The Network as the Platform

"Web 2.0 Changes Virtually Everything"

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Cairo, Egypt

Agenda

- Introduction to Web 2.0
- Key drivers for change – Disruption of the value chain
  - New software models as disruptor
  - Virtualization as disruptor
- Cisco Data Center Networking Architecture
- Enabling the transformation

Major Customer Transformations

Web 2.0 – Implications for the Enterprise

We're at a Major Inflection Point That Will Change the Way We Work

Tremendous opportunity for businesses to move with unprecedented speed & alter the economics of their market

Emergence of the "Flat World"

Scale→ Speed

Regional→ Global

Vertically Integrated → Value-Chains

Unified Communications

Ubiquitous Bandwidth

Web 2.0

SOA

SaaS

Global Economic Change

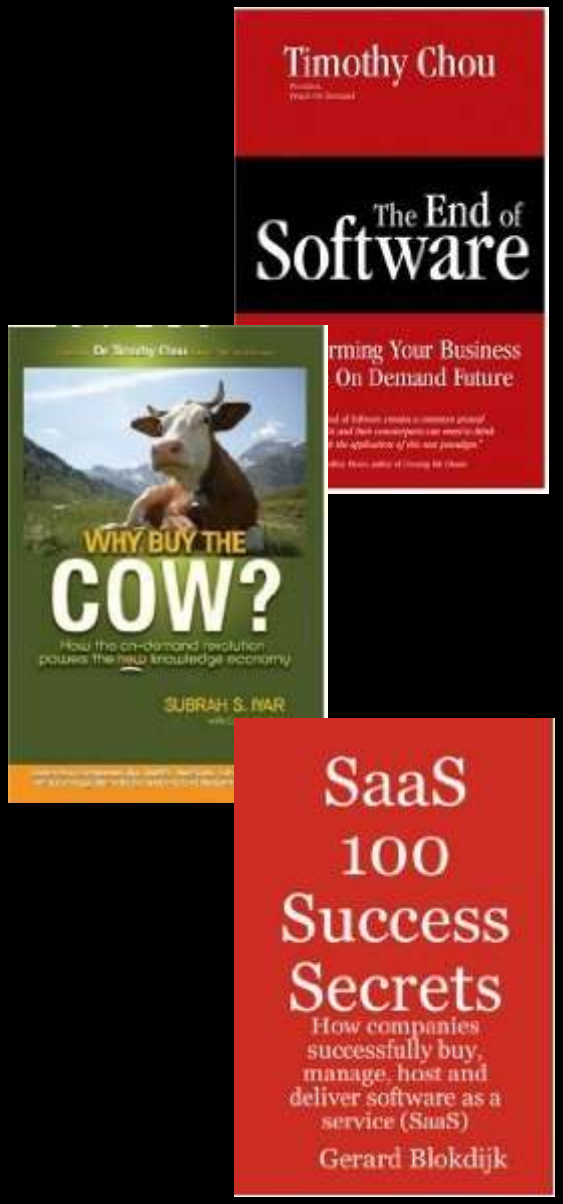
Technical Innovation

What is Web 2.0, and how real is it?

- Web 2.0 (according to Wikipedia) is…
- A transition of Web sites from isolated information silos to sources of content and functionality, thus becoming a computing platform serving Web applications to end users.
- A social phenomenon referring to an approach to creating and distributing Web content itself, characterized by open communication, decentralization of authority, freedom to share and reuse, and "the market as a conversation."
- More-organized and categorized content, with a far more developed deep-linking Web architecture.
- A shift in economic value of the Web — up past a trillion dollars — surpassing that of the dot-com boom of the late 1990s.

“The needs of the many outweighs the needs of the few”

- “Collapsing the supply chain will cause software companies to build better software, more reliable software, lower cost software that can be deployed much faster. Ultimately, this reshapes the fundamental economic model for software companies”
- Software maintenance revenue vs New license revenue as measure of growth expectations for s/w companies
- By changing the fundamental cost model of software, a SaaS model can enable a software company to reduce prices and maintain margins vs traditional software competitors – we have seen this happen in the hardware business
- The end of software as we know it today is not a matter of whether it will happen, but when. The only debate left is the new costing models, i.e., monthly rate per user.



The seven core competencies of Web 2.0 applications allows for new design architectures and deployment

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-recreate data sources that get richer as more users update it
- Trusting users as co-developers
- Harnessing collective intelligence
- Leveraging the long tail through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models, AND business models

IT Challenges for the Enterprise CIO

- Inability to respond to changing business needs
  - Complexity due to heterogeneity
  - Inflexibility of packaged business applications
  - Fragility of the current systems
- Lack of available skills to maintain current systems
  - Requires large multi skilled resources to develop, deploy & Manage
- Inefficient resource utilization of existing application
  - Difficult to upgrade , interoperate and integrate
  - Impractical to replace

Cisco and the Data Center – Virtualization of the Hardware as disruptor

Is the Data Center An Enabler Or An Inhibitor To Your Business?

