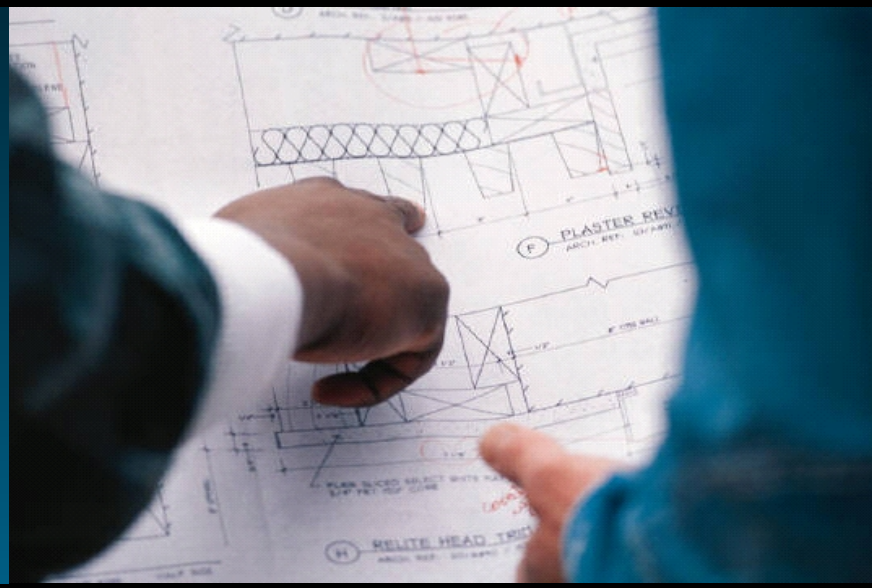
The Network Platform: Enabling Next-Generation Enterprise Architectures



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Cisco Systems

Agenda

- Expanding Influence of the Network
- The Network As a Platform - Way of Thinking
- Case Study - Deep Dive: Multi Capability Engagement
- Key Takeaways

New Collaboration and Business Models

Changing the World

Some Practical IT Challenges – CIO View

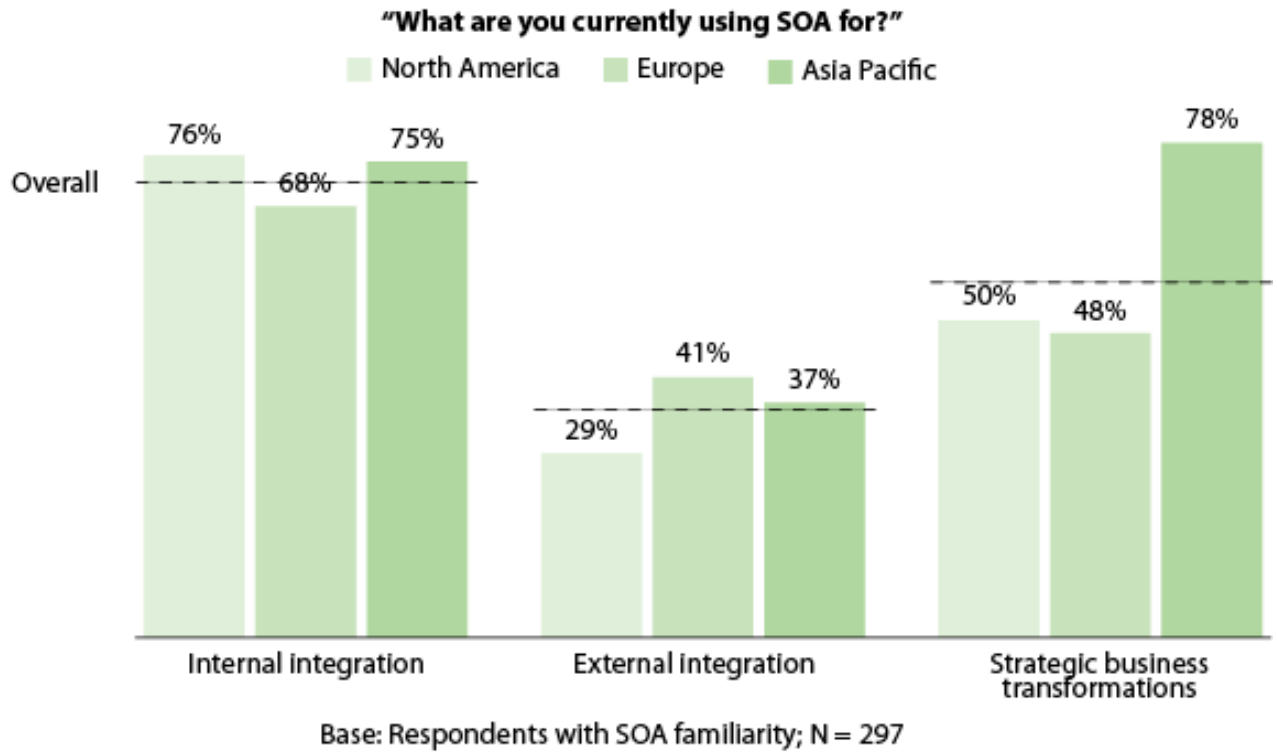
Empowered User

Real-time Information

Borderless Enterprise

- IT as a strategic business enabler
- Global scalability
- Escalating user expectations
- IT service quality, availability, green
- Compliance and security
- Strategic vendor partnerships

