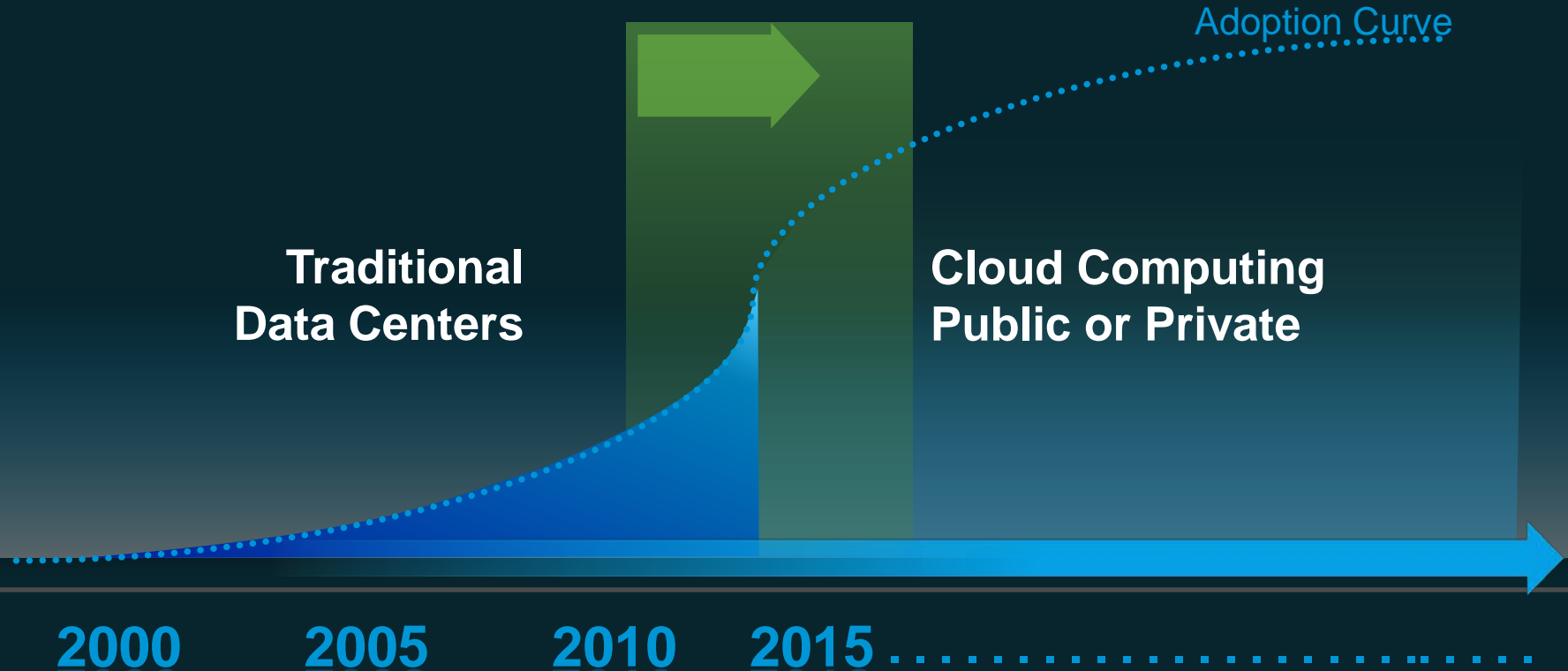


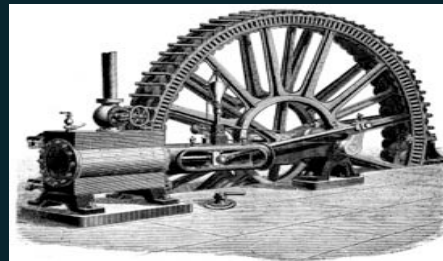
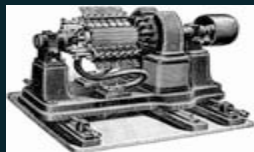
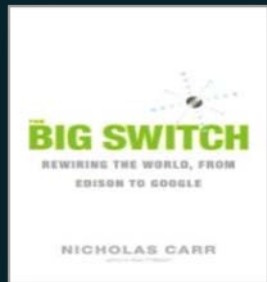
Cloud Computing @ Cisco