- Hyper-growth of Storage at 40-70% per year
- Utilization ~15-25% (Servers/Storage)
- Power & Cooling ~25-30% of total DC costs
- Operations taking another ~30% of total DC costs
- Information Retention extending from 3 to 10 years
- New Applications can take 60-180 days to deploy

"By 2009 50% of today's data centers will have insufficient power and cooling capacity to meet the demands of high-density equipment"

Source: Gartner, 2008

Virtualization Will Be the Most Disruptive Technology in IT Operations Through 2010

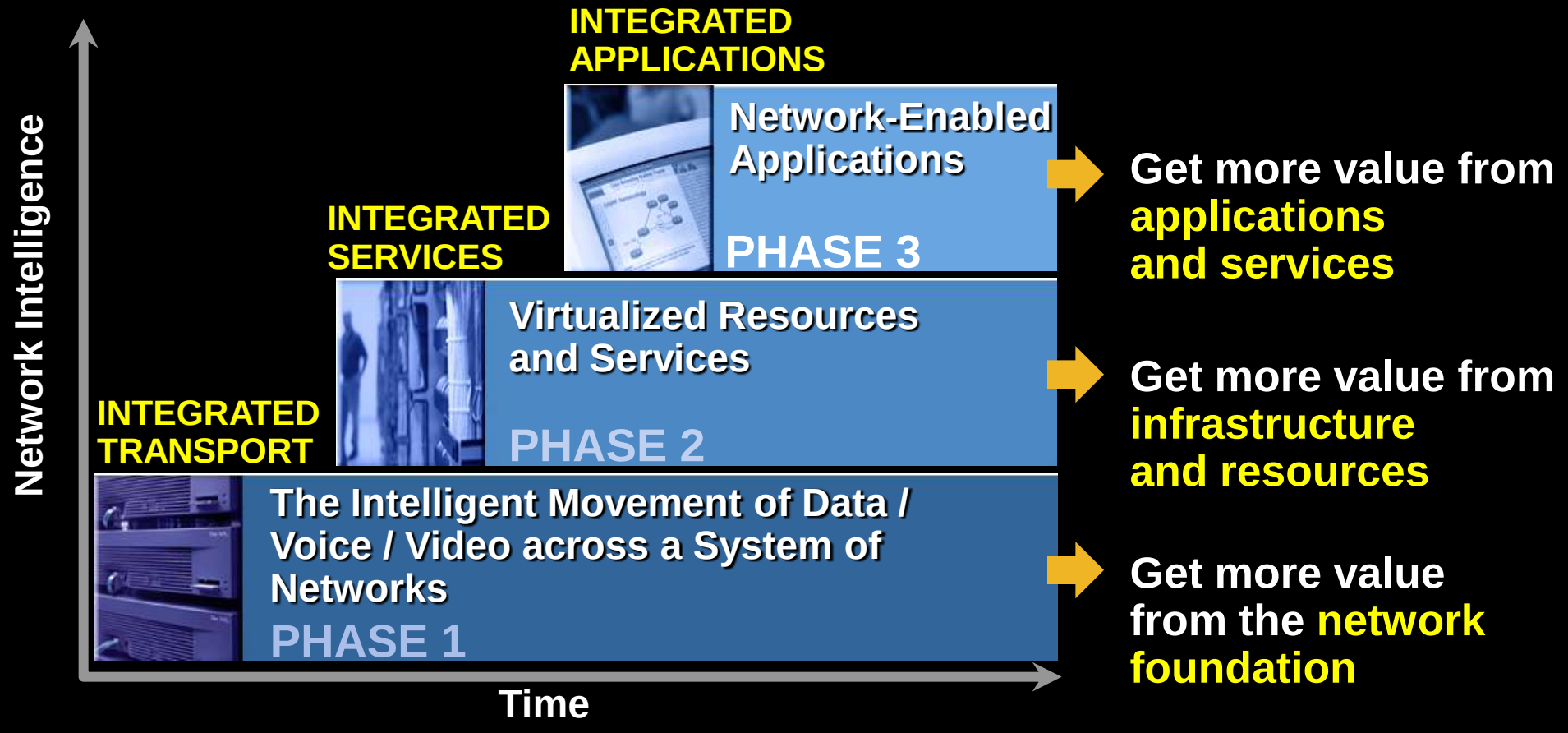
Virtualization *is the abstraction of IT resources in a way that masks the physical nature and boundaries of those resources from resource users.*

Virtualization will change:

- *How you plan*
- *How, what and when you buy*
- *Who you buy it from*
- *How and how quickly you deploy*
- *How you manage*
- *How you charge*
- *Technology, process, culture*

It will transform your approach to client computing

Cisco's Technology Vision:
The Intelligent Information Network (IIN)



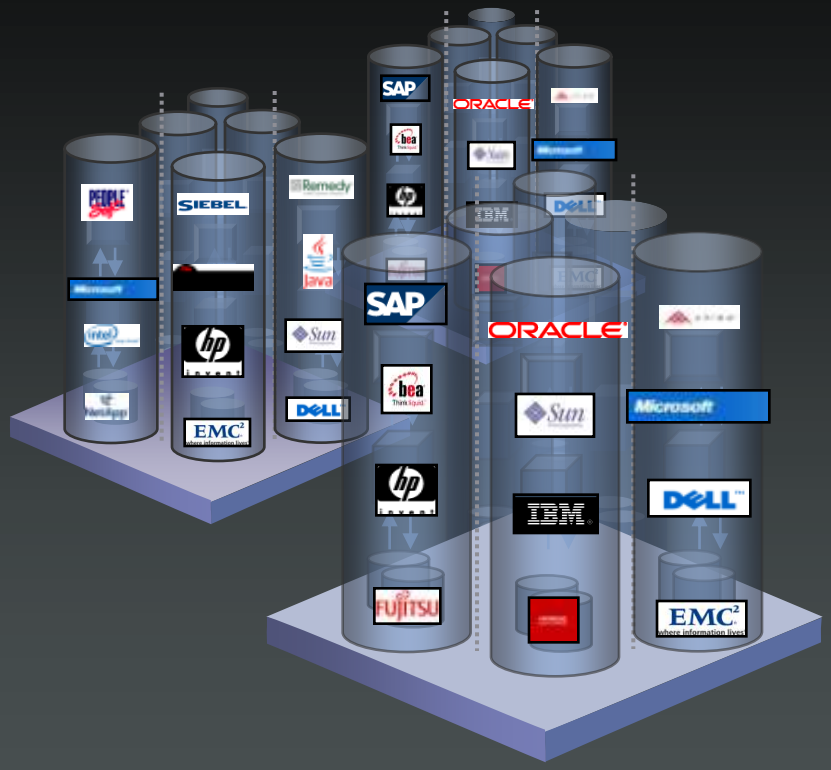
The New World Order… Moving from traditional on-premise software and hardware models to "Software as a Service"

