



# Practical Strategies for Implementing Cloud Computing

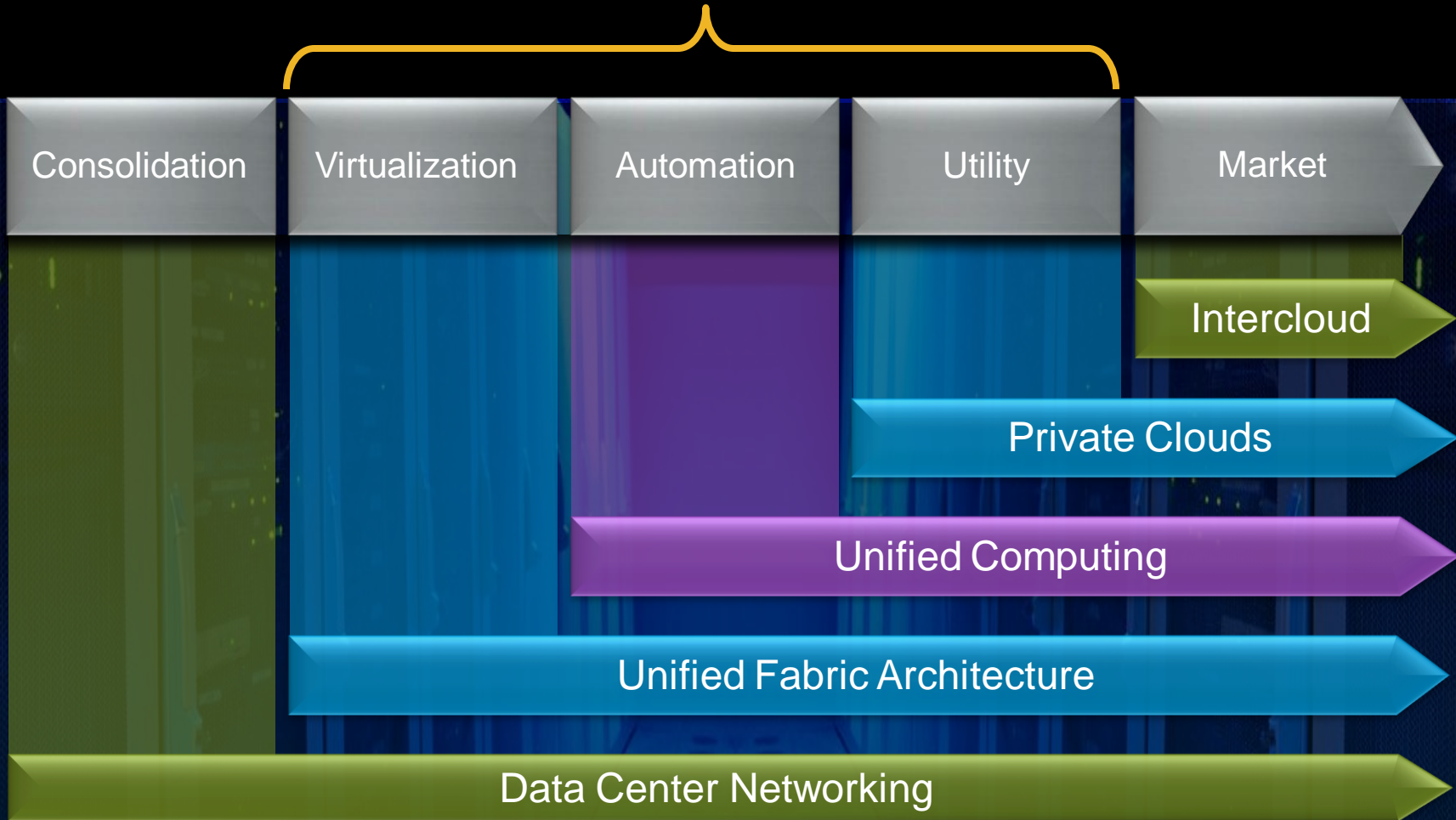


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# Enterprise Cloud Computing Infrastructure

