



IBM SmartCloud
*Oltre la virtualizzazione, il
vero valore del cloud
computing.*

*Andrea Saracini - IBM Europe Tiger Team
Leader*

PCTY2012 

Pulse Comes to You

Optimizing the World's Infrastructure
[May 15^o 2012, Rome]

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SmartCloud

Launching the Next Chapter of IBM's SmartCloud Capabilities

Beyond Virtualization Part 1

- Entry Clouds & patterns
- IBM SmartCloud Foundation for private clouds
- New SmartCloud Services & Solutions

Introducing SmartCloud

- Launched "Rethink IT. Reinvent Business"
- Delivered SmartCloud managed services
- IBM's strategic PoV

Chapter 1

Chapter 2

Chapter 3

Chapter 4

April 2011

October 2011

March 2012

2Q 2012

Pulse2012

Beyond Virtualization

- New **SmartCloud Foundation** capabilities improving Cloud visibility, control, automation
- New **SmartCloud Services** addressing the dynamic storage needs of Cloud
- New **SmartCloud Solutions** to help cities operate more intelligently & efficiently

Impact2012
May

SmarterCommerce
Global Summit
June

IBM Cloud Forum
July

SmartCloud

On today's Smarter Planet, organizations are taking new approaches to optimizing increasingly dynamic business services, processes & relationships

* Source: IBM CEO Study



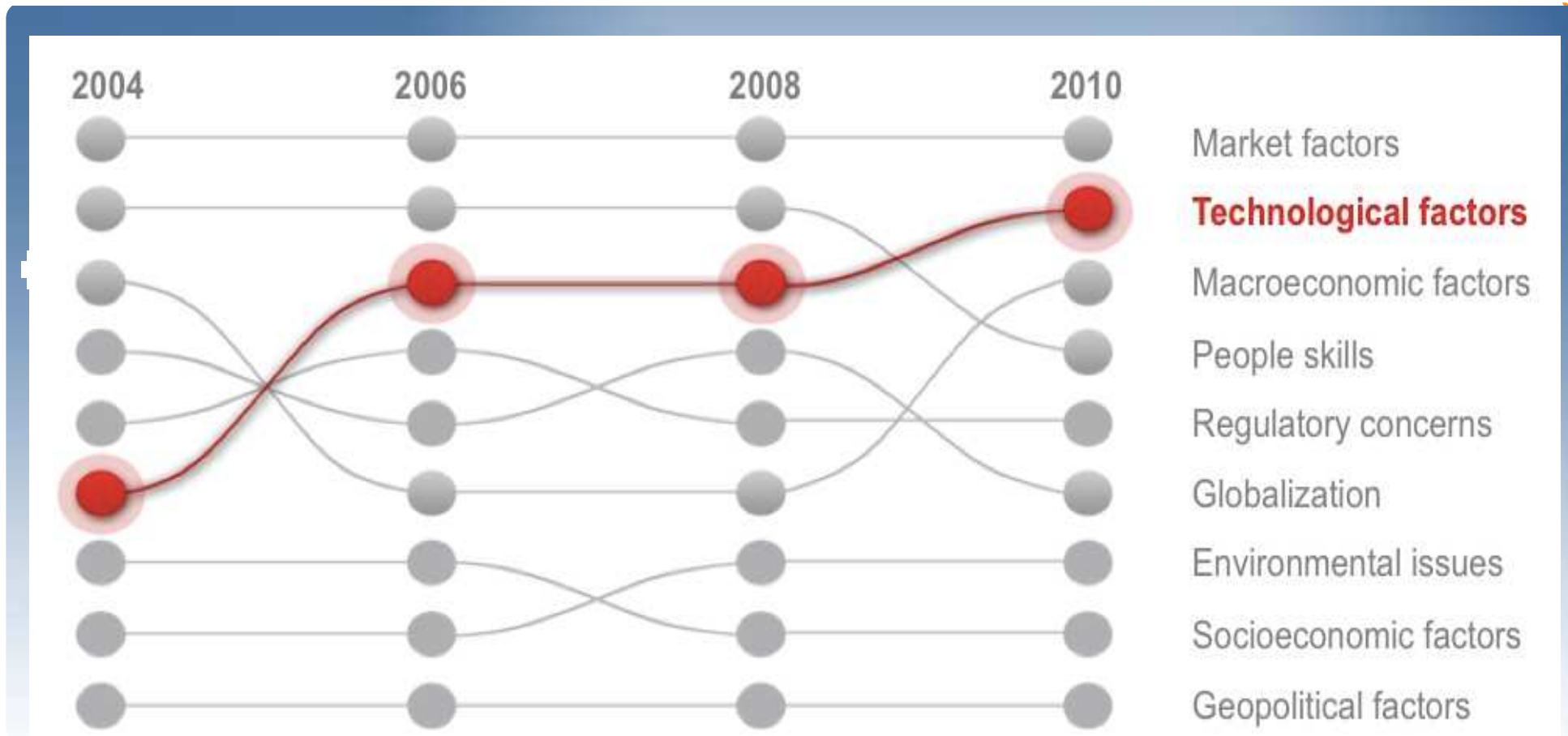
**Build operating
dexterity**

**Reinvent customer
relationships**

**Uncover new
Profit opportunity**

SmartCloud

Effective technology adoption is key to competitive advantage

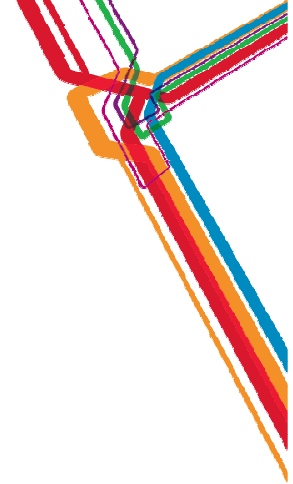


**Build operating
dexterity**

**Reinvent customer
relationships**

**Uncover new
Profit opportunity**

SmartCloud Platform



IBM SmartCloud Foundation

Cloud Enablement Technologies

A foundation for enabling and managing Cloud services.

IBM SmartCloud Services

Managed Cloud Services

A secure, scalable cloud platform for deploying apps rapidly & efficiently

IBM SmartCloud Solutions

Cloud Business Solutions

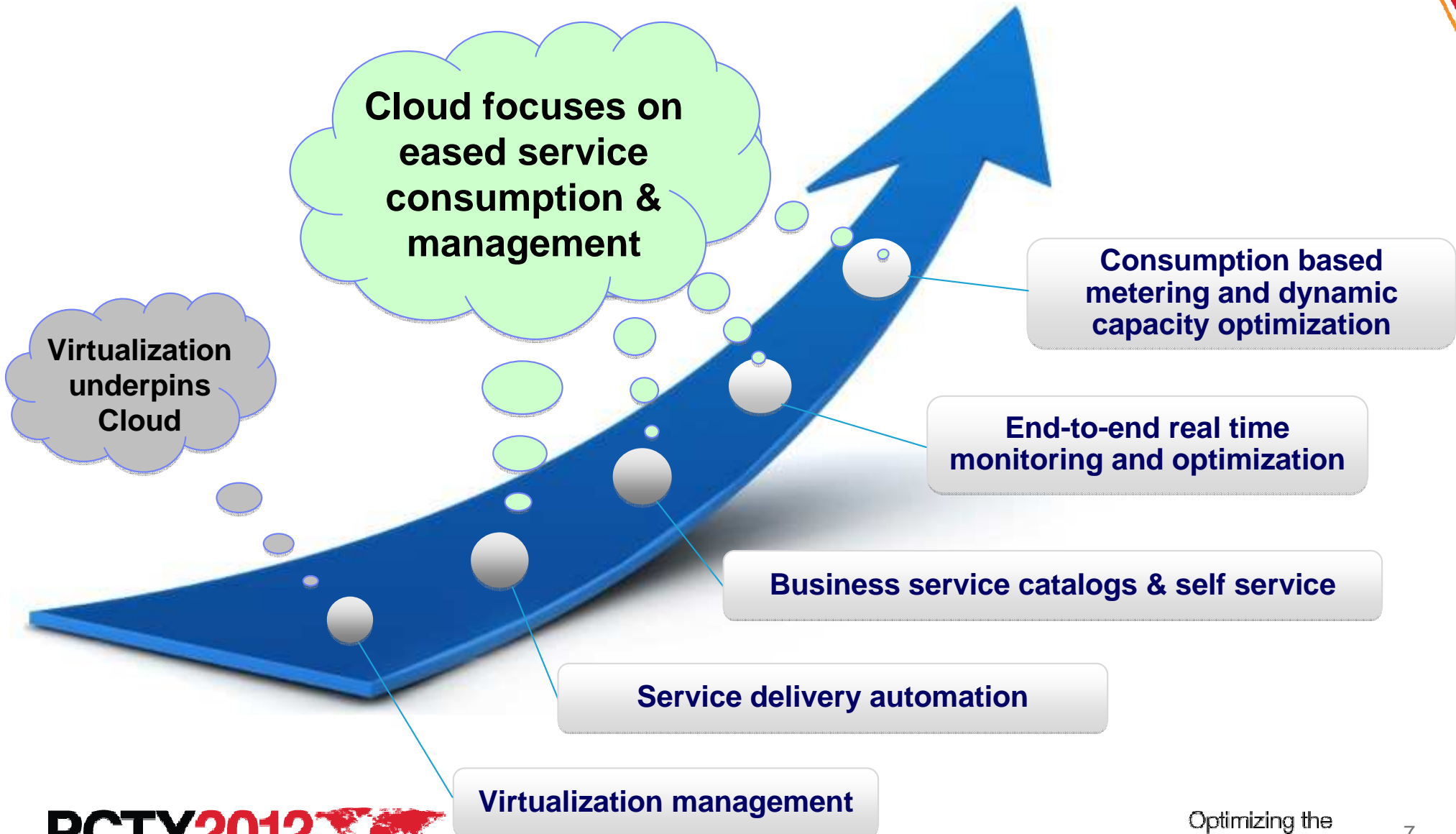
Accelerate businesses impact by leveraging Cloud business applications