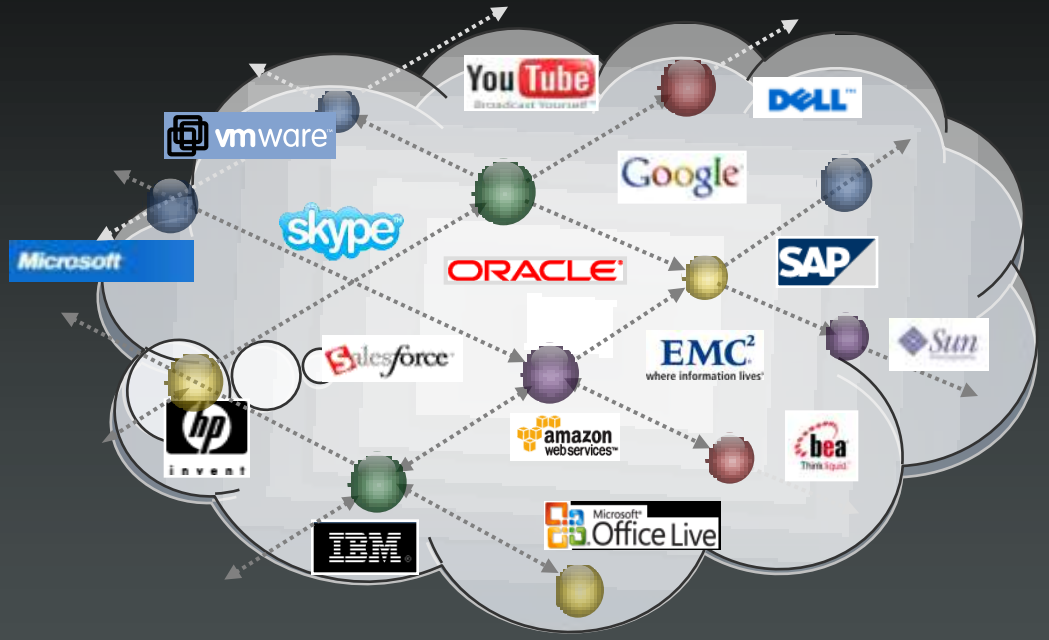
Current: 'Accidental Architecture'

- Silo'd IT resources
- Low utilization, power inefficiency
- Branch offices → 'mini data centers'

Emerging: Web 2.0 Model

- Cloud of virtualized services
- Significant new resource demands
- Challenges with visibility, control, security





Incremental Approach to Data Center 3.0

Consolidate

- Reduced complexity, less to manage
- Lower OPEX
- Regain control of IT resources

Virtualize

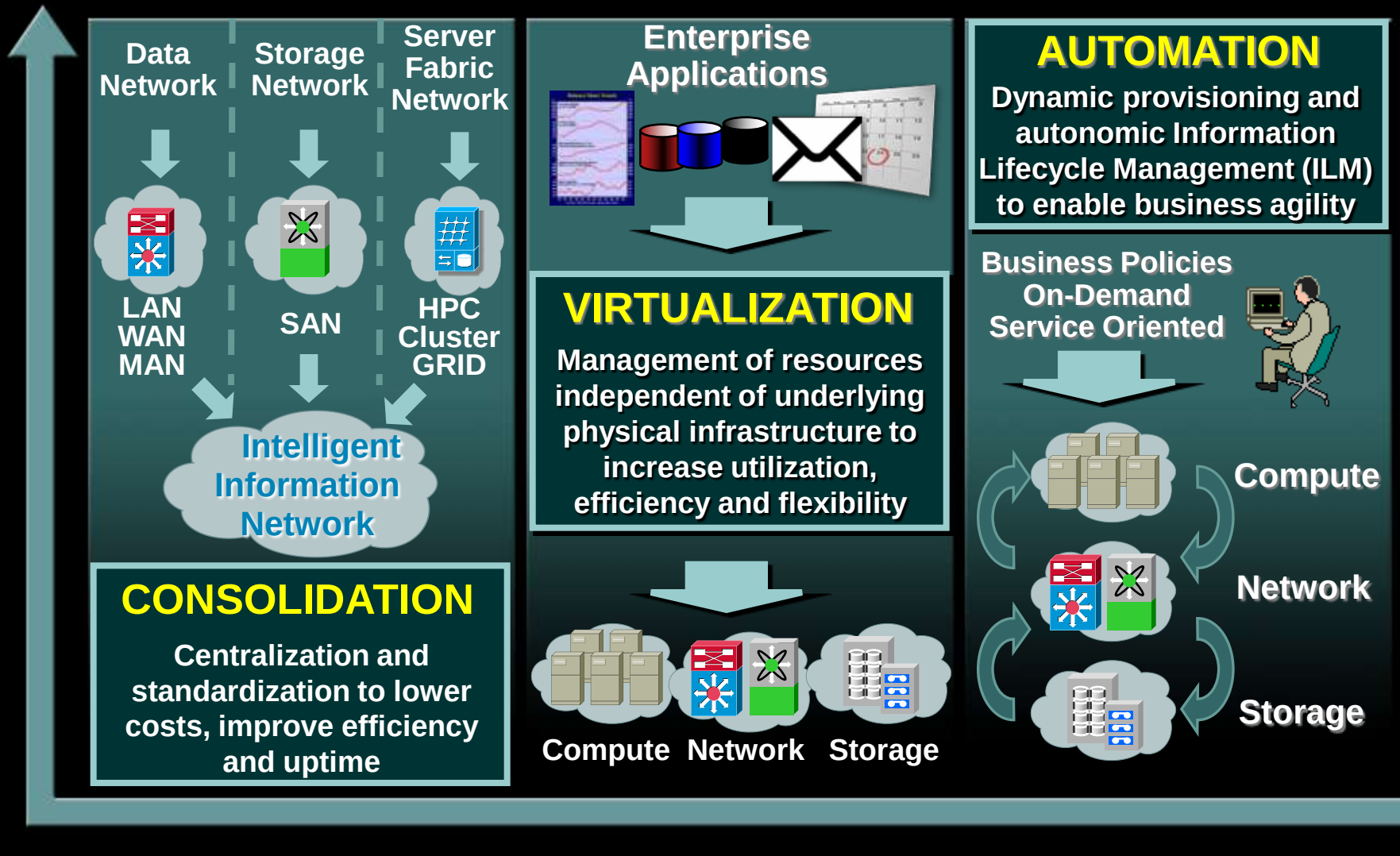
- Higher resource utilization
- Lower CAPEX
- Decouples logical from physical resources

