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Strategic Transformation Revolutionary Technology 2008

Cisco Datacenter Services

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Agenda

- Introduction
- Evolution of the Datacenter
- Case Study
- Lifecycle
- Summary

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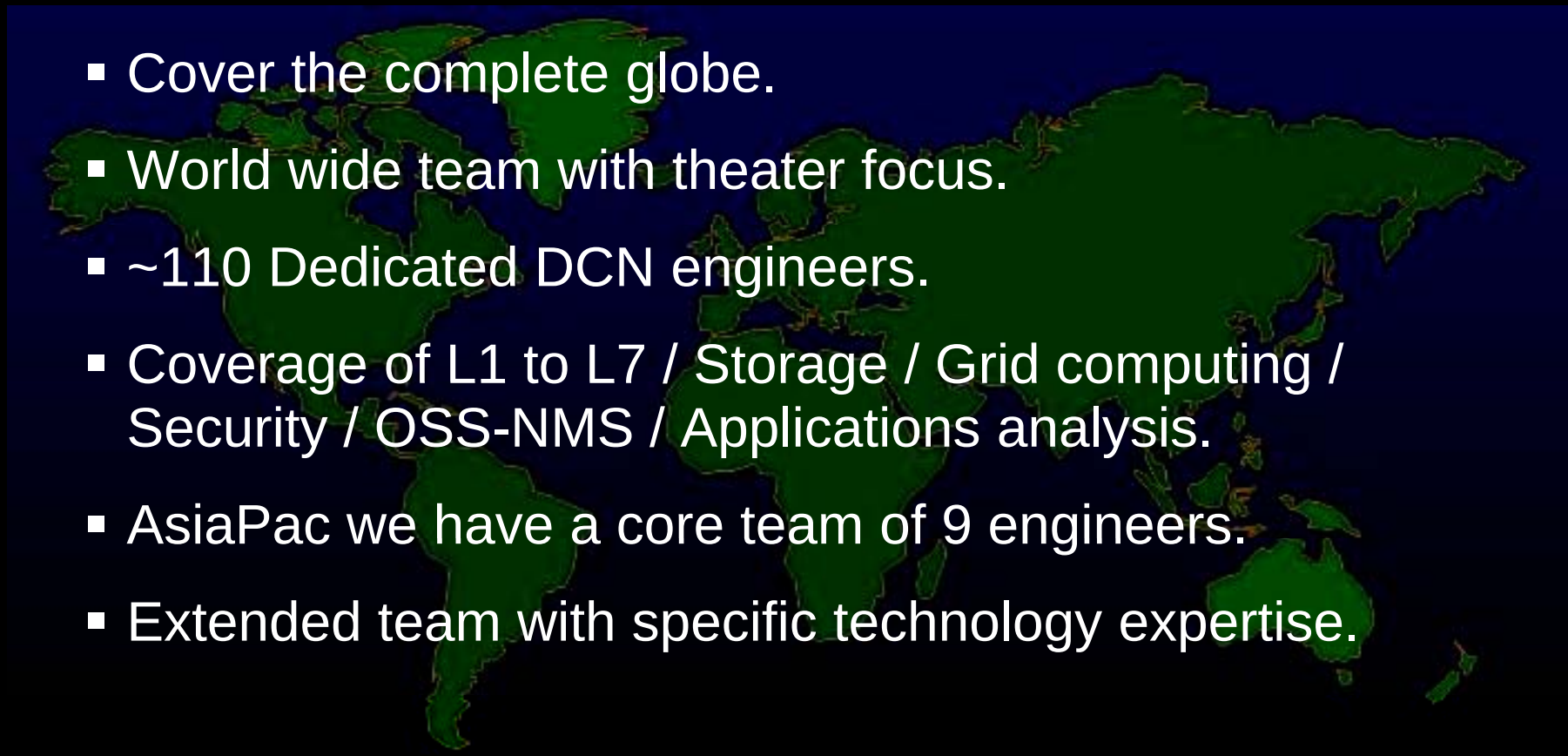
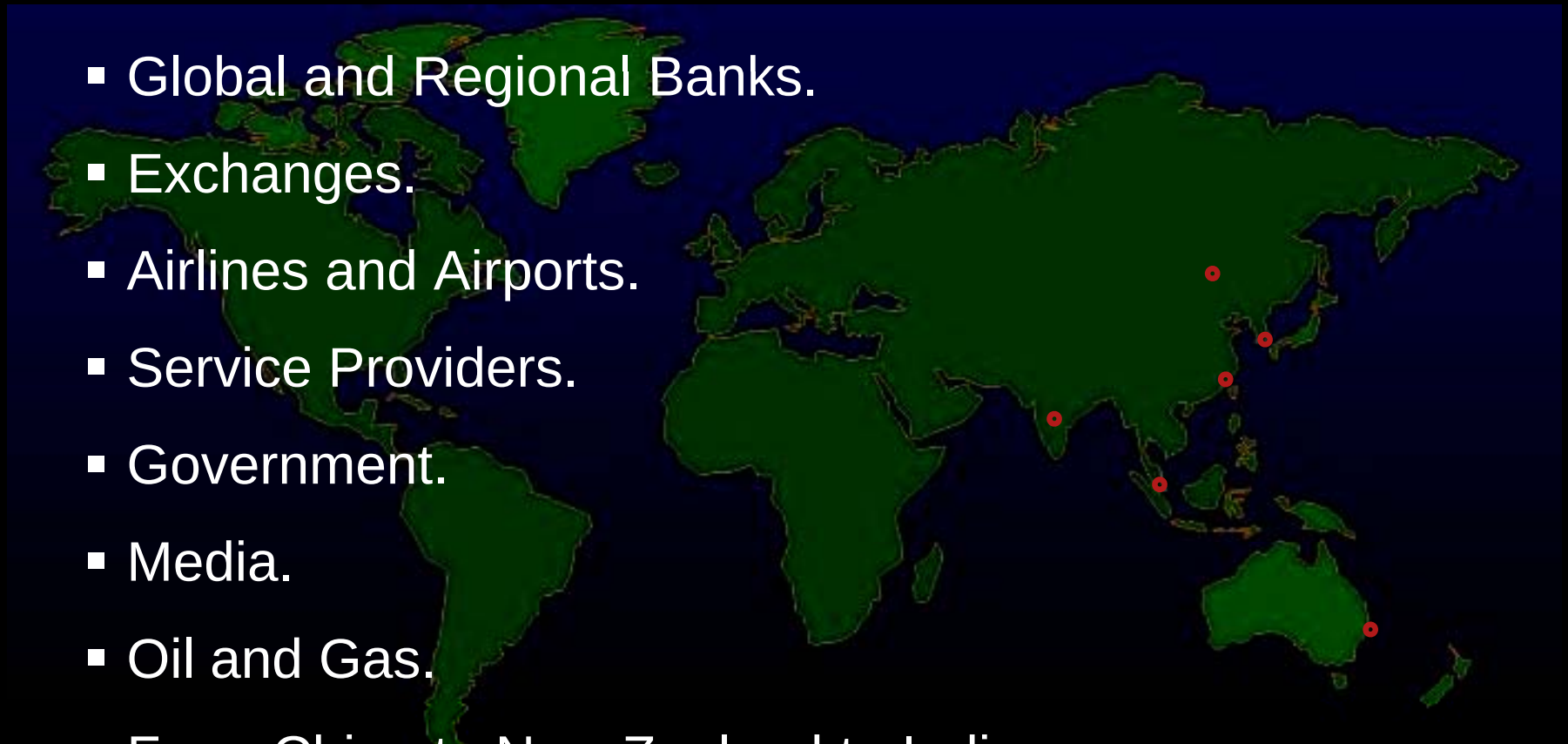
Introduction

