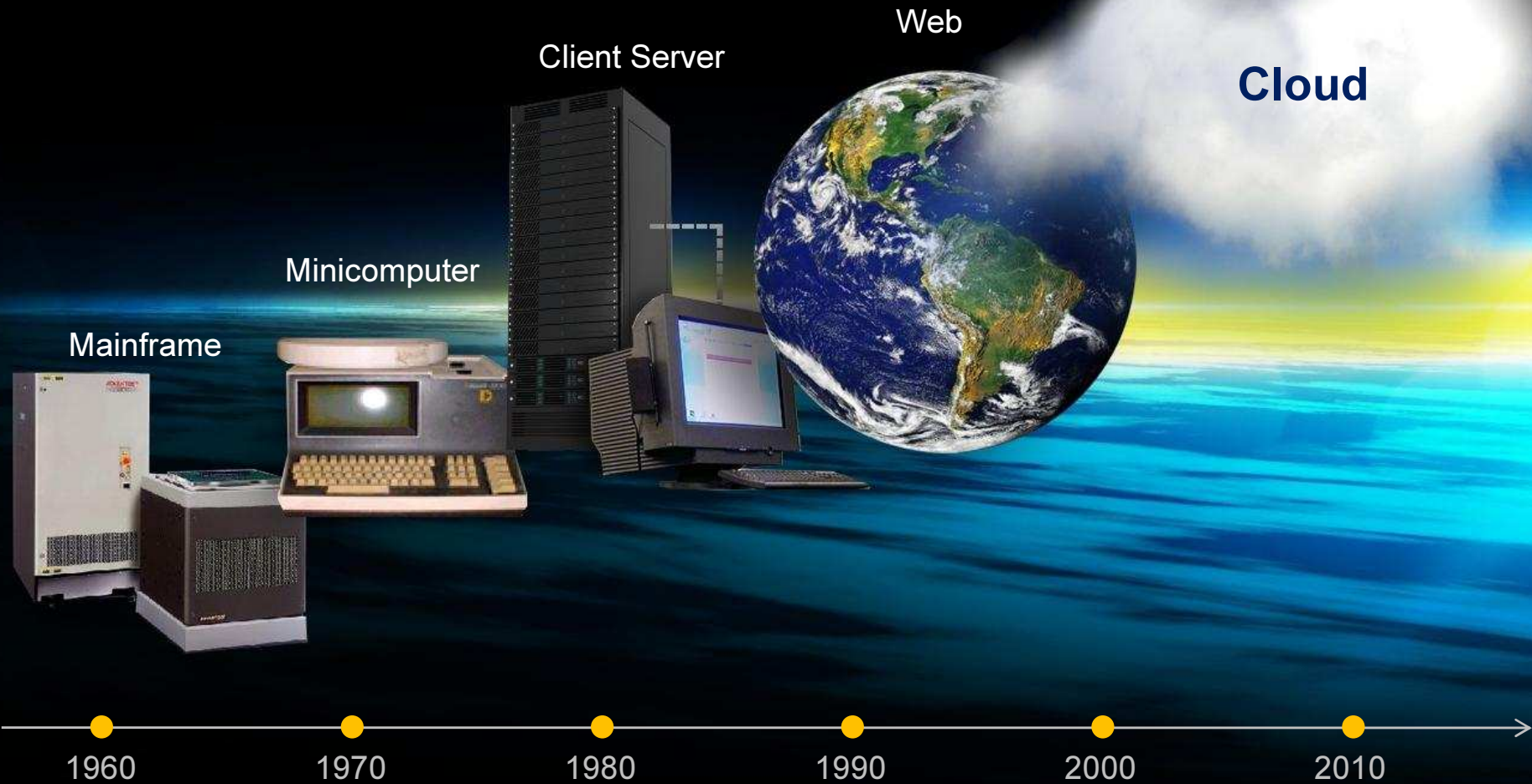
# Agenda

- **Cloud definitions and market evolution**
- Cisco cloud strategy
- SP cloud services
- Cloud architecture
- Ecosystem and services



# Future of Computing

**Disruptor:**  
Virtualization



# Next Inflection Point



## WHAT IS CLOUD COMPUTING?

IT resources and services that are abstracted from the underlying infrastructure and provided “On-Demand” and “At Scale” in a multi-tenant environment

# Cloud Opportunities in Multiple Segments

## Consumer Opportunity

- Anywhere access to data, content, and applications

## SMB Opportunity

- Low cost alternative to traditional IT Solutions
- Access to enterprise class services

## SP Opportunity

- Consolidation & virtualization
- Amortize infrastructure across multiple customers = Higher margins
- More economic efficiencies allowing more compelling services
- Opportunity to provide enterprise, SMB and consumer services

## Enterprise Opportunity

- Reduce complexity, cost and IT touch points
- Improve agility/flexibility/responsiveness
- Enable a focus on core business vs. IT
- Enable unencumbered collaboration and globalization