SOA and Web 2.0 Application Usage on the Rise …



Base: Respondents with SOA familiarity; N = 297

Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, Fall 2007

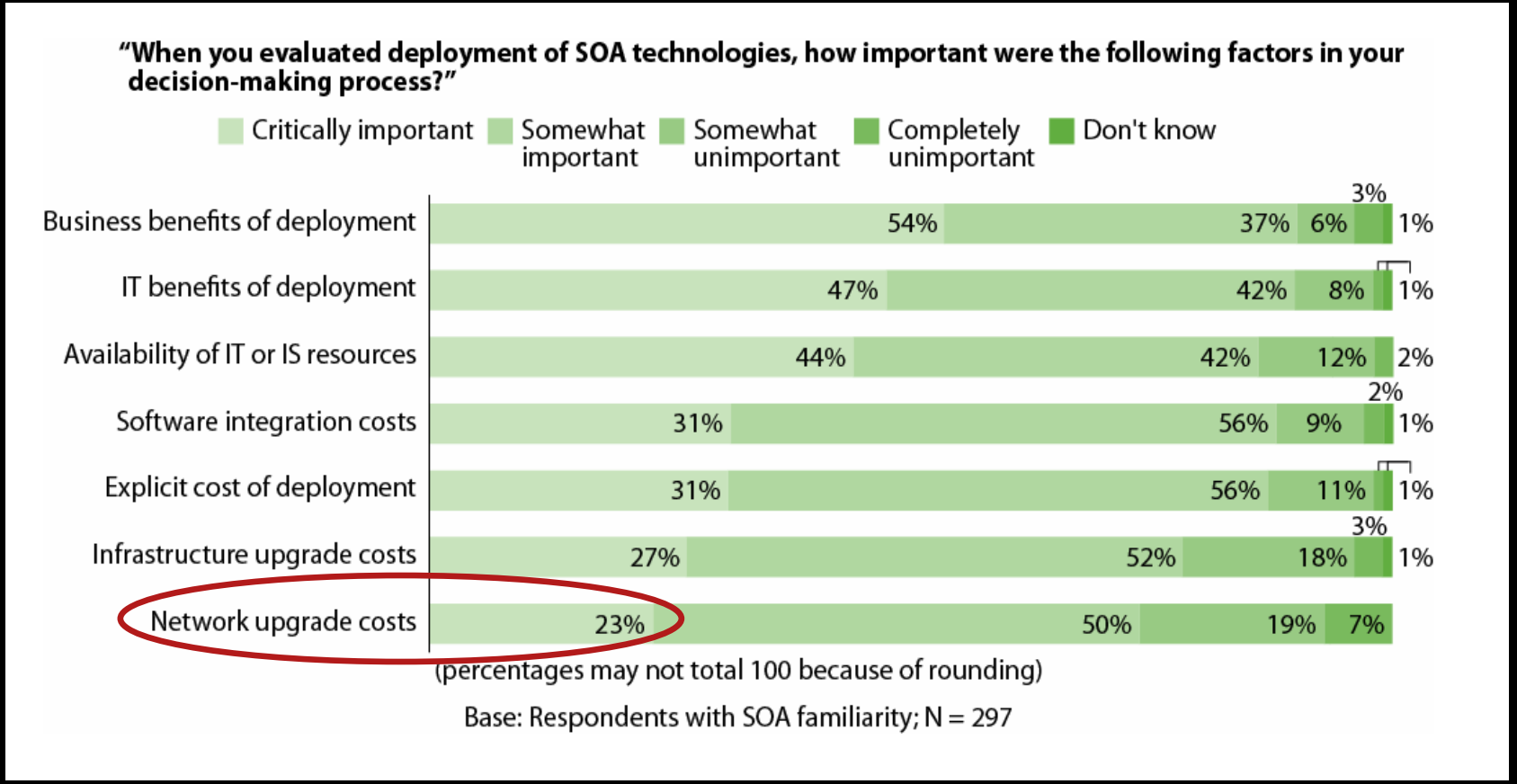
Significant Investment

2008: 12%
2009: 18%
2010: 22%

Penetration

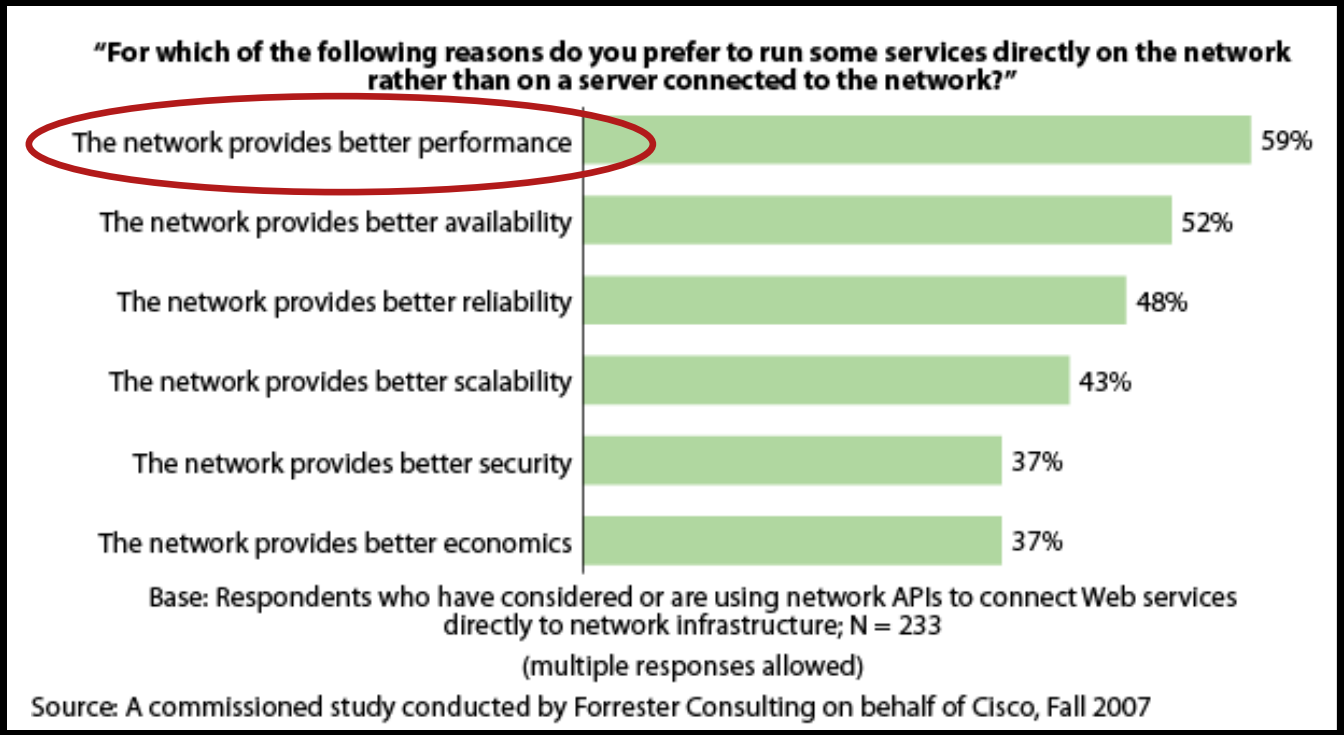
US/Europe: 62%
AsiaPac: 59%

…but Infrastructure Readiness Lags and …



Network performance tops concerns for 67%

…Expectations on Communication based Services are high.



- 55%; run advanced services in the network

  Presence, location, identity

- 57%; provide APIs for network-based services to applications to execute part of business process and application logic

Some Contributing Factors

- **CIO Focus**

  Almost 50% of companies report that the network team is not involved in the application deployment process

- **IT Structure**

  40% of IT organizations are decentralized or federated

- **Budget Process**

  25% of IT organizations have decentralized budgeting

  40% of IT organizations use project based budgeting

… valuable enablers are not taken into early consideration in capability designs!

So What Approach Should One Adopt to Leverage the Network ?