Automate

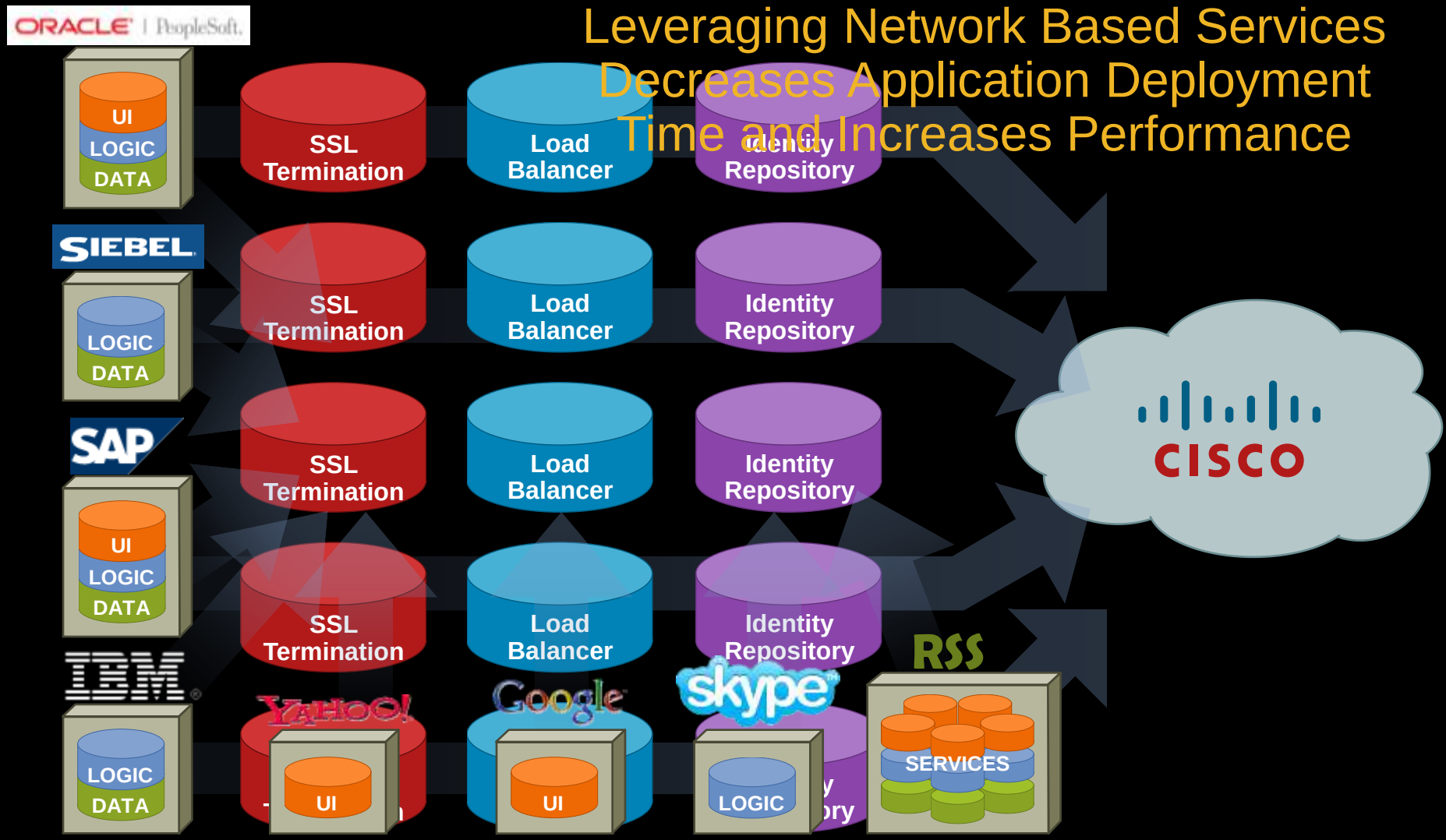
- Dynamically allocate resources
- Simplified policy-based provisioning
- Increase IT productivity

The Network is the Platform

Evolution of the Data Center



Power of Reusability of Network Services



Interactive Services Layer
Cisco Differentiation

Application Delivery
- Application Velocity System
- Wide Area Application Services
- Content Services Switch/ Content Services Module

Application-Oriented Networking
- Intelligent message routing (translation, transformation, reliable delivery) , SOA support
- Application-to-application security
- Application message/ business event visibility and responsiveness