# Cloud Simplifies Service Delivery

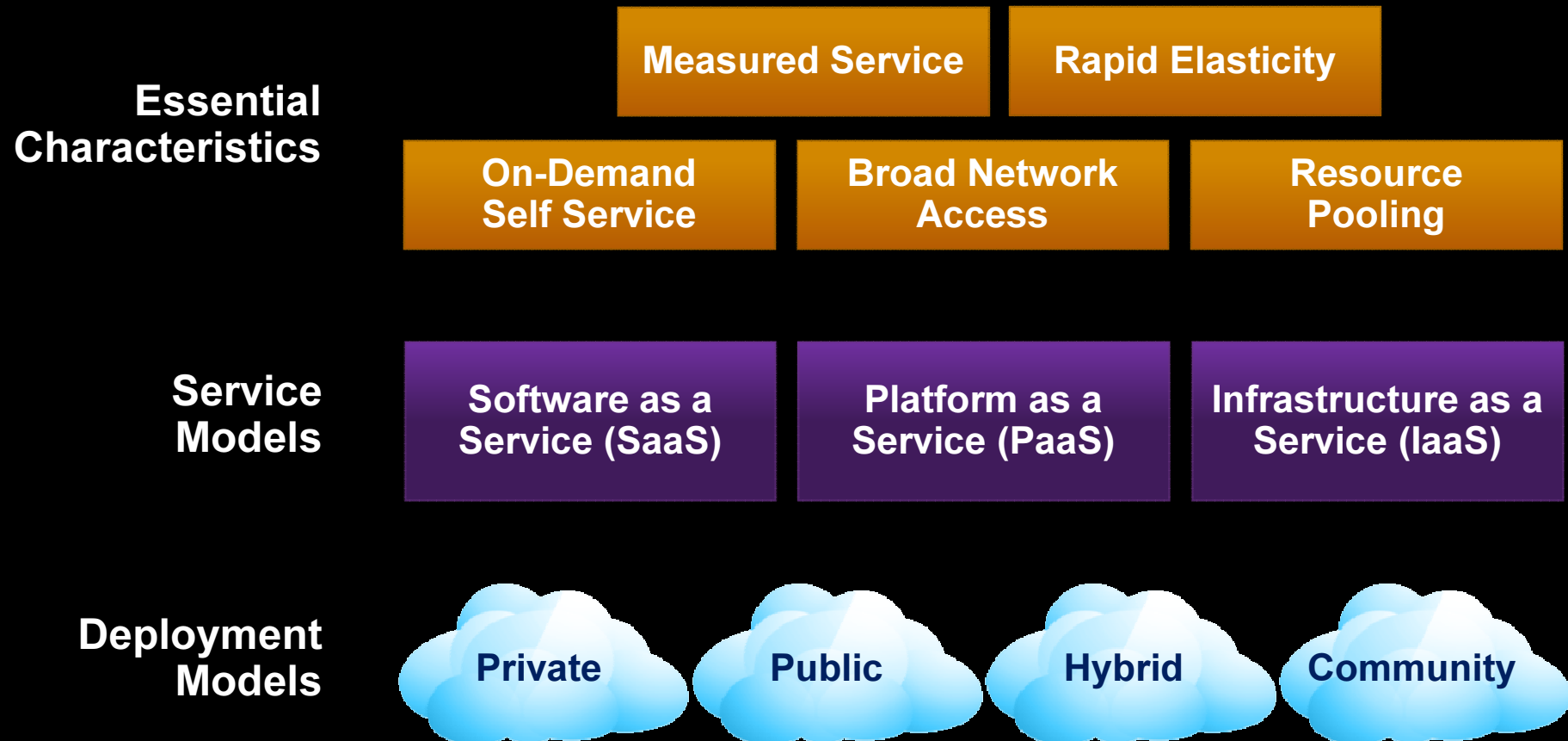


## Cloud Enables

- Agile Service Delivery
- Flexibility of resource allocation
- Efficiency of resource allocation
- Democratization of resource allocation
- Optimized Cost