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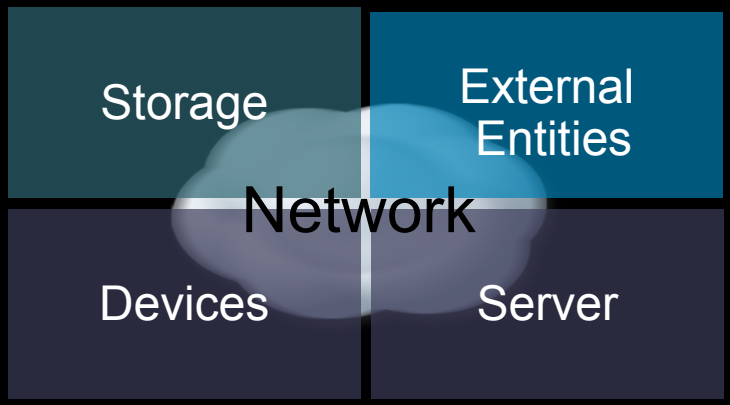
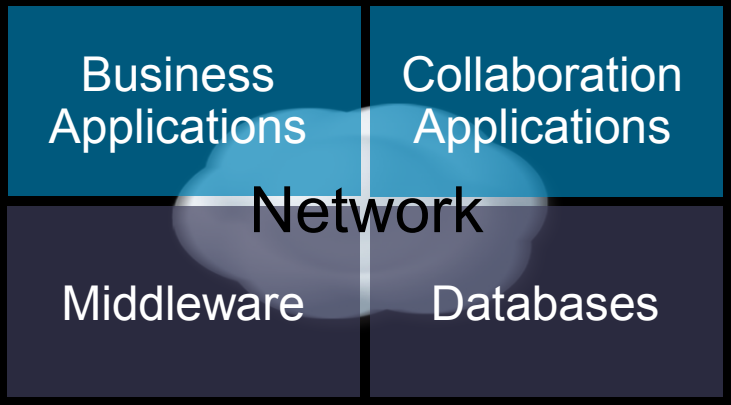
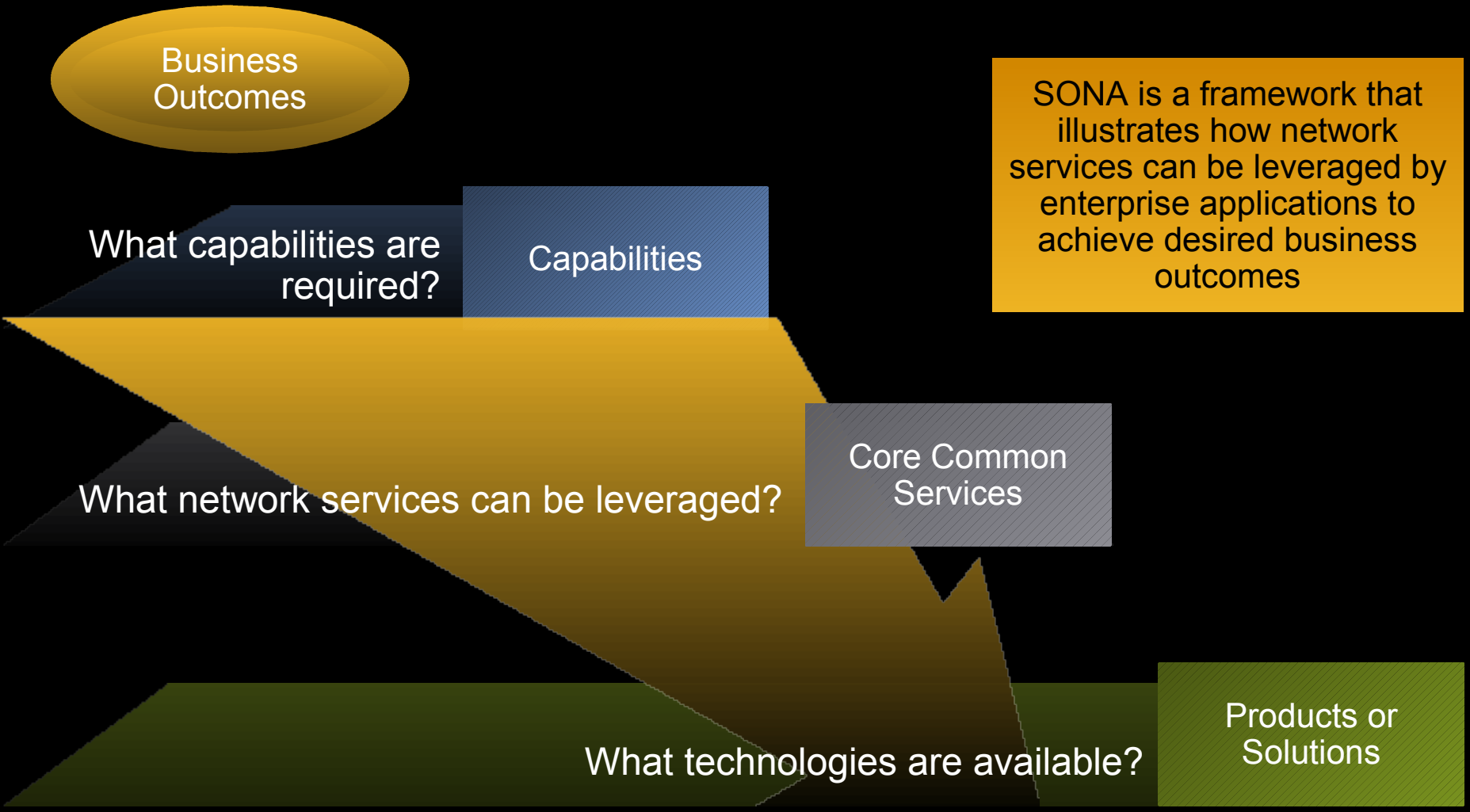
The Network - A Possible Place to Begin?





The network is the *only* common, *single* element that connects and enables *all* components of the IT infrastructure.

An Architecture Approach to Identify Services



SONA is a framework that illustrates how network services can be leveraged by enterprise applications to achieve desired business outcomes

Core Services Structure

Capabilities	A Collection of One or More Functional Services That Create a Common Quality, Ability or Feature That Can Be Used or Developed By Higher Level Processes	
Functional Services	Exposed Services Explicitly Invoked Services That Provide New Functionality for Applications	Transparent Services Enhance or Provide Functionality for Data and Applications Without Direct Interaction from the Application
Physical Infrastructure	A Collection of One or More Physical Devices That Provides a Service, Function or Capability	

Cisco SONA Framework

Applications

- Commercial Applications
- Internally Developed
- Software as a Service (SaaS)
- Composite Apps/SOA

