

Improving IT Agility with Business Service Catalogs and More Flexible Operational Processes at EMC IT

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EMC® Consulting

EMC WORLD
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Agenda



- Observations on IT Service Management
- EMC IT: Business Services Catalog
- EMC IT: Chargeback and Cost Transparency
- EMC IT: Process Automation
- EMC IT Perspective

Issues for IT Service Management



'Traditional IT' is inefficient, brittle, costly

- Traditional IT, including manual operational processes and technology 'specialists', result in enormous inefficiencies
- >70% of IT budgets spent maintaining status quo
- <30% of IT budgets spent on innovation and competitive advantage



IT services don't meet business requirements

- Business demands fast IT support for new initiatives
- Many IT organizations still lack a service orientation, support silos of technology purpose-built for aging applications
- As a result, IT is inflexible, unable to support business agility



Cloud computing success highlights IT service issues

- Options like cloud-based applications set an overall expectation for IT services, 'raises the bar' for internal IT
- 'Shadow' IT services from public cloud providers introduces serious GRC, other concerns



Virtualization success highlights IT Ops issues

- Clients looking to move from virtualized data centers to private cloud want to orchestrate, automate management
- Virtualization's flexibility sets standard for Operations support
- IT Operations is the key to transitioning to self-service, metered, flexible IT

What are potential challenges to success?



- Hard to break old thinking that business 'owns' a resource pool or IT specialists 'own' a technology/architecture component.
- Avoid codifying today's rigid processes based on silos of infrastructure.
- Chargeback is challenging. Tough to bill on utilization; need to start by just understanding costs.
- Not all business stakeholders know what IT services they need. How build a clear language for discussing SLAs?
- Change is disruptive, skills need updating. Cloud drives many from their comfort zone.



EMC's Perspective



- IT Operations is the critical competency that will separate those who can leverage Cloud and those who can't.
 - First, get efficient; next align with business, third integrate.
- Cloud is based on IT Service Management, including technology and business service catalogs, with identified costs for service tiers. For many this is a major shift in orientation.
 - IT facilitates the selection of services and costs by the business, sees that consumption is successful.
- The rise of public cloud makes business expect self-service.
- Cloud computing makes you start thinking in computing pools, revolutionizes thinking of capacity planning, sourcing IT services.
- Today, not all business services need Cloud treatment
 - Think in terms of what services the business needs
 - Think about which IT services call for Cloud (application development, office applications, etc.)



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Business Services Catalog

Approach

- One of the first steps to becoming a more integrated and automated service delivery organization is to create a service catalog
- Service catalog formally defines services that IT provides to the business
- Definition of service drives other IT service management workstreams

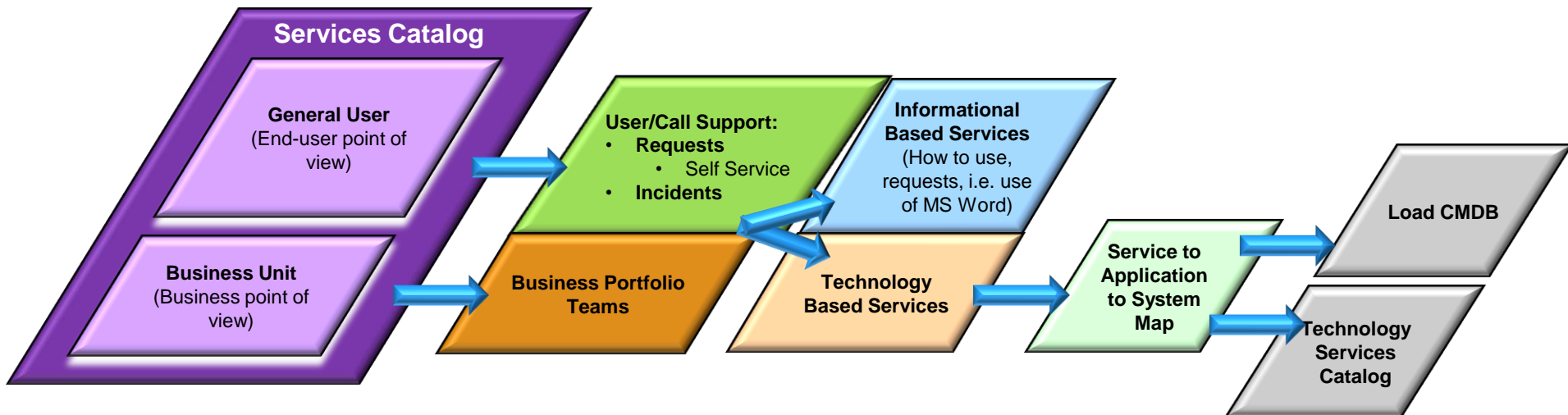
EMC IT Service Catalog

- EMC Consulting leveraged best practice methodologies and templates
- EMC IT now cataloging services themselves
- Catalog implemented with Ionix for Service Management software and help from Ionix professional services

Services Catalogs

- A user facing Services Catalog:

- Lists all services offered with key service descriptors
- Transparently links the Service to the knowledge experts
- Knowledge experts provide the support or underlying technology for the service and hosted environments



For each Service/
Application, there are
defined service
parameters:

- Criticality
- Service KPIs
- Compliance

Defined map of
services to
applications to
physical hosting
environments

Defined Catalog with
levels of service related to
tiers of technical
configurations by:

- Performance
- Availability
- Recoverability

Services Catalog for EMC IT



- Business areas and services:

Application Development & Maintenance Services

- Application Consulting
- Application Development
- Application Maintenance
- Application Integration

Hosting Services

- Application Hosting Services
 - Mission Critical Application Hosting
 - Business Critical Application Hosting
 - Business Important Application Hosting
- Infrastructure Hosting Services
 - Database Hosting
 - O/S Hosting
 - Storage Hosting
 - Backup & Restore

End-User Computing Services

- Workplace Services
 - Equipment Provisioning
 - Desktop Image Provisioning
 - Software Provisioning
 - Fax & Print Services
 - End-User Support Services
 - Conference Room A/V
- Messaging & Collaboration
 - Email
 - Instant Messaging
 - Voice Services
 - Wireless Phone or PDA
 - Audio Conferencing
 - Web Conferencing
 - Video Conferencing
- File Services
 - Home Directory Services
 - File Share Services
- Connectivity Services
 - Office Network Access
 - Remote Access
 - Wireless LAN Access

Business Services

- Business Process Analysis
- IT Portfolio Management
- Lab Support
- Facilities Moves, Adds, Changes, Closures
- M&A Integration
- Partner Enablement/TPA
- Program Management