**Cisco delivers cloud computing benefits  
WITHOUT sacrificing service levels, security or compliance**

# Cloud Definition from NIST



<http://www.csrc.nist.gov/groups/SNS/cloud-computing/index.html>

# Barriers to Broader Adoption of Cloud



**Customers require a trusted end-to-end service infrastructure**

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# Cisco's Cloud Strategy

## Addressing Our Customers' Business Challenges

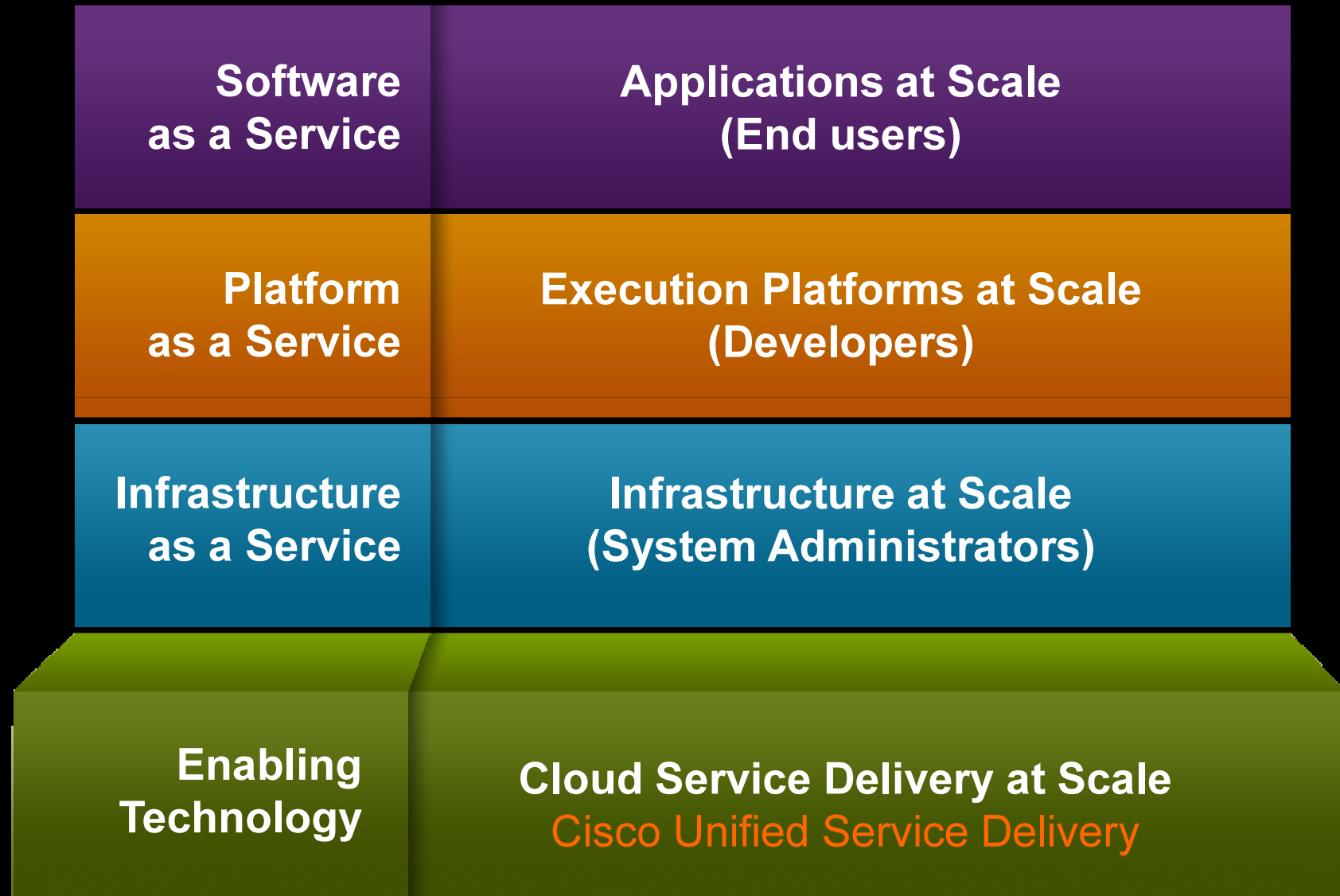


Deliver products, solutions & services to organizations to build secure Clouds

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

# Types of Cloud Service



# Cisco Cloud Solutions

## What We Offer



**Communications & Collaboration Solutions**  
(Delivered via SaaS and On-Premise)

**Collaboration and Unified Communications**

**End-to-End IaaS-Enabling Solutions**

**Compute as a Service, Disaster Recovery,  
Virtual Desktop, Cloudbursting**



**Pervasive Trust & Security Solutions**

**Comprehensive Security Suite**

# Cisco Cloud Solutions

## Where We differentiate

Best of Breed  
Datacenter +  
Networking Products

End to End Integrated  
Network + Data Center Solution

Fully  
Virtualized  
Network

Integrated  
Multi-Service  
Delivery

True Unified  
Computing

Trust

Cloud Centric  
Networking



# Agenda

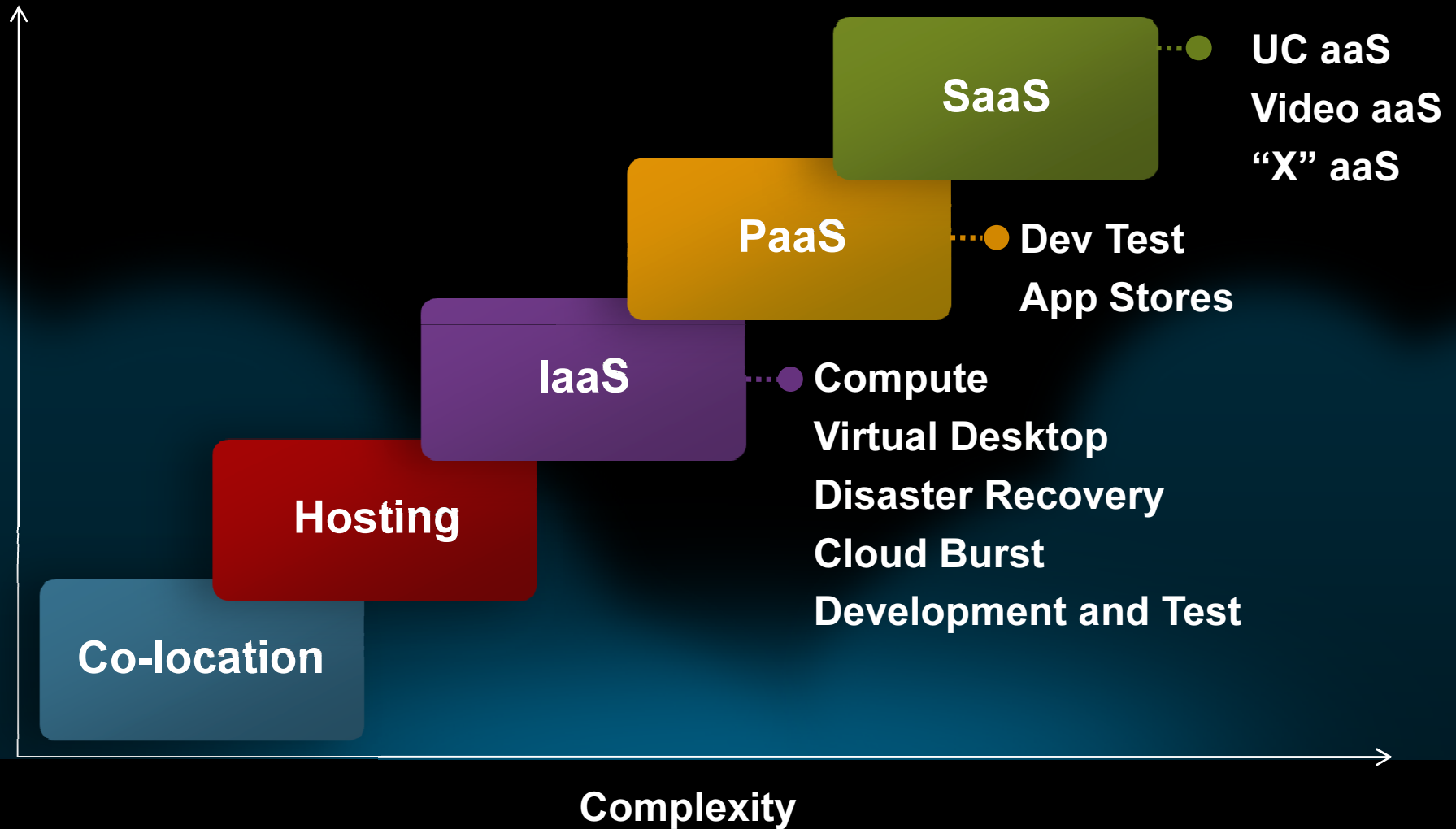
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# Service Providers are Expanding Services

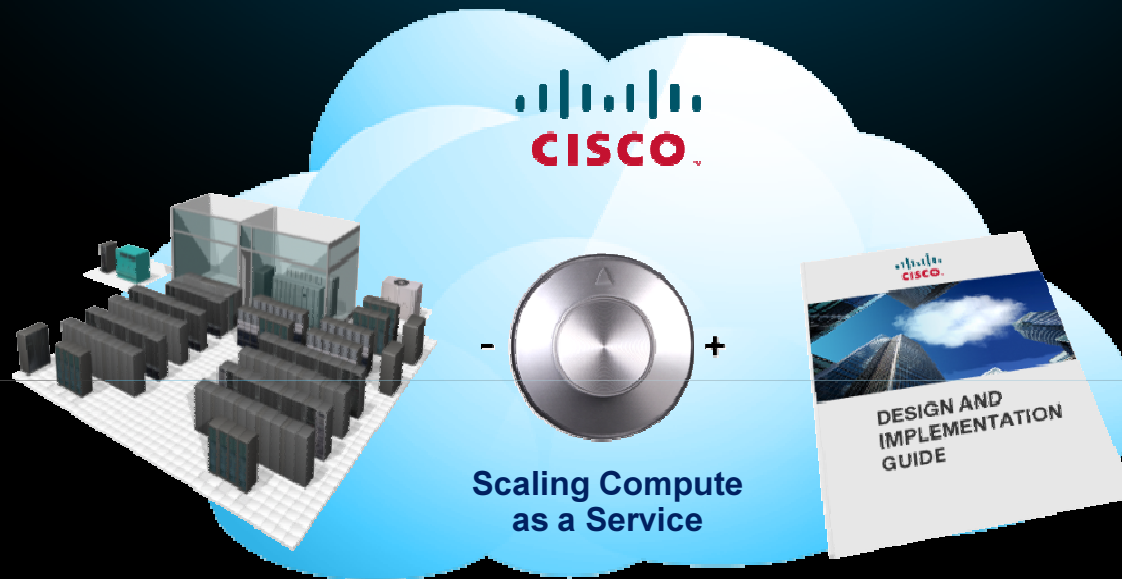
## SP Cloud Services

Revenue & Revenue/Sq. Ft.