INTERACTIVE SERVICES LAYER

APPLICATION NETWORKING SERVICES

Security Services

Mobility Services

Storage Services

INFRASTRUCTURE SERVICES

Unified Communication Services

Compute Services

Identity Services

ADAPTIVE MANAGEMENT

VOICE SERVICES
- IPT
- E911
- Presence Services

SECURITY SERVICES
- App security
- VPN / SSL
- Virtual firewalls
- Anti-X
- DDoS
- NAC
- HTTP inspection

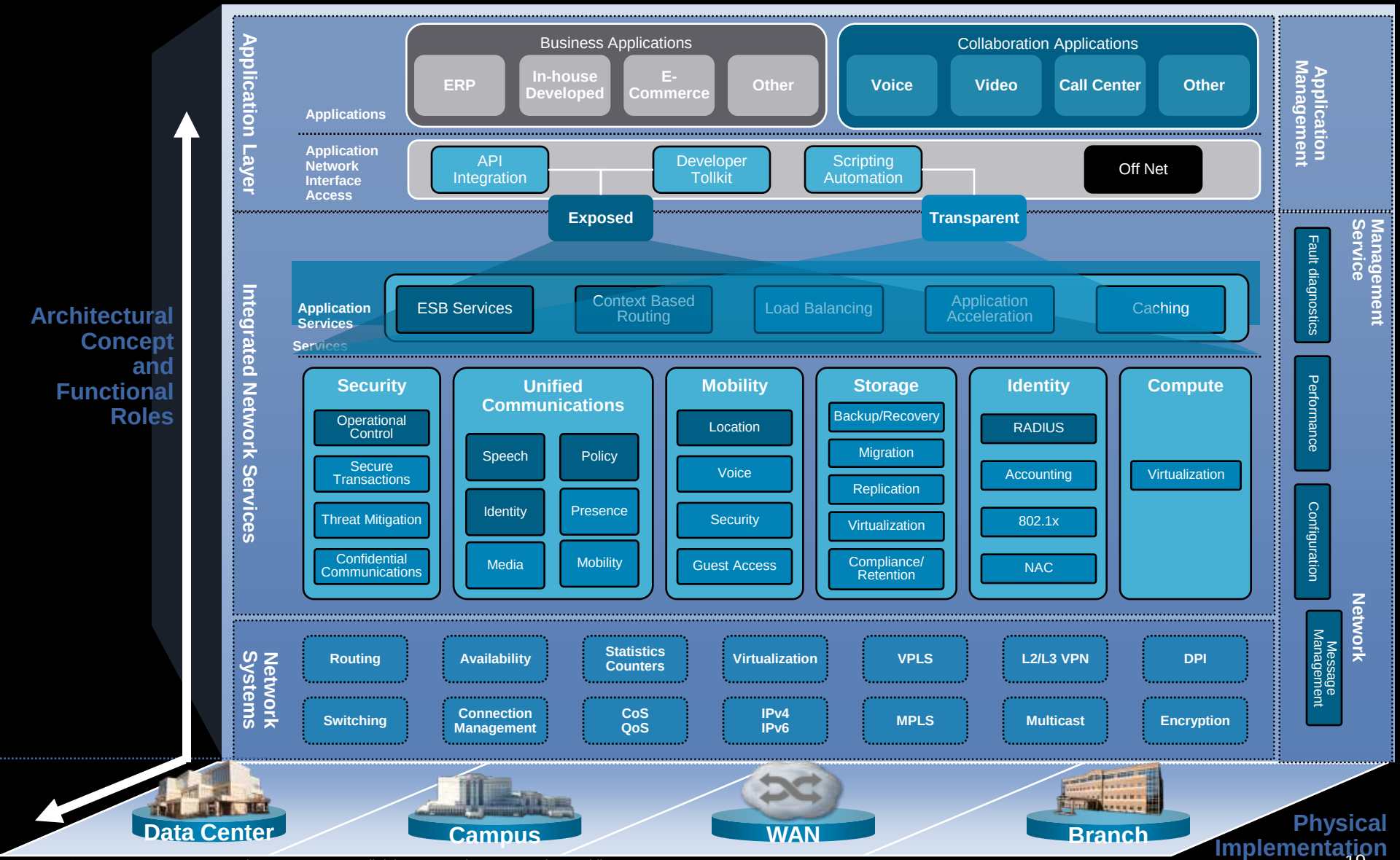
MOBILITY SERVICES
- Access Technologies
- Distribution Technologies
- Applications
- IP Mobility

STORAGE SERVICES
- VSAN
- Data replication
- Remote backup
- Tape acceleration
- File Virtualization