Commitment to open standards and a broad ecosystem

SmartCloud

Organizations are now moving **beyond virtualization** to higher value stages of Cloud Computing



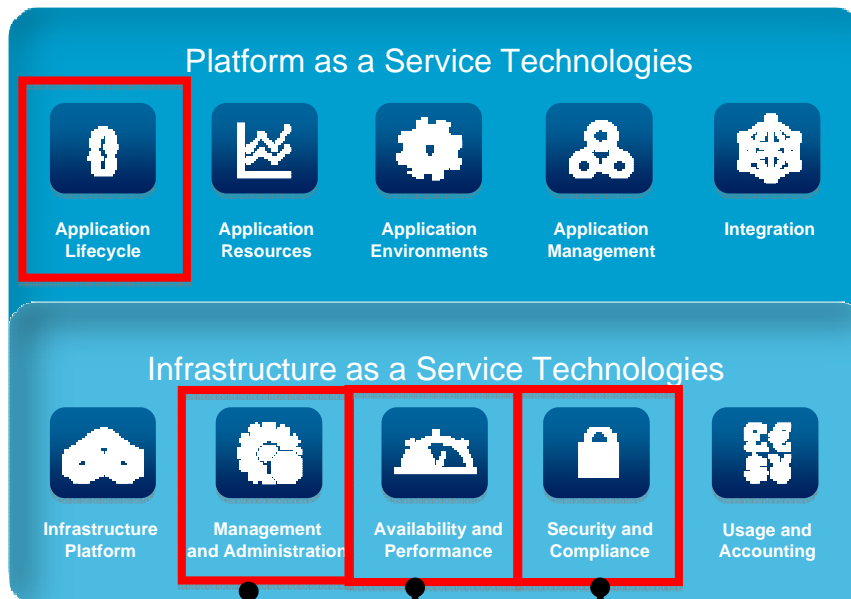
SmartCloud Foundation



AUTOMATION

- Rapid, scalable and resilient provisioning independent of hypervisor platform
- Integrated lifecycle management of cloud services (DevOps)
- Collaborative service development, testing and service provisioning
- Customized workload patterns tied to provisioning engine

IBM SmartCloud Foundation



NEW!

- IBM SmartCloud Control Desk
- IBM SmartCloud Storage Continuous Delivery
- IBM SmartCloud Virtual Storage Center

Updated

- IBM SmartCloud Provisioning
- IBM SmartCloud Monitoring
- IBM Identity/Access and IBM End Point Manager



CONTROL

- Simplified administration with image management to control image sprawl
- Reduce service disruptions with integrating service desk, change & maintenance management
- Lower costs and improve overall performance by virtualizing and better controlling storage resources



VISIBILITY

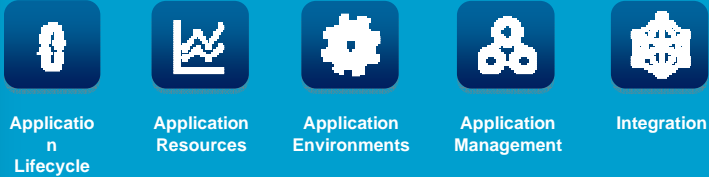
- Improved visibility into the performance of cloud resources and services optimizing usage & QoS
- Health analytics for capacity planning and workload placement improving utilization
- Secure the Cloud by enforcing policy-based access controls, including from mobile devices

SmartCloud Provisioning

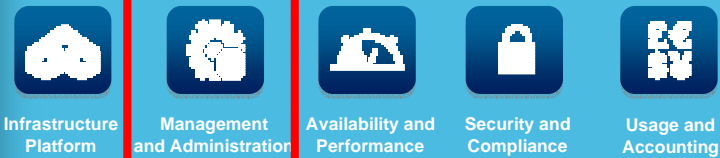


IBM SmartCloud Foundation

Platform as a Service Technologies



Infrastructure as a Service Technologies



Client Success

Dutch Cloud

- Dutch Cloud can now rapidly deploy new services in seconds vs. hours. (Deploy 100's of new VM < 5 mins).
- Improves cloud service delivery by increasing speed & delivery, while minimizing operations and costs

AUTOMATION

Reduce the complexity of Cloud delivery and image management

Business Outcomes

- **70%** reduction in image provisioning time with automated image lifecycle management
- **40% - 80%** labor cost reduction by increasing image/admin ratio efficiency
- **Reduce complexity** by managing image sprawl with health visibility and image analytics
- **Speed time to market** for applications with pattern-based workload design & deployment

SmartCloud Monitoring

IBM SmartCloud Foundation

Platform as a Service Technologies



Application Lifecycle



Application Resources



Application Environments



Application Management



Integration

Infrastructure as a Service Technologies



Infrastructure Platform



Management and Administration



Availability and Performance



Security and Compliance



Usage and Accounting

Client Success



- Increased their customer utilization from 60% to 96% with no performance degradation.



- Saving 5,000 hours of staff time by automating security processes



VISIBILITY

Better see, understand and secure Cloud Infrastructures

- IBM Security Identity and Access Assurance
- IBM End Point Manager

Updated

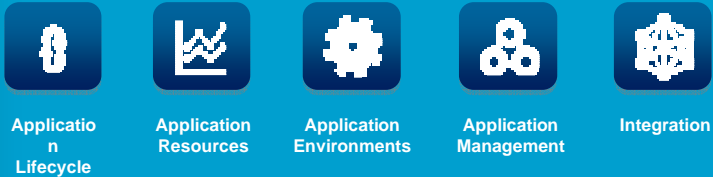
Business Outcomes

- **60%** increase in user utilization without effecting overall performance leveraging
- **20%** reduction in total cloud delivery cost using capacity optimization algorithm
- Secure access from 250K mobile users
- **30%** reduction in labor costs by via automated access & identity (incl. Mobile)

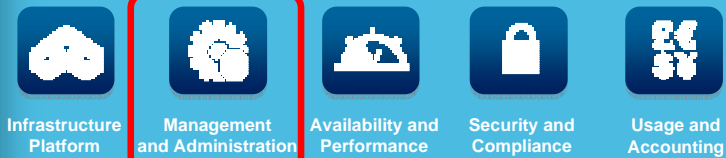
SmartCloud Virtual Storage Center

IBM SmartCloud Foundation

Platform as a Service Technologies



Infrastructure as a Service Technologies



Client Success

A large, US based teleco company could not continue to purchase Storage, and needed to improve the utilization of what they had.