Enabling Services

- Information Security Services
- Authentication
- Monitoring
- IT Service Management
- IT Finance
- IT Architecture
- Business of IT
- First & Best

Application Hosting Services Example



EMC IT Service Catalog Description – Application Hosting Support for Unix/Linux

| Service Name |
|--|
| Application Hosting Support for Unix/Linux |
| Service Audience |
| <ul style="list-style-type: none">o Service Delivery Group (SDG)o Business Technology Group (BTG) |
| Service Description |
| <p>Application Hosting Support for Unix/Linux provides design, implementation and third level support for all Unix/Linux based server platforms. This service is composed of the following offerings</p> <ul style="list-style-type: none">• Application Hosting Design• Scripting• Operating System (OS) software upgrades and rebuilds• Server performance and capacity analysis• Server Monitoring• Building and implementing server infrastructure• Initiate decommissioning of servers• Security Updates• Database refresh• Problem Resolution and Escalation• Application Managed Server Support• Application Support |
| Service Offerings |
| Standard |
| <ul style="list-style-type: none">o Application Hosting Design - Using standard technical building blocks, design & develop Application hosting server infrastructure platforms, produce Detailed Solutions Design (DSD).o Scripting - Develop, implement and maintain custom scripts for various functions including Business Copy Volume (BCV) manipulation, backups, and inventory maintenance, etco OS software upgrades and rebuilds - Upgrade the OS or other system software to current or required versions and rebuild/reload OS onto existing servers.o Server performance and capacity Analysis – Utilizes various tools to provide server performance and capacity activities.o Server Monitoring – Monitors the servers to identify any problemso Building and implementing server infrastructure – Provision virtual servers and install OS on servers per project specific Detailed Solution Designso Initiate decommissioning of servers – Initiate decommissioning of servers and/or reallocate any servers from platforms no longer in use or End of Service Life (EOSL) servers.o Security updates – Install OS specific security updates as mandated by Global Security Organization (GSO)o Database Refresh - Perform Production Database refresh activities required by the Database Administrators (DBAs). |

Infrastructure Hosting Service Example: Backup and Restore



EMC IT Service Catalog Description – Backup and Restore for Data Center

| Service Name |
|--|
| Backup and Restore for Data Center |
| Service Audience |
| <ul style="list-style-type: none"> ○ This service is available to all EMC Business Units. |
| Service Description |
| <ul style="list-style-type: none"> ○ The Backup and Restore service enables EMC Business Units to efficiently obtain a cost effective and secure solution to protect and retrieve data. The service includes: <ul style="list-style-type: none"> • Backup and recovery of data residing on primary online storage • Compliance to long term retention based on regulatory and/or business compliance • Archiving and preservation of data to lower cost tier based on archiving policy • Classification of data (<i>future offering</i>) • Purging of data based on purging policy (<i>future offering</i>) |
| Service Offerings |
| Standard |
| <ul style="list-style-type: none"> ○ Service Class: Based on data requirement ○ Backup and recovery, archiving, purging (<i>future offering</i>), redundancy and replication ○ |
| Service Level Objectives |
| Base |
| <ul style="list-style-type: none"> ○ Response/provisioning: Within 2 weeks of work request ○ Availability: 99.9% ○ RTO: equal or greater than 24 hours ○ RPO: less than or equal to 24 hours |

End User Computing Services Example



| Service Name | | |
|---|--|--|
| PC Equipment Provisioning | | |
| Service Audience | | |
| This service is available to all XXX employees. | | |
| Service Description | | |
| <ul style="list-style-type: none"> The PC Equipment Provisioning Service enables XXX employees to obtain PC hardware, peripherals, and accessories; either bundled with the PC configuration provided by XXX to eligible employees or separately. The service is used to obtain computing equipment for new hires, equipment refreshes, parts/accessories orders, out of warranty parts/accessories swaps and special projects. The service offerings are: <ul style="list-style-type: none"> <i>Standard</i>: includes the PC hardware configuration currently specified by XXX policy to support XXX employee PC computing needs (PC Acquisition Policy) <i>Enhanced</i>: provides for obtaining hardware, peripherals, and/or accessories not included in the Standard installation as by job function or assignment Software enhancements must be requested via the PC Software Provisioning Service. The service is compliant with established EMC guidelines, standards and contracts. An EMC employee can request this service for a contractor or other authorized associate. | | |
| Service Offerings | | |
| Standard | Enhanced | |
| <ul style="list-style-type: none"> Service Class: Business Supporting Corporate standard hardware configuration or single standard components | <ul style="list-style-type: none"> Service Class: Business Supporting Upgraded or non-standard equipment | |
| Service Level Objectives | | |
| Base | Gold | Platinum |
| 5 business days | 2 business days | 1 business day |
| Cost Allocation | | |
| Cost Components and Allocations | Fixed Costs | <ul style="list-style-type: none"> Standard XXX hardware configuration |
| | Variable/Optional Costs | <ul style="list-style-type: none"> Additional, upgraded or non-standard hardware, peripherals or accessories Expedited service |
| Additional Information | | |
| To obtain this service: | <ul style="list-style-type: none"> Phone IT Service Desk @ 1-877-xxx-xxxx Access Self-Service Purchasing System (SSP) Self-Service Procurement Utilize Account Request Tool (ART) (U.S. and Canada only) ART | |
| Required approval: | <ul style="list-style-type: none"> Standard Offering and Base SLO – Manager Enhanced Offering and/or Gold and Platinum SLO – Senior VP | |
| Service Owner: | <NAME>, <EMAIL>, <PHONE> | |
| Supporting information: | Hardware Ordering | |