Lew Tucker
VP/CTO Cloud Computing
Cisco Systems

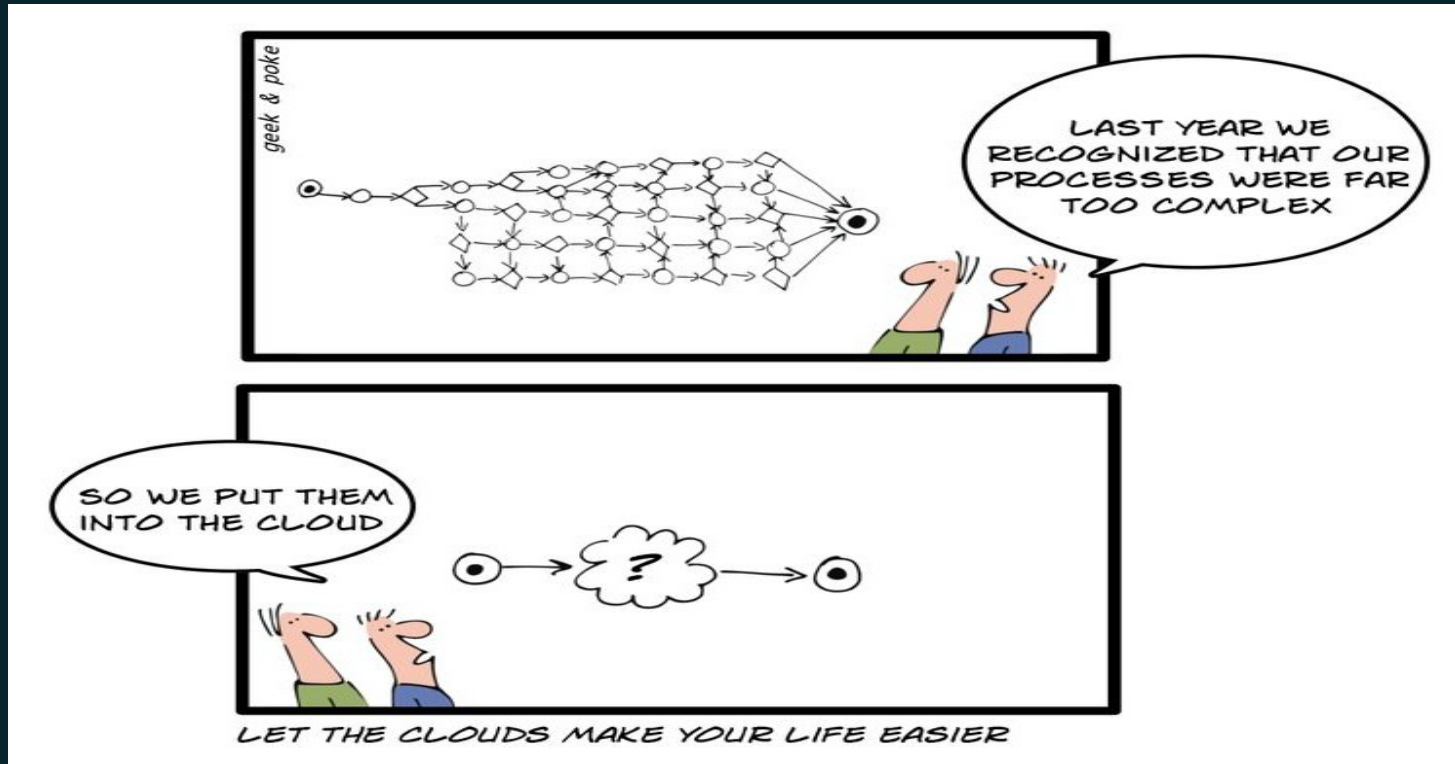
We Are at the Very Beginning of a Major Shift



Beginning to look like computing is on a path to follow the same course as electrical power generation...

