



TRANSFORMING TO IT-AS-A-SERVICE

Leveraging IT To Accelerate Business Agility

Osama Soliman
Advisory Technology Consultant
February 2012

Enterprise IT Provides Control & Reliability

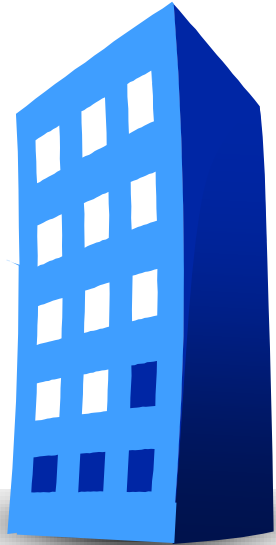
Enterprise IT



Trusted
Controlled
Reliable
Secure

Public Clouds Introduced Greater Agility

Enterprise IT



Trusted
Controlled
Reliable
Secure

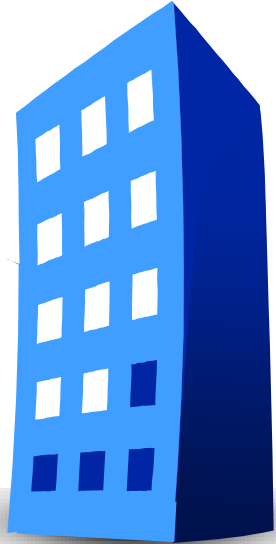
Public Cloud

Simple
Low Cost
Flexible
Self-Service



IT Risks Loss of Control

Enterprise IT



Trusted
Controlled
Reliable
Secure

Public Cloud

Simple
Low Cost
Flexible
Self-Service



“21% of IT professionals used
Personal Cloud Services”

Forrester, “The Rise and Fall of Business Personal Computing”
Mobile Defined “Market”, 2011 June 2011

IT Must Transform To An “Internal SP”

Deliver IT-As-A-Service (ITaaS)

- Deliver Improved *Business Agility*.
- Provide Value To Business *Top-Line*.
- Maintain *Trust And Control*.
- *Simplify Consumption* of Internal/External Services.

Helpdesk



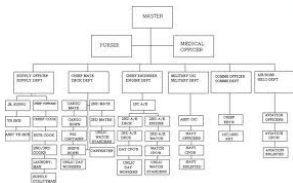
IT-Issued



Flat Tax



Silos



Self-Service



Choice Computing



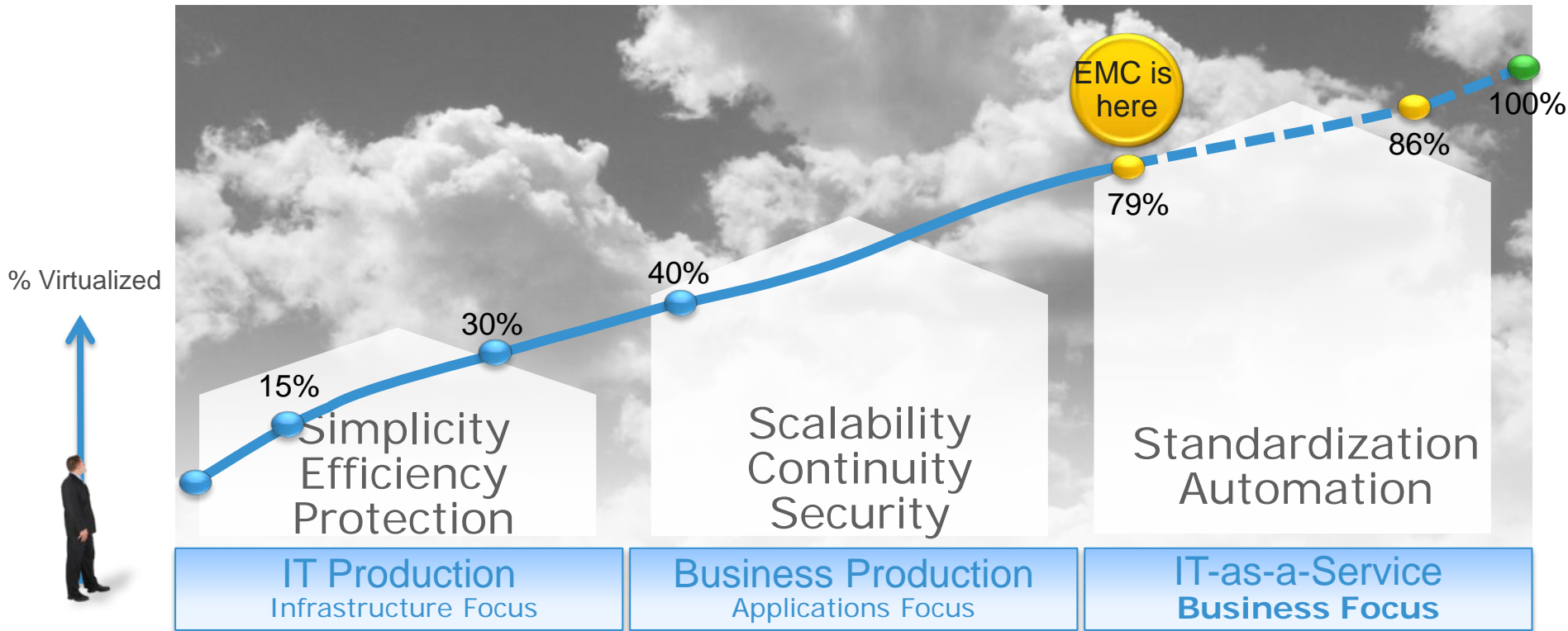
Metered



Services

ITaaS Is Goal of the Cloud Journey

With Many Benefits Along The Way

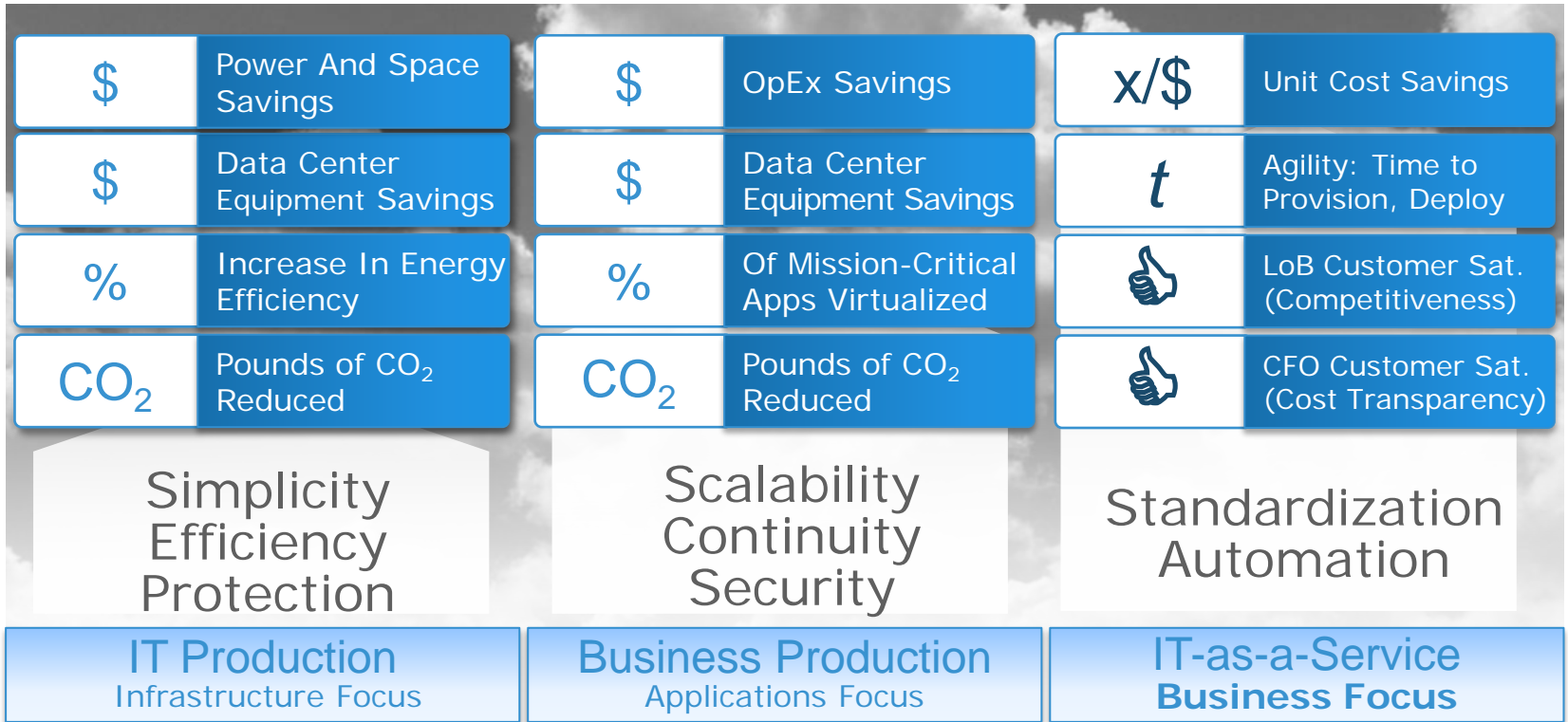


EMC²

But ITaaS is Different:

Focus Shifts From Infrastructure Cost to Business Agility

% Virtualized



Delivering IT-As-A-Service Requires New Models

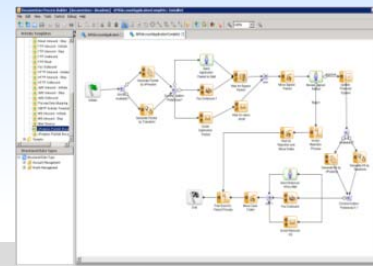


Technology Model

Private, Public, Hybrid Cloud
Controls, Trust, Compliance
Standardize, Automate



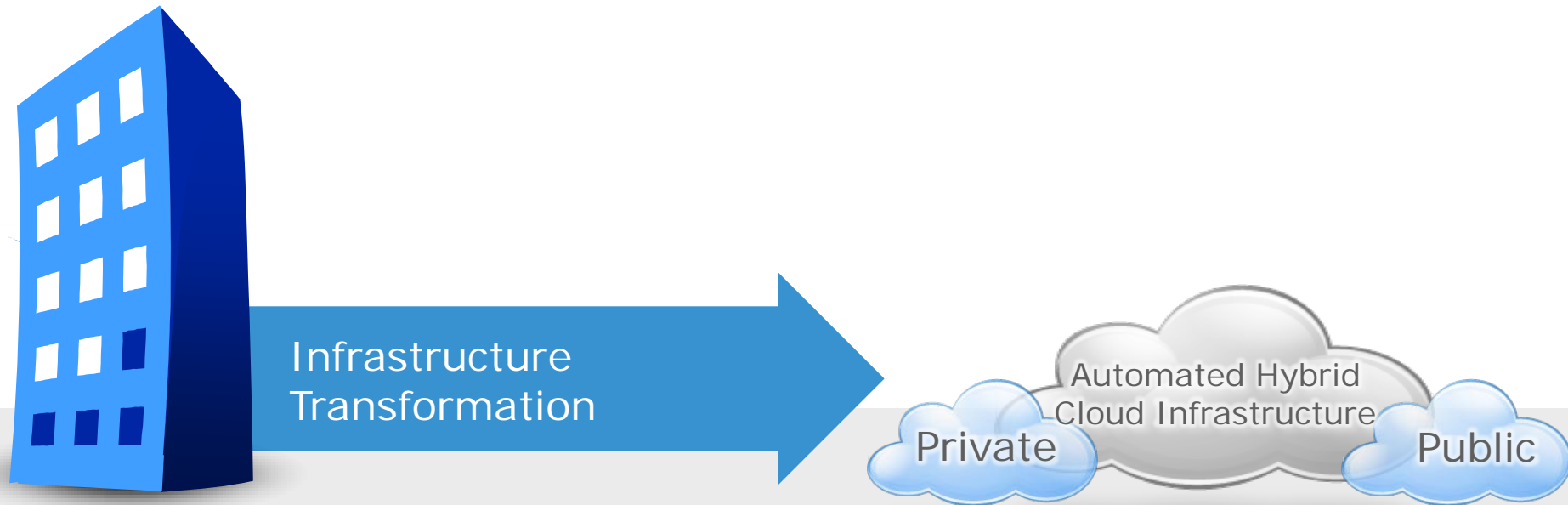
Consumption Model



Operations Model

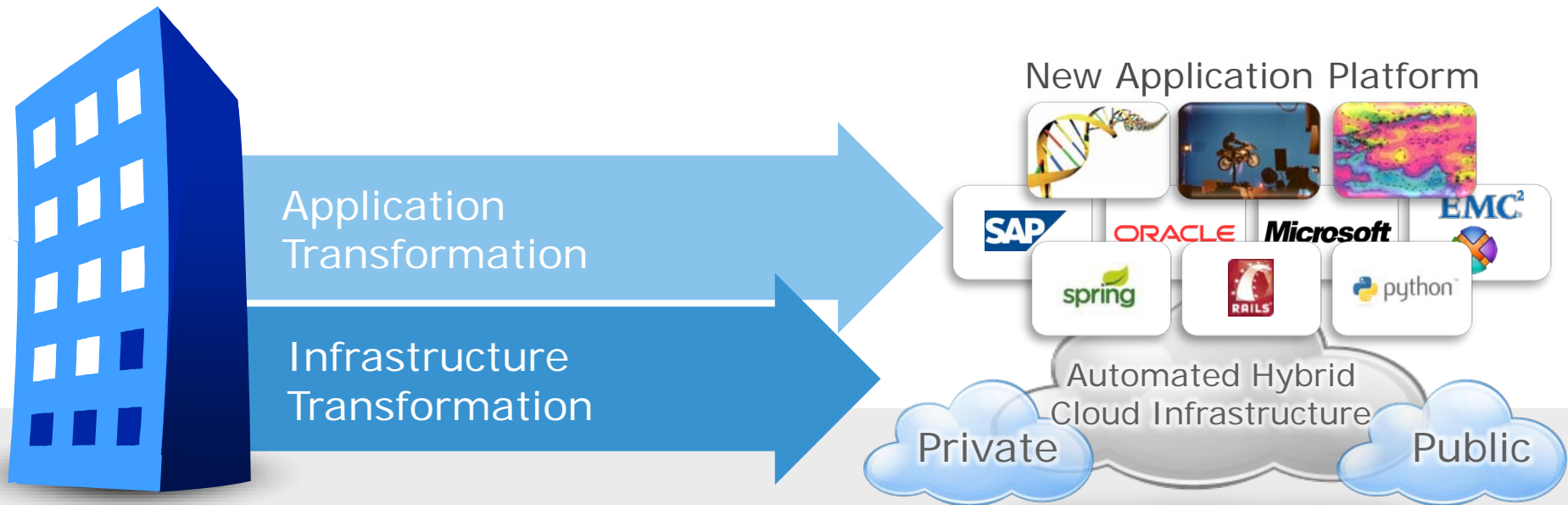
ITaaS Requires a Hybrid Cloud Infrastructure