# Cisco Infrastructure as a Service Solution

## Enabling Computing as a Service, Disaster Recovery, Virtual Desktop, Cloudburst, and Development/Test

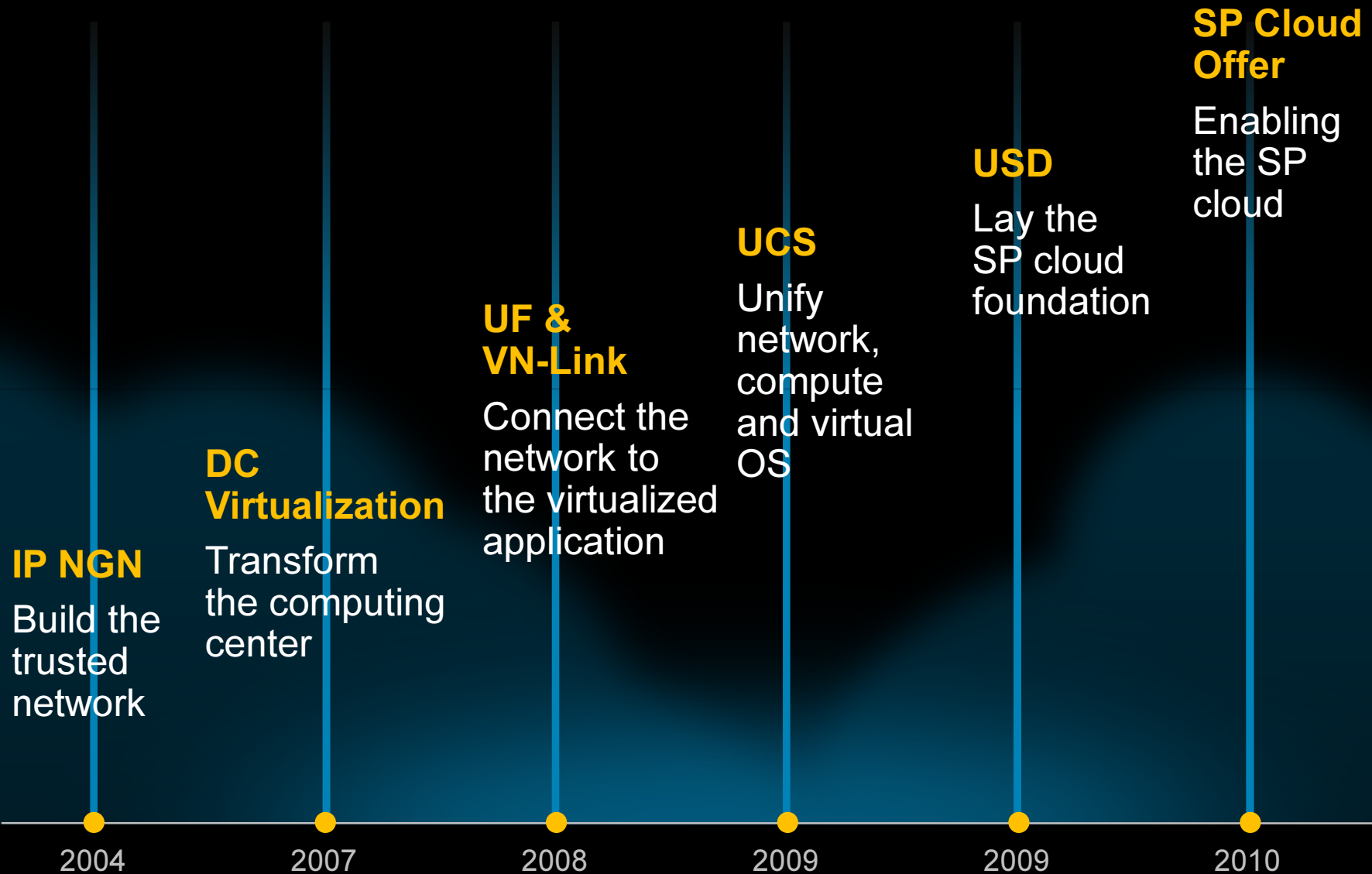


**Cisco Validated Design,  
Unified Service Delivery  
Powered**

- Massive VM Scale
- High Bandwidth Switching
- Secure Partitioning for Multi-Tenant
- Designed and Built Integrated Solution
- End-to-End Testing