Advanced Services Datacenter Practice



- Cover the complete globe.
- World wide team with theater focus.
- ~110 Dedicated DCN engineers.
- Coverage of L1 to L7 / Storage / Grid computing / Security / OSS-NMS / Applications analysis.
- AsiaPac we have a core team of 9 engineers.
- Extended team with specific technology expertise.

Team Experience and Exposure



- Global and Regional Banks.
- Exchanges.
- Airlines and Airports.
- Service Providers.
- Government.
- Media.
- Oil and Gas.
- From China to New Zealand to India

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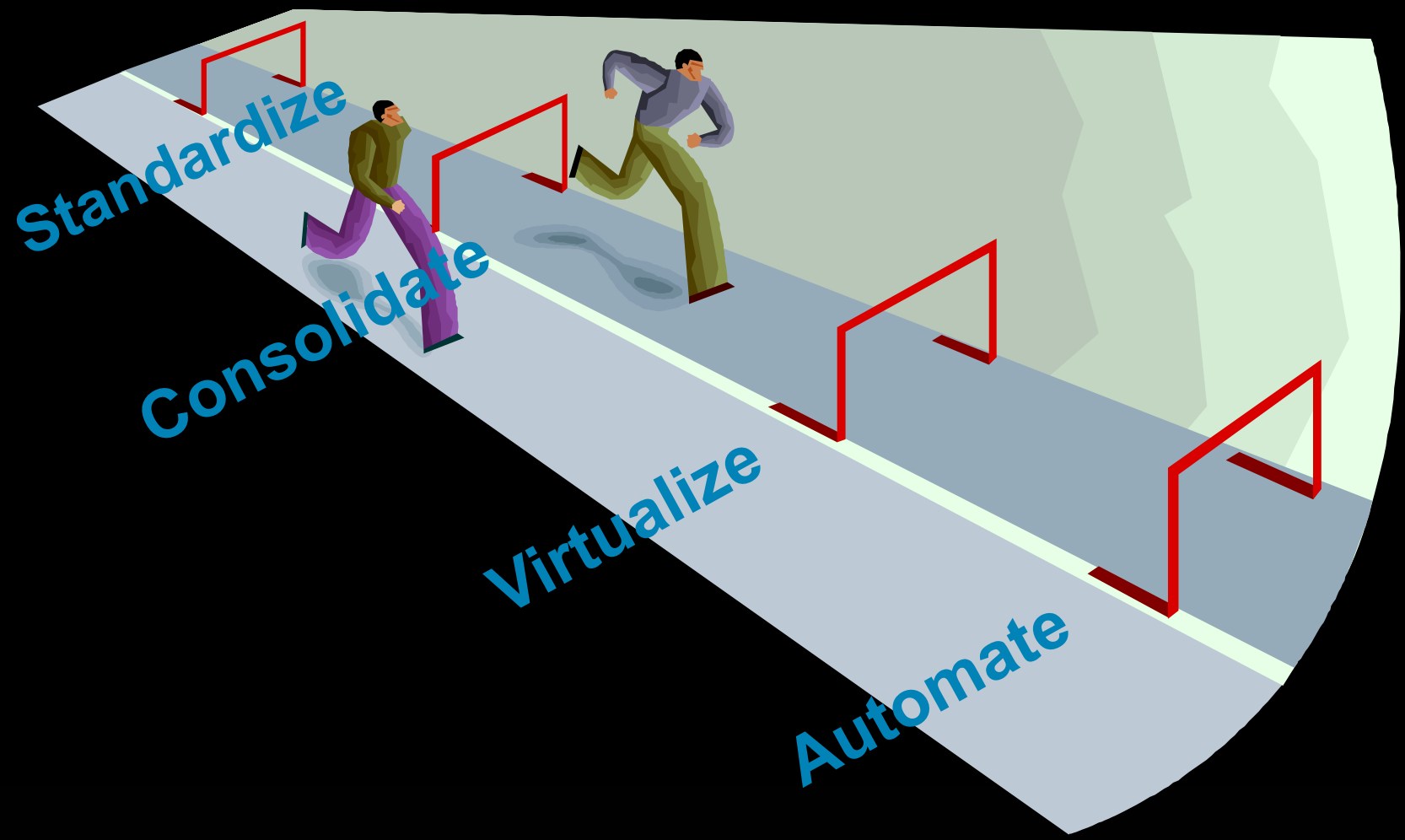
Evolution of the Datacenter

The Path to Next Generation Data Center



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Case Study

“ I have business owners within our company from around the world looking at hosting there applications in Asia simply because it is cost effective. I need to be able to provide facilities were we can offer guaranteed differential services to these Internal customers while also managing our External customers”

Head of APAC Telecoms

Global Company

Cisco Services.

Making Networks Work.
Better Together.

What is the current challenges?