Chargeback and Cost Transparency

Chargeback and Cost Transparency for EMC IT



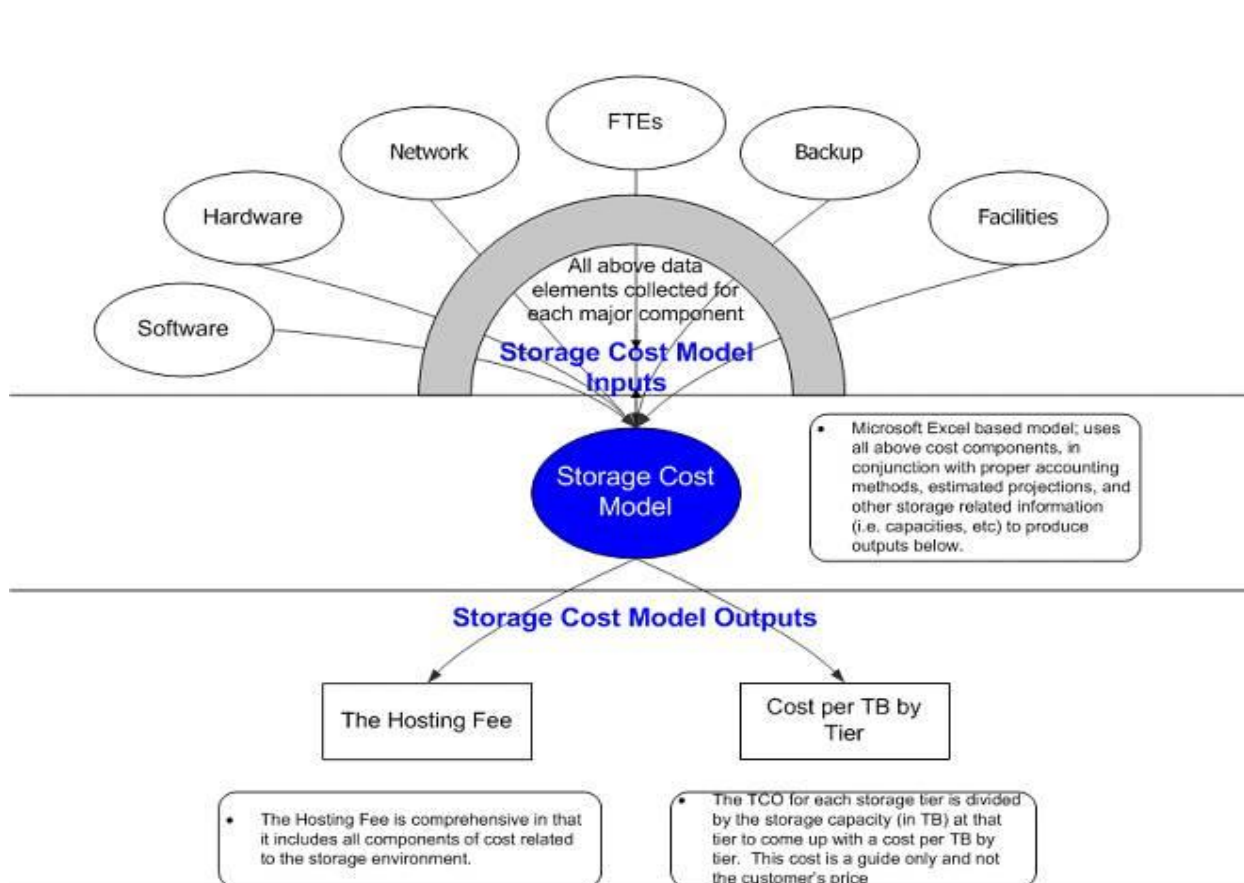
Approach

- The service catalog provides a list and description of services with associated costs
- The businesses and end users can choose the services and level of services
- IT can allocate costs agreed to when the services are requests
- Chargeback is the method for allocating costs for services provided

EMC IT Cost Transparency

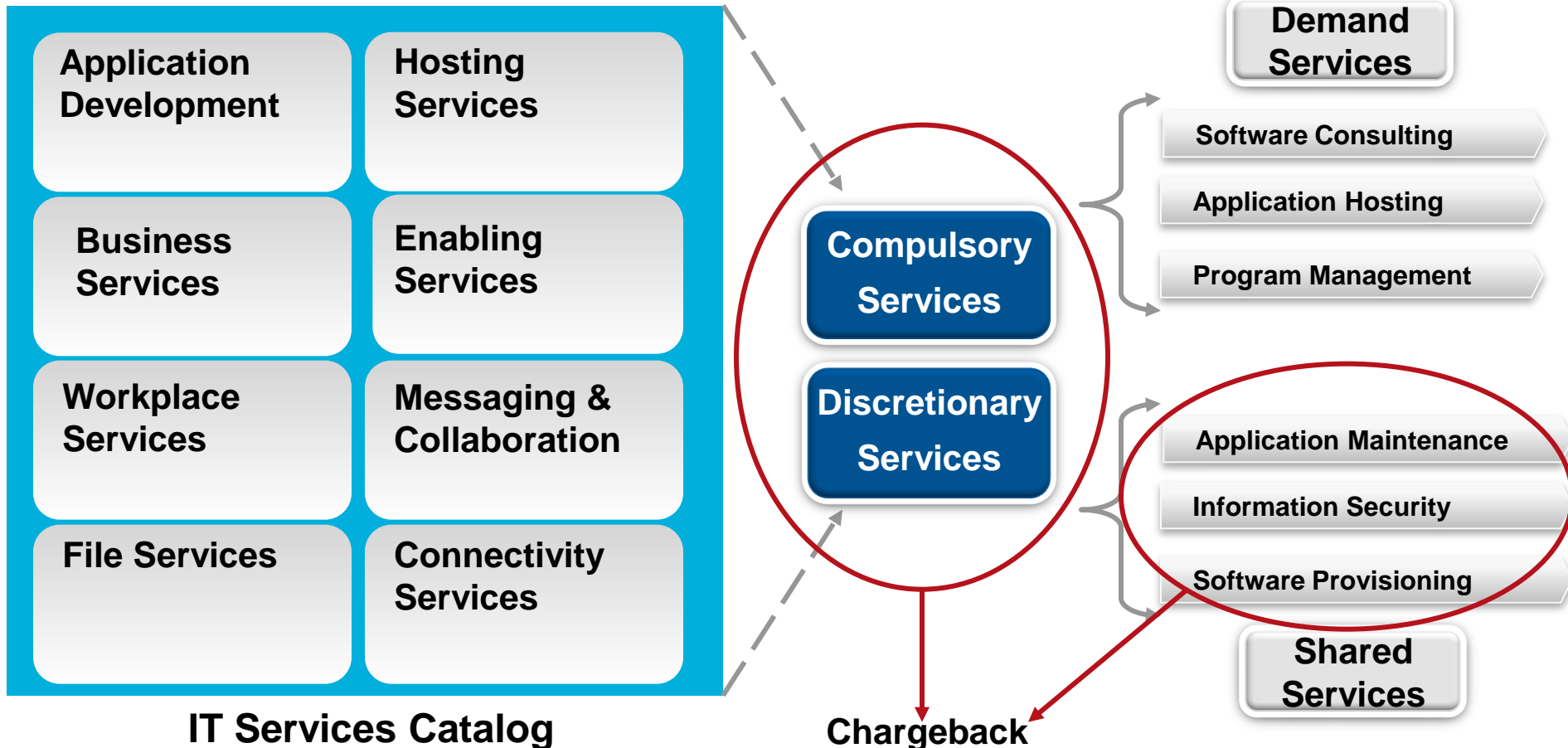
- EMC IT Finance worked with EMC Consulting to develop a new model to link IT services (e.g. application design, development and support costs) to end services
- Linking costs to services is valuable as input to budgetary process and infrastructure investment decisions

Storage Chargeback Model: Inputs and Outputs



Conceptual Design - Services Structure

The Chargeback Model is aligned to the IT Services Catalog structure...