Critical To Consuming Both Internal & External Services



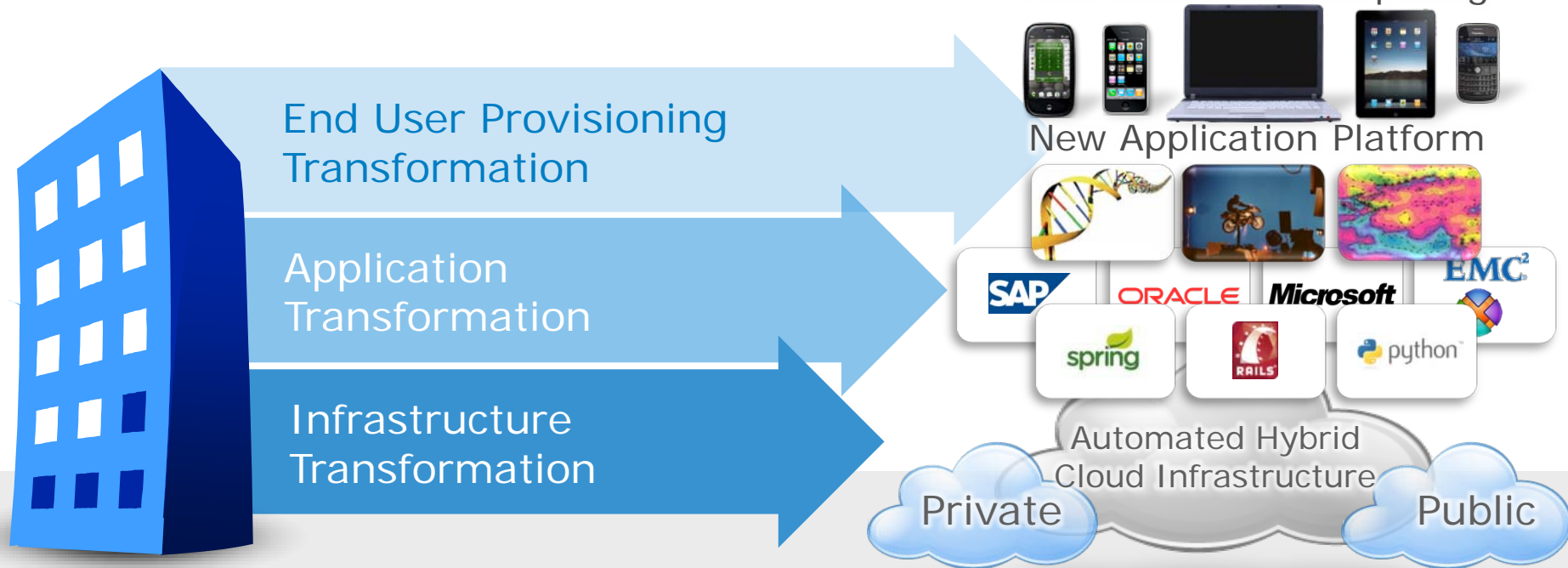
The New Application Platform

Critical to Consuming Any Application



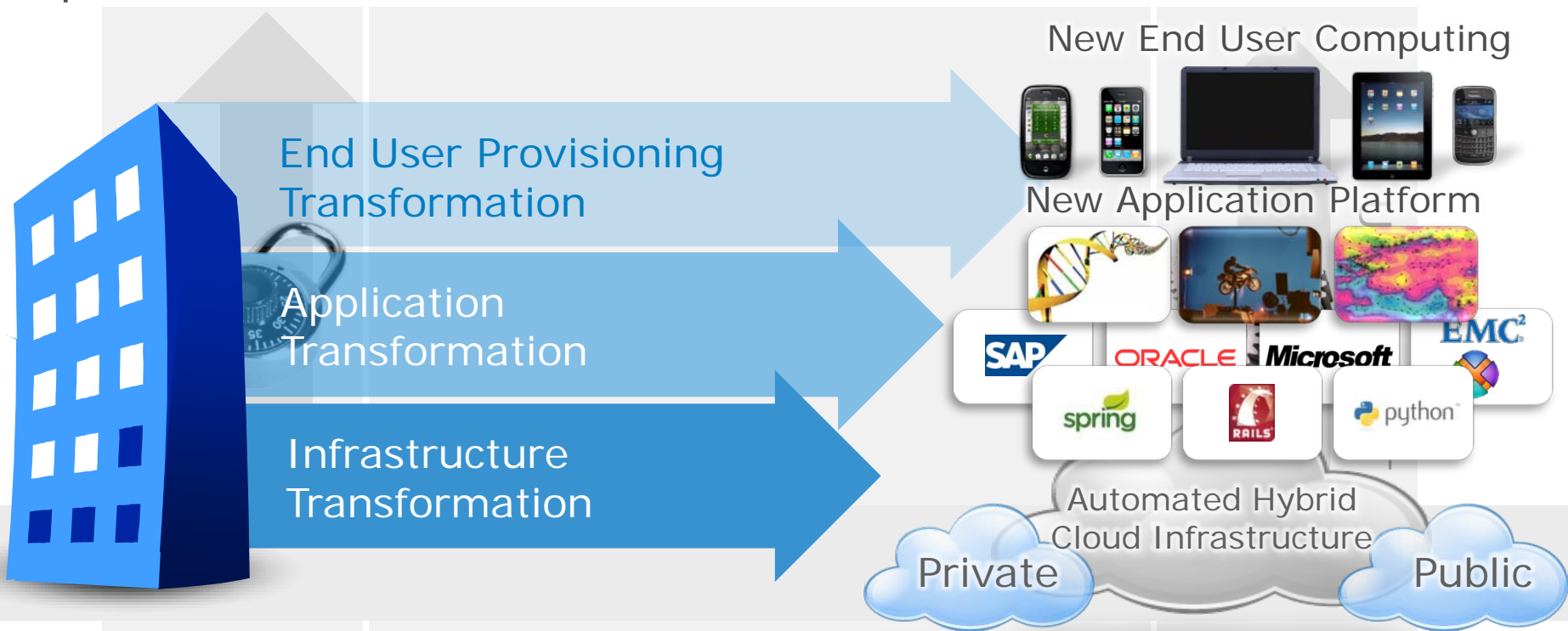
Access Applications From Any Device

Critical to Consumer-Style Choice Computing



The New Technology Model

Top-to-Bottom Trust and Automation



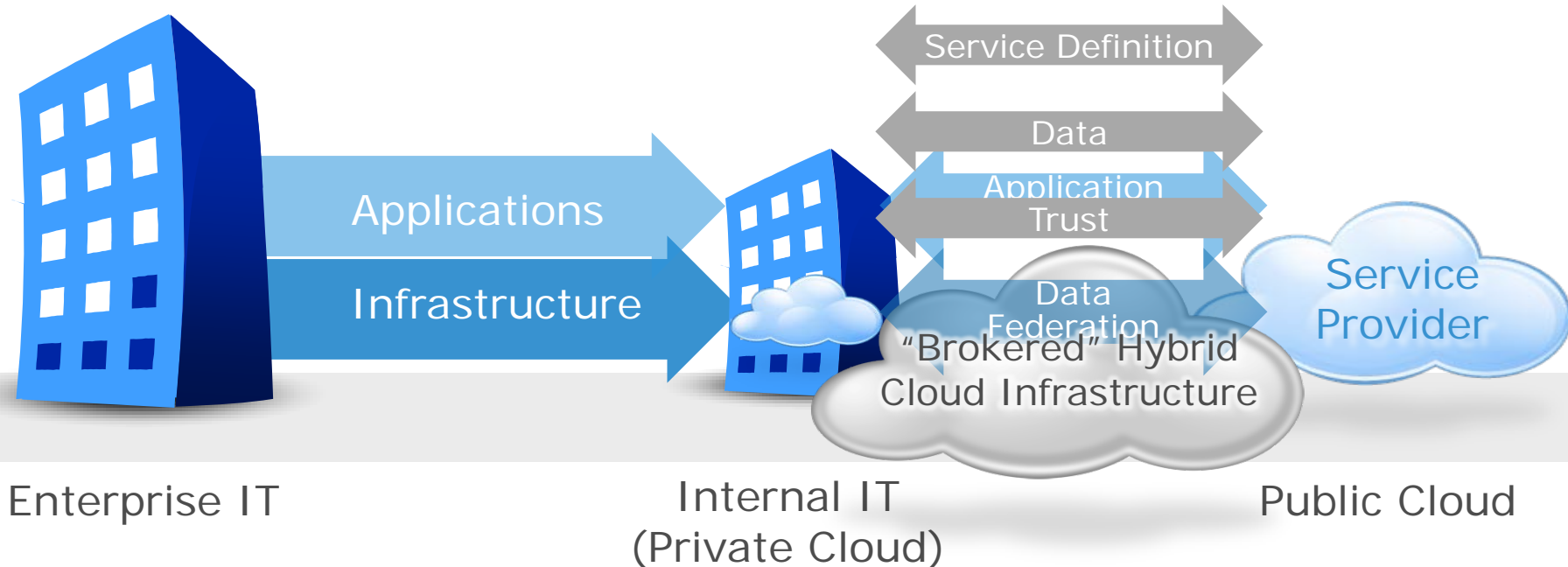
The New Technology Model

Top-to-Bottom Trust and Automation



Brokering Services Requires Control, Trust

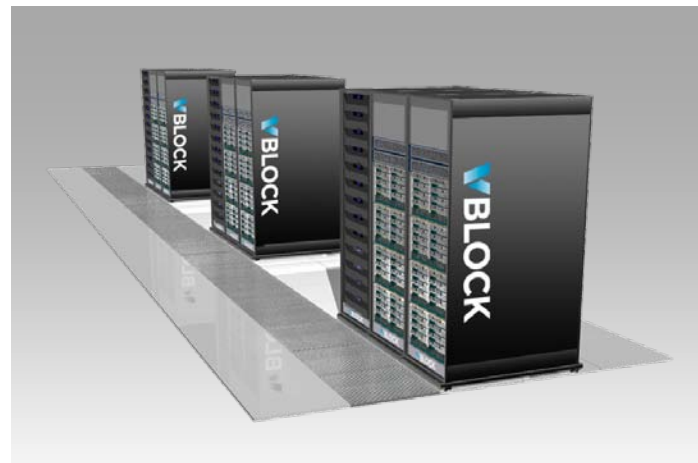
The New Model to Deliver Internal + External Services



Standardize, Automate: ITaaS Technology

Virtual Infrastructure Simplifies Self-Service Provisioning

- Simplifies Use of Service Catalog-Based Provisioning
- Simplified Capacity Planning, Reducing Administration
- Increases Responsiveness to the Business' Needs



Pre-Engineered,
Pre-Integrated and Validated

Delivering IT-As-A-Service Requires New Models



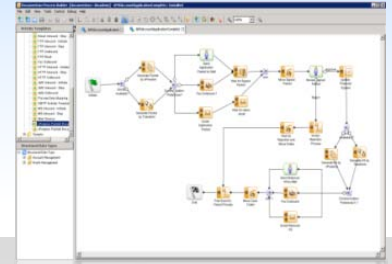
Technology Model

Private, Public, Hybrid Cloud
Controls, Trust, Compliance
Standardize, Automate



Consumption Model

Self-Service Catalogs
Financial Transparency
Consumerized IT



Operations Model

Simplifying Consumption: IT Must Act/Operate Like an SP

Internal IT requires

- Customer-Focus
- Financial Transparency
- Choice Computing
- Catalog of Services



Service Catalogs Simplify Consumption

Enable Consistency Of...