They achieved **50%** better on of their storage, and **0%** reduction in maintenance costs



Intelligently controls storage resources lowering cost

Business Outcomes

- **30-80%** better storage utilization in dynamic environments leveraging virtually any storage vendor



- **100%** improvement in storage tier efficiency
- **38%** less labor needed for setup, assignment and tasks optimizing labor the challenges of day-to-day storage operations
- **60%** reduction in maintenance costs by controlling and streamlining storage lifecycle management

NEW!

SmartCloud Control Desk

IBM SmartCloud Foundation

Platform as a Service Technologies



Application Lifecycle



Application Resources



Application Environments



Application Management



Integration

Infrastructure as a Service Technologies



Infrastructure Platform



Management and Administration



Availability and Performance



Security and Compliance



Usage and Accounting

Client success



- Major energy utility uses SmartCloud Control Desk to manage assets, service requests and changes across its IT environment
- Better process linkages closes **40%** of tickets within 2 hrs and resolve **85%** of issues without resolution



CONTROL

Intelligently controls complexity and rapid change

Business Outcomes

- Up to **40%** more efficient cross functional processes controlling service requests, configuration and maintenance planning
- Up to **60%** increase in service request responsiveness to problems & user issues
- Up to **70%** reduction in change-related outages by increasing efficiency and reducing mean time to repair
- Reduces TCO by using one unified solution and supporting the industry's largest array of delivery models

NEW!

SmartCloud Services

IBM SmartCloud
Enterprise - object storage

NEW!

- Managed services for enabling flexible and reliable Cloud storage across users and apps
- Virtually always available
- Self service SLAs
- SmartCloud Enterprise platform integration

IBM SmartCloud Foundation

Cloud Enablement Technologies

IBM is building its Cloud infrastructure using these enablement technologies

IBM SmartCloud Services



Managed Cloud Service Platform

IBM uses the Foundation technologies to deliver a Cloud managed services platform (IaaS/PaaS)

SmartCloud Enterprise+

IBM SmartCloud Enterprise+ provides access to a managed, hosted cloud environment that is designed to provide:



Managed Cloud Service Platform

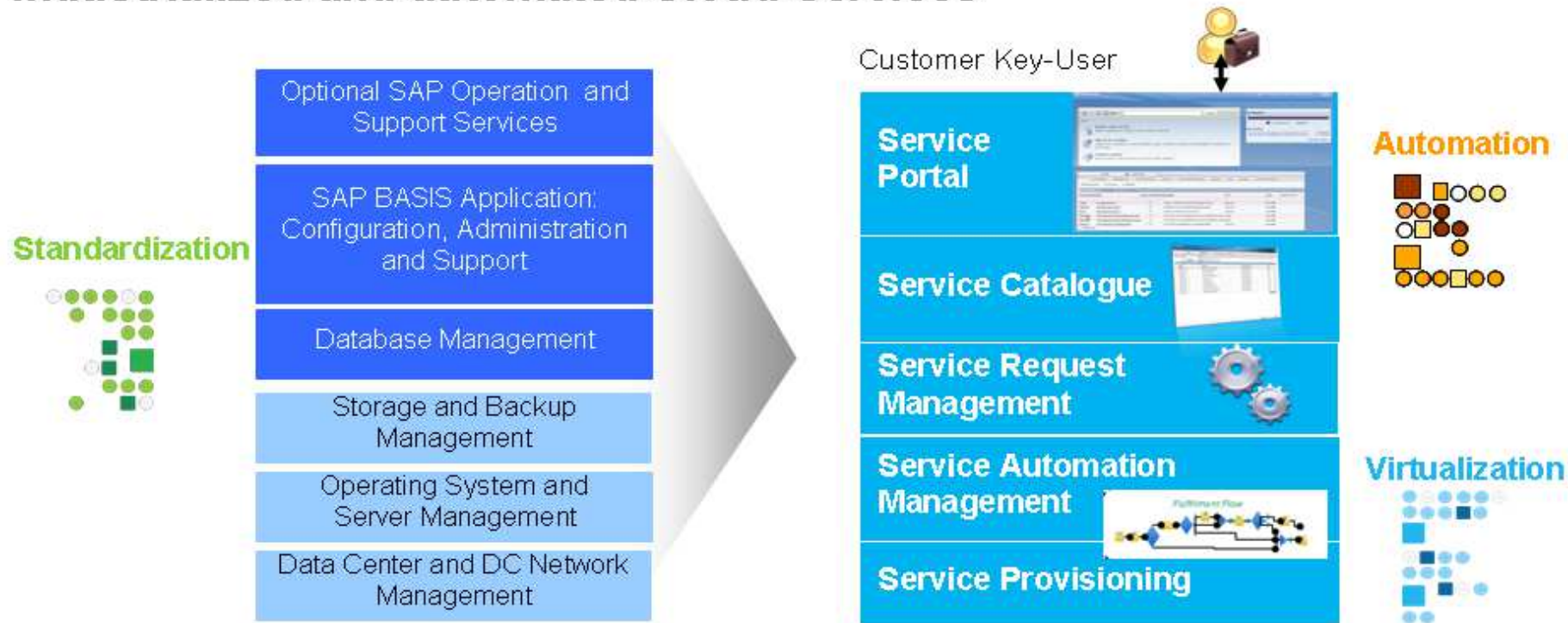
IBM uses the Foundation technologies to deliver a Cloud managed services platform (IaaS/PaaS)

- A robust cloud infrastructure that includes resources commonly used by enterprises to reduce costs and operational risks
- More flexible configuration options to facilitate differentiation for competitive advantage
- Enterprise-class capabilities to accelerate cloud adoption and improve time to value
- Committed service level agreements (SLAs up to 99,9 %) aligned to business and usage requirements to increase accountability for response time and availability

With IBM expertise in cloud consulting, migration and integration, we can help you identify the right point for getting started with IBM SmartCloud Enterprise+, based on your unique needs and business processes

SmartCloud For SAP

IBM **SC4SAP** Applications transforms traditional Services into industrialized and automated Cloud Services



Delivering SAP production and non-production environments via IBM's Cloud platforms and automating the most common labor intensive tasks associated with managing SAP environments

SmartCloud Summary



Cloud Enabled Data Center (IaaS)

Cut IT expense, risk & complexity

New capabilities improve **visibility, control** and **automation** of clouds



Cloud Platform Services (PaaS)

Accelerate time-to-market with new workloads

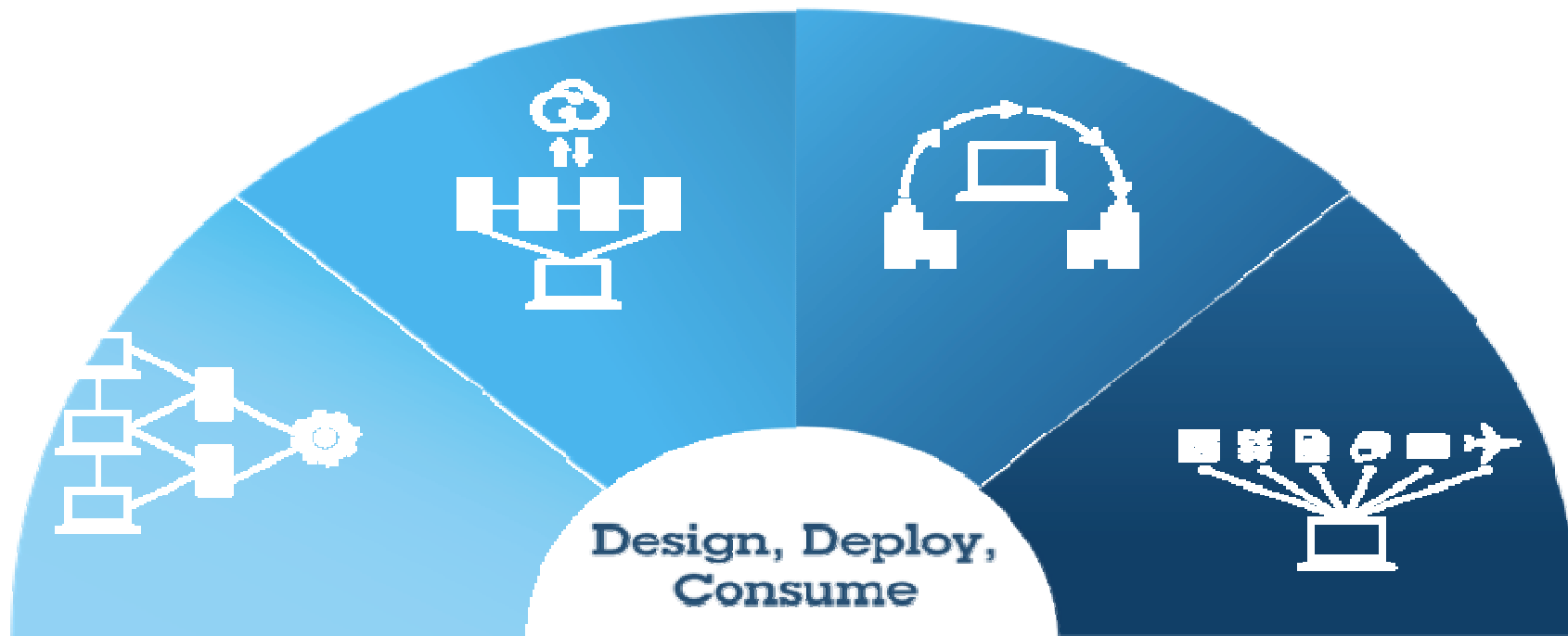
New offerings to automate DevOps ops and **flexible storage services**