Core Common Services

Real Time Communications

Mobility

Application Delivery

Security

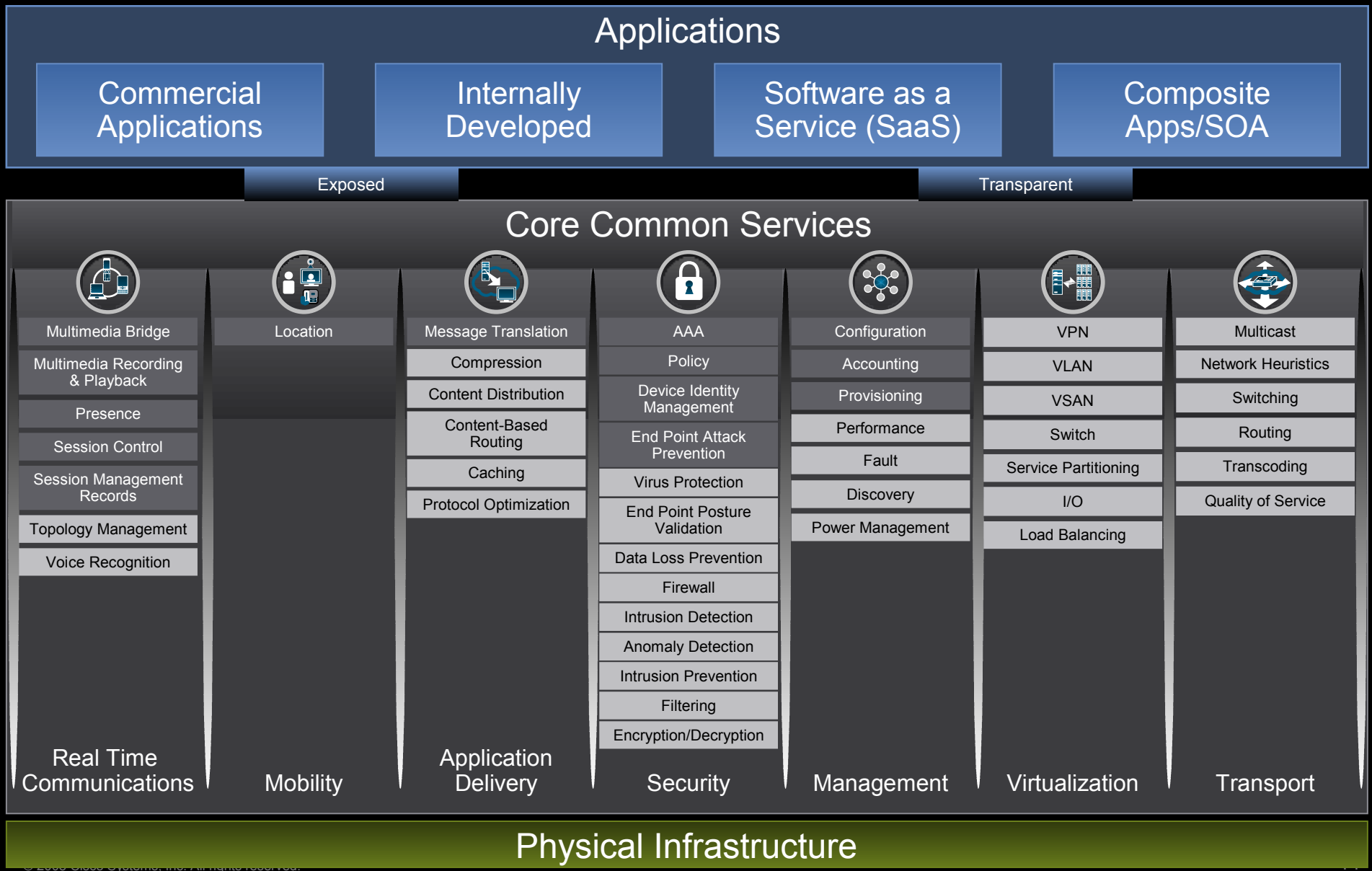
Management

Virtualization

Transport

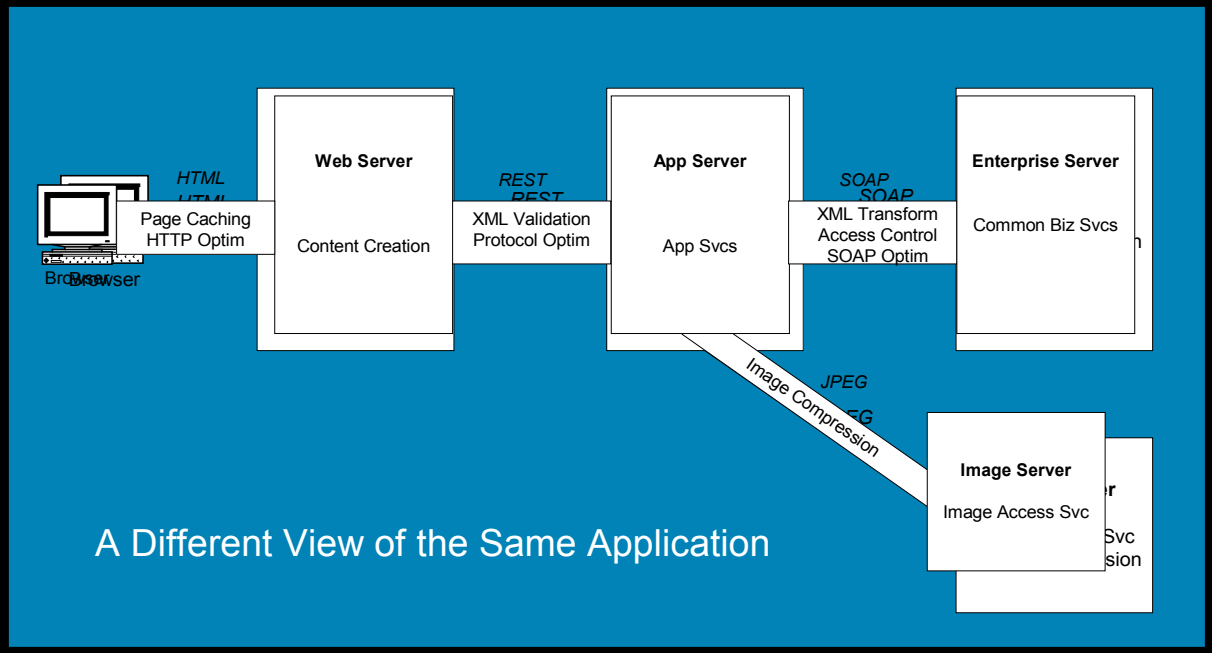
Physical Infrastructure

Cisco SONA Framework

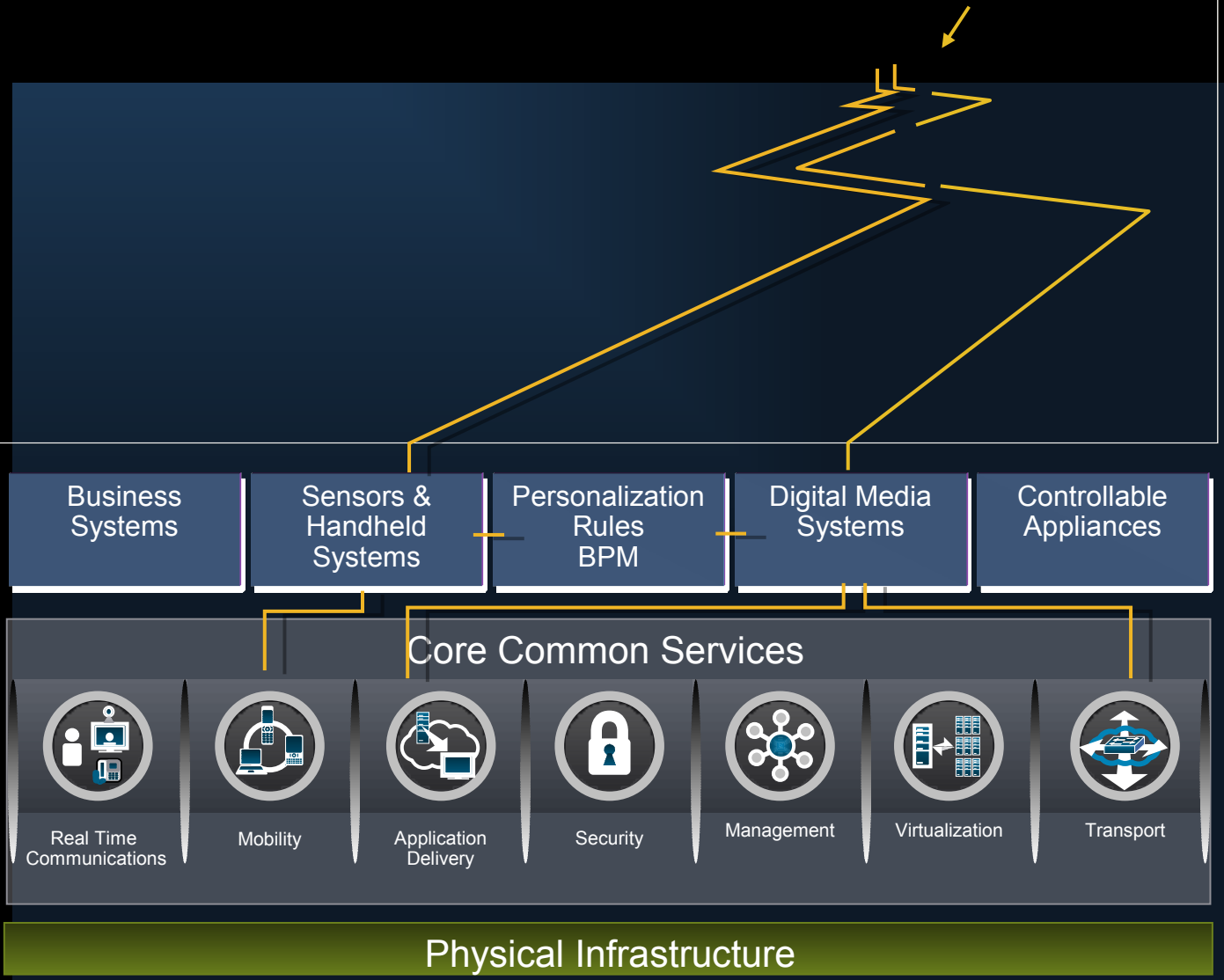


When should I think about Network-based Services?