Chargeback

- Services segmented by business use
- Costs aligned to service definition & delivery
- Monthly summaries are charged back quarterly

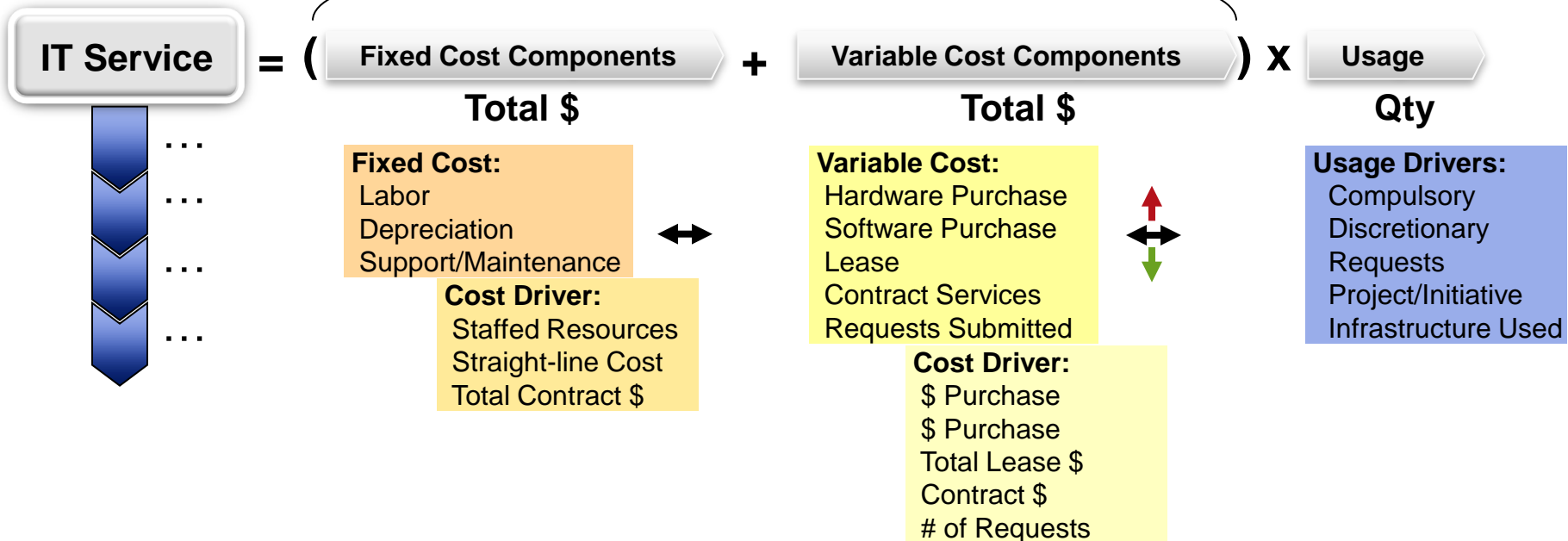
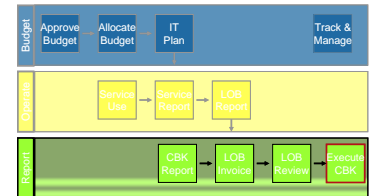
Conceptual Design – IT Services Cost Make-up

...How each service cost will be derived...



Cost Includes All Fixed and Variable Components...

Standardized Service Cost



- Cost components determined based upon service definitions within IT Services Catalog
- Measurable and reportable data points used, mapped directly to existing IT Cost Centers
- A total of Fixed and Variable costs is determined for each IT Service, based on actual costs
- Cost drivers will affect service consumption, and potentially Variable costs