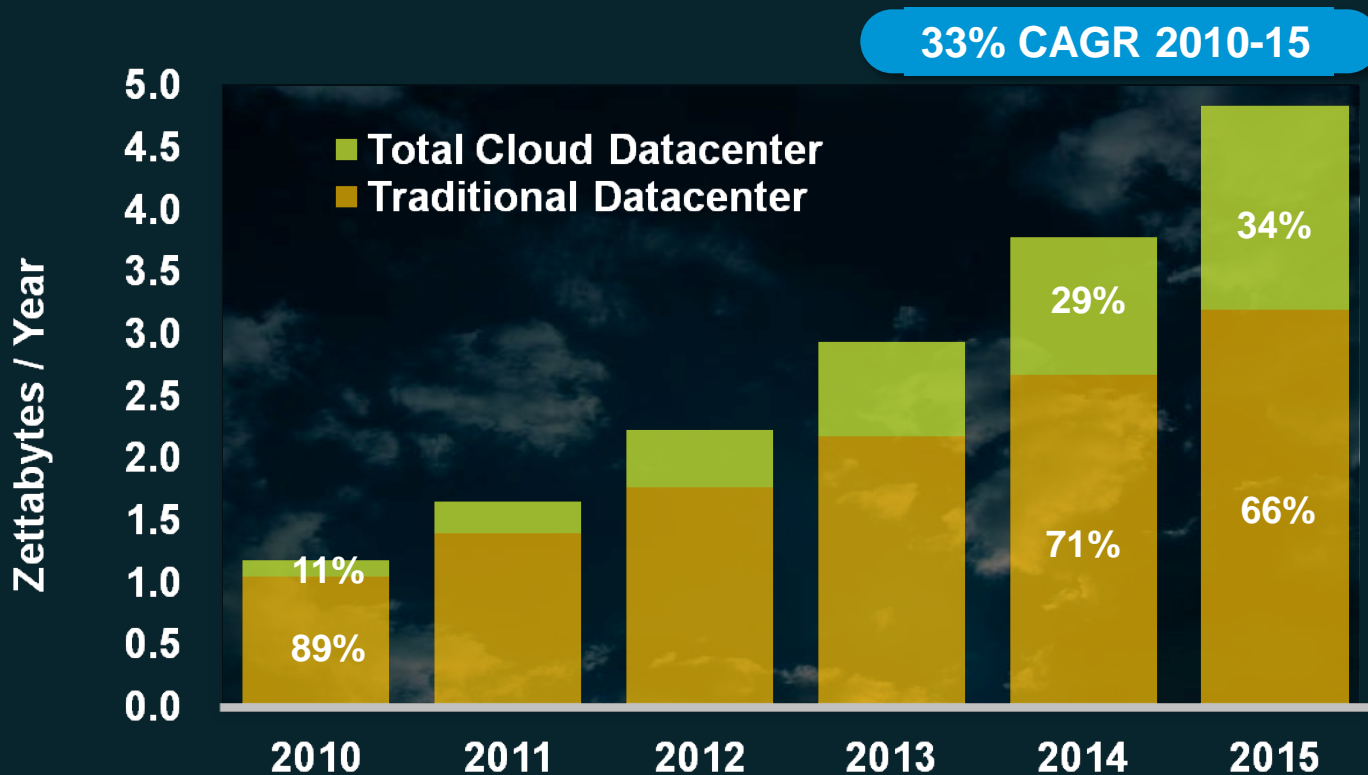


Hype cycle in full swing!!



CloudTraffic increases 2010 -2015

Cloud Traffic Will Be Over One-Third of DC Traffic by 2015



Growth of Connected Devices

Total **500 Million**



Total **35 Billion**



Total **50 Billion**



Total **500 Billion~**



1/10th of a Device per
Person on Earth
2007


5 Devices per
Person on Earth
2010

7 Devices per
Person on Earth
2013

70~ Devices per
Person on Earth
2020

Source: Forrester Research, Cisco IBSG

Cisco's Top 5 Priorities

- 1 Leadership in the Core... Routing / Switching & Services including Security and Mobility
- 2 Collaboration
- 3 Data Center / Virtualization 
- 4 Video
- 5 Architectures for Business Transformation



cisco
5
COMPANY
PRIORITIES
2011

**“They are the key drivers of the future of the network...
the constants that will guide us”**

Customer Cloud Careabouts



Experience

Economics

Agility

Security

Cisco Cloud Strategy

Enable Cloud Services by Uniquely Combining
the Unified Data Center and Cloud Intelligent Network

Tailored Solutions for Building Clouds



Enable customers to
build and operate
private, public or
hybrid clouds

Connect to Cloud with Confidence



Enable customers to
connect users to
Cloud with Visibility,
Security, Availability
and Performance