# Cisco Enabling the SP Public Cloud

## The Network is the Platform



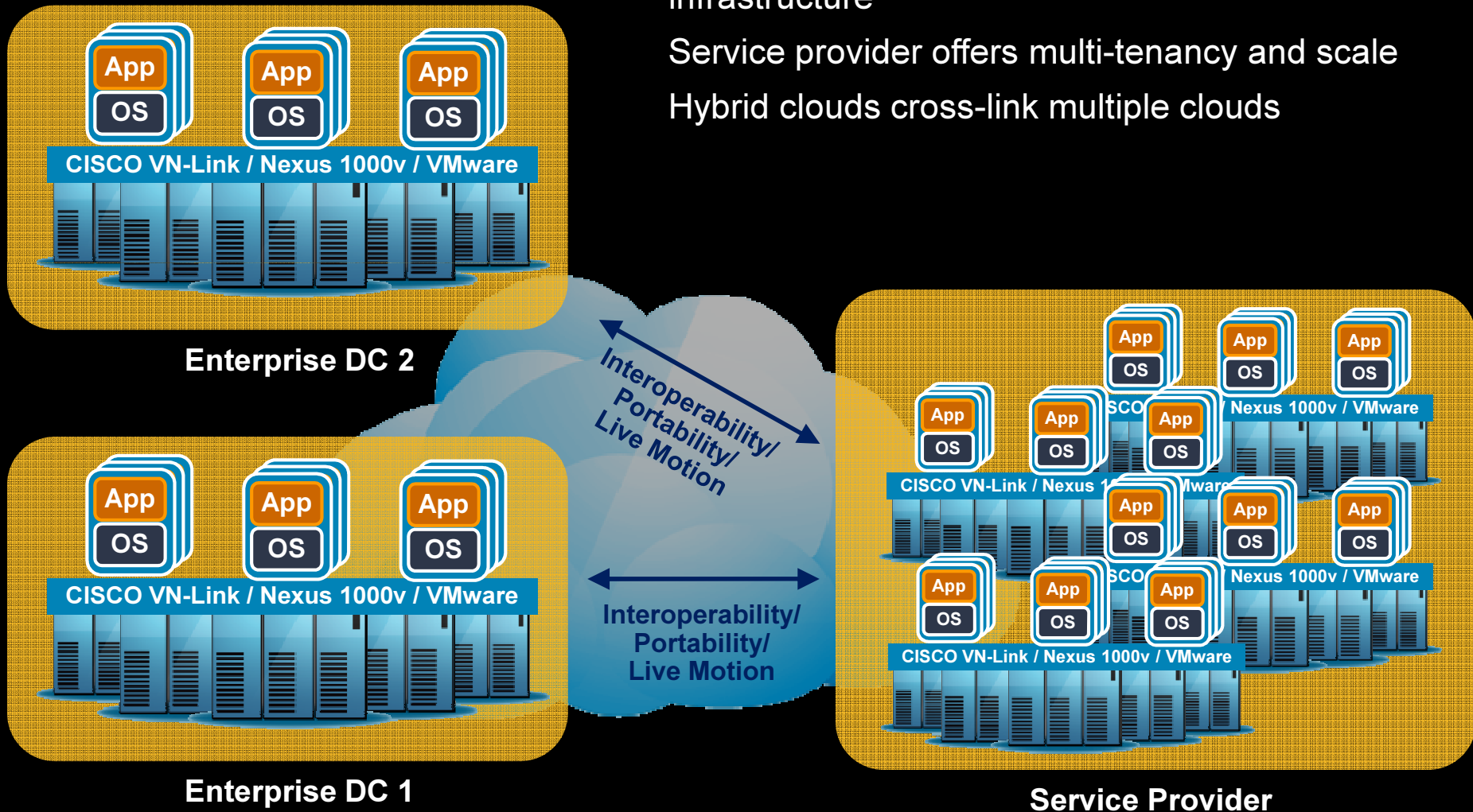
# Extending the Service Provider Public Cloud