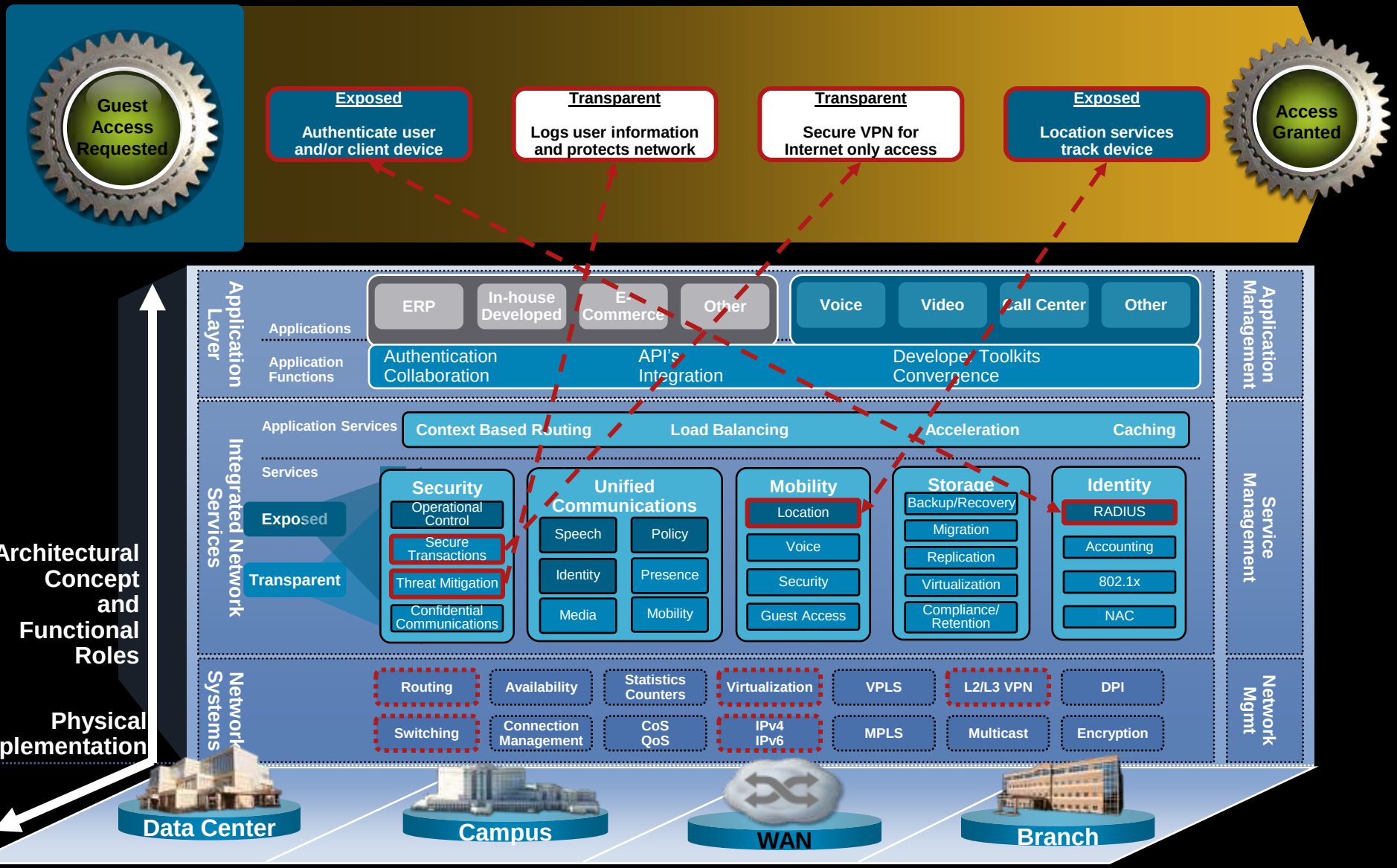
COMPUTE SERVICES
- RDMA
- Server virtualization
- I/O virtualization
- File/Print

IDENTITY SERVICES
- 802.1X
- RADIUS
- ACLs

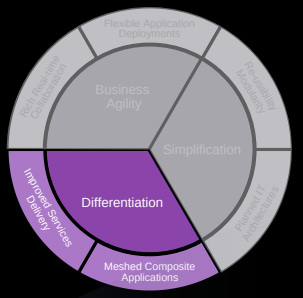
Integrated Network Services Architecture