- When Considering Application Requirements
- When Designing a Solution
- During Implementation
- When Updating Your Architecture Repository



Network Services In Action for Hospitality: Pinpoint Advertising



VIP Guest approaches elevator

Sensors detect Guest and relay event with context to Rules Engine:

Mobility service pinpoints the Guest

Rules determine response based on location, preferences and policy

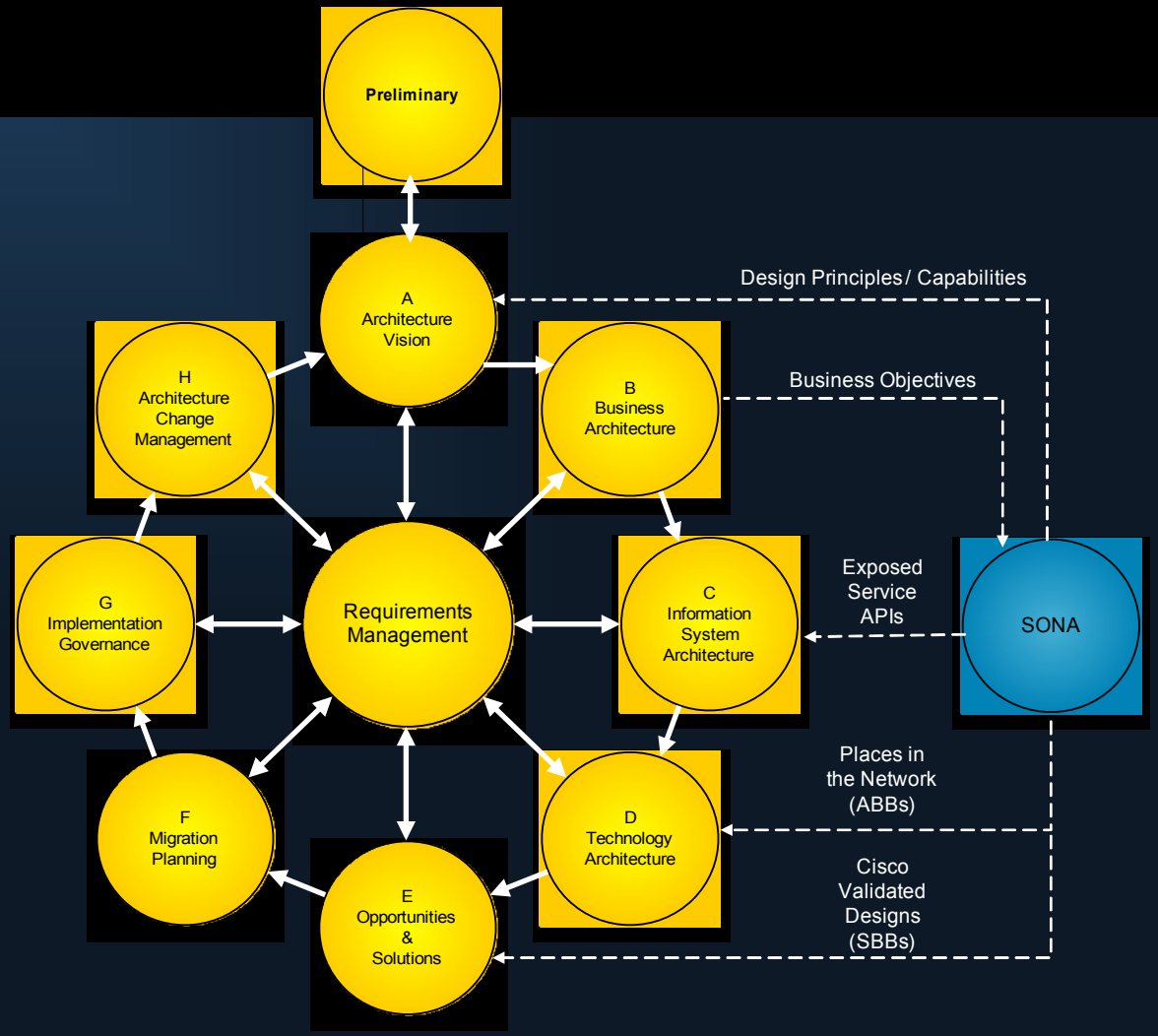
Targeted rich media is served efficiently:

Application Delivery & Transport ensure Compatibility, Quality and Efficiency

While waiting, Guest views flat panel displaying favorite meal, available in restaurant

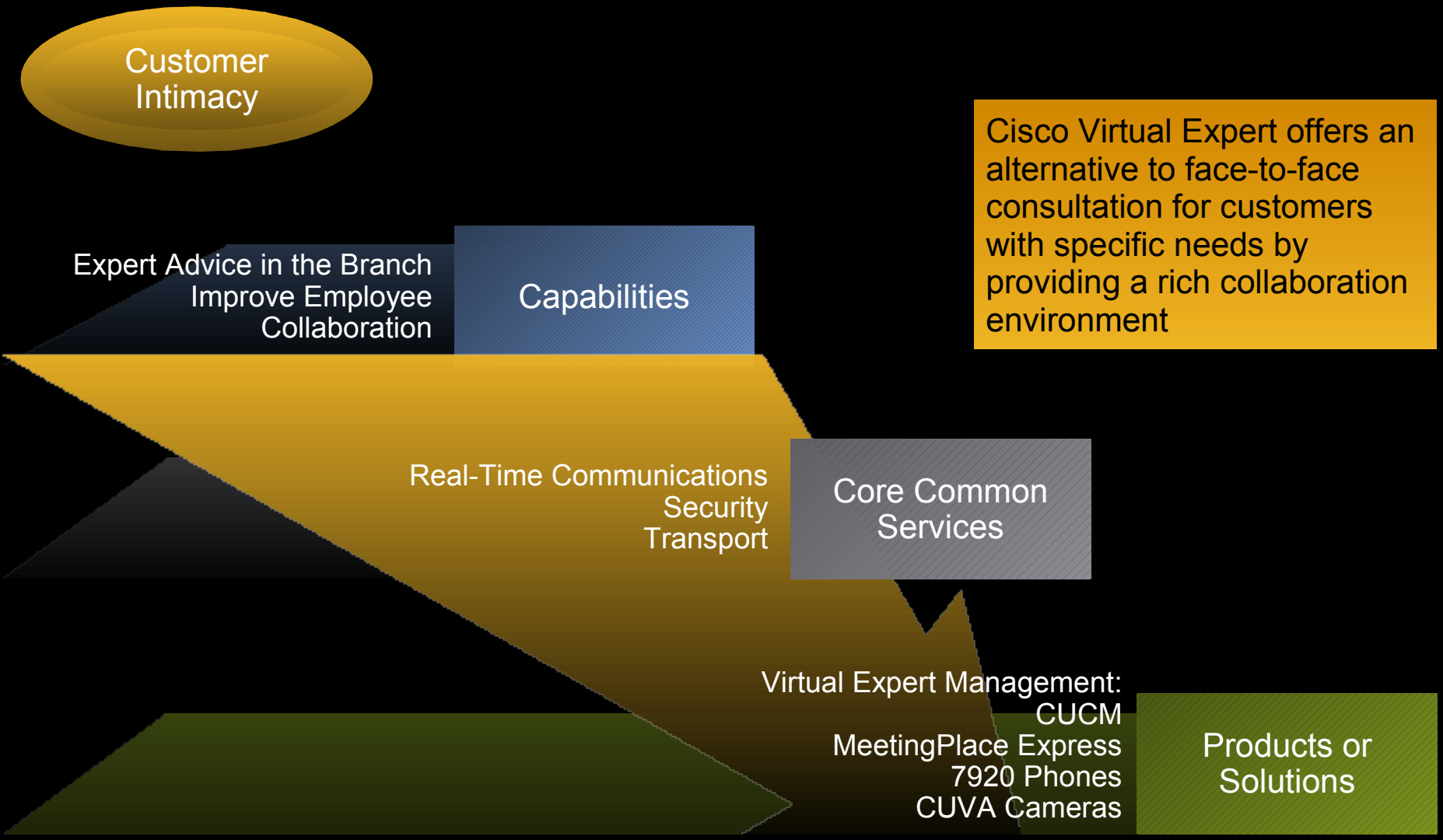
➔ *Network-based services enable Automated Pinpoint Advertising to increase upsell and provide "high touch" guest experience at low cost*