## Cisco's Focus Today



# Who Are the Major Cisco Players?

## Application (SaaS)

- Cisco WebEx
- Microsoft
- Google
- SalesForce.com

## Platform as a Service

- Cisco WebEx Connect
- Google
- Amazon Web Services
- Windows Azure

## Infrastructure as a Service

- Telstra
- HP
- IBM
- Sun
- AT&T
- Savvis
- AWS

## IT Foundation

- Cisco
- VMWare
- IBM
- Microsoft
- HP
- Red Hat Linux
- EMC2

# Cloud Computing Benefits Today

- Flexibility {
- Scalability
  - On-Demand Availability
- Cost {
- Efficient Utilization
  - Capex to Opex
  - Pay as You Go



The  
New York  
Times

The NY Times used Amazon's EC2 and S3 services to convert and store 11 million articles into PDF form (generating 5.5TB of data) in 24 hours

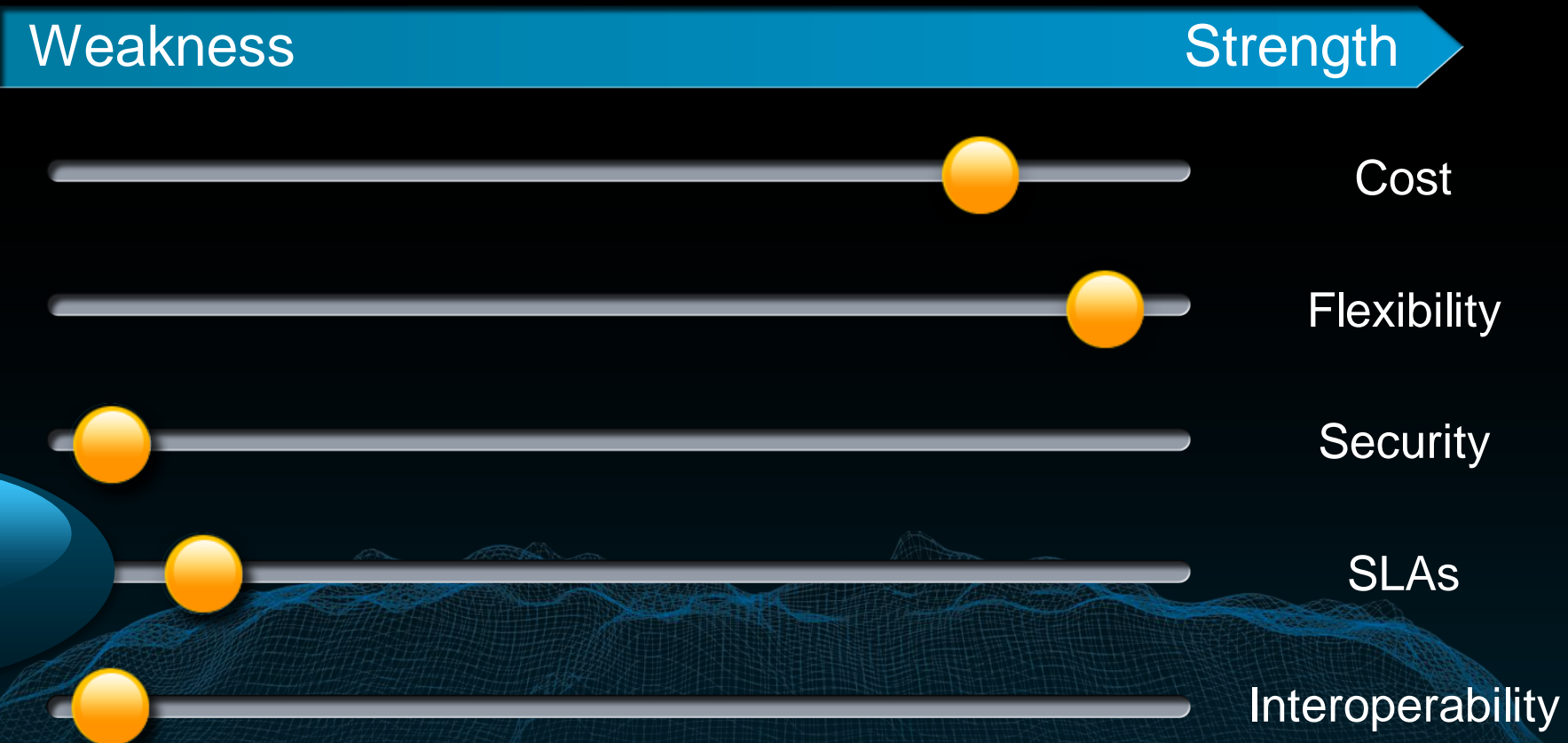


ANIMOTO

Animoto, an application on Facebook, went from 25K to 250K users in 3 days. Animoto accomplished this by launching up to 4000 Amazon compute instances to meet demand

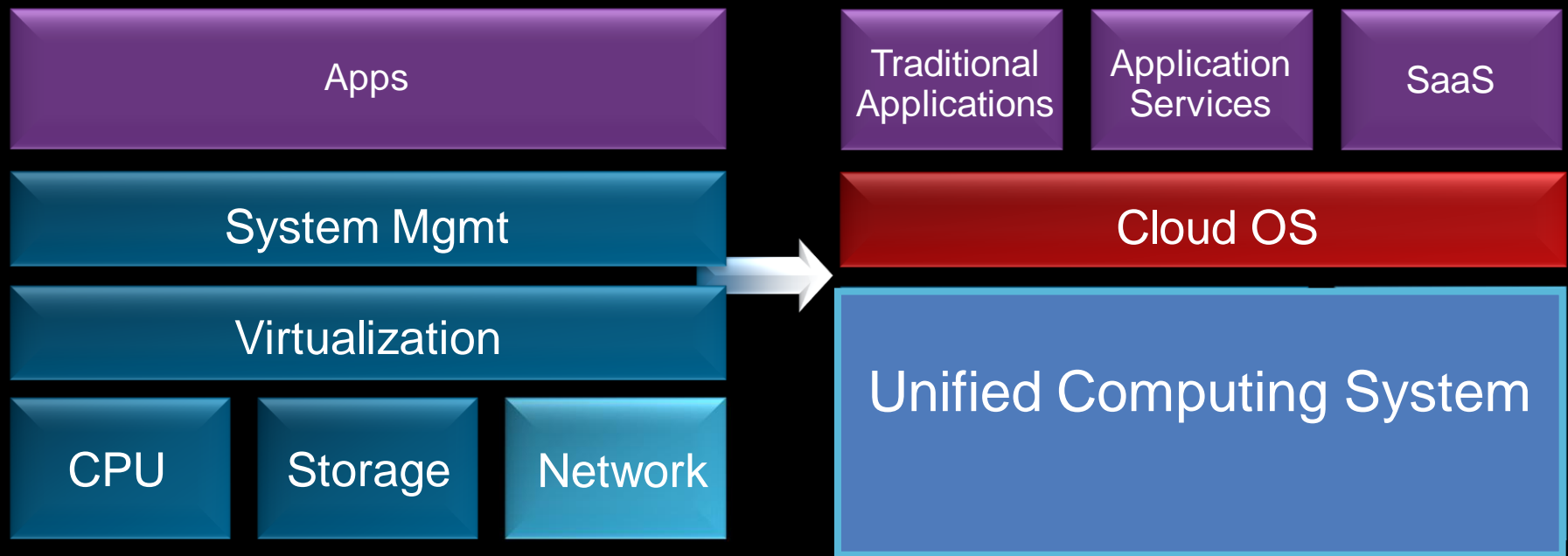
# What Do Enterprises Need?