Rich Ecosystem of Integrated Solutions



Enable customers
to deploy tested,
best of breed
solutions

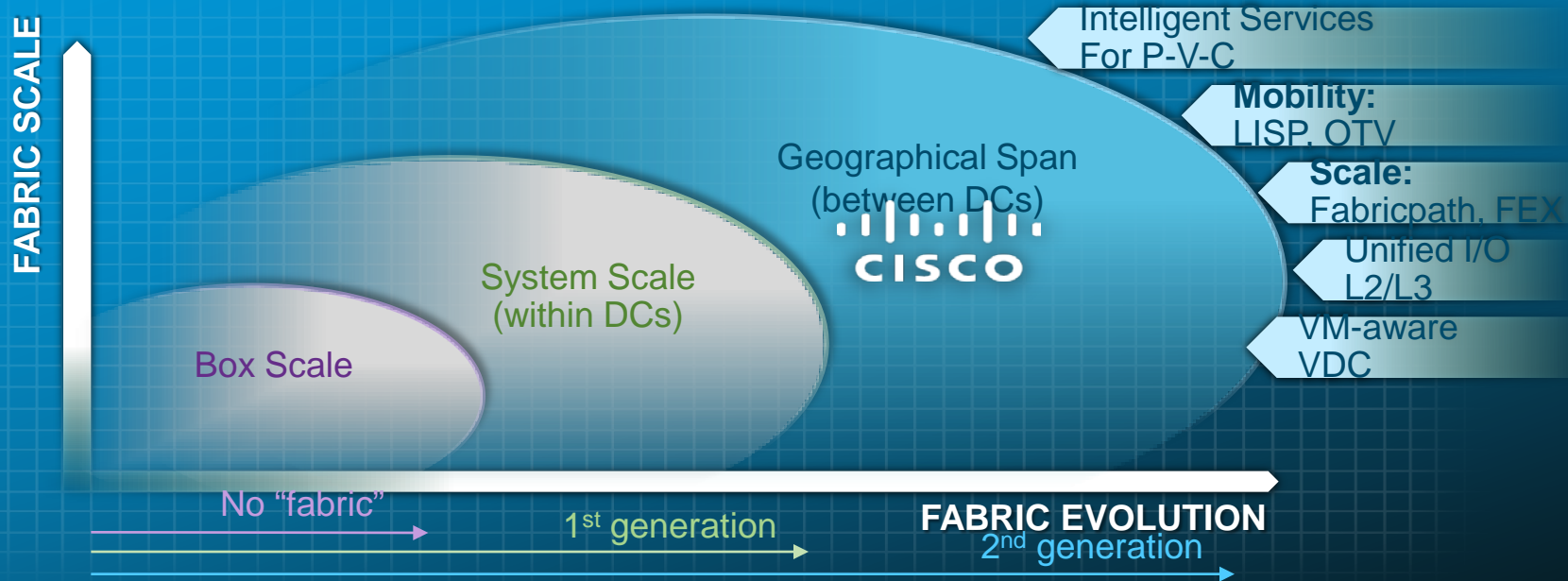
Innovative Cloud Applications



Enable customers
to deploy cloud
services to
collaborate and
enhance their
experience

Fabric Scale: "Think Beyond the Box"