Standard Services: Familiar Terms to LoBs

Control: Services Packaged With Trust, SLAs

Management: Demand, Capacity, Financial

Business Data: Variable Costs, Service Levels



Financial Transparency Simplifies Decisions

Chargeback, Showback Allows Variable Cost Models

- Links Cost to Consumption
- Provides Basis for Service Pricing
- Quantifies Demand (maps per-user utilization)
- Forecasts Demand (highlights consumption)
- Supports Delivery (aids capacity management)



Consumerized IT Simplifies Fulfilling Demand, Access



Choice Computing



Self-Service Portals

Category	EMC IT Infrastructure Services			EMC IT Platform Services	
	Cloud Services	Managed Storage & Remote Site	Managed Hosting	Big Data Analytics	Content Management
Service	<ul style="list-style-type: none"> Cloud Host 	<ul style="list-style-type: none"> Backup/Recovery HomeDirectory On-Line Backup Remote Site Bundle 	<ul style="list-style-type: none"> Managed On-Site PPServices Managed JCR Remote-App Access Application Hosting 	<ul style="list-style-type: none"> Content Hosting/Sandbox Data Modeling BI Tools and Analytics Consulting 	<ul style="list-style-type: none"> DocBase CenterStage SharePoint
Installation	Same site	Same site	1 week to 1 month	Same site	Same site
SLA / RR	Months	✓	✓	Months	✓
RTO	Hours	Hours	Hours	Hours	Hours
SPB	✓	Quies	✓	Days	Days/Week
Changeability	Low/High	✓	✓	✓	✓
Recovery	✓	Partial	✓	Partial	Partial
Cost	Low	Moderate	Moderate	Moderate	Moderate

Service Pricing & Rate Sheets



Brokered Services

Delivering IT-As-A-Service Requires New Models



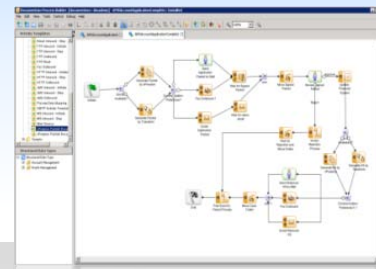
Consumption Model

Self-Service Catalogs
Financial Transparency
Consumerized IT



Technology Model

Private, Public, Hybrid Cloud
Controls, Trust, Compliance
Standardize, Automate



Operations Model

Organization, Skills, Roles
Horizontal Processes
Business Alignment

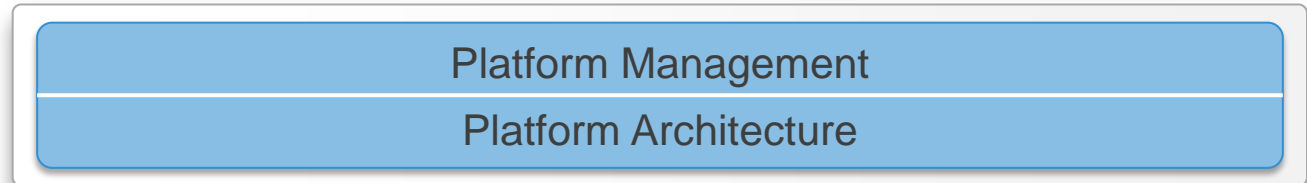
ITaaS Organization & Processes:

Requires a Shift From Silos to Services

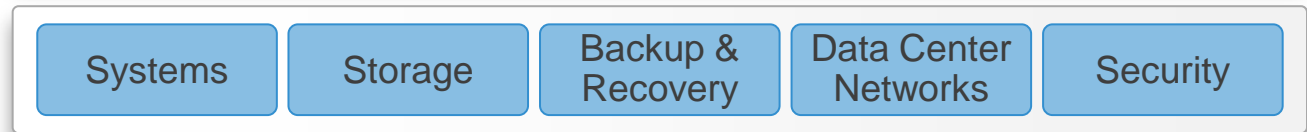
Service-Oriented
Skills, Roles,
Operations



Horizontal
Processes



Foundational
IT Roles



ITaaS Skills, Roles:

Accelerate Your Career



IT Business
Roles

Service
Marketing

Service
Operations

Product
Management

Financial
Management

EMC Cloud
Architect

Cloud Infrastructure
And Services

Virtualized
Infrastructure

IT-As-A-Service

EMC Data
Center Architect

Information
Architect

Storage Service
Management

Information
Engineer

Information
Availability

EMC Technology
Tracks

Technology
Architect

Storage
Administrator

Implementation
Engineer

Platform
Engineer

ITaaS Improves Business Alignment

Customer-Centric, Internal Service Provider Mindset

IT Go To Market

Defined Services With Transparent Pricing

How do we market, sell, and bill for our offerings?

IT Product Management

Disciplines To Manage IT Services

How do we productize to win the business?

Service Operations Management

Basic Capabilities Needed to Meet SLAs

How do we implement and support our products?

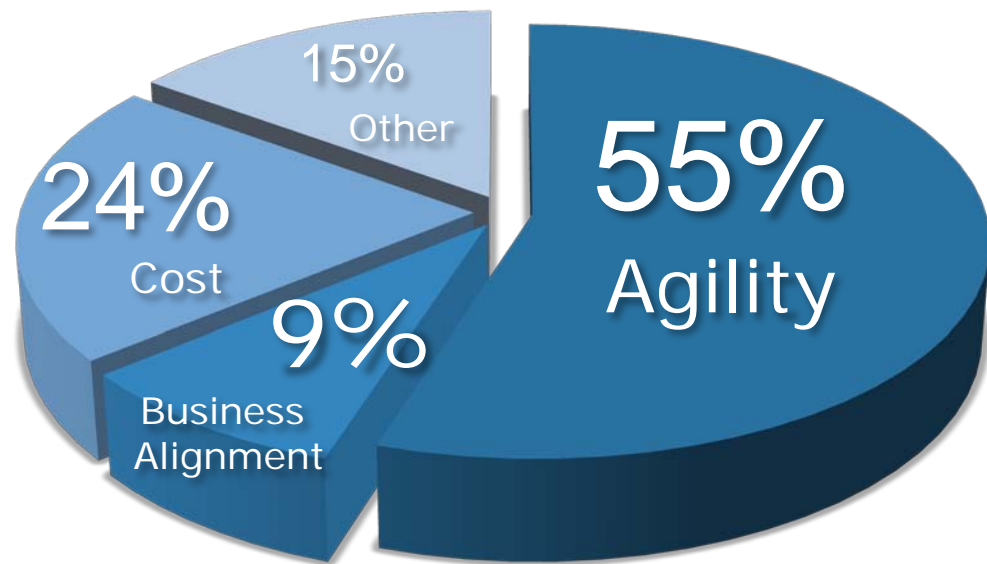
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The ITaaS Objective?
Business Agility.

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Agility Is The #1 Private Cloud Driver



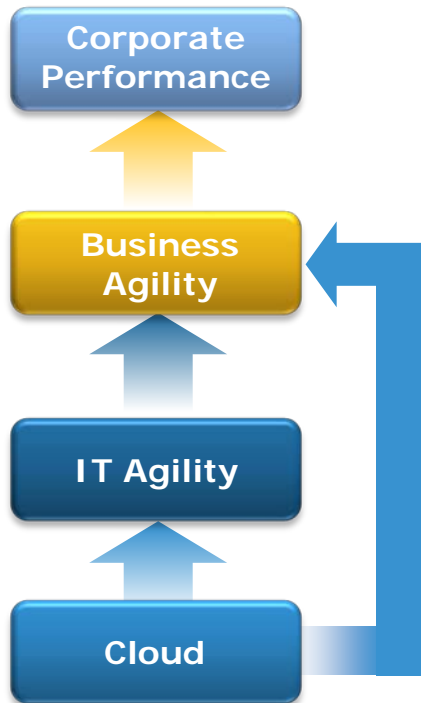
“The majority see agility and speed as the primary benefits of private cloud computing.”

- Gartner

Source: “The Drivers And Challenges Of Private Cloud Computing”, March 2011, Gartner

The ITaaS Goal: Agility

Providing Value To The Business Top-Line



Global Business Agility Survey, VMware, February 2011

- **Agility is important to achieving key business outcomes**
- **IT agility strongly linked to agile companies**
- **Cloud computing enables IT agility**
- **Business leaders even link cloud directly to business outcomes**
 - 63% of business leaders agree cloud can have a significant impact in making their business more agile and responsive
 - Companies with enterprise-wide cloud deployments are 3x more likely to achieve business agility that is "much better than competition"