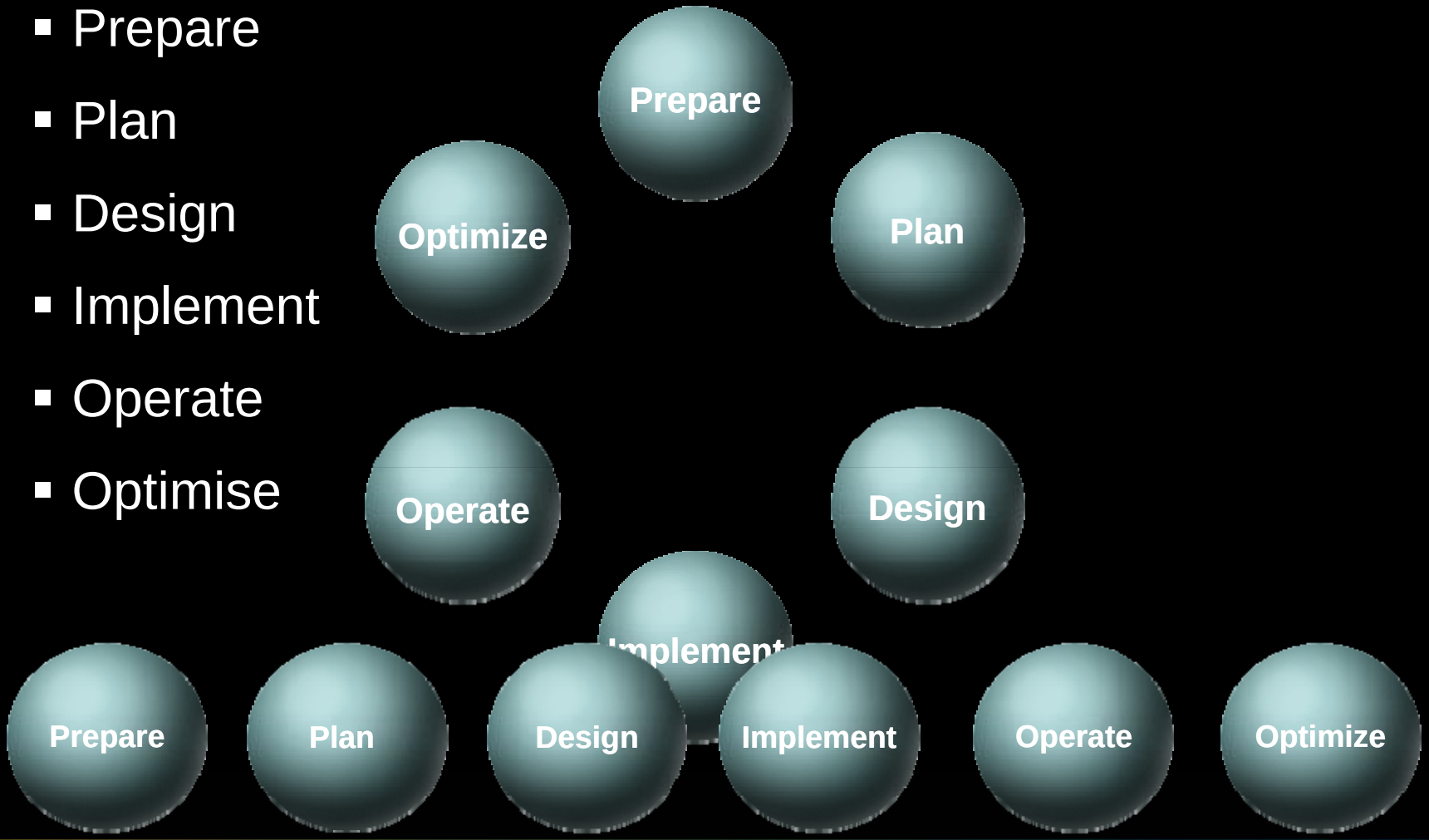
- Separate infrastructure for individual applications.
- Basic virtualization only (VLANs).
- Limited QOS deployments.
- Complex physical infrastructure.
- Management challenges.
- No end to end provisioning.
- Universal challenge of POWER and COOLING

Where do we need to get to?

- Hosting of global applications.
- Ability to offer differentiated services.
- Efficient utilization of infrastructure.
- Agility in deployment of services for applications.
- Consolidation of existing infrastructure.
- Scalability.
- Disaster recovery is assumed.