## *Solutions to Current Cloud Barriers*





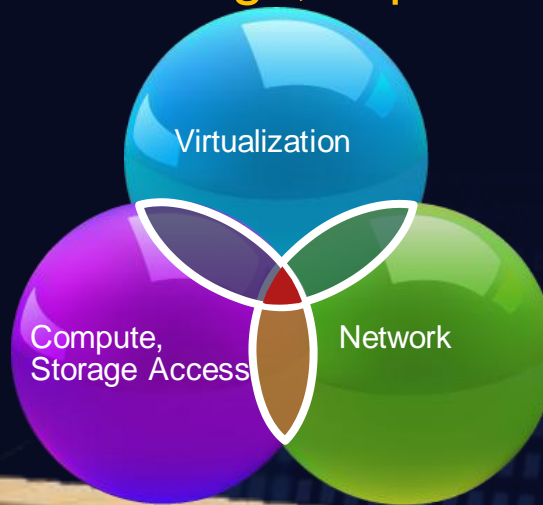
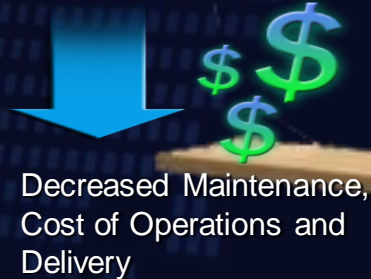
# From Data Center to “Cloud”



# UCS: Innovation and Efficiency in Balance

Significant Opex/Capex Savings, Improved Responsiveness

## IT Efficiency, Cost Control



## IT Innovation, Flexibility, Responsiveness



20%<sup>\*1</sup>

15%<sup>\*1</sup>

35%<sup>\*1</sup>

### Site TCO

- 1.Reduced 'System' Power
- 2.Lower Cooling
- 3.Better Use of Space
- 4.Lower PUE/Site

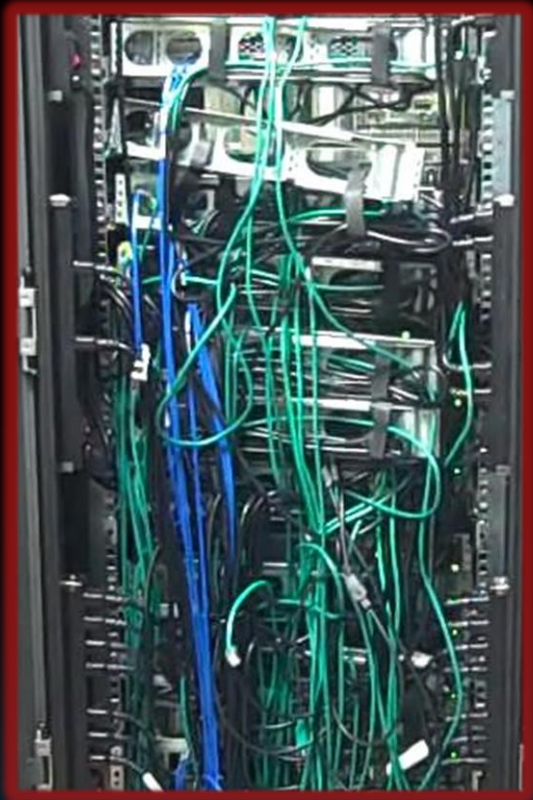
### Platform TCO

- 1.Radically Fewer Components
- 2.Lower HW/SW Costs
- 3.More VM's Per Node
- 4.Better Performance Per Node

### Organization TCO

- 1.Fewer FTE/"Service"
- 2.Faster Provisioning
- 3.Seamless Repurposing
- 4.Better Coordination