EMC Recommendations for IT As A Service



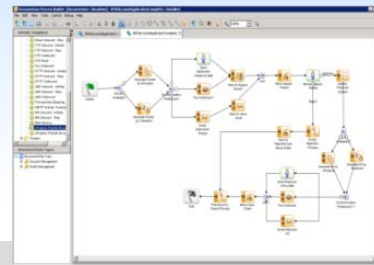
Technology

- Build Your Hybrid Cloud
- Establish Visibility, Controls, Compliance



Consumption

- Implement a Service Catalog
- Establish Financial Transparency



Operations

- Transform People, Roles, Processes, Organization

Transformation To ITaaS: How EMC Can Help

TECHNOLOGY

Converged Infrastructure

EMC Proven^(SM) Solutions

Trust, GRC Solutions

Cloud Trust Authority

CONSUMPTION

Service Catalog Design

Financial Management

Transition Planning

Service Provider
Ecosystem

OPERATIONS

Cloud & ITaaS Architect
Training and
Certifications

Process Design,
Management

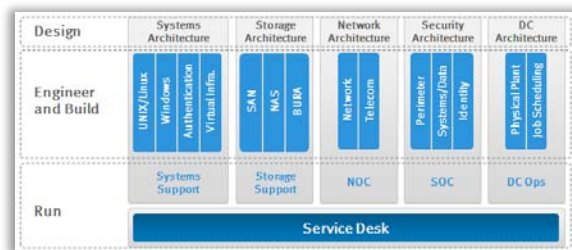
Organizational Change
Management

EMC² EMC IT's Journey to ITaaS



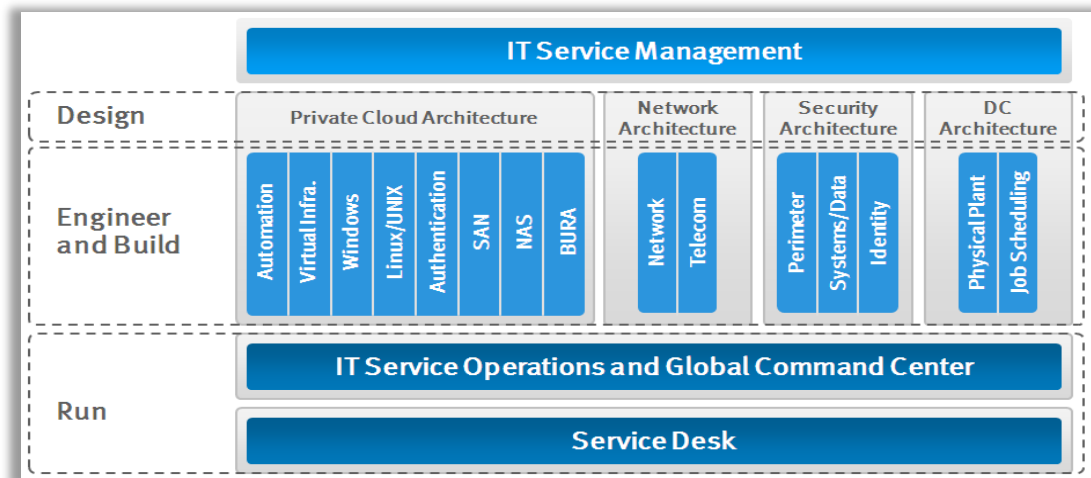
EMC-IT's Transition: Operational Models Affect Organization

EMC's Shift From Silos To Services



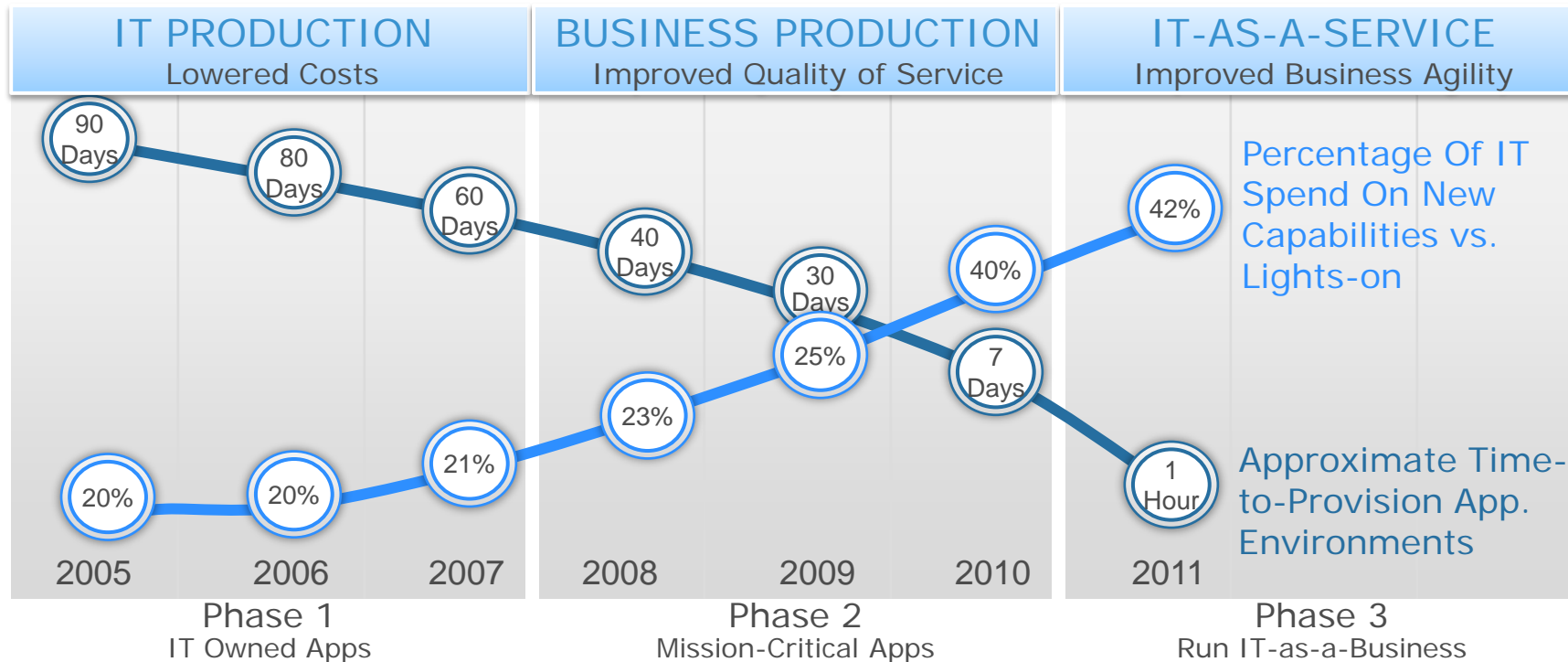
2008
Vertical Silos

2011
Unified Private Cloud
Infrastructure And
IT-As-A-Service



EMC IT: Benefits Along The Journey

Cost & Agility Trends



Oracle 11i eBusiness Suite:

Replatforming

- Overloaded legacy hardware
- Constant CPU spikes >80%
- Outdated technology
- Low performance
- Poor scalability
- Costly to maintain
- Slow backup speed
- Degraded user experience

**High Availability Requirements –
7x24x365**



ORACLE

Sun Fire Server



Vblock Reference Architecture

- Sun Fire E25K
- UltraSPARC IV processor
- CPU – 224 Cores
- CPU utilization 80%
- OS – Solaris 10
- Storage – Symmetrix DMX-3

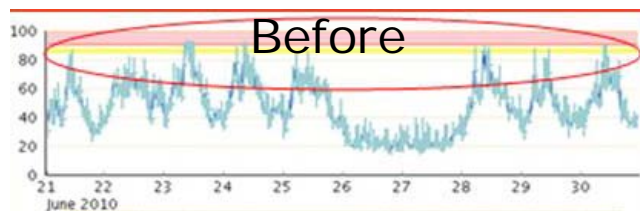
- Cisco UCS B440
- Intel Nehalem EX processor
- CPU – 192 Cores
- CPU utilization 10%
- OS – Red Hat Linux / VMware vSphere
- Storage – Symmetrix VMAX



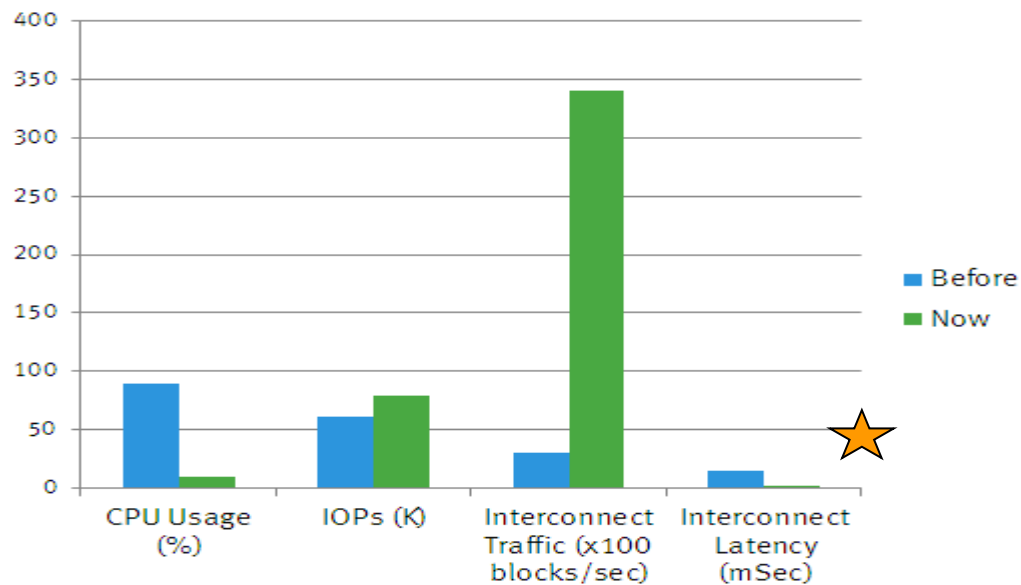
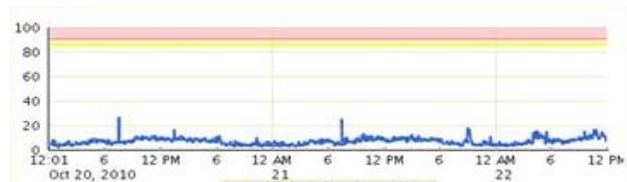
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Oracle 11i System Statistics – Comparison