SONA ties network-based services into *any* overarching EA framework



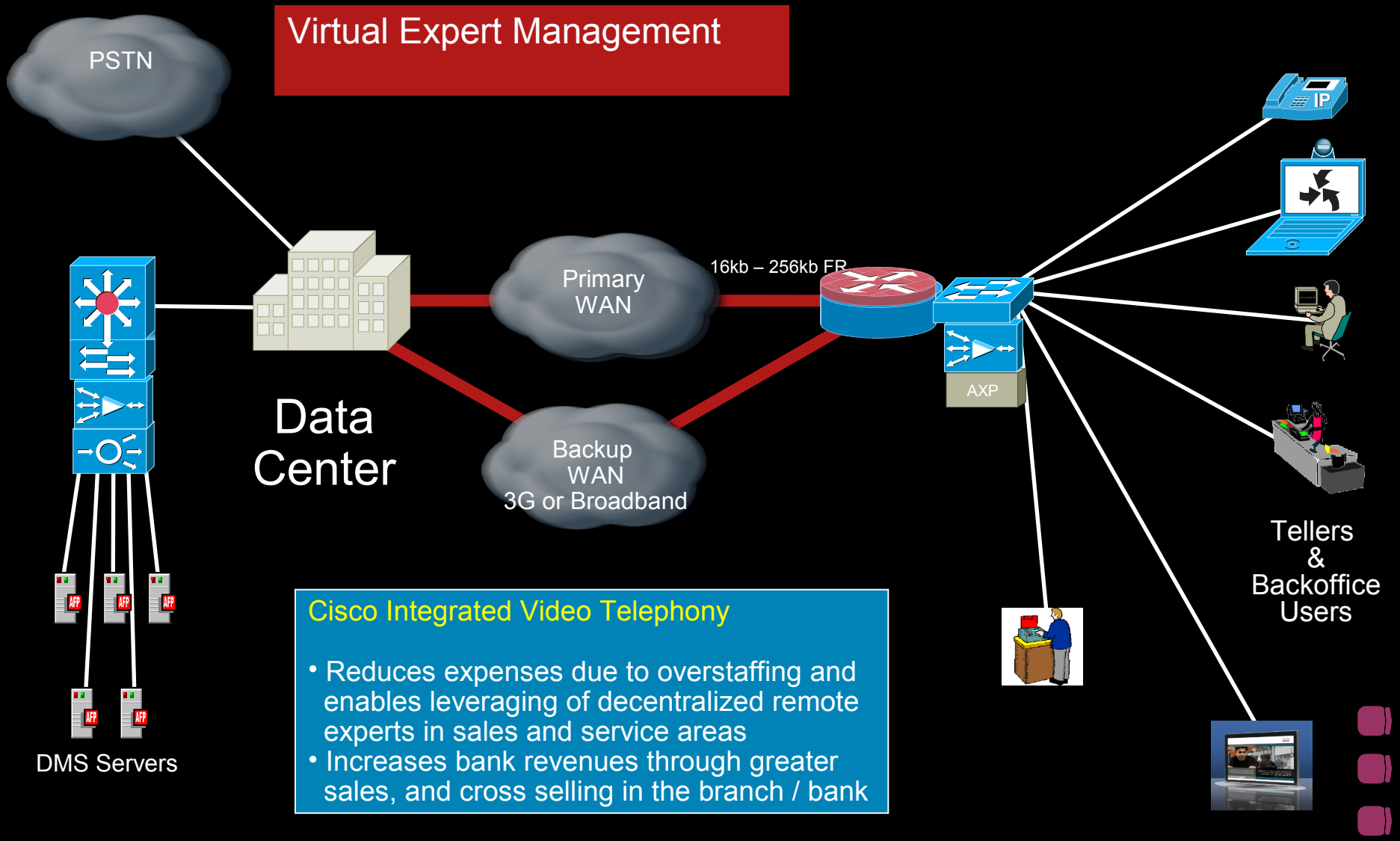
Example: SONA interaction with the TOGAF ADM

Financial Services: Retail Banking Example



Cisco Virtual Expert offers an alternative to face-to-face consultation for customers with specific needs by providing a rich collaboration environment

Example: Enhancing the Customer Experience in Retail Banking via Real-Time Communication Services



Cisco Integrated Video Telephony

- Reduces expenses due to overstaffing and enables leveraging of decentralized remote experts in sales and service areas
- Increases bank revenues through greater sales, and cross selling in the branch / bank

Example: Enhancing the Customer Experience in Retail Banking via Real-Time Communication Services

Optimize customer experience through intelligent queue management and SME matching

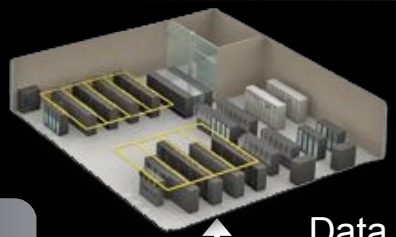
Banking Expert

Allow for specialized consultation provided from regional centers via dynamic video interaction

Home

Enable better collaborative sales and service through intelligent unified communications integrated with call center and SME database

Provide personalized digital marketing and messaging with digital media solutions



Data Center

Enhance product speed to market with lean, centralized application management

Successful Architecture Alignment requires consideration of the following streams, which may be attempted in multiple iterations…

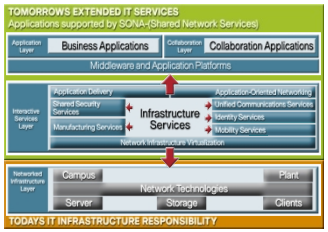
Business Strategy to Technology Alignment

Business strategy
Technology Trends
Industry Trends
Desired functionality
Functional Capabilities

Implementation Roadmap

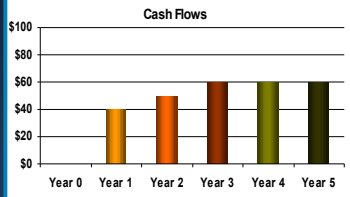
Sequencing of Activities
High Level Planning
Major Initiatives
Dependencies
Timeline