Business Solutions on Cloud

Immediate access to pay for use applications

New SaaS solutions to **provide industrialized and scalable solutions**



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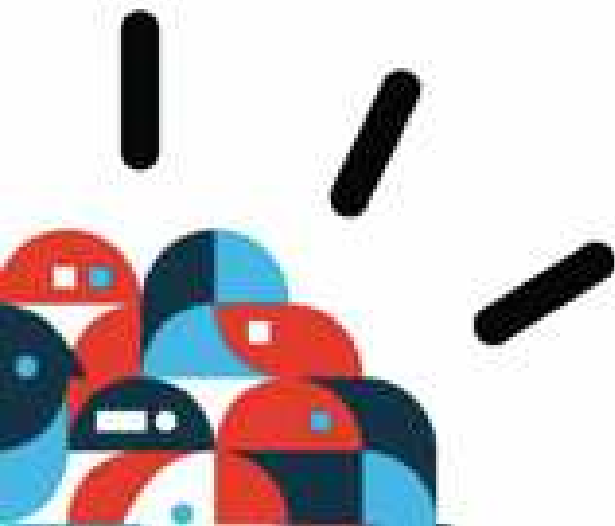
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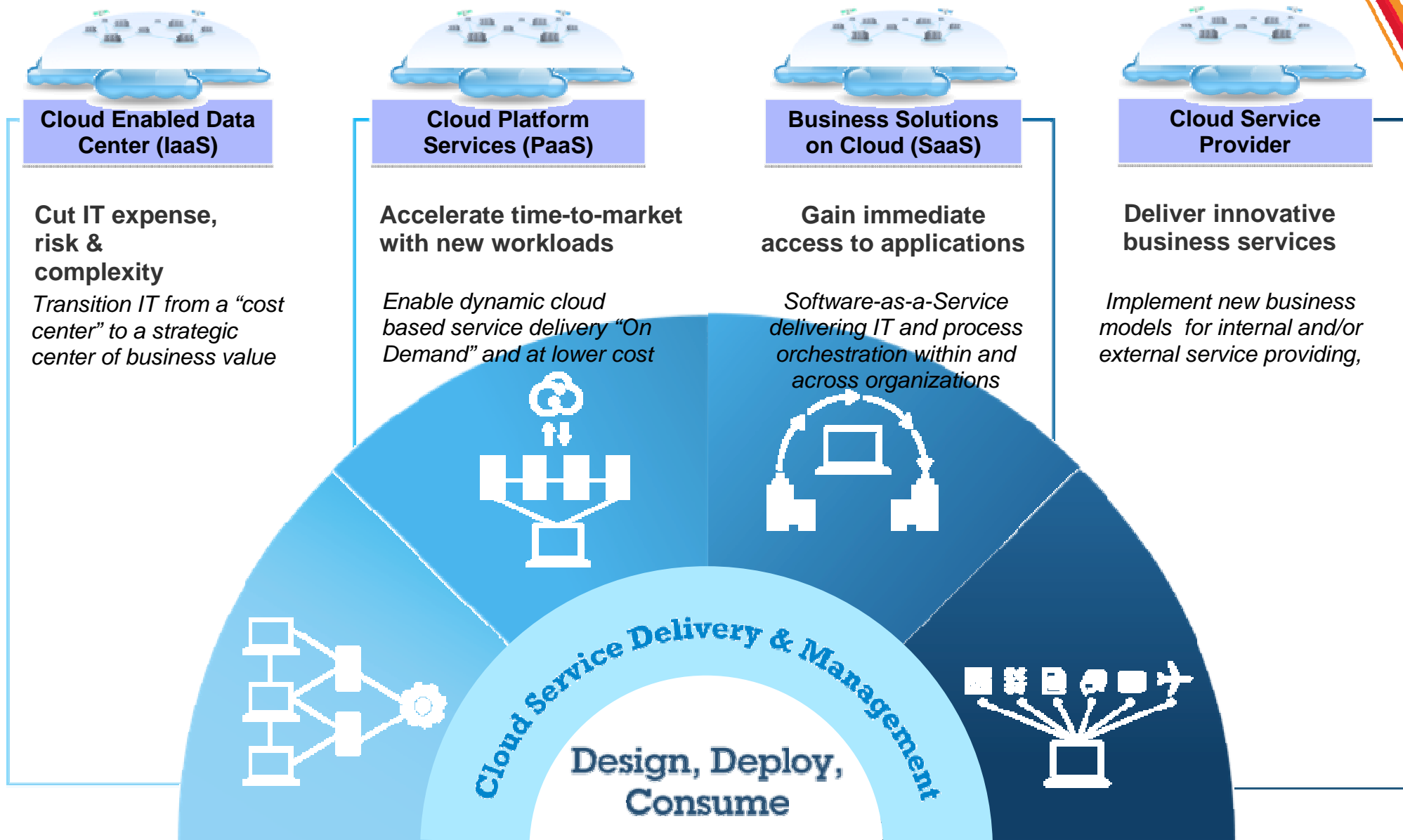
IBM.com/smartcloud/community



Rethink IT.
Reinvent Business.

SmartCloud

Cloud adoption patterns are emerging backed by proven best practices



SmartCloud

Key Drivers in Moving **beyond virtualization**

Speed Delivery



#2 priority is to align Cloud delivery to the velocity of the business.
43% want more efficiency in cloud service delivery.



Optimize QoS



54% are unsure of how many cloud services were being used”

70% report little confidence in the ability to monitoring cloud services usage

44% say lack visibility into cloud access points as the top security concern.

Control Complexity



40% loss of control and governance is a top concern”

80% focused on Cloud processes and management processes [#1 rank]

45% need more dynamic control of storage due to Cloud by 2015

SmartCloud Foundation

New Cloud enablement capabilities easing the move beyond virtualization, speeding time-to-value of new services

- Simplifies the adoption of Cloud computing by **automating** the delivery of Cloud services
- Optimizes ROI by **improving visibility** into Cloud service usage, availability and performance
- Reduces cost and risk by **controlling complexity** and improving responsiveness to change

NEW!