Lifecycle To Future State

- Prepare
- Plan
- Design
- Implement
- Operate
- Optimise



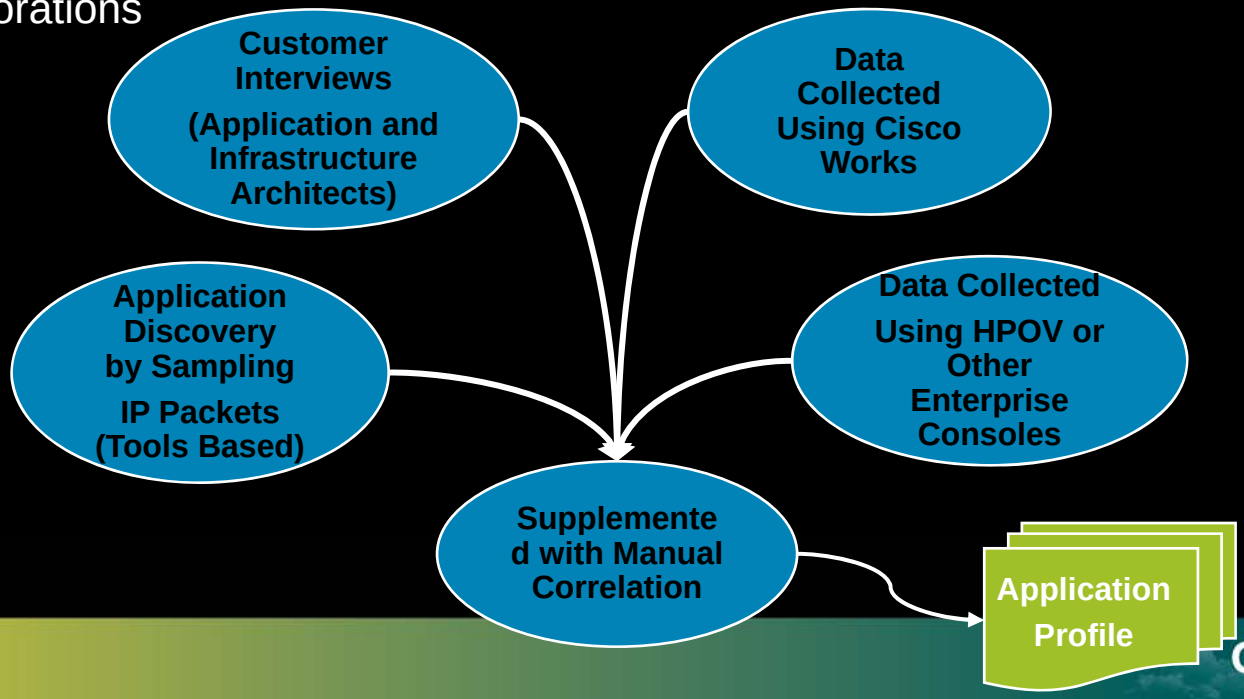
Prepare and Plan

- Business Requirements
- Application Profiling
- Application Classification
- Virtualization Strategies
- High Level Architecture

Prepare: Application Profiling - Approach

Application Profiling Is Based on a Top-Down–Bottom-Up—Iterative Approach. This Approach Ensures that All Key Application Data Point Are Identified, Verified, and Validated

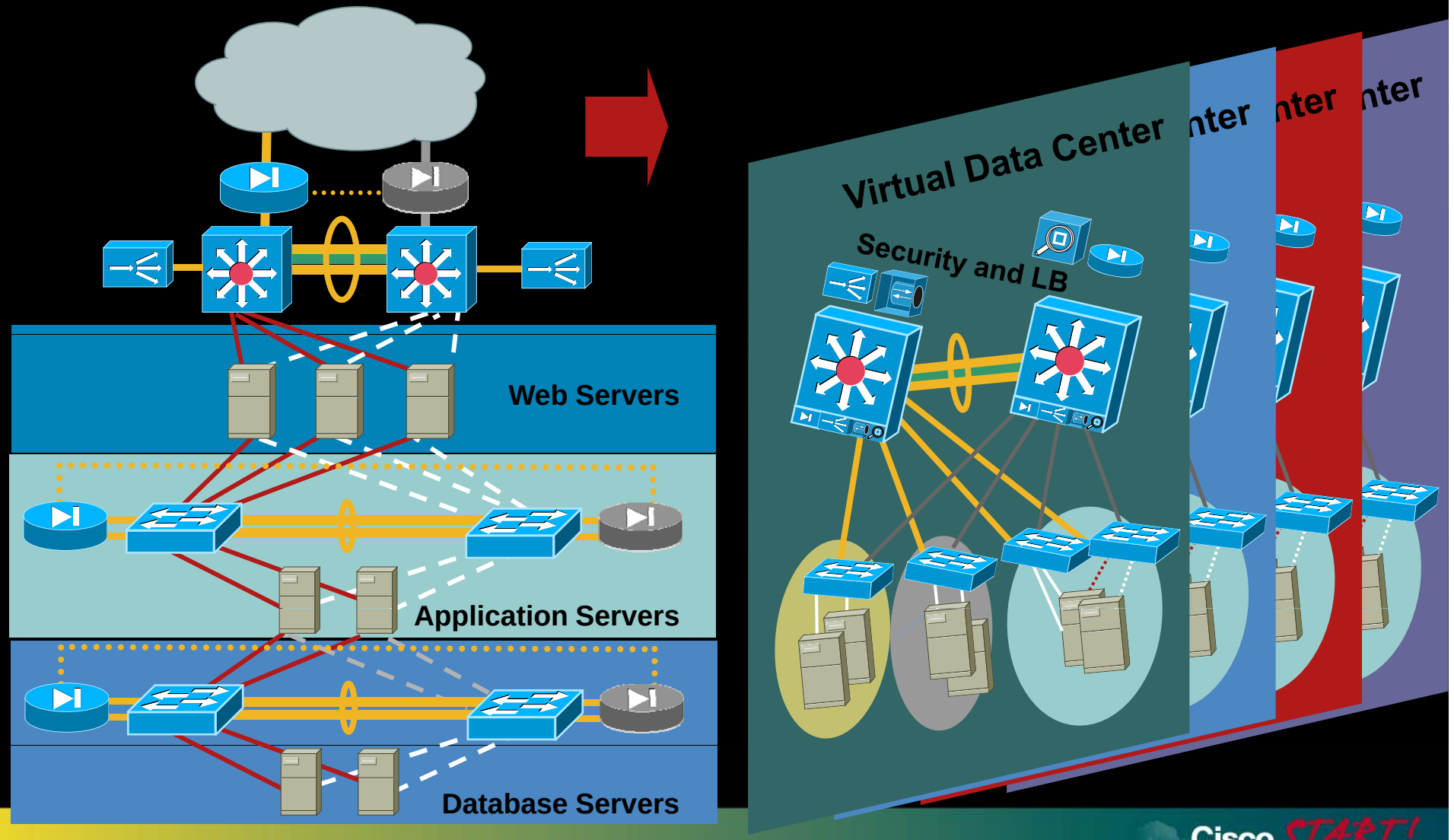
- Top-Down Approach—Data gathering by interviewing business-analyst, application developers, architects, system administrators, network engineers,
- Bottom-Up Approach—Tools based data captures, footprint identification, and colorations