CPU Utilization -

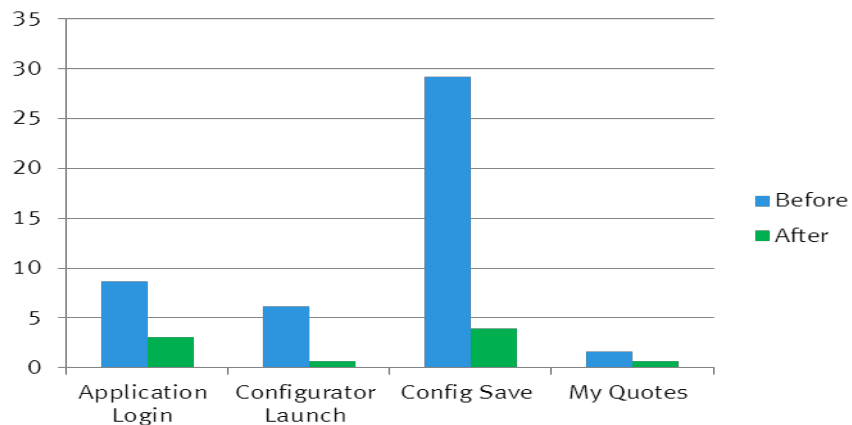


After

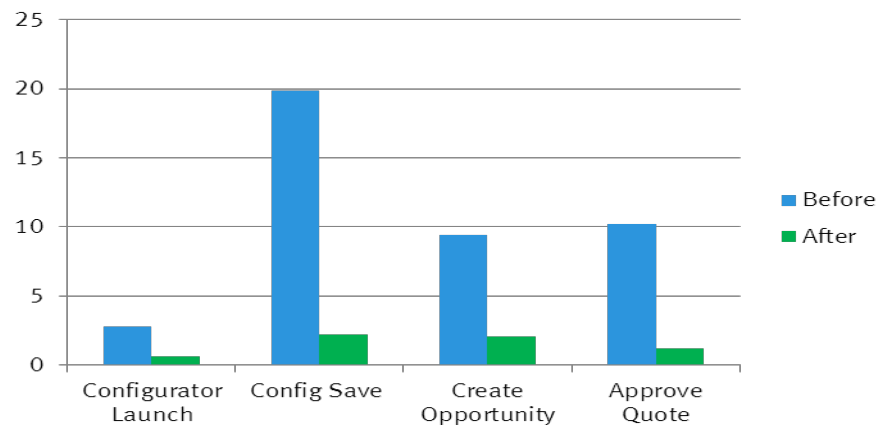


Oracle 11i Performance – Online

Channel Express Transaction Times (sec)



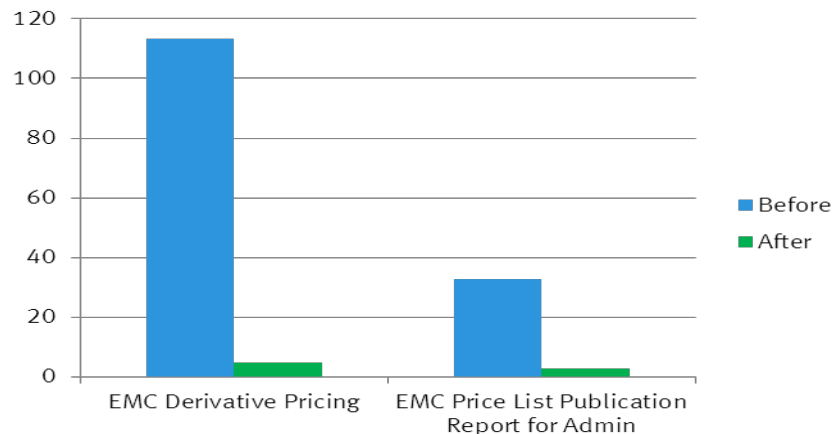
Direct Express Transaction Times (sec)



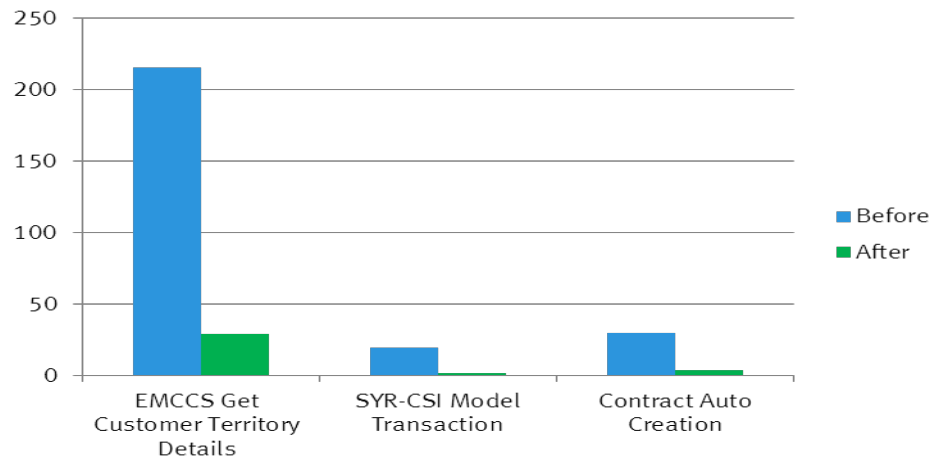
Performance Gains: 2X – 10X !

Oracle 11i Performance – Batch

Sales Job Timings (sec)



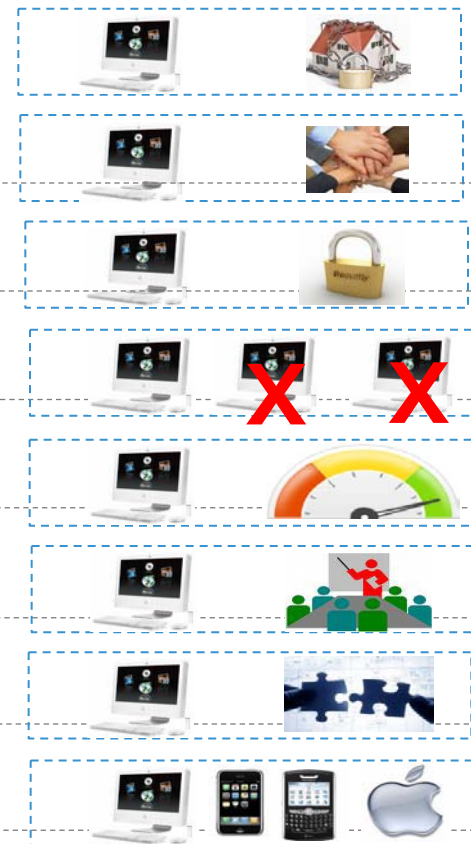
Customer Service Job Timings (sec)



Performance Gains: 6X – 20X !

VDI Use Cases

- 1 Securing Home User Devices
- 2 Securing Third Party Devices
- 3 Securing Contractors
- 4 Device Consolidation
- 5 M&A Acceleration
- 6 Training Room Setup
- 7 Application Centralization
- 8 Universal Desktop Access



High Level Architecture for Production VDI

VDI at Enterprise Scale Must Support Thousands of Concurrent Users

VDI Platform



Authentication DLP



Backup



Management

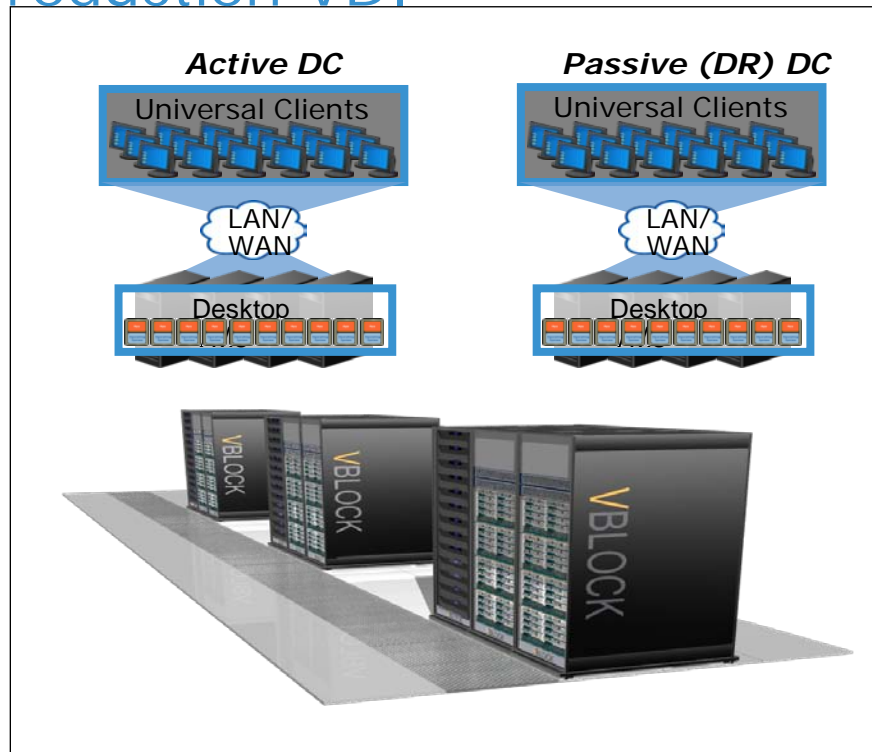


Network / SAN



Storage

Network Access Control



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EMC IT: ITaaS Example - Cloud9 Sandbox