Process Automation

Process Automation for EMC IT



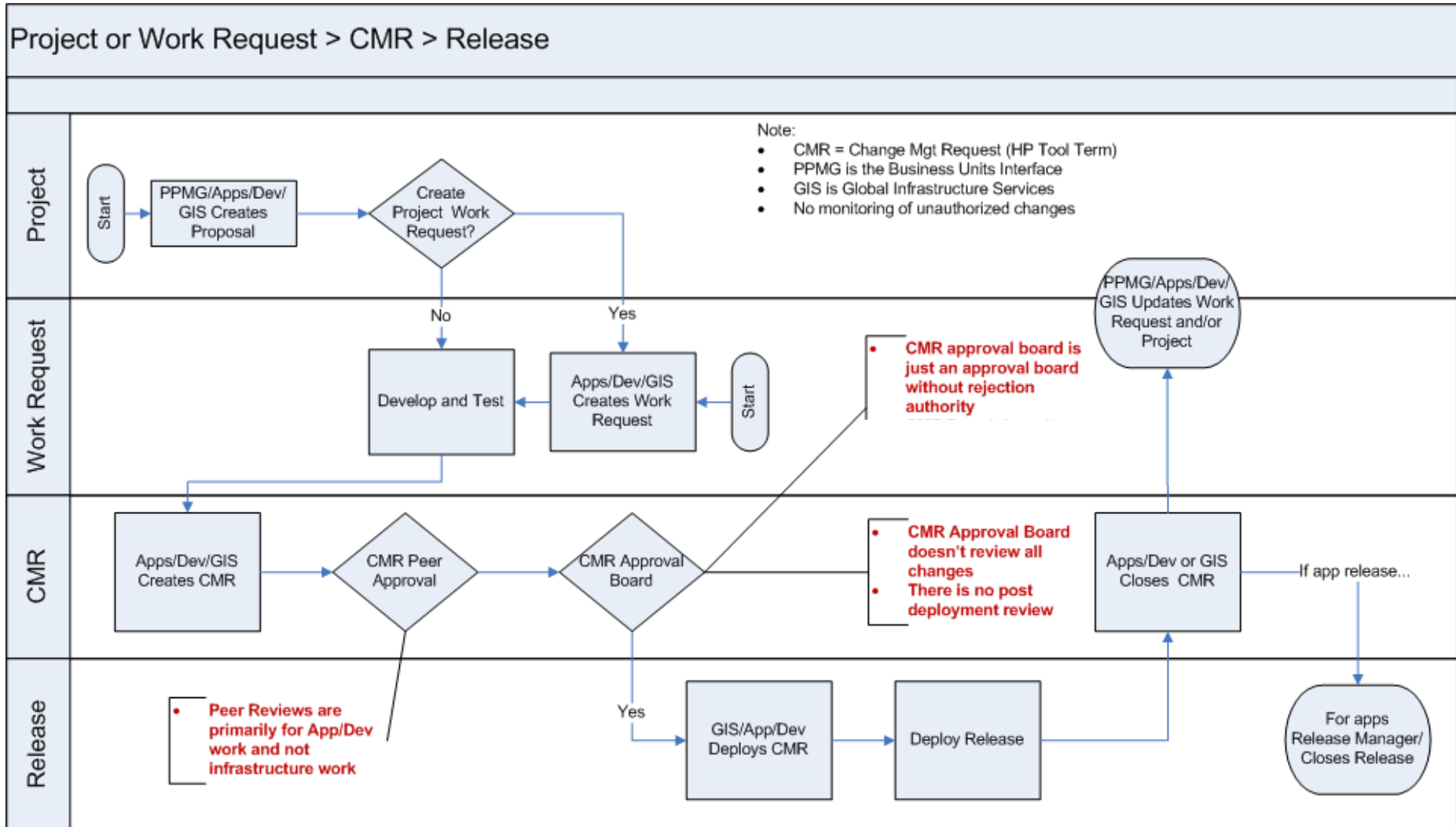
Approach

- Process automation starts with understanding the current environment and the goal of the process
- Next, assess the capabilities and functionality of the current environment

EMC IT Process Automation

- Gap analysis showed that change management process at EMC IT had become complicated and difficult to follow
- EMC Consulting simplified and strengthened change management controls and processes
- In line with ITIL guidelines, Change Management Board established
- Service catalog also enabled single configuration management database (CMDB) for single source of up-to-date configurations
- EMC IT has completed integration of the new processes with Ionix Server Configuration Manager, Ionix Service Manager and Ionix for IT Operations Intelligence

Step 1: Document Current Process Flow



Guiding Principles – ITIL v3 Change Management



The Seven 'R's of Change Management

- Who RAISED the Change?
- What is the REASON for the change?
- What RETURN will the change deliver?
- What RISKS are there if we do or do not carry out the change?
- What RESOURCES will be required to perform this change?
- Who is RESPONSIBLE for this change being performed?
- What RELATIONSHIPS are there between this and other changes?

Step 2: Conduct Gap Analysis of Current to Future State

Current State

- Basic CM Request System – not integrated with Incident & Problem management
- No federated CMDB to perform a thorough risk assessment
- Change and Technical Review Meetings
- Verbal approvals only; challenges with accountability
- Limited definition of change categories, priorities, impact, windows and request for change submission
- Limited automation
- Weak post change review process

Transformation Vision

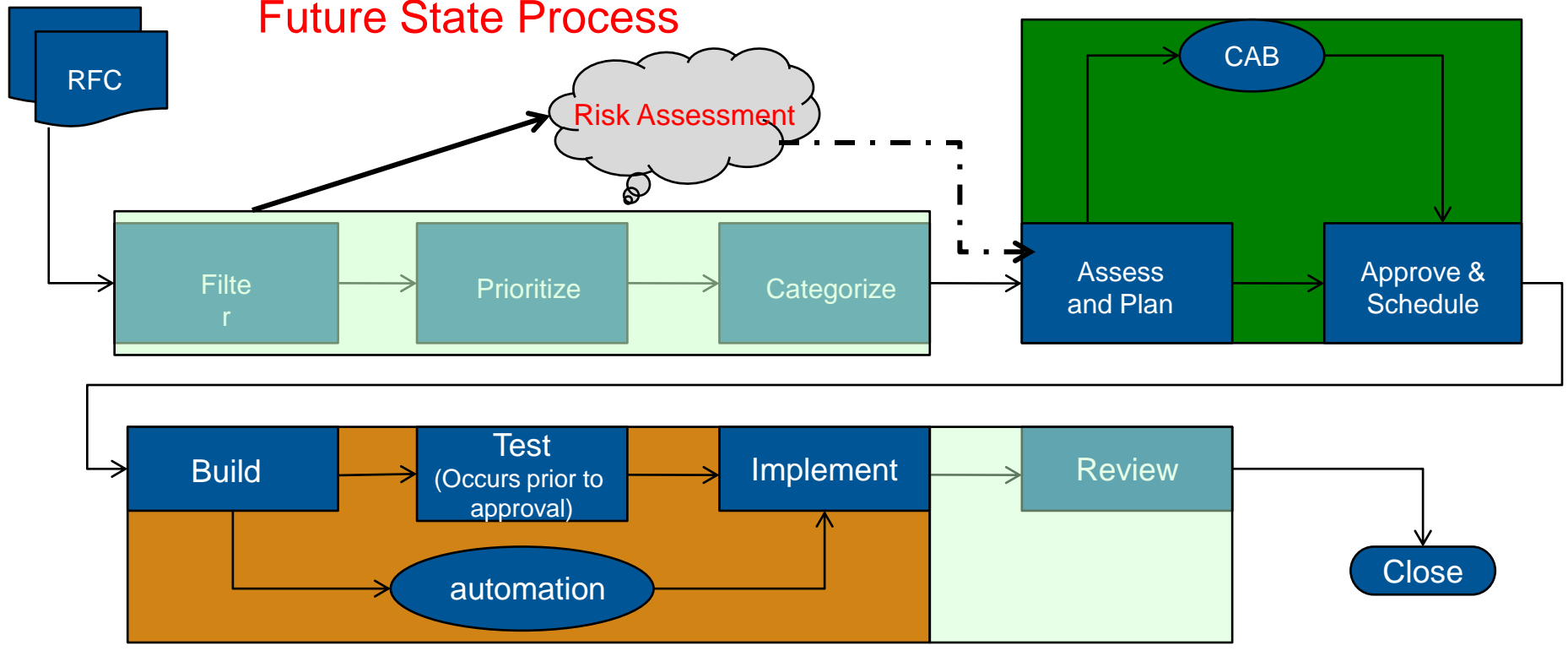
- Leverage Industry Leading Practices to improve and mature Change Control within EMC IT
- Automate Change Management processes leveraging integrated EMC solutions
- Establish formal approving authority and process
- Establish a tightly controlled closed-loop process
- Continuous Services Improvement
- Comprehensive Risk Assessment