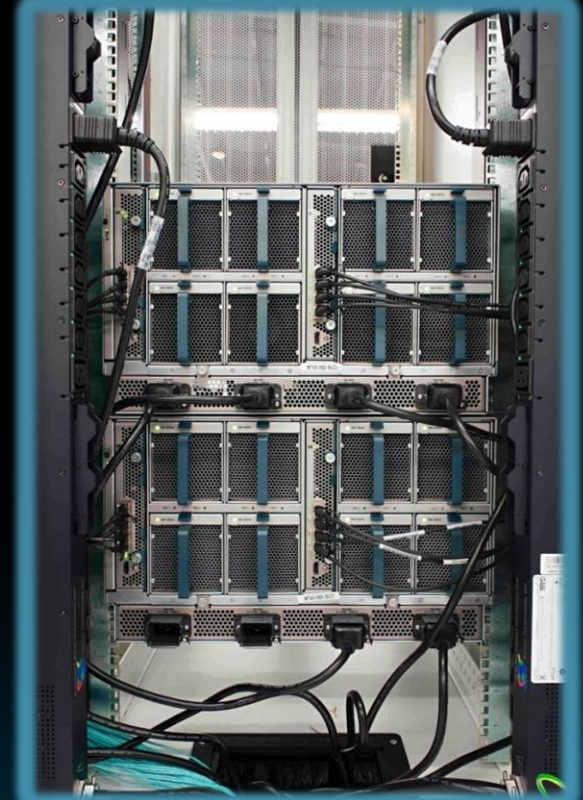
# UCS Simplifies



From ad hoc and inconsistent...



...to structured, but siloed, complicated and costly...

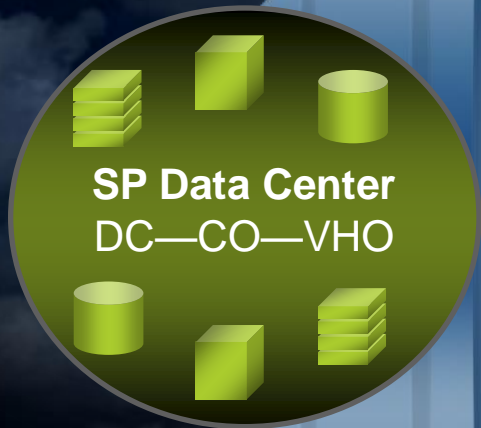


...to simple, optimized and automated



# Data Center is Simplified with Cisco Unified Computing

## Re-engineer the DC to Deliver any Application, Virtualized



### Unified Computing



Unified Computing System

- High efficiency processing
- Multi-tenancy management
- Integrated service profiling

### Third Party Virtualization



virtualized by



Nexus 1000V

- Optimizes Resource Utilization
- Eliminates VM Sprawl
- Couples port profiles and VMs

### Unified Fabric



Nexus Family

- VM-aware networking
- Massive Simplification
- LAN, SAN and VM unification

Pre-integrated, pre-engineered, purpose built for virtualisation, supporting more workload, using less power than any other provider