## Providing Scale to Connect Multiple Clouds Together

Common underlying compute, network & storage infrastructure

Service provider offers multi-tenancy and scale

Hybrid clouds cross-link multiple clouds



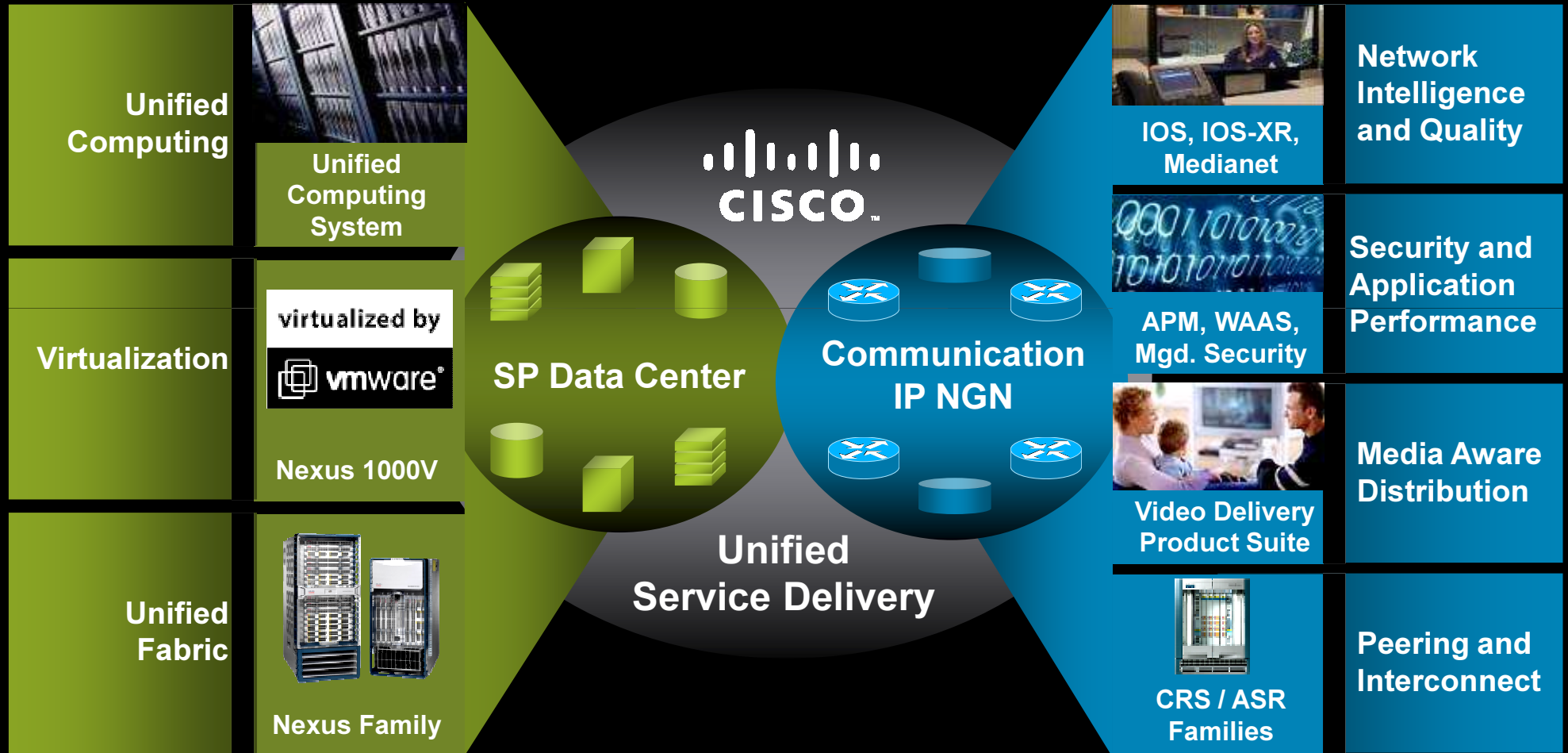
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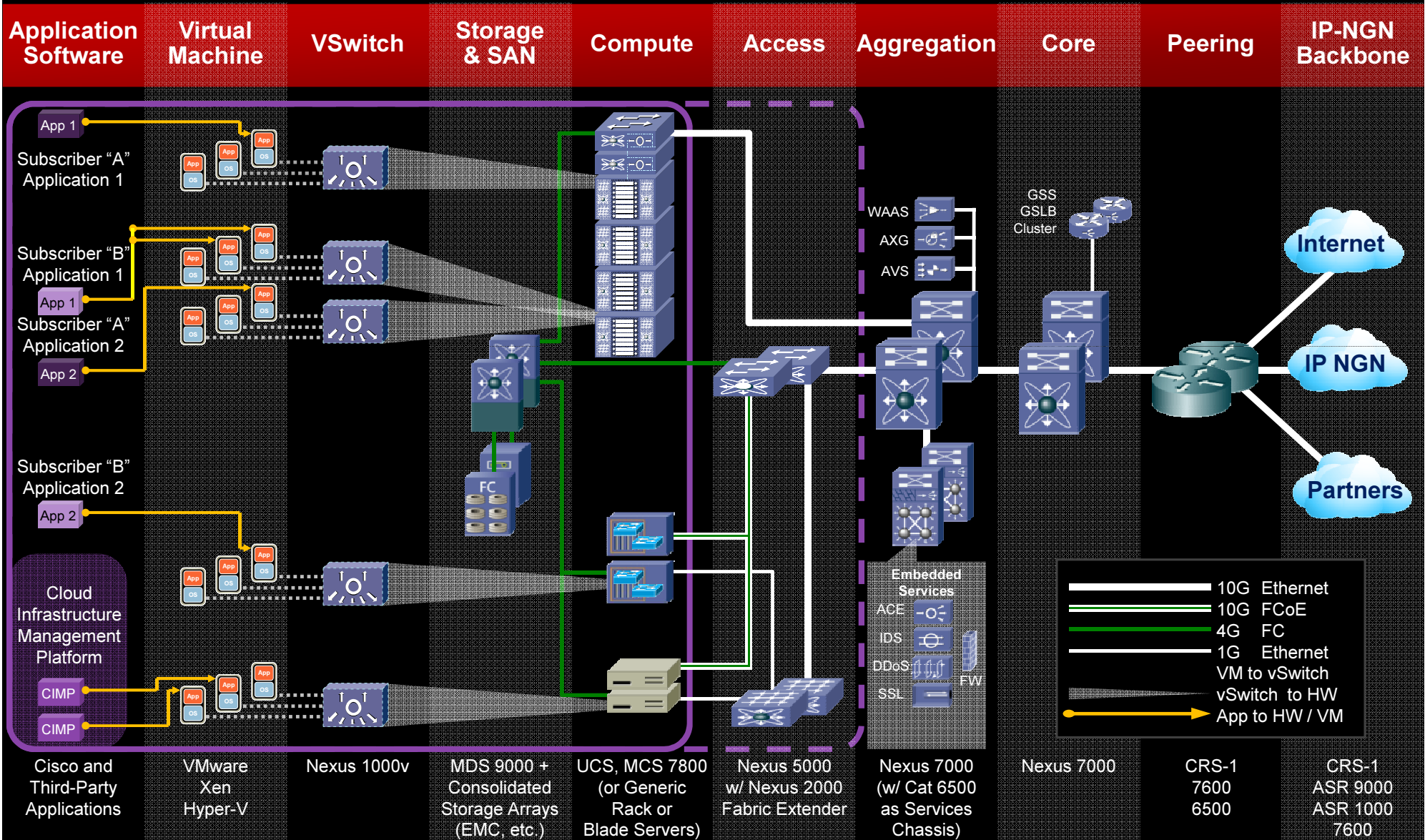
# Unified Service Delivery

## Foundation for Service Provider Cloud Services



# IaaS – Compute as a Service

## Design Implementation Guide Architecture



# Cisco's Cloud Centric Network

## Linking Public and Private Clouds

- Cloud Centric Network is essential for Virtualization and Cloud
- Authentication and Verification through the network
- The Network understands the physical
- Network connects and delivers cloud resources efficiently
- Enable Cloud Interconnection through open APIs and standards