Future State

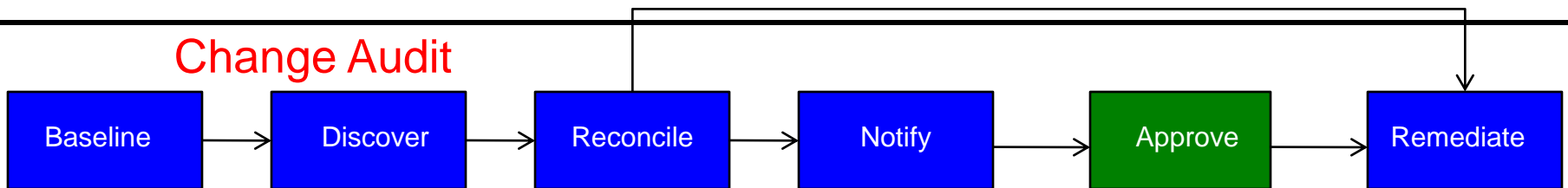
- Fully integrated service management system
- IT Services Catalog with an end-to-end services map driving change control
- Formal Change Advisory Board with **rejection** authority
- Defined change categories, priorities, impact, windows and request for change timelines
- Fully Automated workflows and electronic approval tracking
- Process governance through audits, KPI and metrics
- Knowledge management
- Comprehensive Risk Assessment prior to Change Implementation
- Special EOQ/Black-Out handling

Future Process Put into Automation

Future State Process



Change Audit



Expected Benefits of Process Improvement and Automation

Current State

Changes control the organization

- Somewhat Reactive system
- Longer MTTR; lower Service Levels
- Unauthorized changes allowed to happen
- Higher number of unplanned outages
- Right vision; Limited accountability and governance
- “Flexibility” allows for possible process subversion
- Limited KPIs and metrics for continuous improvement



Future State

Organization controls changes

- Closed Loop, controlled process
- Fully automated workflows and routing
- All changes formally requested, documented, reviewed and approved
- Risk and Impact analysis performed
- Change Testing and Auditing performed
- Zero unauthorized changes tolerated
- High successful change rate
- KPI reporting for increased visibility and continuous improvement
- LOW unplanned work

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EMC IT Perspective

EMC IT Transformation: Spotlight on IT Service Management



- Our Environment
- IT Service Management Program
- CMDB Architecture
- Lessons Learned
- Questions ?

EMC IT: Global, Heterogeneous, Complex



USER PROFILES

- 48,000 internal users
- 400,000+ registered customers and partners on EMC websites
 - 61 countries
- 394 offices worldwide

IT ENVIRONMENT

- 5 datacenters
 - 5,905 servers & virtual machines
- 3,000 Network Devices and 230 PBX's
- 6.5 PB storage across 5 tiers (incl. BURA)
 - 2,500 database instances
- EMC, RSA, and VMware solutions at work
- 219,000 data ports / 87,000 voice ports
- 460 "3rd parties" connected (3,900 users)

BUSINESS APPLICATIONS

- 414 applications / tools
 - 150+ active initiatives
- 8,500 annual enhancements (2008)
- 950,000 B2B transactions (2008)

SUPPORTING THE BUSINESS

- 32 of 62 countries have IT presence
- 85 of 394 offices have on-site IT support
 - End user support in 20 languages
 - 39,000 monthly support requests
 - 1,100 monthly system changes
 - 23,000 devices monitored