81%

Are moving to Cloud, with 62% of CIO's citing it as the top priority

70%

Are concerned about the ability to see and understand their Cloud environments

43%

Are focusing on improving Cloud efficiency, speed and control



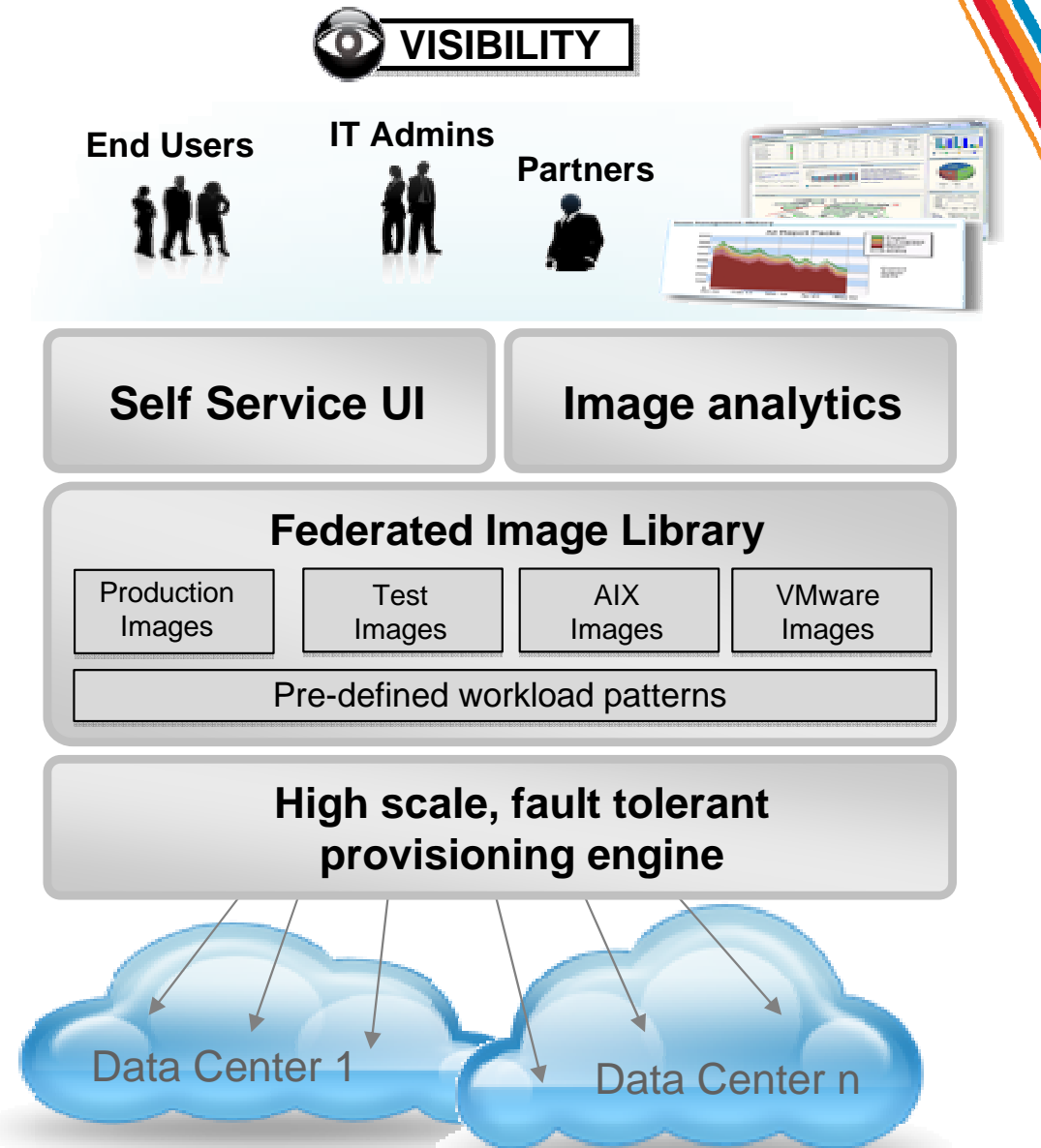
Rethink IT.
Reinvent Business.

PCTY2012

SmartCloud Provisioning

Reduces complexity of Cloud delivery and image management

- **Eases service deployment** while rapidly scaling to the dynamic needs of users
- **Advanced image management** leveraging rich analytics, image versioning and federated libraries
- **Easily customize** with design and deployment patterns improving efficiency
- **Greater reliable**, by automatically tolerating and recovering from infrastructure failures
- **Save IT labor cost** by enabling self-service requests and automated operations (no manual configuration)



SmartCloud Continuous Delivery



DevOps collaborate to develop environment definitions and monitoring

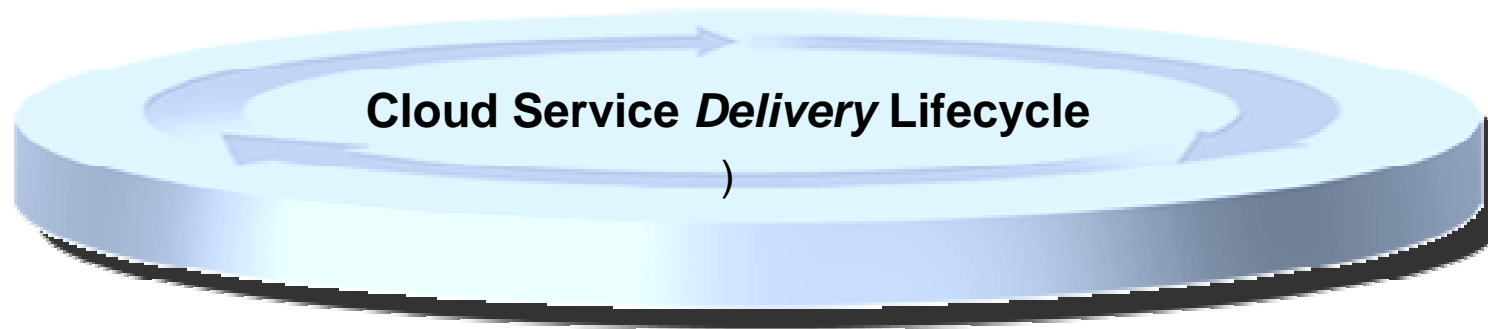
Value: Ensures that Development understands production-like environments; avoids architectural conflicts

Development continuously delivers application changes to a realistic environment for testing

Value: Shared approach ensures testable environments and script reuse for repeatable delivery; Test org always has known good builds, properly deployed.

Promote Applications from Test/Staging to production

Value: Shared technology and automation ensures no gratuitous differences between dev/test and prod.



Manage the entire delivery pipeline with end-to-end visibility and dashboards

Value: Enables end-to-end delivery metrics and visibility into bottlenecks.

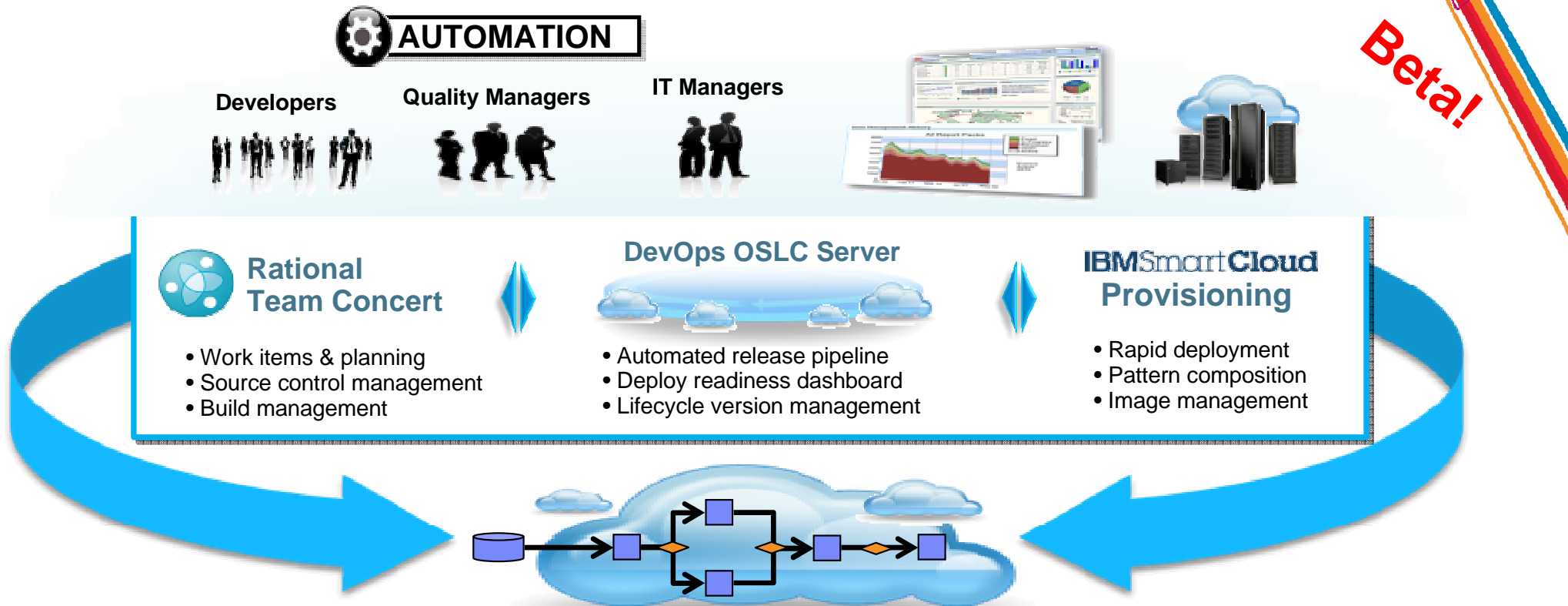
DevOps troubleshoot together, using the same analysis and instrumentation in dev, test, ops

Value: Ensures a common understanding of quality and performance (and no fingerpointing)

Collaborative incident management and user support

Value: ensures an integrated process for reproducing and resolving defects and issues between dev, test, and ops.