Cisco Takes the Fabric Beyond the Data Center



Cisco CloudVerse

Unified Data Center and the Intelligent Network to Deliver Cloud Services



**Assured
Experience**



Secure



**Cloud
Applications**



**Unified
Data
Center**



**Cloud
Intelligent
Network**

Cloud
Enablement
Services



**Dynamic, Efficient
Agility**



**Accelerated
Deployment**

50% TCO Savings

Cisco CloudVerse

Product Portfolio

Collaboration, Video
Virtual Desk top, Security, IaaS



Cloud Applications

Unified Data Center

Cloud Intelligent Network

Cloud Enablement

Cisco Technical &
Professional Services



Nexus
Family
CIAC, UCSM, NSM

UCS
Family



CRS
Family

ASR
Family
Cisco Prime

ISR
Family

Unified Data Center

The Platform for Delivering IT as a Service

Business Objectives



IT Service Offerings



On-Demand Services



Unified Fabric
Highly Secure, Scalable



Unified Computing
Modular Self-Integrating
Computing Elements

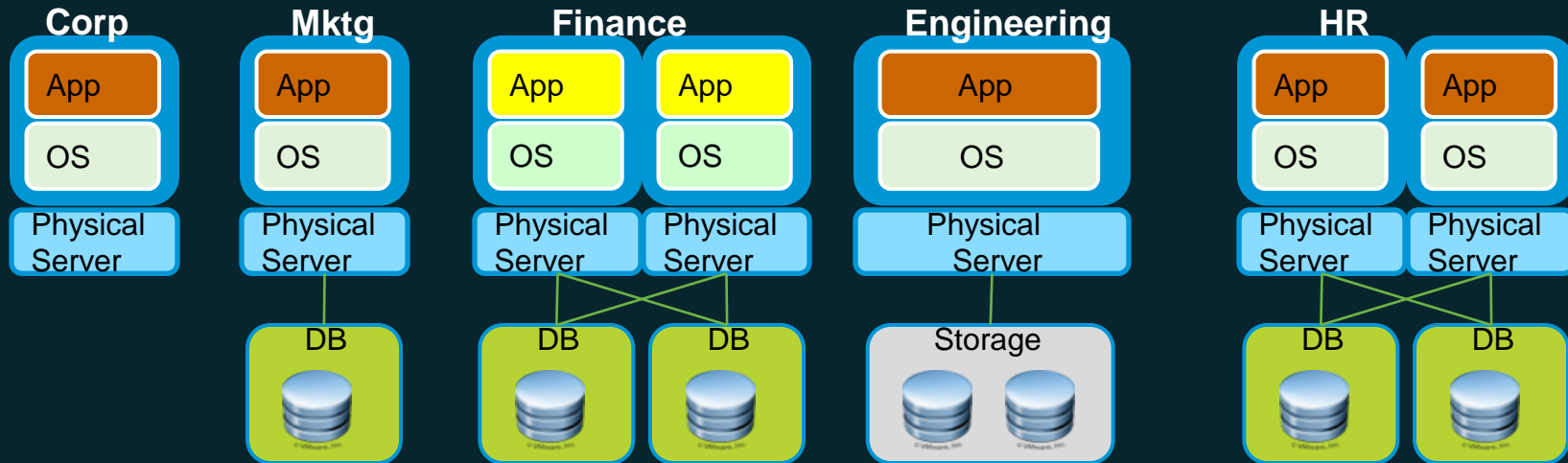


Unified Management
Automated "Self-Service"
Resource Provisioning