Focused On The Internal IT User

- Infrastructure-As-A-service For Developers
- Hosted In EMC IT Global Data Centers
- IT Supported Operating Systems
- Choice Of Size Configurations
- 24x7 Monitoring, OS Support
- Backups & Self-Service Restore



83%
FASTER
TIME TO DEPLOY

EMC-IT: Inhibitors We Encountered

Considerations IT Leadership Must Address

TECHNOLOGY

- Shared Platforms Are Different
- Automation Is Scary

CONSUMPTION

- Shift To Service-Based Culture
- New Service Catalog Integration
- New Financial Management Models

OPERATIONS

- New Skills, Roles, Organizational Model
- New Product/Service Management Processes
- New Product/Service Lifecycle Processes
- Service-Based Approach To Delivery

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ITaaS Capabilities: EMC Consulting

Transformation to a Services Model Based on Cloud

Service Strategies

Strategic direction, management support, and value proposition

IT as a Service Strategy

Shared Services Value Proposition

Corporate and SBU Management Support

Organization , Roles, Skills

Governance, org structure, roles, responsibilities, supporting org change/transformation

Governance

Organizational Model

Sourcing and Staffing Model

Change Management

Process Simplification

Processes for creating, maintaining, enhancing, communicating, measuring, delivering

Capacity Planning and Resource Mgmt

Metrics and Reporting

Automation and Process-Driven Delivery

Communications and Customer Interaction

Service Catalog, Offerings

Technology-based, center-of-excellence-based

Technical and Functional Capabilities

Service Catalog Implementation

Service Lifecycle Management

Service Request, Portal

Cloud Infrastructure and Operations

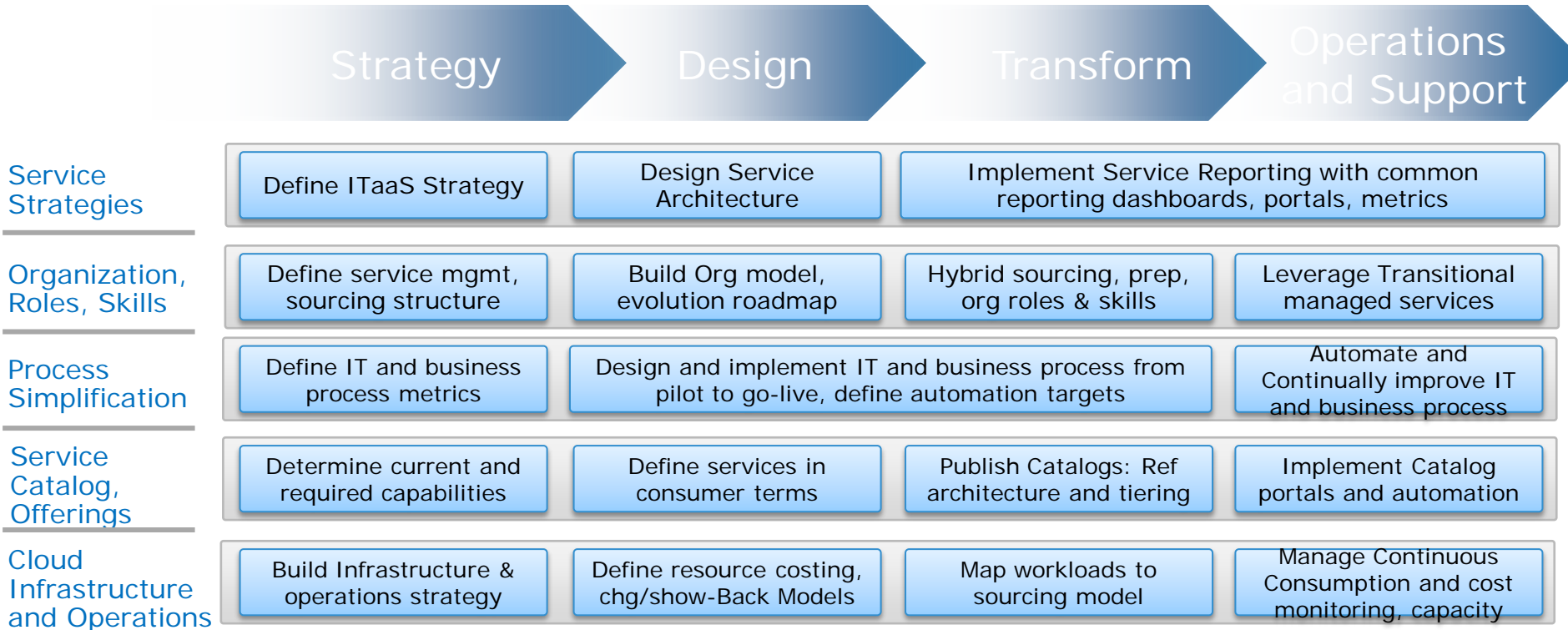
Technology infrastructure and administration to operate the business

Service Technology Infrastructure / Cloud

Service Management Infrastructure

Financial Management Infrastructure

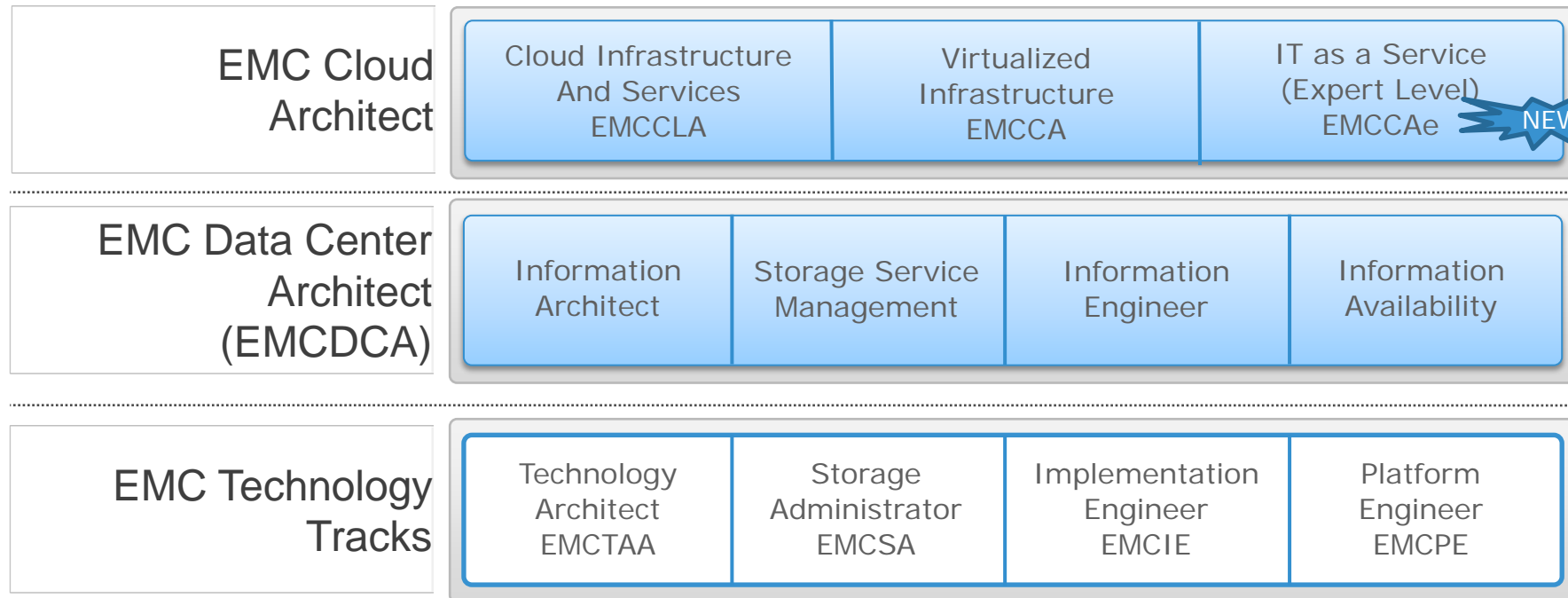
ITaaS Capabilities: ITSM Specific Service Mapping