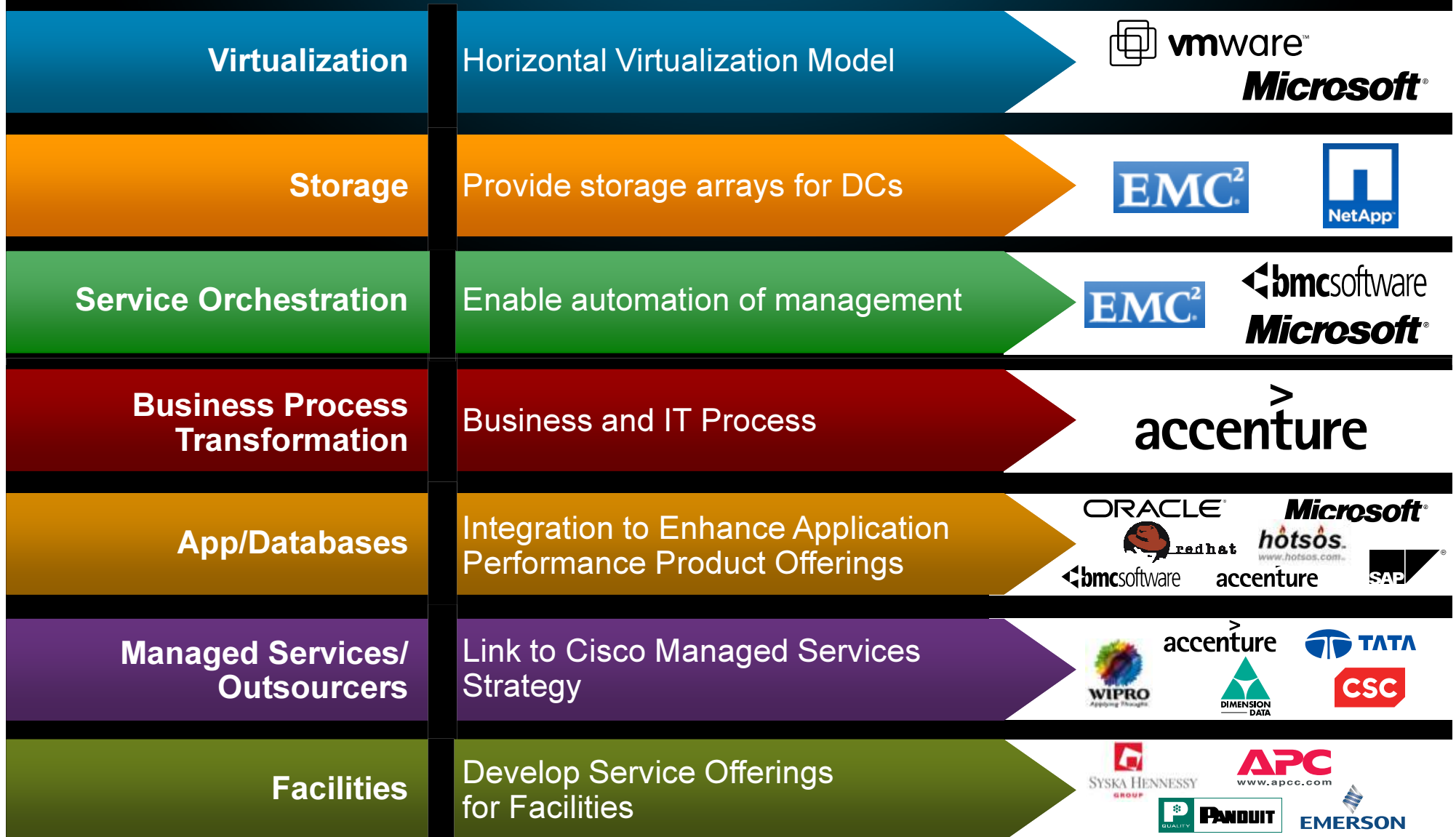


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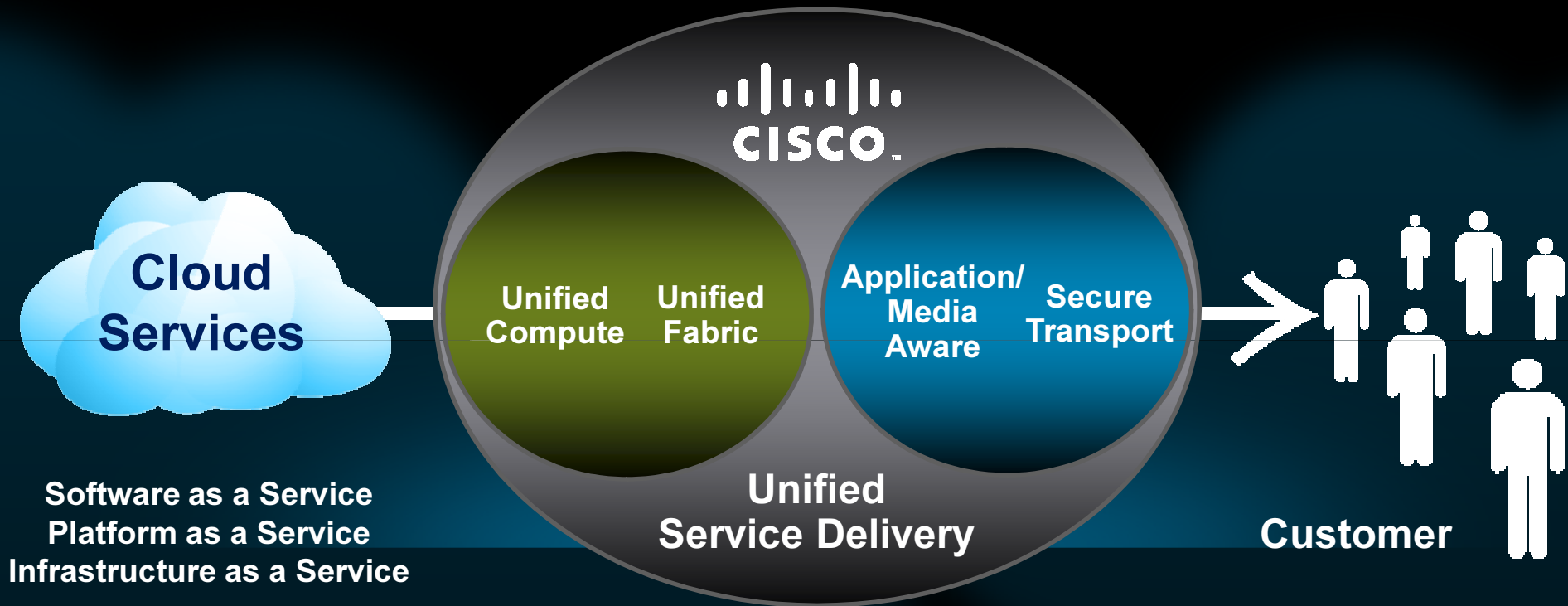