Traditional Data Center Approach

Complexity Grows With Number of Apps



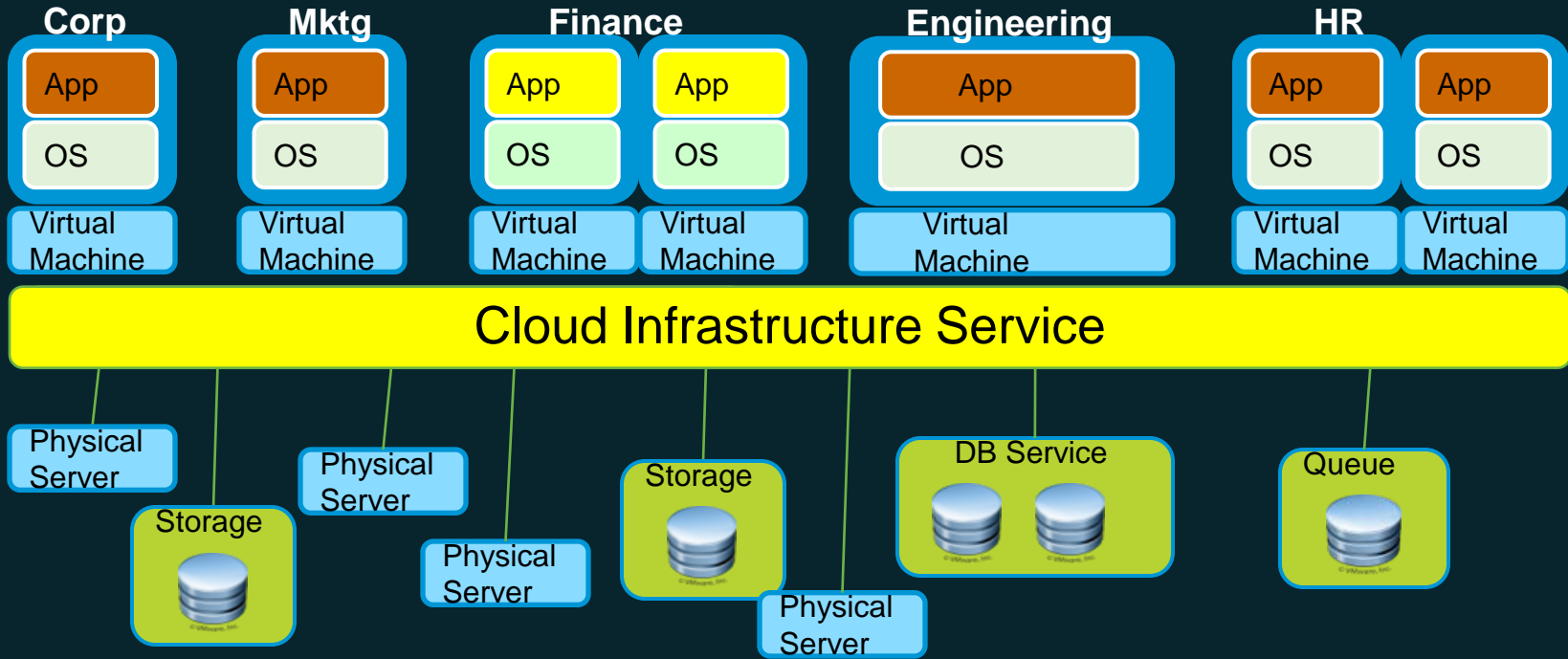
Poor Utilization



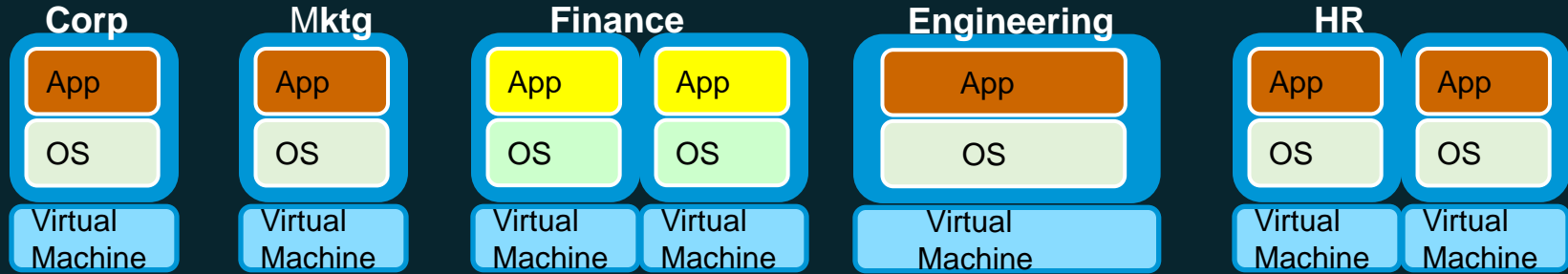
Inflexible Infrastructure

Cloud-based IT Delivery Model

Simpler – Flexible - More cost effective



Infrastructure becomes a service



API-driven services

Self-service portal

Selective application mgmt

Cloud Infrastructure Service

Pool of shared resources

Physical Server

Storage



Physical Server

Physical Server

Storage



Physical Server

DB Service



Queue



UCS: Unified Compute, Networking, and Storage

Delivered
as a Service

Attributes

- On demand, self service
- Measured usage
- Elastic supply
- Network delivered

Services

- Infrastructure-as-a-service
- Comms/Collab-as-a-service
- Virtual desktop
- Video-as-a-service

Pooled Resources

Compute

Network

Storage

Cisco Solution: Virtualized Multi-Tenant Data Center (VMDC)



A unique, multi-tenant, service delivery platform that allows variety and flexibility without sacrificing efficient operations.