Business Tolerances
Application Classification

- Applications categories
  - P1 applications require a 99.9999% uptime (30 secs)
  - P2 applications require a 99.999% uptime (5 min)
  - P3 applications require a 99.990% uptime (23 min)
  - P4 applications require a 99.950% uptime (4 hrs, 23 mins)
  - All applications are N-tier data application
- P1/P2 application: Require geographical diversity, active/active mode, No over subscription.
- P3/P4 application: Require geographical diversity, active/standby mode, same resources shared.
- All internal user services except for DNS will be categorized as P3 or P4

Virtualization in DC
Physical Separation to Logical Segmentation



Design

- Low Level Design.
- Implementation Planning.
- Migration Planning.
- Acceptance Test Planning.

System Level Resiliency

- **Reliable, robust hardware**
- **Cisco software that mitigates fault impact**

Network Level Resiliency

Cisco Software Features for Faster Convergence, Protection, and Restoration

Embedded Management

Embedded Cisco Software Intelligence for Proactive Fault/Events Configuration and Availability Tracking

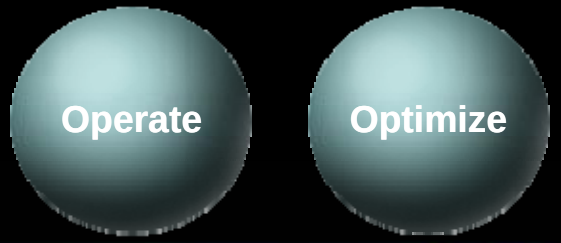
Address Every Potential Cause of Downtime with Functionality, Design, or Best Practice

Implement

- Implementation of Network and Testing.
- Building of Virtualization Policies.
- Migration of Applications.
- Implementation of Management

Operate and Optimize

- Provisioning
- Dynamic Provisioning
- Capacity Management
- Performance Management