# Cisco Data Center 3.0 Ecosystem

## Data Center Virtualisation Solution

### Storage Network

#### Storage Partners



### Server Access Network

#### Virtualisation and Unified Fabric Partners



### Network Services

#### Application Partners



Data Center Management

Data Center Network Manager–  
Topology Visualization and Provisioning

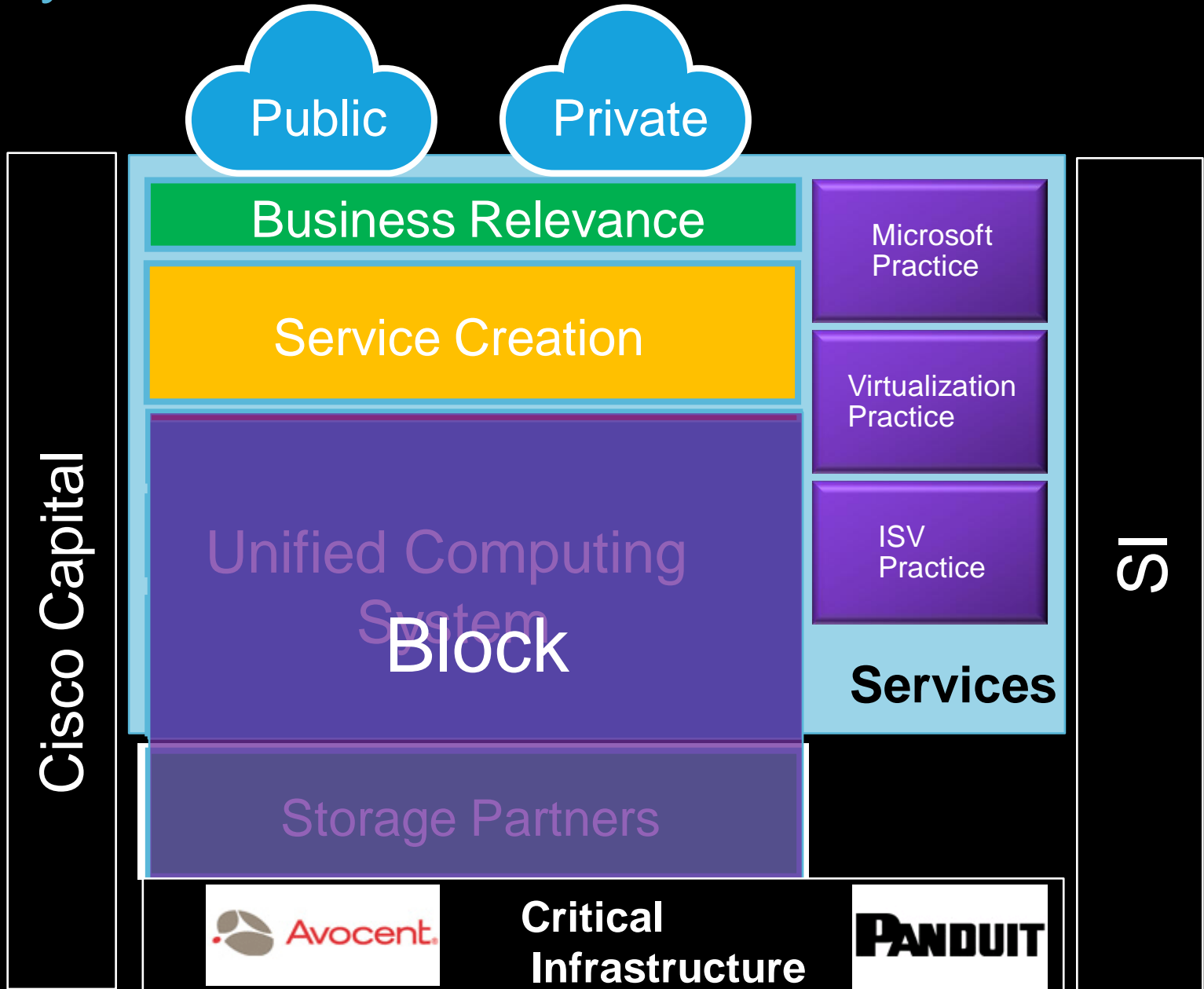
ANM– Advanced L4-7 Services  
Module Management