Next Generation Architecture (3-5 Year View)



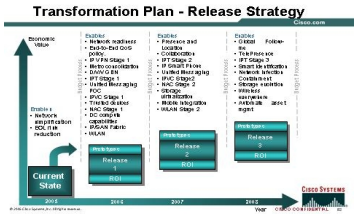
Standards & Guidelines
Configuration Templates
Architecture Principles
Conceptual Architecture
Logical Architecture
Physical Architecture

Financial Planning



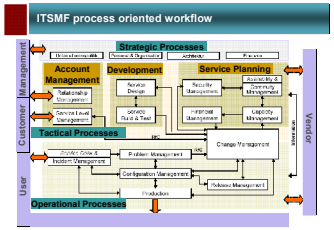
Investment Required
Business Benefits Analysis
Budget Planning
Business Case
ROI / TCO Analysis

Release Strategy



6-12 month Releases
Aligned to Budget cycle
Major work programs
Release functionality
Benefits by release
Lifecycle Management

Operational & Governance Model



Decision Framework
Operational Capabilities
Organisation Alignment
Skills & Training
ITIL/ITOM Alignment
Management Tools
FCAPS

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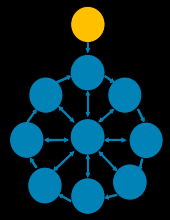
Case Study: Large European Financial Institution

- **Business Operating Model:** Different business units demanded **robust and differentiated** network-based services.
- **Business Growth:** Increased **M&A activities** required infrastructure agility.
- **Business Risk:** Increased **information security** needs due to a recent security incident
- **Business-IT Alignment:** **Weak linkage** to business, leading to long IT cycle time and **reactive response** to business demands
- **IT Operational**: Infrastructure **design vulnerabilities** resulting in frequent network outages that adversely impacted the business

Financial Services Case Study

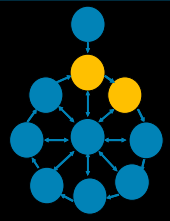
- Key business strategies identified by interviewing business stakeholders and leadership teams
- Sample interview results are below:



Key Business Initiatives and Strategies - Specific Business Unit

- Break functional silos
- Leverage Cross Channel Architecture
- Improve Customer Intimacy
- Ensure end-to-end Process integration
- Leverage New Channels
- Speed up product take up
- Improve Branch Capability
- ….
- ….

These business drivers were then analyzed to determine strategic requirements that led to identification of “must-have” technology capabilities.



Key Strategies

- Break Functional Silos
- Leverage Cross Channel Capability
- Improve Branch Capability
- Ensure End-To-End Process Integration
- …

Technology Capabilities

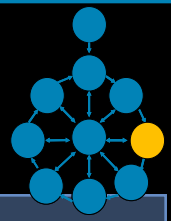
Application Oriented Network
- Leverage the usage of Wide Area Acceleration to improve performance in branches and also decrease footprint in branches

Network Based Service - Collaboration
Usage of Video technologies to deliver corporate Messages, new product features and “breaking of functional silos”

Places in the Network - Datacenter
Improve the overall network architecture to allow faster Provisioning and improved manageability.

Network Systemic Property - QOS
Enable QOS features to ensure that the user experience is
maintained as advanced techologies get implemented

The consolidated list of capabilities are then used to identify the architecture services that are needed.



Applications

Commercial Applications | Internally Developed | Software as a Service (SaaS) | Composite Apps/SOA

Exposed | Transparent

Core Common Services

Real Time Communications	Mobility	Application Delivery	Security	Management	Virtualization	Transport
Multimedia Bridge	Location	Message Translation	AAA	Configuration	VPN	Multicast
Multimedia Recording & Playback		Compression	Policy	Accounting	VLAN	Network Heuristics
Presence		Content Distribution	Device Identity Management	Provisioning	VSAN	Switching
Session Control		Content-Based Routing	End Point Attack Prevention	Performance	Switch	Routing
Session Management Records		Caching	Virus Protection	Fault	Service Partitioning	Transcoding
Topology Management		Protocol Optimization	End Point Posture Validation	Discovery	I/O	Quality of Service
Voice Recognition			Data Loss Prevention	Power Management	Load Balancing	
			Firewall			
			Intrusion Detection			
			Anomaly Detection			
			Intrusion Prevention			
			Filtering			
			Encryption/Decryption			