Build Talent, Skills: EMC Proven Professional Certifications



Delivering The New Skills Portfolio



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ITaaS Customer Examples

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Customer Example: Global Financial Services Firm

Looking For An Agility Edge

- Need for Highly Scalable, Elastic Application
- Need to Scale to Serve Millions of Users w/Automated Operations
- Vblock-Based Cloud Architecture Deployed in 10 Weeks
- Fully Automated of Platform as a Service (PaaS) Launched
- vFabric-Based Application Foundry Supports New Cutting Edge Initiative



60x
FASTER
TIME TO DEPLOY

Customer Example: Services Catalog

Infrastructure And Operations Roadmap



EMC Consulting Customer Profile:

Global specialty biopharmaceutical company with approximately 4,183 employees and roughly \$3.4 billion revenue

Industry:

Pharmaceutical

Situation

- No link between business requirements and IT
- Current infrastructure struggling with growth

Solution

- Tiered infrastructure strategy and standardized reference architectures
- Service Tier Decision Tool for alignment of applications to lowest possible cost
- 3 year roadmap to introduce new technology and meet business plans

Business Benefits

- Improved infrastructure utilization
- Service levels aligned to business requirements
- Improved communications between IT and the business

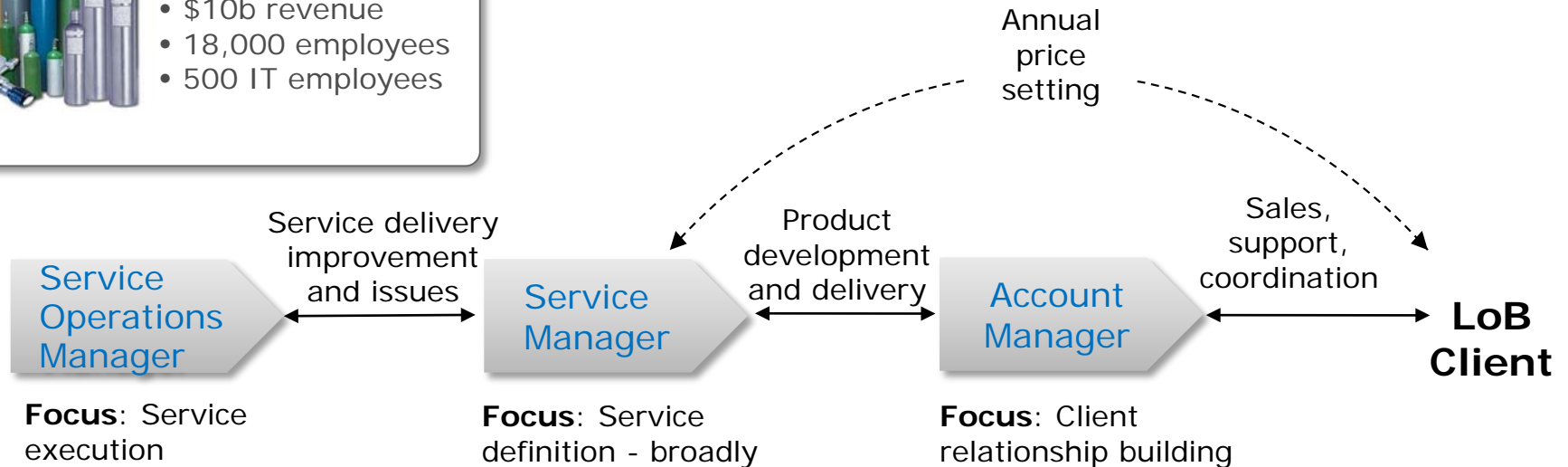
Customer Example: New Operational Model

Industrial Chemicals Customer



Customer Profile

- \$10b revenue
- 18,000 employees
- 500 IT employees



Customer Example: Financial Transparency, Consumption-Based Chargeback

Service Rate Worksheet for Major Insurance Provider



Service Identifier

Total Cost of Ownership

Service Rate Worksheet																																																
SERVICE IDENTIFIER	KEY	IDENTIFIES THE SERVICE, FOR EXAMPLE, STORAGE																																														
VERSION		IDENTIFIES THE VERSION OF THE SERVICE, FOR EXAMPLE, 1.0																																														
EFFECTIVE DATE		DESCRIBES EFFECTIVE DATES FOR THIS VERSION OF THE SERVICE																																														
FISCAL YEAR		IDENTIFIES THE FISCAL YEAR FOR THE COST BLOCK																																														
SERVICE COMPONENT NAME		REPRESENTS THE SERVICE COMPONENT IN THE SERVICE CATALOG / SERVICE OFFERING																																														
Service Costs By Category																																																
ANNUAL SO TCO WORKSHEET: (SO NAME)		<table border="1"> <tr> <td>ANNUAL SO TCO</td> <td></td> </tr> <tr> <td>Labor</td> <td>\$300,000</td> </tr> <tr> <td>Software</td> <td>\$119,804</td> </tr> <tr> <td>Hardware</td> <td>\$323,212</td> </tr> <tr> <td>Facilities</td> <td>\$167,286</td> </tr> <tr> <td>Annual SO TCO</td> <td>\$1,010,302</td> </tr> </table>	ANNUAL SO TCO		Labor	\$300,000	Software	\$119,804	Hardware	\$323,212	Facilities	\$167,286	Annual SO TCO	\$1,010,302																																		
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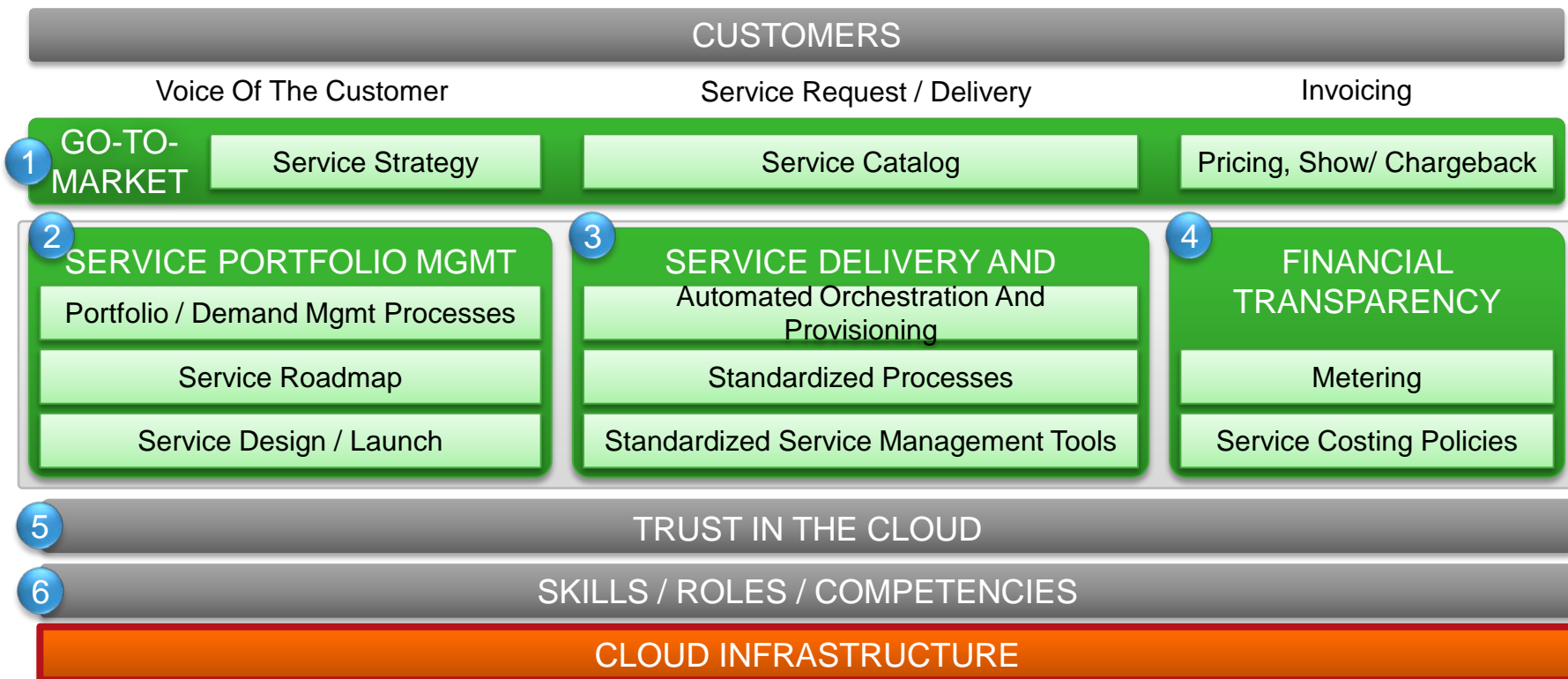
Planned Consumption

EMC²[®]

Background

EMC²

IT-As-A-Service Strategy



Financial Transparency

8-Step Process For Simple, Fair, Accurate Charge / Showback