# Examples of Ecosystem Partners



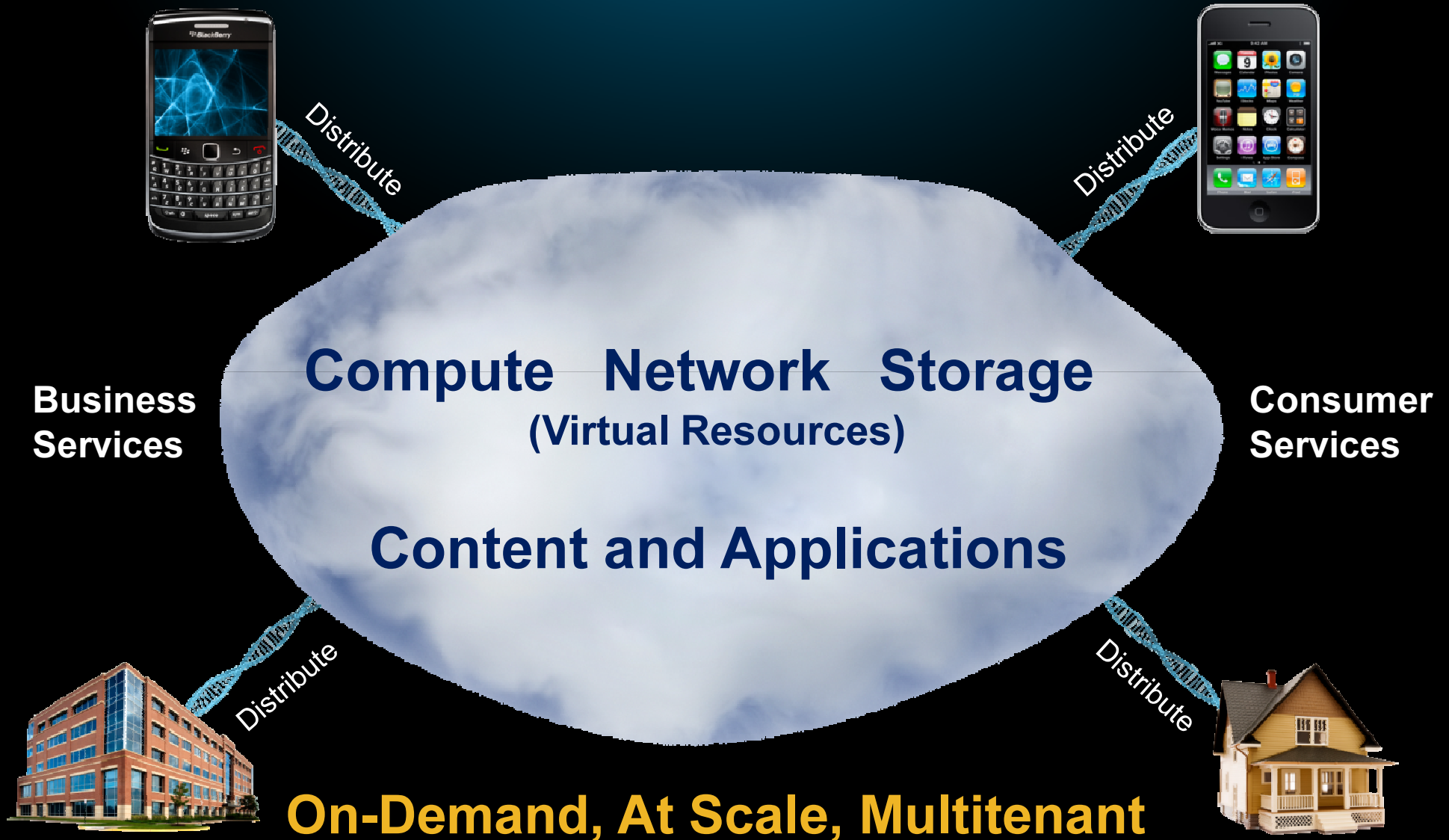
# Cloud Services are the Ultimate Destination

## Cisco Provides a Secure Scalable Infrastructure



Secure Virtual Experience Bridging the Trust Gap

# Cloud Services are the Ultimate Destination



# Cisco Cloud Computing Solutions



**Flexibility to Deliver Services Quickly At Scale  
and with Dramatic Cost Advantages**

# Data Center Solutions Portfolio



## DC Interconnect Solutions



DC Edge Routing WAN Optimization Optical Family

## Nexus and Catalyst Switching Solutions



Nexus Family

Catalyst Family

## DC Services Solutions



ASA and ACE Families

## DC Storage Solutions



MDS 9000 Family

## Unified Computing Solutions



UCS Family

# Cisco Nexus 7000 Series

## Data Center Class Switches



- Zero Service Disruption design
- Graceful systems operations
- Integrated lights-out management

- Lossless fabric architecture
- Dense 40GbE/100GbE ready
- Unified fabric

- Virtualized control and data plane
- 15Tb+ switching capacity
- Efficient physical and power design

Operational  
Continuity

Transport  
Flexibility

Infrastructure  
Scalability

# Nexus 5000 Series



## Nexus 5010

Cost-effective option for lower density racks

### Operational Continuity

Designed for Data Center Operating Environmentals  
NX-OS consistent with MDS, Nexus 7000 and Nexus 1000V

### Transport Flexibility

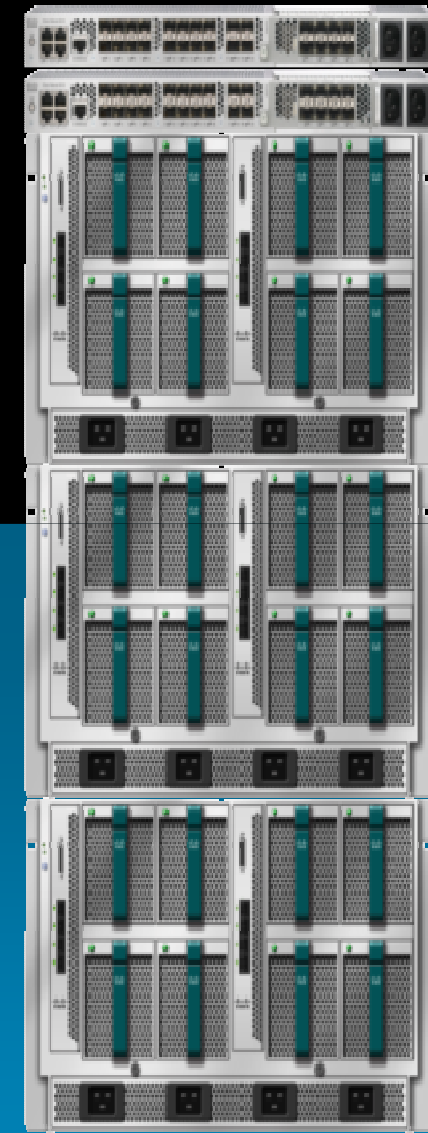
20-port wire-rate 10GbE w/ modular Ethernet and Fibre Channel uplink  
10GbE, Fibre Channel, Data Center Ethernet, and FCoE for Unified Fabric  
Optimized for multi-RU server rack deployments and areas of space constraint  
Low latency for HPC deployments

### Infrastructure Scalability

VN-Link and Network Interface Virtualization capable  
Simplifies physical plant and enables Unified Fabric power efficiencies

# Unified Computing System

- A single system that encompasses:
  - **Network:** Unified fabric
  - **Compute:** Industry standard x86
  - Virtualization optimized
- Unified management model
  - Dynamic resource provisioning
- Efficient Scale
  - Cisco network scale and services
  - Fewer servers with more memory
- Lower cost
  - Fewer servers, switches, adapters, cables
  - Lower power consumption
  - Fewer points of management



**For More Information**



[www.cisco.com/go/cloud](http://www.cisco.com/go/cloud)  
[www.cisco.com/go/iaas](http://www.cisco.com/go/iaas)  
[www.cisco.com/go/usd](http://www.cisco.com/go/usd)