Integrated Network Services – Guest user access example



Mash-up Applications Utilizing Worldwide Data Centers



ORACLE | PeopleSoft
UI
LOGIC
DATA

Microsoft
LOGIC

ARIBA
UI

SAP
UI
LOGIC
DATA

RSS
SERVICES

SIEBEL
LOGIC
DATA

Google
UI

IBM
LOGIC
DATA

ORACLE
DATA

bea

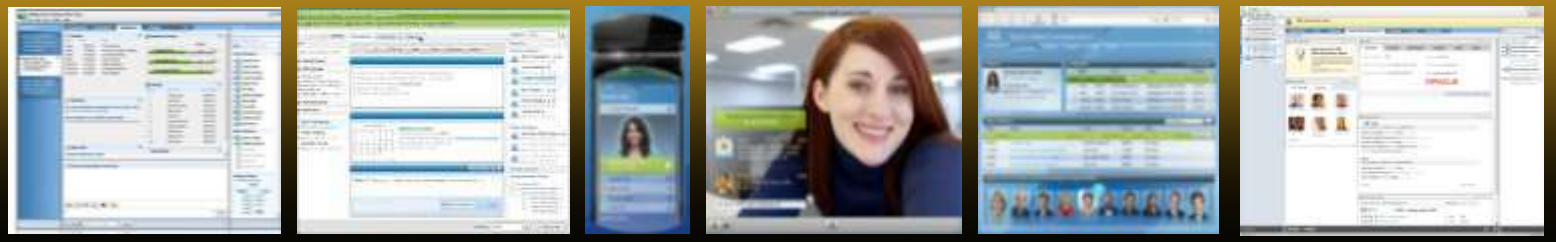
Application 1

Application 2

Delivering "high touch" applications regardless of data location

Example: Enterprise Collaboration 2.0 Architecture

End-User Clients



Collaborative Applications

Cisco Apps | Partner Apps | Customer Apps

Video | File Mgmt | Call Control | Policy Mgmt

Directory & Identity | Voice | Presence & Location

On-Premise

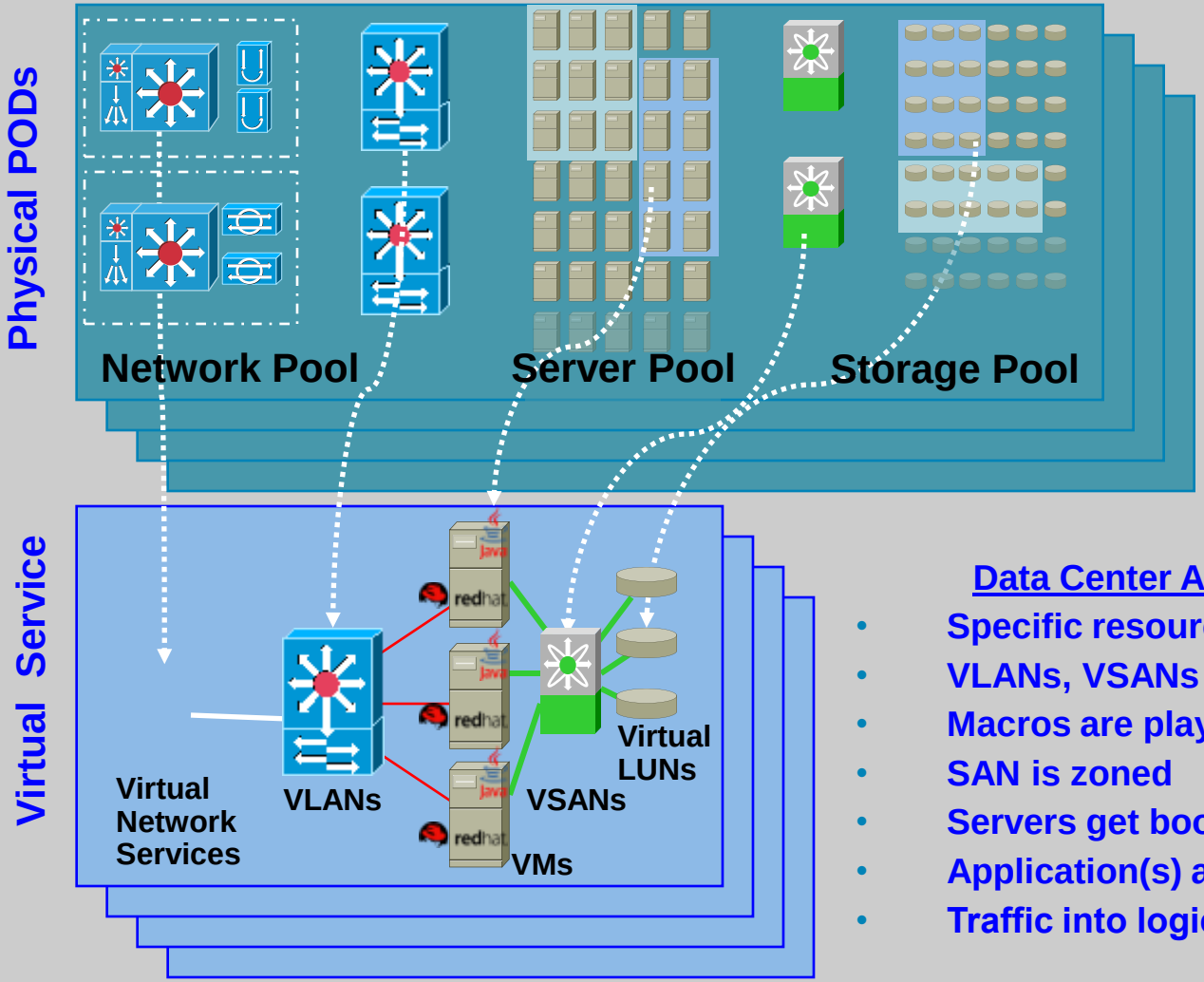
Policy Mgmt | Presence & Location | Routing & Queuing

IM & Chat | Custom Data | Data Sharing

On-Demand

Global Delivery Network

SODC: Creating Virtual Services from Physical Infrastructure PODs



Data Center Automation

- Specific resources selected from pools
- VLANs, VSANs are configured
- Macros are played
- SAN is zoned
- Servers get booted with assigned image
- Application(s) are started
- Traffic into logical network turned “on”

The Network Facilitates IT- Business Alignment

Cisco Data Center 3.0

Business Architecture

- Repurpose the network as a virtualized data center fabric
- Abstract logical services from physical resources
- Dynamically provision services to meet business demands
- Enhance collaboration between IT and the business

Physical Infrastructure

Data Center Strategic Initiatives

Extend the Value of the Current Operational Model

- Lower Operating Costs
- Infrastructure Resilience
- Power and Cooling
- Application Delivery
- Holistic Security
- Compliance

Enabled by: Consolidation, Virtualization

Improve IT Effectiveness in the New Environment

- Event- and Policy-Driven Real-Time Infrastructure
- Unification of Components, Networks, Communications
- Streamlined Business Processes, IT as a Service