Data Center Best Practices  
and Services

Cisco Services and Support

Cisco Data Center Assurance  
Program

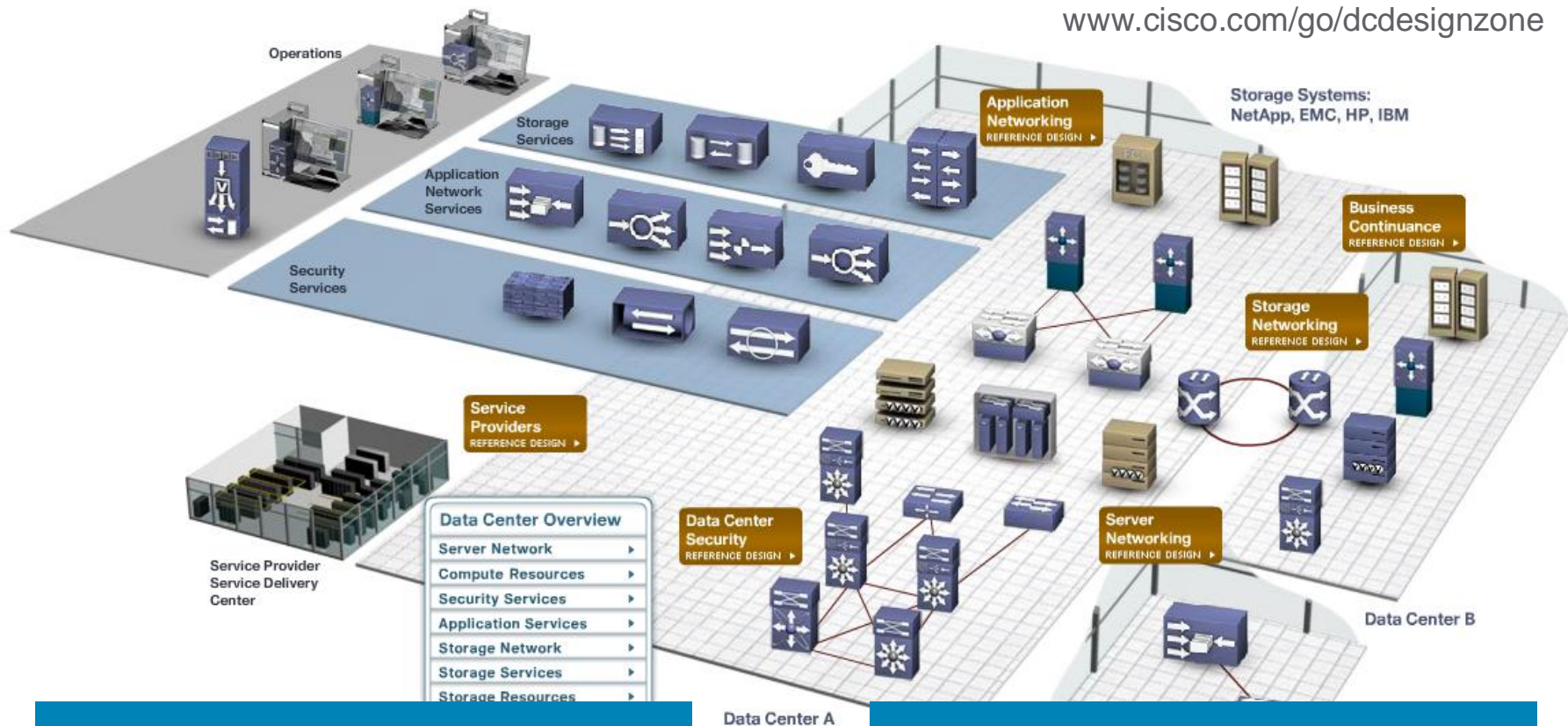
# Journey to Cloud and E2E DC/V



# Design Best Practices for Virtualized DC

## Data Center Assurance Program 4.0

[www.cisco.com/go/dcdesignzone](http://www.cisco.com/go/dcdesignzone)



- End-to-end baseline implementations (System Assurance Guides)
- Optimized for ISV Appl'ns (Deployment Guides)
- Tested and Documented Designs (Cisco Validated Design Guides)

- App Networking, Blade Fabric Switches, Active-Active Configurations
- Oracle™ EBS®, Microsoft™ OCS®, SAP™, Tibco™ Rendezvous®
- Service Provider, Video and Mobility overlays