Infrastructure
as a Service

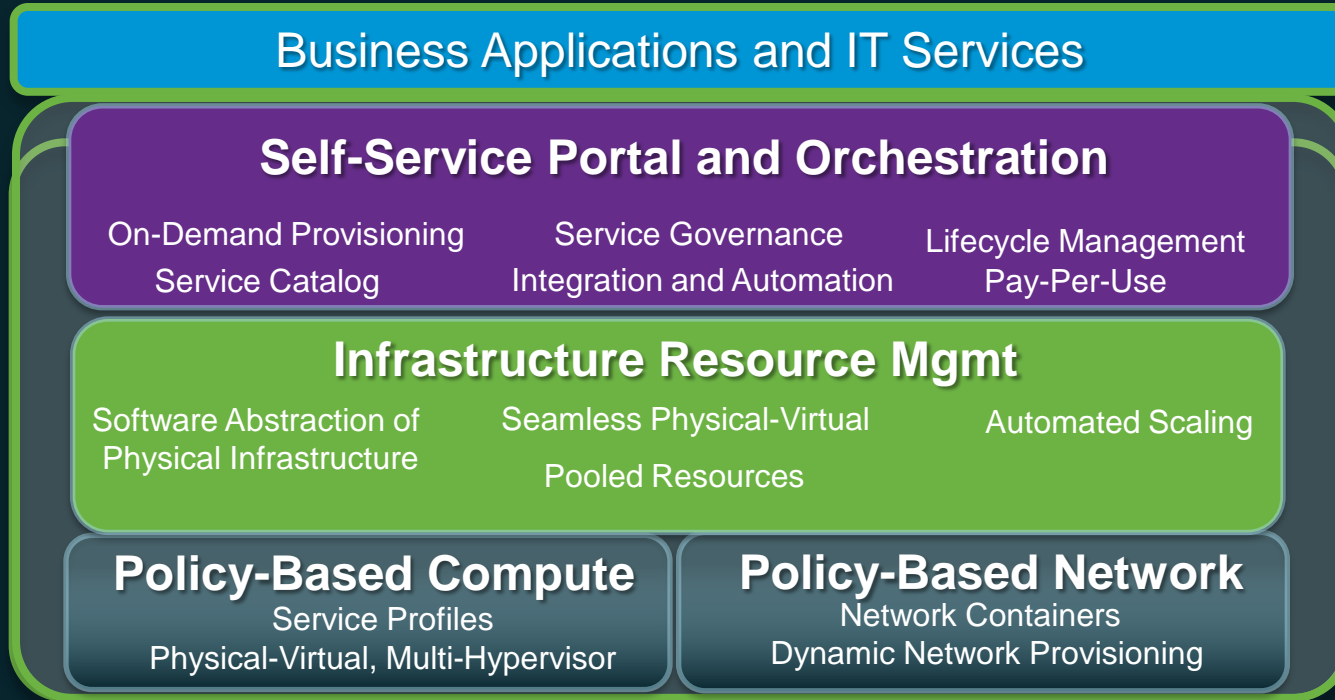
Virtual Desktop
Services

Unified
Communications

Etc...

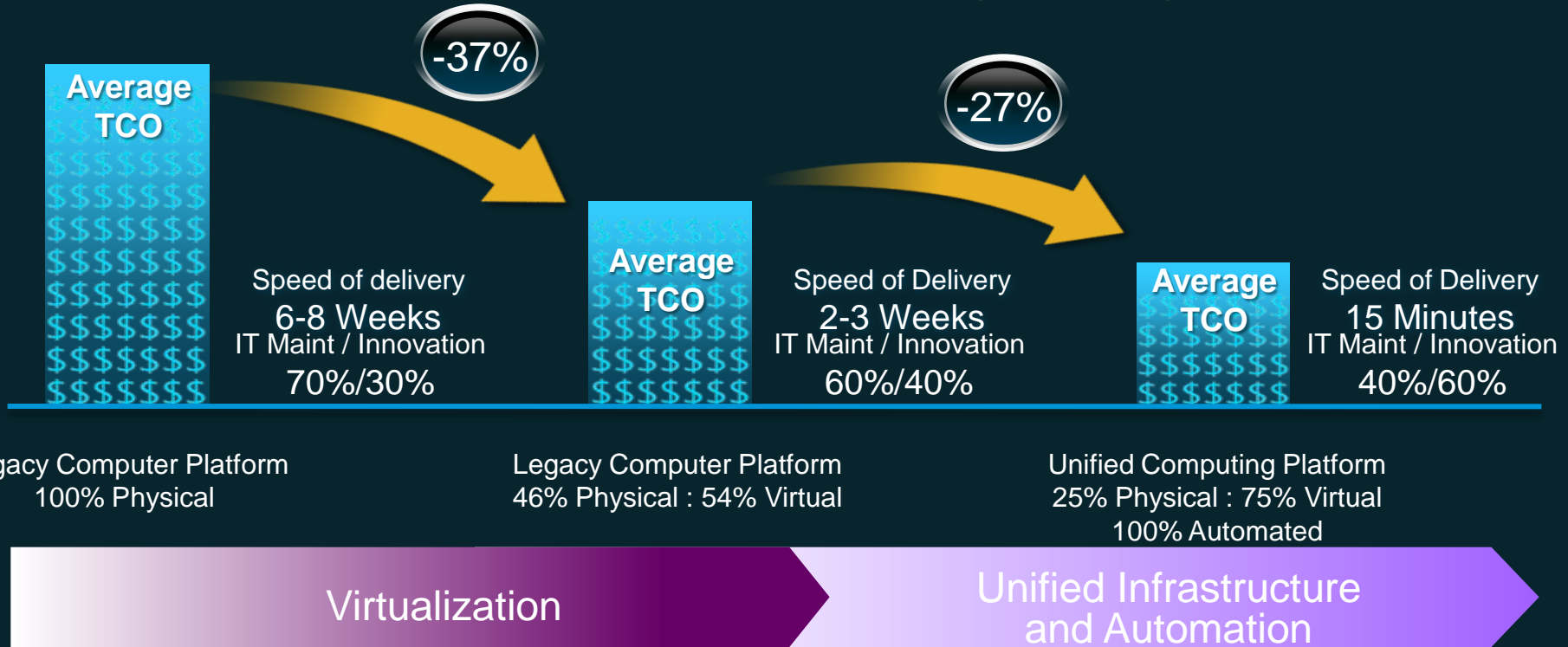


Policy Based Management Approach



Cloud Case Study

Cisco IT Elastic Infrastructure Services (CITEIS)