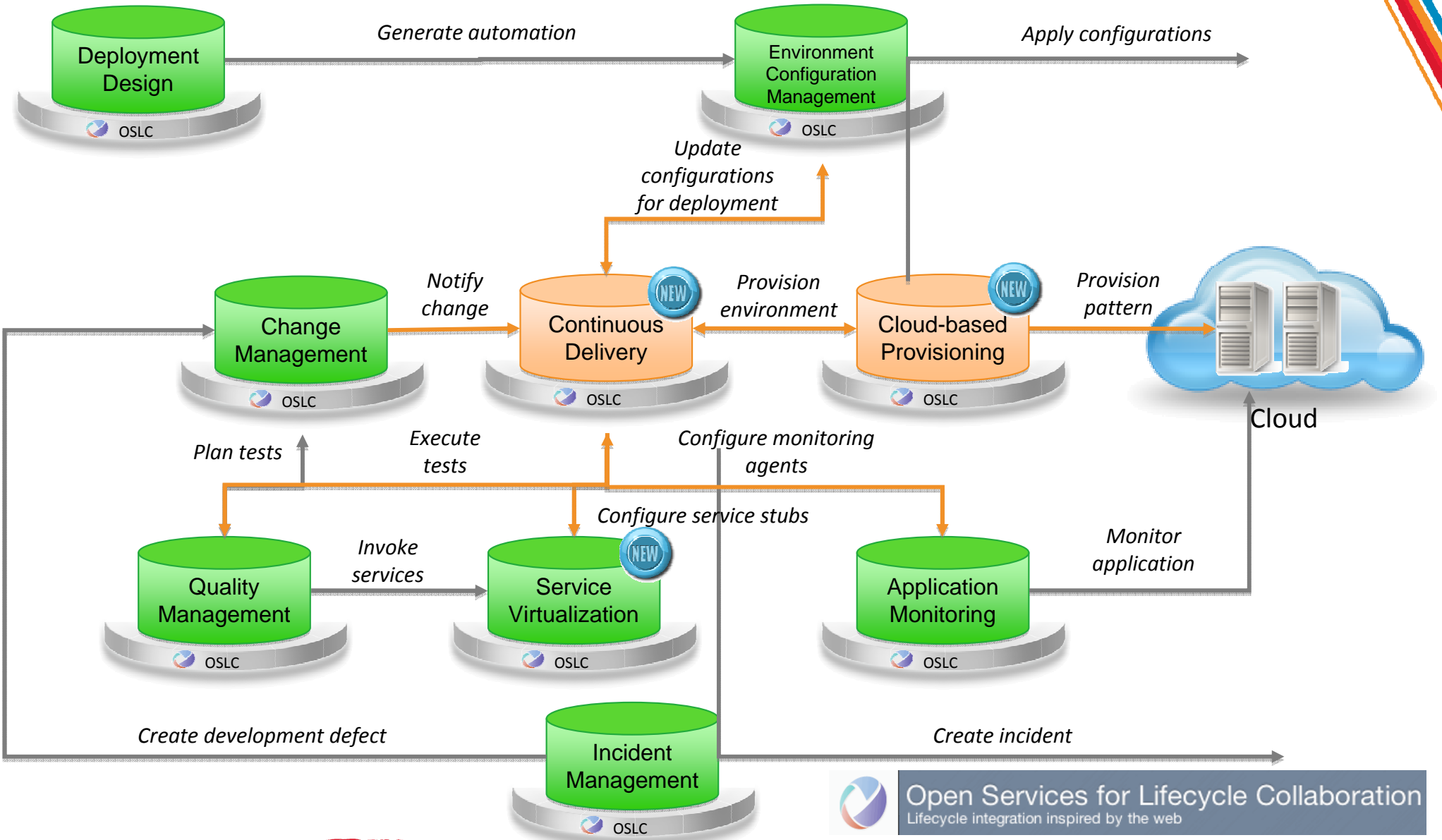
SmartCloud Continuous Delivery



- Customizable common service delivery workflow spanning Dev, Test and Ops teams
- Automated release management for highly scalable, ultra-fast application deployments
- Continuous integration and testing of in production-like environments leveraging **Green Hat**
- Release readiness dashboard provides visibility and enables collaboration between DevOps
- Integrated suite built upon Rational Team Concert & SmartCloud Provisioning