TRANSFORMING THE BUSINESS

- Virtual Data Center
- Universal Client
- Telepresence
- Web 2.0

SOLUTIONS DEPLOYED



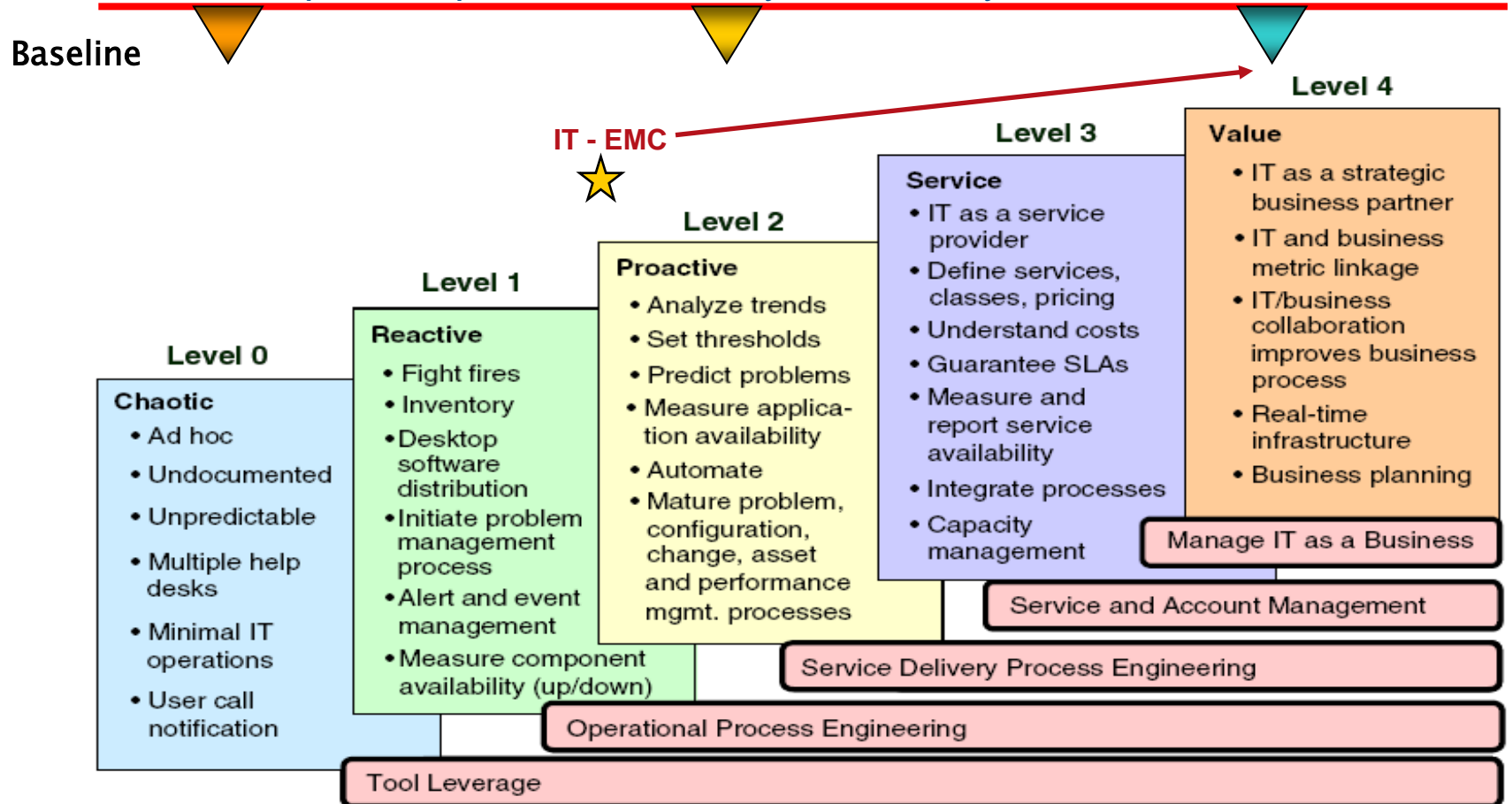
Problem Statement



- The lack of an integrated configuration management data base and configuration management process impedes IT's ability to effectively perform configuration, problem and change management
 - High degree of dependency on SME's to evaluate an impact of a change
 - Increased risk of incidents/outages, change management conflicts and longer time to determine root causes of problems without a stronger understanding of the overall configurations supporting IT applications/services
 - Information needed to facilitate most IT driven projects is not readily available
 - PM's will continue to hunt for data on every IT driven project – burning valuable cycles
- The Peregrine solution currently used by IT for service management is not supported by the vendor
 - Peregrine is a mission critical service that is at risk should a problem arise requiring vendor support.

Capability Maturity Model – from Laggard to World Class

Improve Operational Quality as Maturity Levels Rise



Source: Gartner (November 2005)

IT Industry Classification: Legacy Laggard Operation (orange triangle), Average Industry Operation (yellow triangle), World Class Operation (teal triangle)

Configuration Management Systems: To Be

Federated CMDB:
ITSM processes
access a single
data layer -
Infra Enterprise



Service Support: ITIL Processes

- Configuration Mgt
- Incident Mgt
- Problem Mgt
- Change Mgt
- Release Mgt

Service Delivery

- Service Level Mgt
- Availability Mgt
- Capacity Mgt
- Financial Mgt
- IT Service Continuity

IT Service Management Program Governance



Steering Committee
(CIO and Direct Staff)

Business Leads
(Ken LeBlanc, Jon Peirce, Tony Pagliarulo, Roland Cloutier)

Executive Sponsors
(Ken LeBlanc, Jon Peirce, Tony Pagliarulo)

Program Management
(IT STAR - Steve LaCross)
(EMC Professional Services - Infra & ICS)