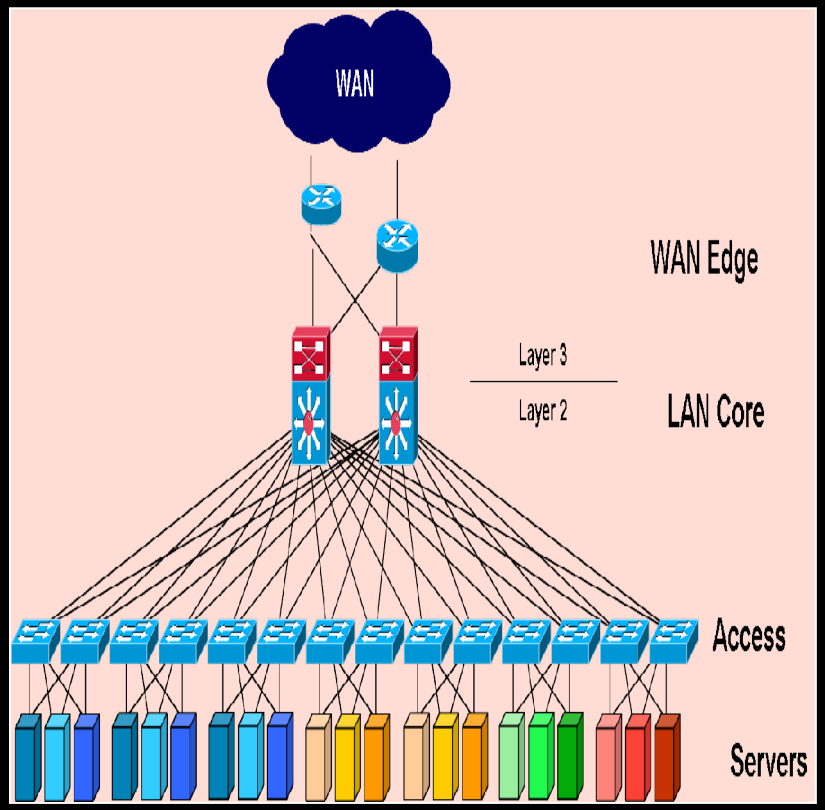
Physical Infrastructure

Next, a future state architecture is derived using the requirements

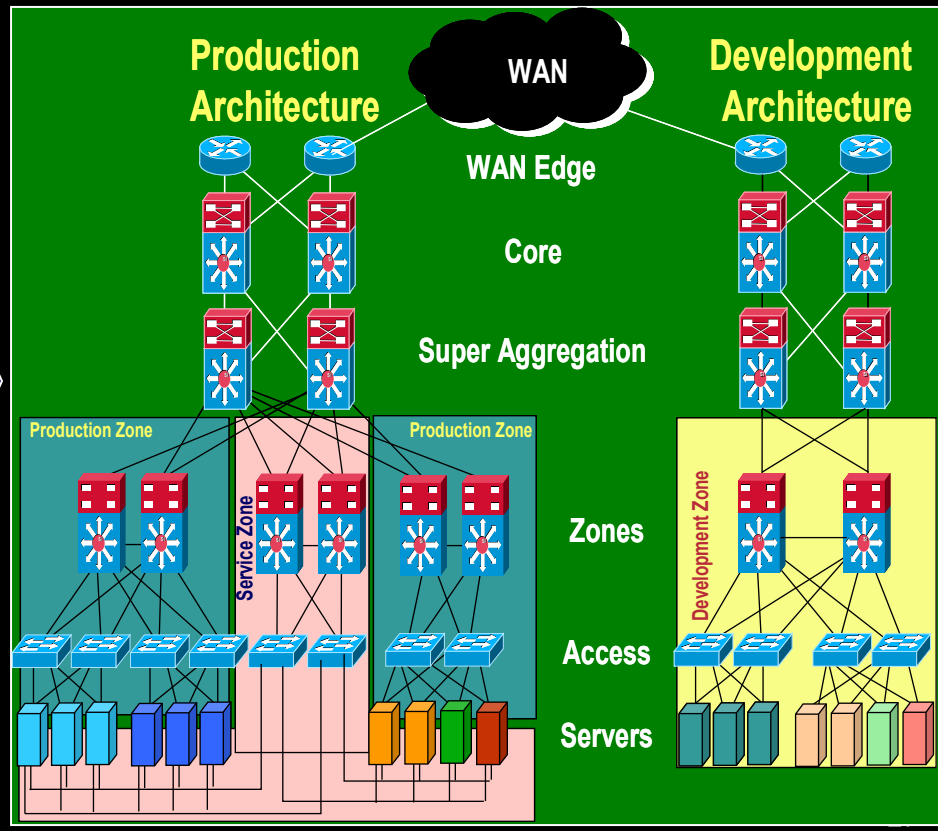
Three Major Themes:

- Migration - New reference architecture and migration of selected Applications
- Replace - Data Center “EOX” Remediation
- Upgrade - Data Center Risk Mitigation

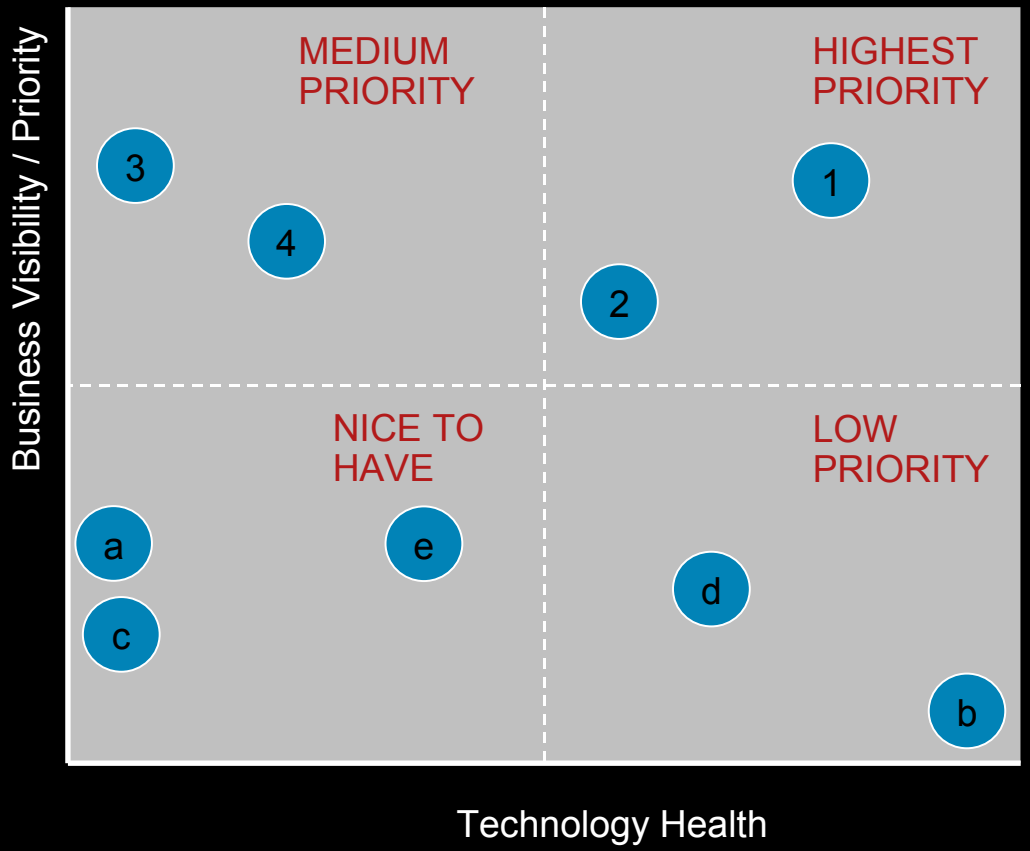
CURRENT STATE ARCHITECTURE



FUTURE STATE ARCHITECTURE



The technology initiatives were then grouped into clusters so that they can be ranked and managed as a portfolio.



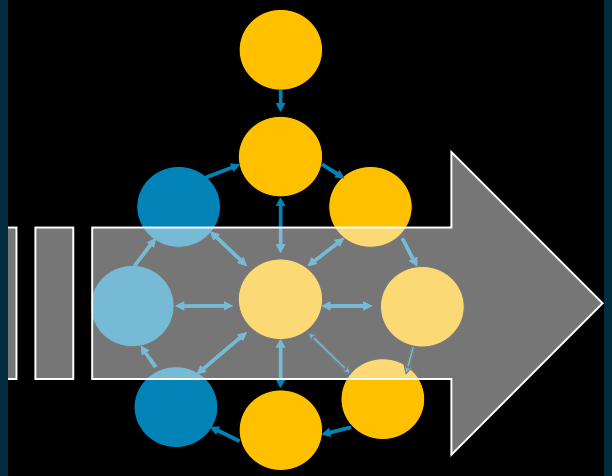
- Application Oriented Networking
- Collaboration
- Datacentre
- Quality of Service
- ….
- Initiative a
- Initiative b
- Initiative c
- Initiative d
- Initiative e

Thus with a structured approach, customized for the client, we were able to create an architecture plan that was aligned to the pressing issues.

Engagement Context

- Business Operating Model: The different business units were demanding robust and differentiated network based services.
- Business Growth: Increased M&A activities required even more infrastructure agility.
- Business Risk: Increase need to ramp up information security due to a recent security incident.
- Business - IT Alignment: Weak linkage to business leading to long IT cycle time and always being reactive to business demands.
- IT Operational: Infrastructure design vulnerabilities resulting in frequent network outages that had adverse impact on the business

Solution



Results

- An adaptive architecture that lent itself to flexibility. This allowed enablement of “independent” internal business units and facilitated ease of mergers.
- An enhanced security model to both handle and manage new security issues effectively.
- A release strategy that tied the initiatives to business outcomes. This clear linkage allowed IT executives to clearly articulate business value if infrastructure investments.

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The Network's Role in Next-Gen EA

- Consideration of the network in the success of SOA and Web 2.0 (and beyond) initiatives is currently an afterthought
- Enterprise architects are uniquely positioned to help companies leverage the network in areas such as
  - "Visual Networking" enabling Participative Architectures
  - "Floating context" to enable rich media and multiple devices
  - Traditional performance, security and availability features
  - … and more as needed by your business capabilities
- A framework describing network-based services can play an important role in overall enterprise architecture definition process

For more information visit http://www.cisco.com/go/architecture

Thank you for your time and attention … Q&A?