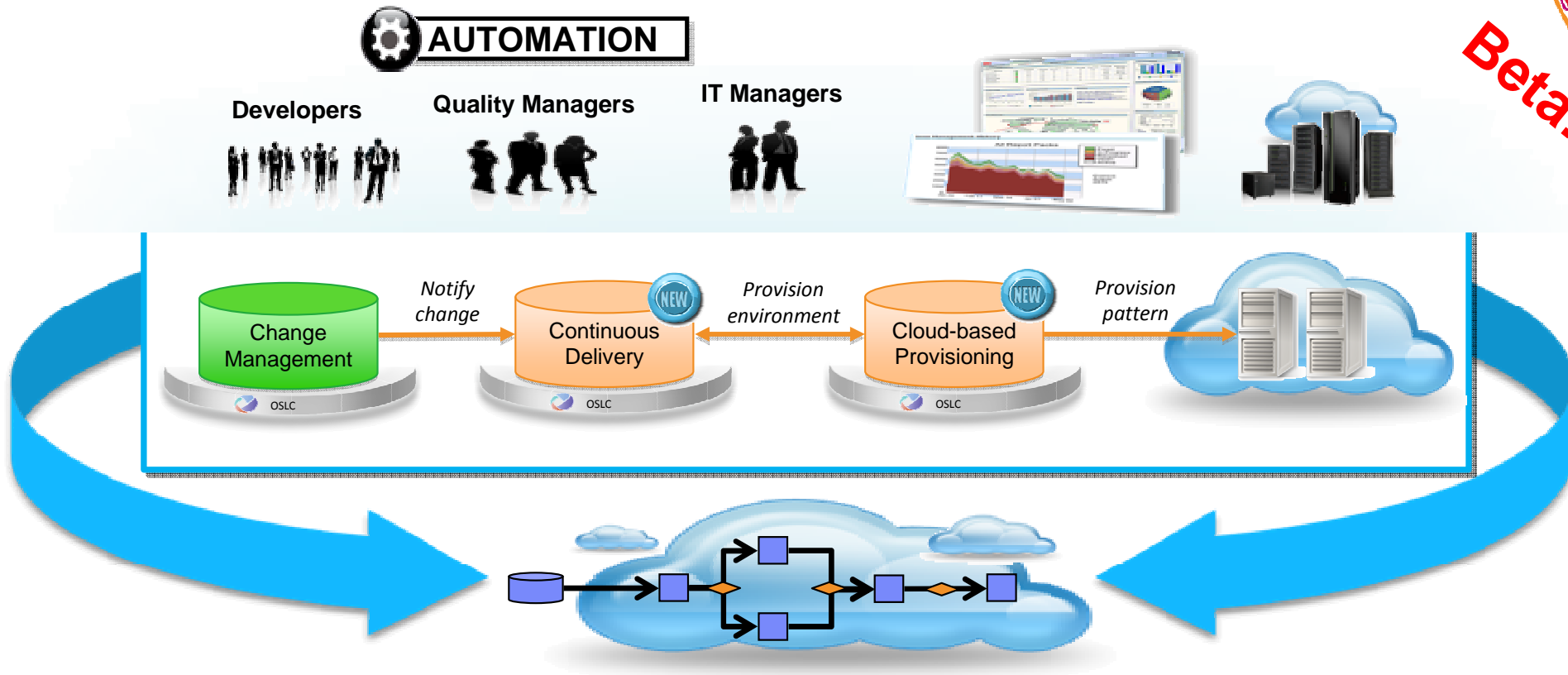
SmartCloud Continuous Delivery

 Capabilities/integrations to build



 **Open Services for Lifecycle Collaboration**
Lifecycle integration inspired by the web

SmartCloud Continuous Delivery



Solution Capabilities

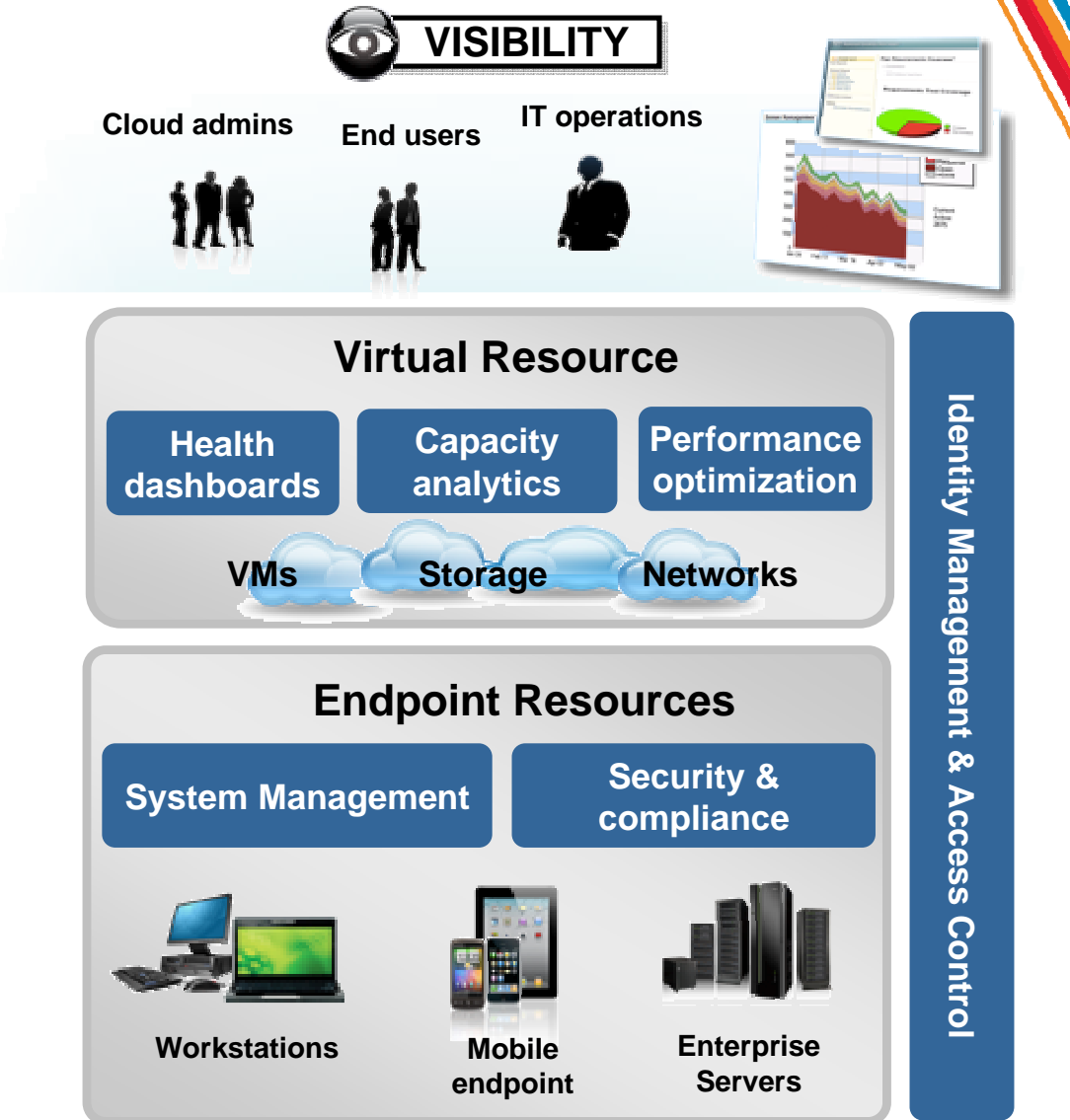
- Sets up the DevOps project (RTC) with the pipeline work flow and tasks, such as, Build, Test, Deploy
- Tracks changes (in RTC SCM) including dev code, app config, instrumentation, and installation scripts
- Executes Pipeline Tasks when triggered by changes, such as, Code check-in, by a developer.
- No-touch automatic execution of tasks including build & packaging, provisioning of the systems in the Cloud, set up of the system, app and configuration, and testing
- Internal Library to track versions of releases enabling tracing of defects to environment
- Dashboard to track pipeline flow and metrics

SmartCloud Monitoring*

Better see, understand and secure Cloud Infrastructures

- **Optimizes Cloud performance and availability lowering operational cost**
 - Rich analytics of Cloud services
 - Track cloud service levels and predict problems before user impact
 - Right-size VMs with built-in analytics
 - Better utilize existing HW/SW investments
 - Consolidate workloads on fewer servers
- **Better manage Cloud service endpoints** by tracking configuration compliance and secure access across mobile endpoints
- **Optimize Cloud security and compliance** by enforcing policy-based identity and access control to cloud services

IBM SmartCloud Monitoring in partnership with
* IBM Endpoint Manager and IBM Security Identity/Access Assurance



SmartCloud Virtual Storage Center

Intelligently controls storage resources

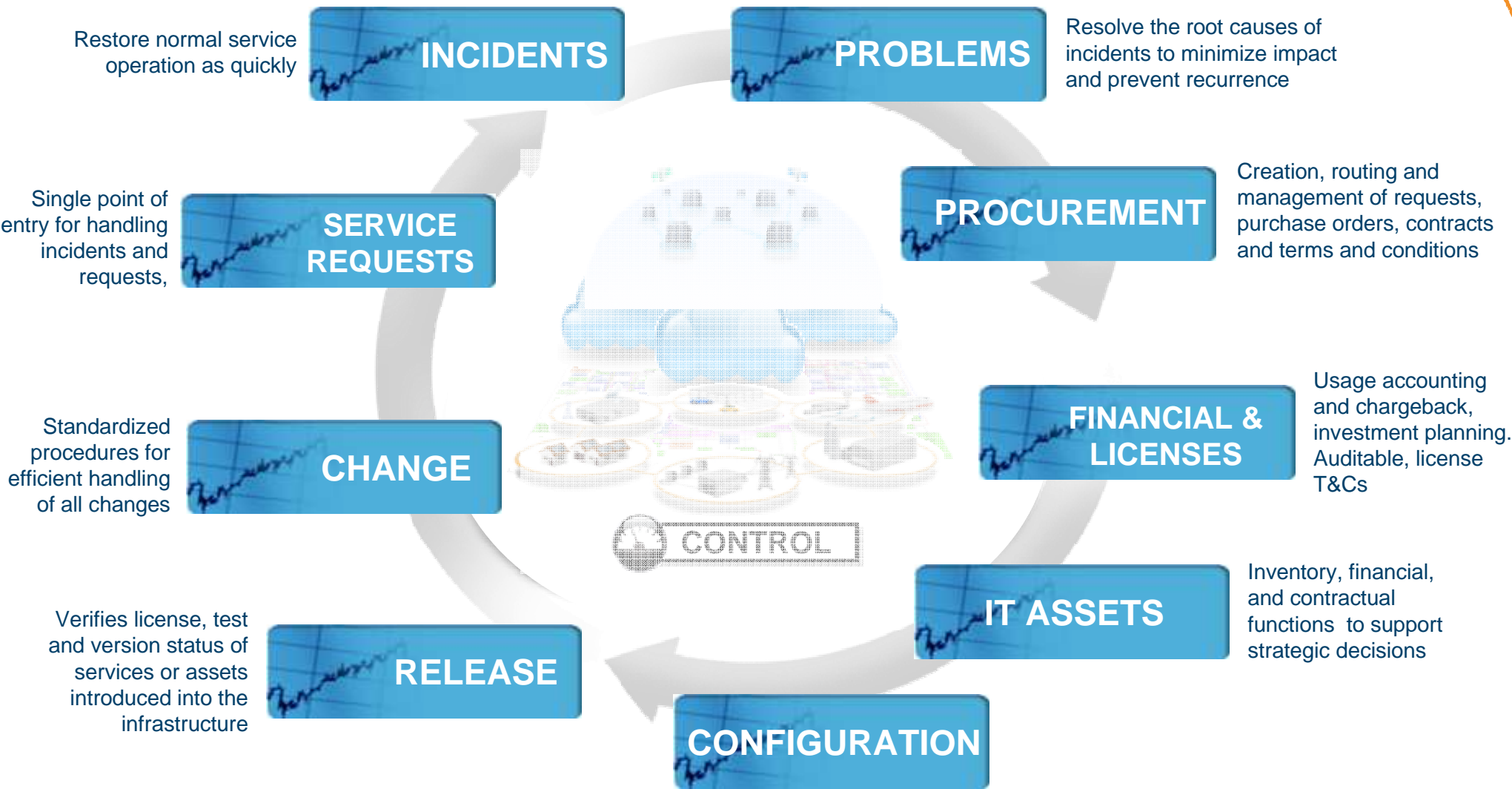
- **Virtualized storage resources**
from multiple arrays, vendors, and datacenters – pooled together and accessed anywhere.
- **Standardized storage services**
selected from a service catalog
- **Mobility of storage volumes**
Move on the fly based on workload balancing policies
- **Self service provisioning** using automation to allocate capacity
- **Paid per use storage resources**
end users are aware of the impact of their consumption, service level choices