Collaboration Applications and Services

Meetings, IM and Presence

People Centric Virtual Meetings

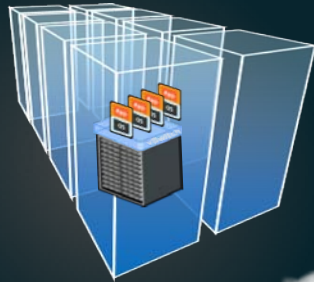
Rich, Real-Time Communications



Fabric Extensibility Between Clouds

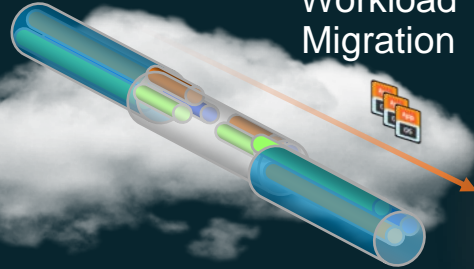
Enable Deep Connectivity Between Data Centers and Clouds

Unified Fabric,
Unified
Computing,

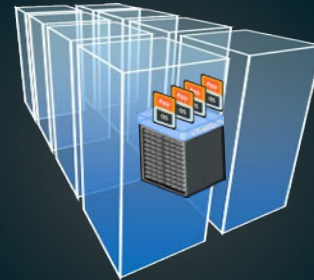


San Jose

Workload
Migration



New York



Preserve
User
Experience



Application / Location
Transparency LAN
Extension

ASR 9000



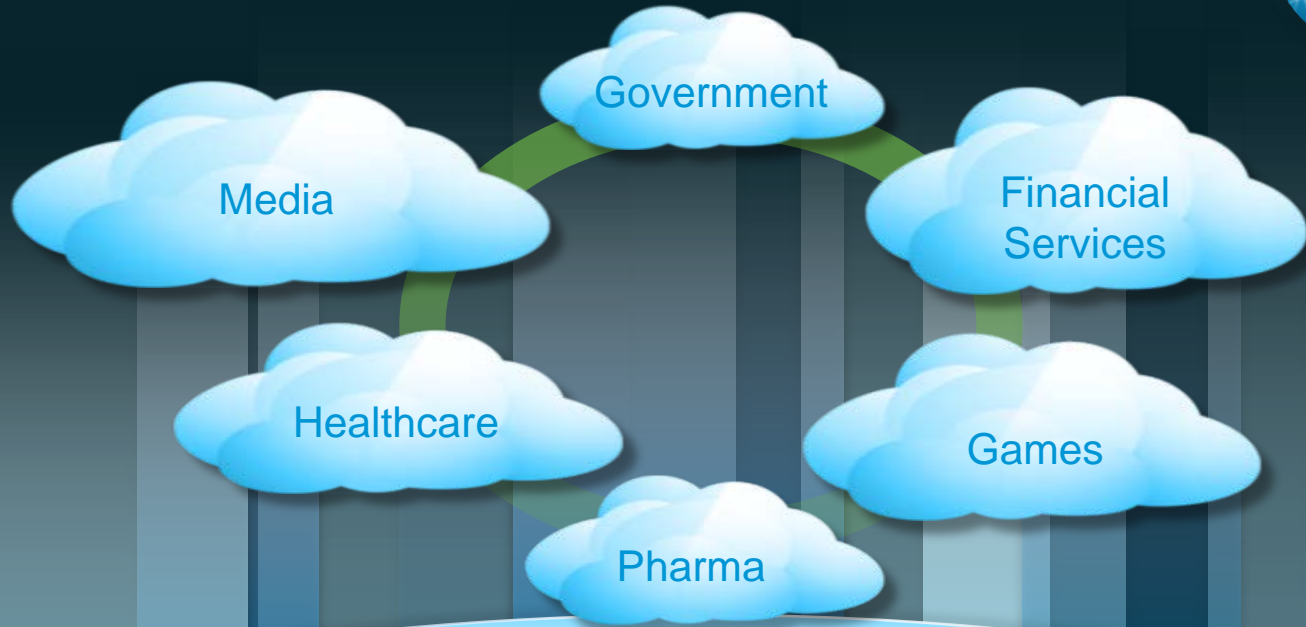
Nexus 7000



Advances in technology and platforms

- Virtualization and internet scale is changing data center architecture
- Network virtualization and software defined networking open up new possibilities
 - Software-defined networks (SDN)
 - Nexus 1kv, VXLAN
- Virtual data centers, hybrid private and public clouds bring flexibility to traditional data centers
- Open source clouds are being developed
 - OpenStack community growing
 - Cisco contributing through Quantum: Network as a Service
- Cisco is bringing it's expertise into each of these new areas

A World of Many Clouds



Public **Seamlessly Connected
Securely Accessed** Private

An Even Larger Cloud Is on the Horizon



Reference: J. Rabaey, "A Brand New Wireless Day," Keynote Presentation, ASPDAC Jan. 2008

Cloud Connects People and Things

Powered by Cisco's Intelligent Network

Infrastructure

Services

Solutions



Thank You