Enabled by: Automation

Partner Programs
Key Components of Architecture Solutions

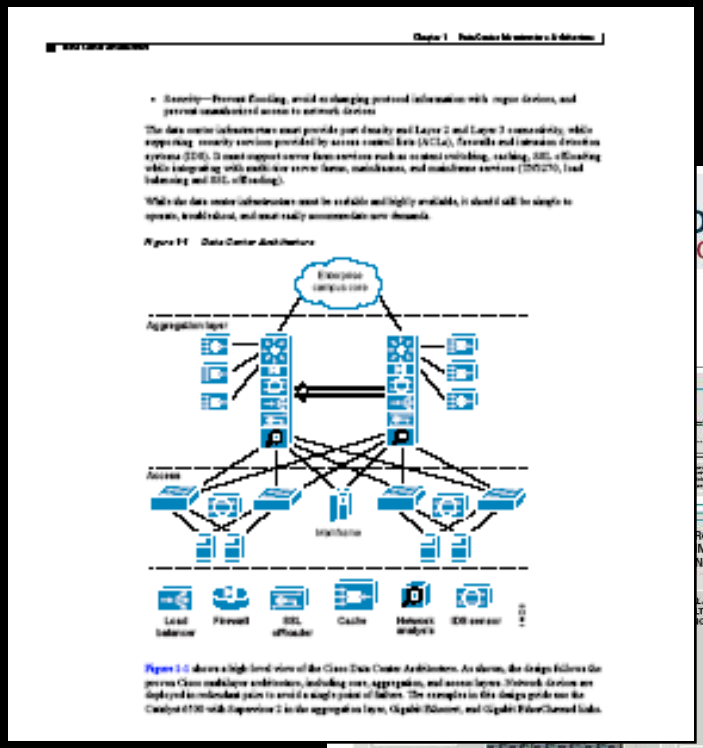
Retail	Manufacturing	Healthcare	Education	SLG	Central Government	Finance
WINCOR NIXDORF, IBM, NCR, Intel, Ambiro..., cy..., Lite..., ObjectVideo, SPANLINK, workbrain, ORACLE, vocera COMMUNICATIONS, mCosm	Rockwell Automation, Honeywell, IBM, hp invent	PHILIPS, GE Health..., ascom, hp invent	SchoolMessenger	BERBEE	DECRU A NetApp Company, EMC², IBM, LiteScape	FIS FIDELITY NATIONAL INFORMATION SERVICES, ...nics, THE PERFORMANCE LEADER, WOMBAT FINANCIAL SOFTWARE, NCR, DIEBOLD We won't rest.

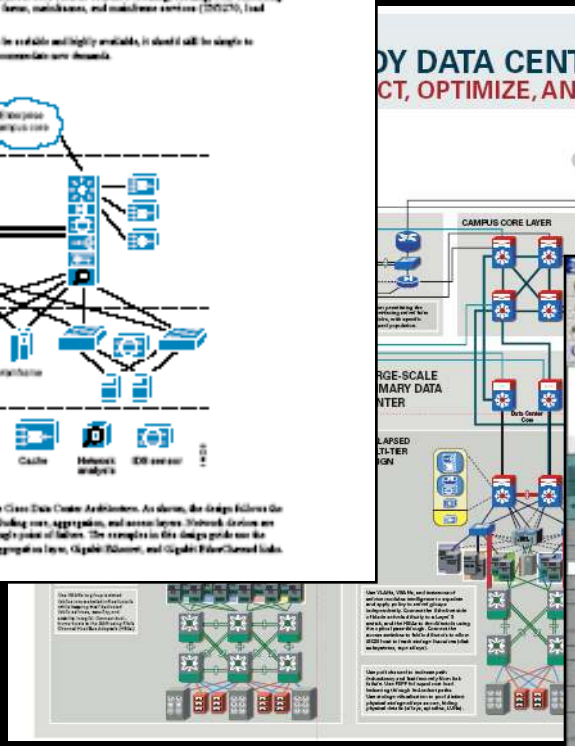
Cisco Technology Developer Program

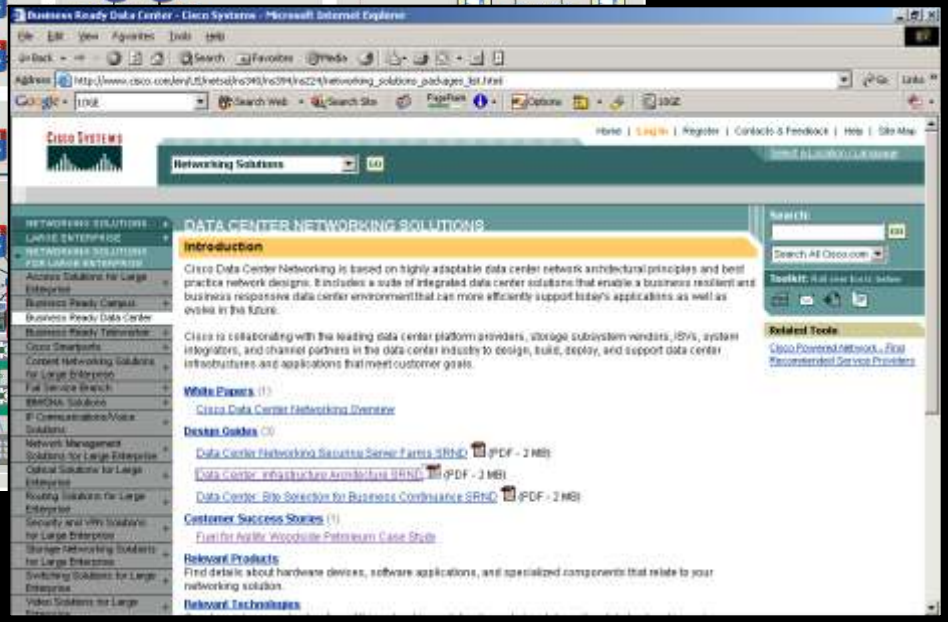
Uniting Cisco with 3rd Party Application vendors of complementary network-enabling technologies to deliver interoperable Solutions

~ 371 partners
~ 49 Affiliates

Ease Deployment, Reduce Risk, Improve Resilience with Data Center Networking Design Best Practices







www.cisco.com/go/datacenter

Value Proposition of an Architectural approach to enable Web 2.0 in the Enterprise

- Deliver an architectural approach to connecting network services to applications to deliver business solutions
- Leverage proven Cisco system and solution delivery processes to reduce risk and differentiate enterprise offering
- Enable advanced services and/or consulting practices targeting vertical markets
- Localize systems and solutions with proven partners and channels
- Enables enterprises to optimize network aware applications and services globally across their businesses