**Request / Event / Incident
Problem / Change
Management**
Leader: Mike Leach

**Configuration
Management
(including CMDB)**
Leader: Neil Thibodeau/Mike Norris

**Service Catalogs /
Solution Architecture**
Leader: Bill Reid

**SOPs /
Central Repository /
Documentation Control**
Leader: Rich Boucher

Process Owner

Process Owner

**Support
Team**

**Support
Team**

Request

Event

Incident

Problem

Change

Configuration

Sally
Devenport

Rick
Espanet

Dave
Robinson

Nancy
McShea

Al
Winzenried

Neil
Thibodeau

Lawton Read
Bill Andreas

Neil Thibodeau
Rajesh Raychoti
Cathy Albanese
Nirmali Mani
Manish Gurumoorthy

Service Desk
Event
Coordinators

Mission Critical
EOQ Critical
Applications

Peregrine
Replacement

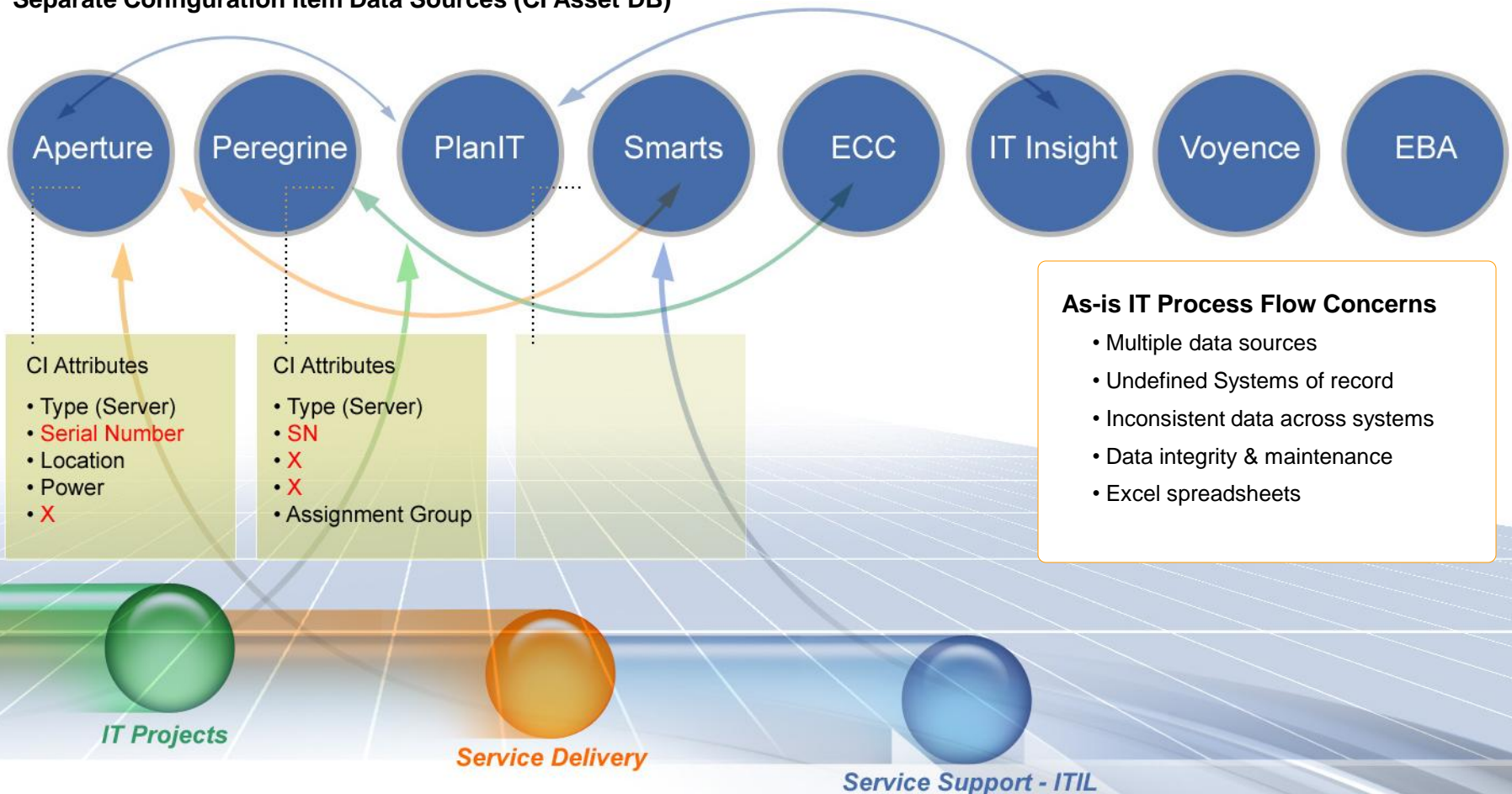
Proposal # 73582
IT Content Management

Operational Quality Leadership Team

(Steve LaCross, Bill Reid, Neil Thibodeau, Mike Leach, Mike Norris, John Osterman, Rich Boucher, Torsten Guttenburger-RSA, Shelly Lowenthal-RMSG)

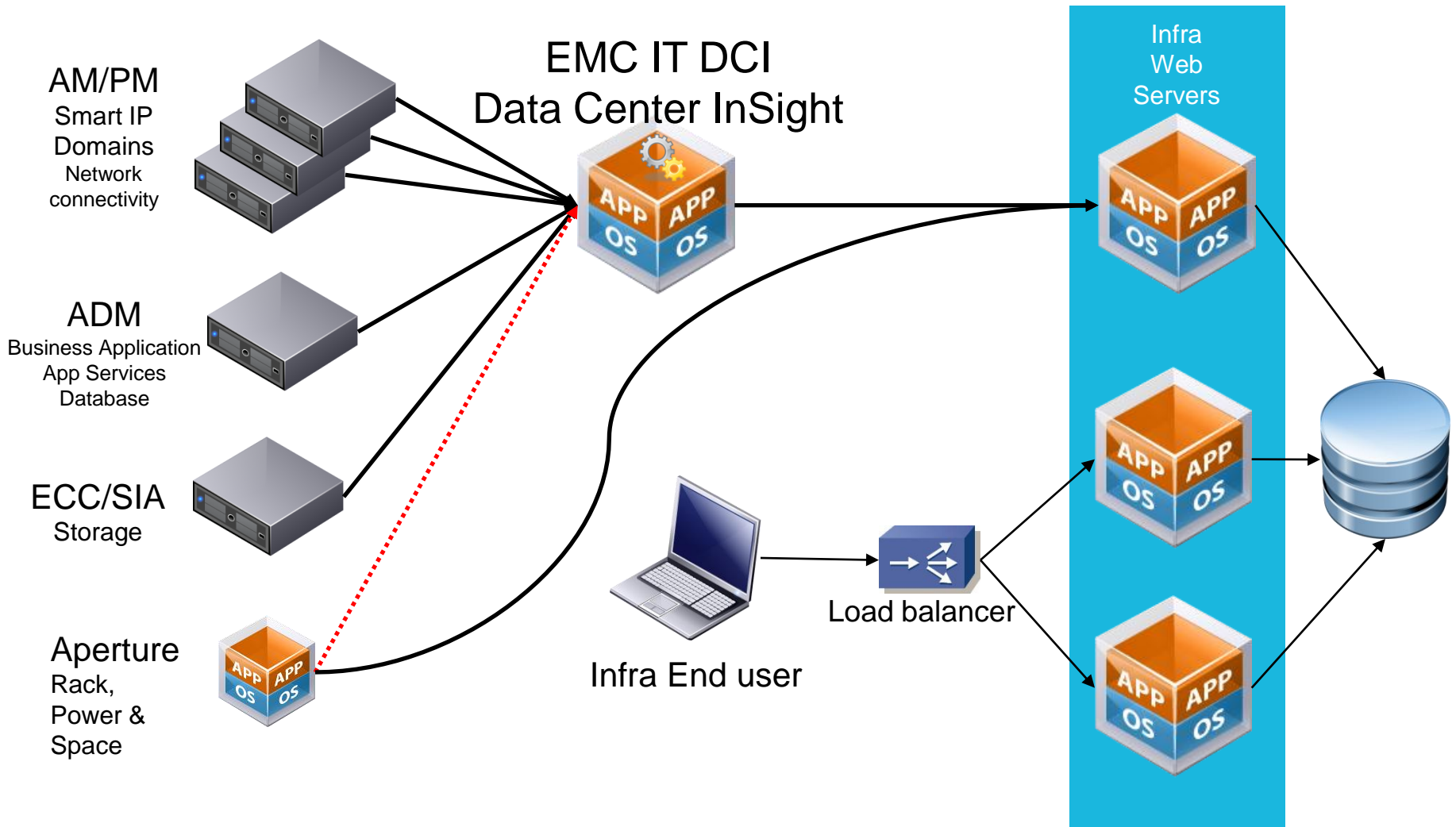
Configuration Management Systems: As Is

Separate Configuration Item Data Sources (CI Asset DB)



Because various data sources contain similar but inconsistent CI Attributes, (each relevant to it's own internal process and business function), **IT processes are greatly impeded or inefficient.**

High level EMC IT Infra Implementation CMDB Population (Critical Tool view)



- Executive Support Paramount
 - “What’s in it for me” is a real factor
 - The paradigm shift is from service silo thinking to service management from a Customer perspective.
- Staff Appropriately
 - Professional Services are KEY for Change, Event, Problem, Incident and Request
 - Development of a Customer Facing Service Catalog
 - Defining ITIL “Best Practice” processes
 - Standing up the Change Advisory Board using best practices
 - Defining cross process interfaces
 - Defining meaningful KPI’s and Metrics
 - Those which demonstrate business value AND internal governance
 - Development Support Critical
 - We understaffed initially causing major delays
 - Expect similar problem in 2nd phase due to complexity of building Peregrine replacement model.
- Over-Communicate!
 - We used video, posters, town halls and direct communications spanning 3 months prior to go-live

Questions?

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Take the Next Step with EMC Consulting



Check out the EMC IT customer profile on emc.com:

www.emc.com/collateral/customer-profiles/h7142-emc-it-cp.pdf

To learn more about EMC Consulting services for IT service management, contact your EMC representative

...or find us on the web at www.emc.com/consulting

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