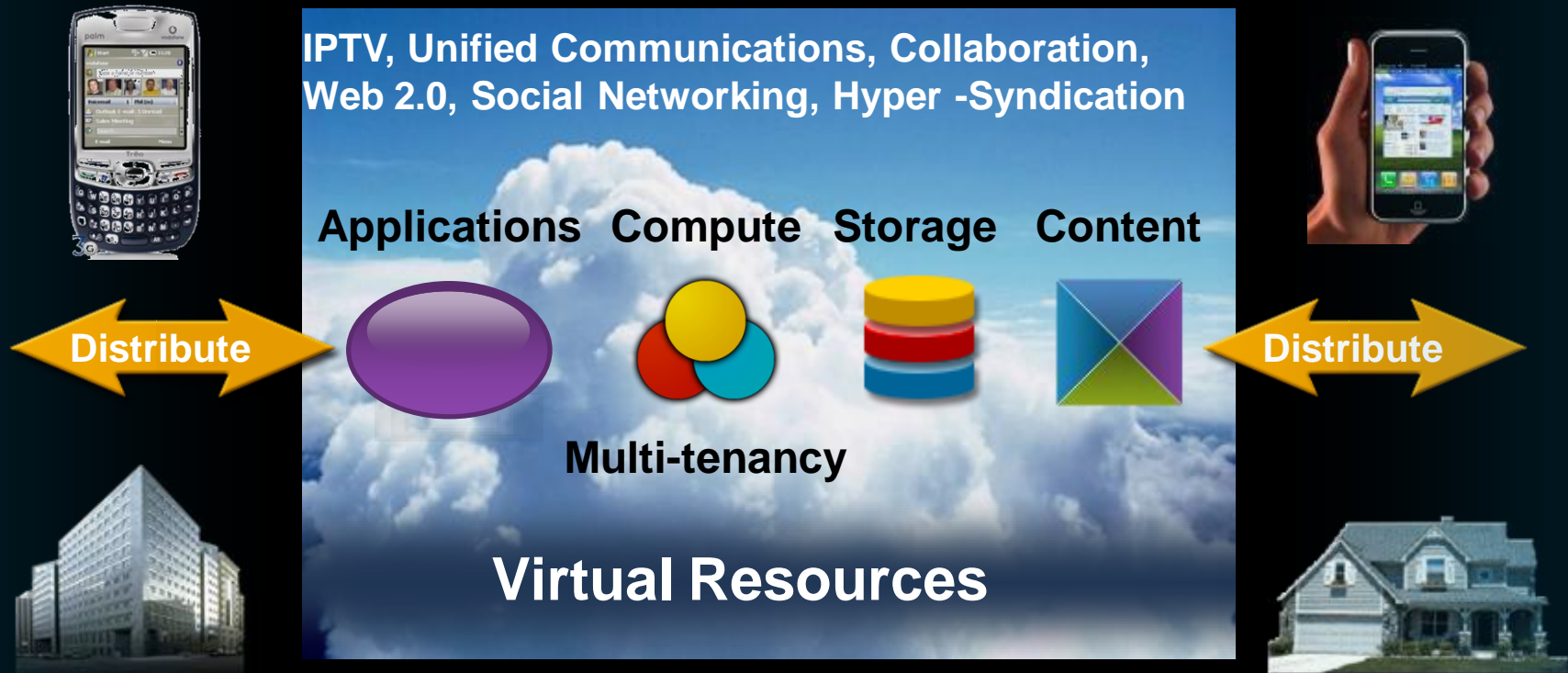


# Cloud-based Services

## The Ultimate Destination

### Virtual Business Services

### Virtual Residential Services



Thin and Remote Clients

Thin and Remote Clients

# Cloud Computing – Cisco's Strategy

- Cloud Computing represents a shift in how Applications and Data Center resources will be architected and consumed
- Cisco's strategy is three fold:
  1. Help Enterprise and Service Providers **build** their own cloud Data Centers
  2. Create **new technology** to Enhance the State of the Art of Building and Using Clouds,
  3. Invest in **standards** and interoperability to create the Inter-cloud
- The network has a key role in enabling **enterprise-class** clouds and the Inter-cloud