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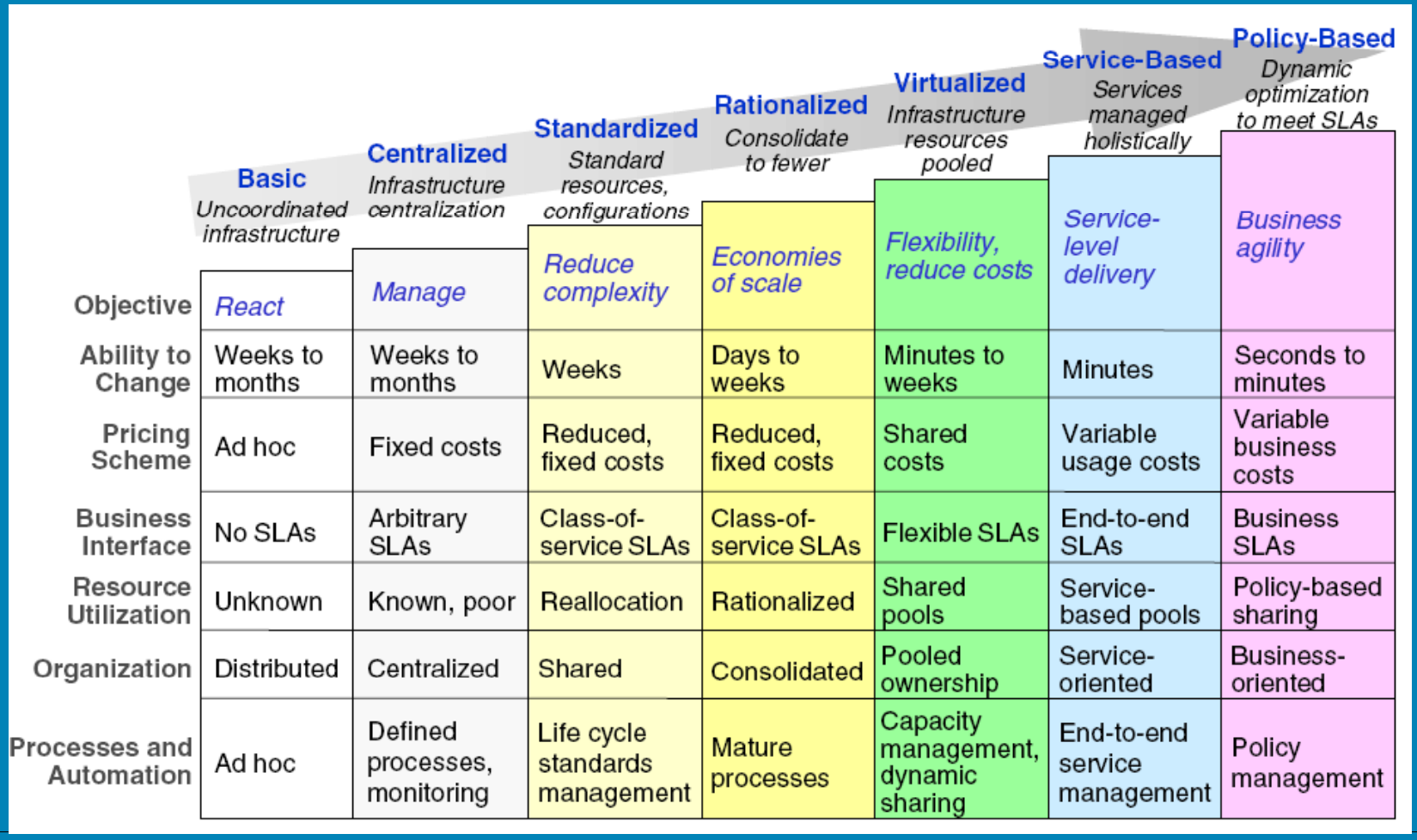
Summary

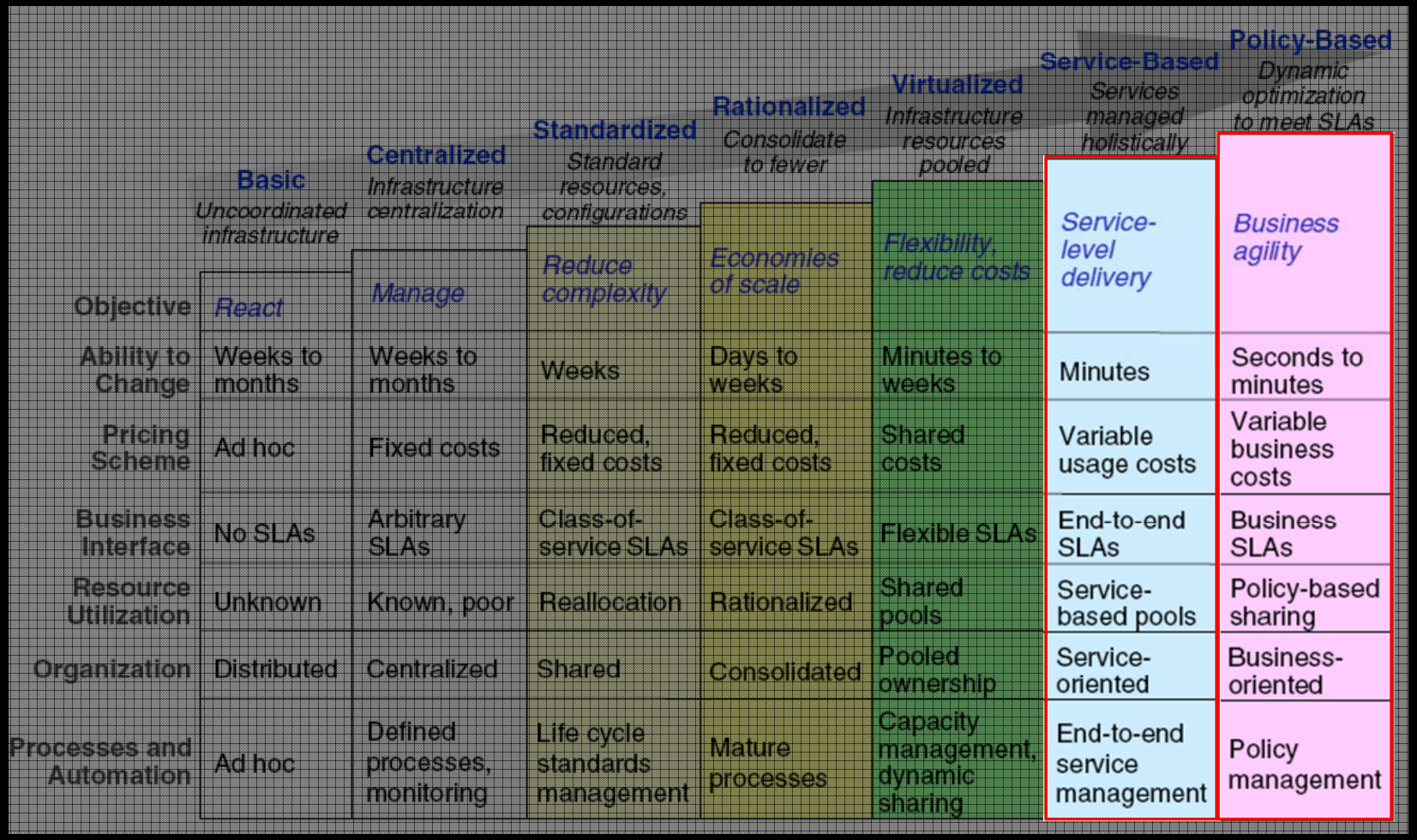
Benefits of an Automated Datacenter



	Basic *Uncoordinated infrastructure*	Centralized *Infrastructure centralization*	Standardized *Standard resources, configurations*	Rationalized *Consolidate to fewer*	Virtualized *Infrastructure resources pooled*	Service-Based *Services managed holistically*	Policy-Based *Dynamic optimization to meet SLAs*
Objective	*React*	*Manage*	*Reduce complexity*	*Economies of scale*	*Flexibility, reduce costs*	*Service-level delivery*	*Business agility*
Ability to Change	Weeks to months	Weeks to months	Weeks	Days to weeks	Minutes to weeks	Minutes	Seconds to minutes
Pricing Scheme	Ad hoc	Fixed costs	Reduced, fixed costs	Reduced, fixed costs	Shared costs	Variable usage costs	Variable business costs
Business Interface	No SLAs	Arbitrary SLAs	Class-of-service SLAs	Class-of-service SLAs	Flexible SLAs	End-to-end SLAs	Business SLAs
Resource Utilization	Unknown	Known, poor	Reallocation	Rationalized	Shared pools	Service-based pools	Policy-based sharing
Organization	Distributed	Centralized	Shared	Consolidated	Pooled ownership	Service-oriented	Business-oriented
Processes and Automation	Ad hoc	Defined processes, monitoring	Life cycle standards management	Mature processes	Capacity management, dynamic sharing	End-to-end service management	Policy management

Source: Gartner Infrastructure Maturity Model, Nov 2004c

Benefits of an Automated Datacenter



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Benefits Of Cisco Services

- Develop a data center strategy that supports operational and financial objectives
- Deploy quickly for rapid time to market
- Mitigate risk with proven best practices
- Lower total cost of ownership through reduced complexity and improved stability
- Simplify provisioning through virtualization
- Increase resource utilization through consolidation and virtualization of data center resources
- Design infrastructure for business continuity and disaster recovery solutions
- Assist in migration to enable a seamless transition to new technologies and designs


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