Early
Experience
Program

SmartCloud Control Desk

Holistically controls complex service management processes

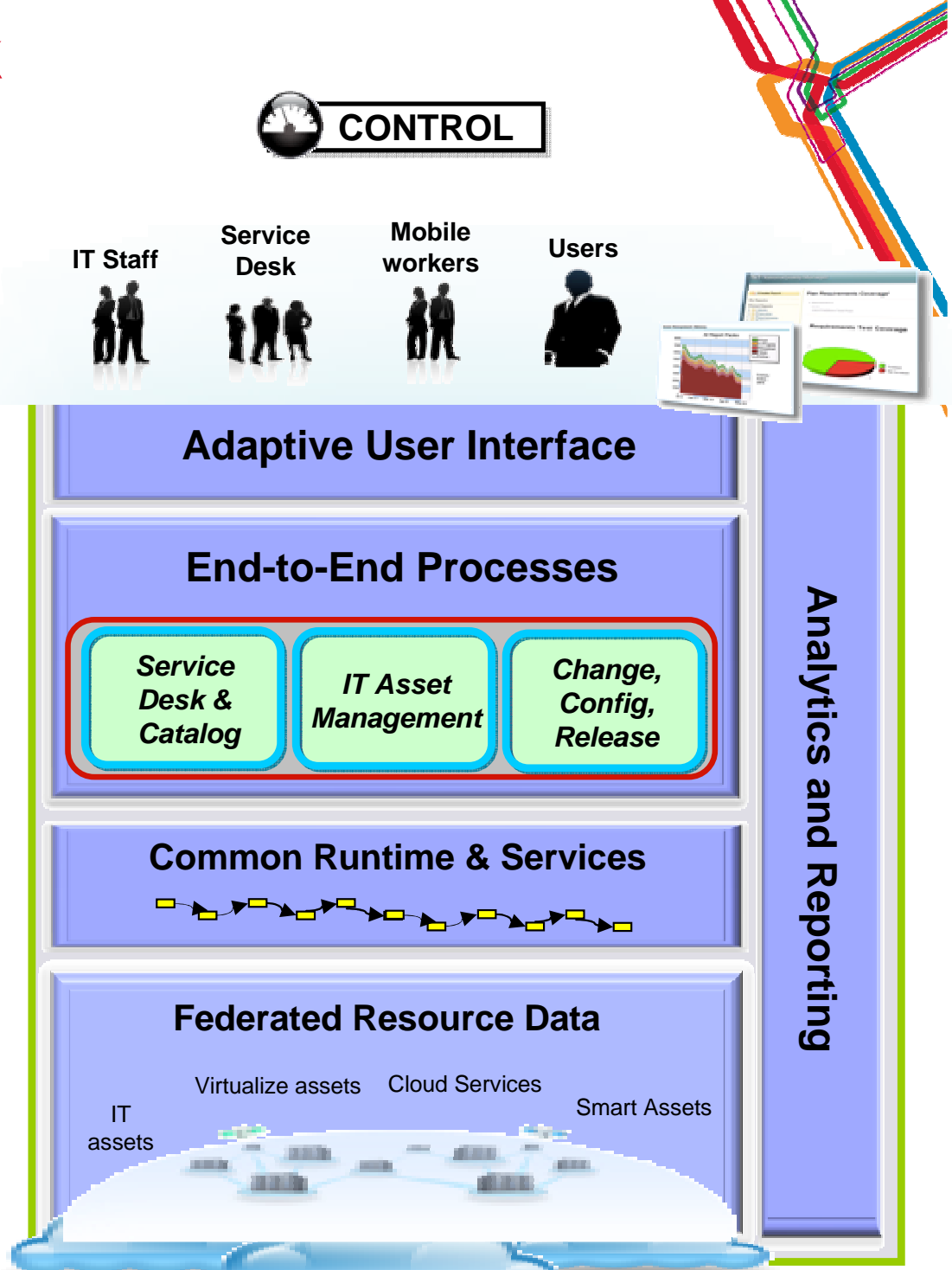


SmartCloud Control Desk

Intelligently controls complexity & rapid change

- Automates control of service incidents and changes with standardized governance procedures across siloes
- Better control risk & cost leveraging automated impact analysts & reports
- Collaborative, role-based usability, with access anywhere at anytime (mobile)
- Supports broad set of delivery models including traditional on-premise, cloud, virtualized, SaaS or physical
- A unified, lower cost solution for controlling the complexities of multiple, concurrent ITIL processes

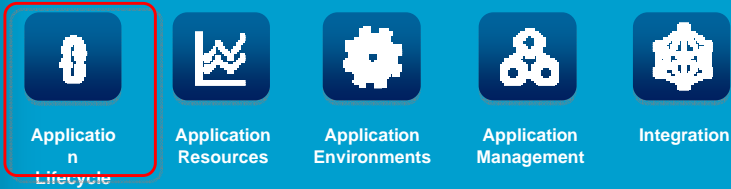
* A software product for private clouds



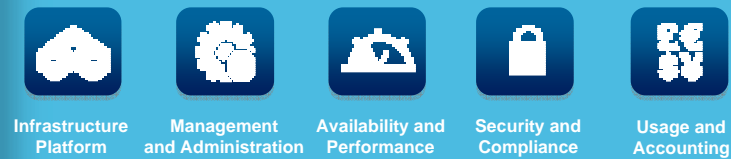
SmartCloud Continuous Delivery

IBM SmartCloud Foundation

Platform as a Service Technologies



Infrastructure as a Service Technologies



Client Success



- SunTrust increased business agility without sacrificing operation discipline, quality, and governance
- Achieved a **5 times** faster application build and deploy times and reduced errors by 93%



AUTOMATION

Accelerate service development and deployment with higher quality

Business Outcomes

- **Shortens** delivery time from **months to days** through end-to-end automation, standardization and repeatability
- **20%** reduction in resource costs while increasing predictability of deployments through low touch and self-service
- **40%** more agility by streamlining operation and development collaboration with in-context communication
- **20%** increases in application service availability and performance by improving stakeholder of alignment dev, test and ops

New!

SmartCloud object - storage



A managed service for upload once, access anywhere Cloud capabilities

Business Outcomes

Unlimited File Size - Virtually any file, any size uploaded anywhere from any type of device or access point

Data Consistency - File changes are reflected across the whole cloud everywhere around the world immediately, unlike other clouds, which update file versions periodically

True Global Namespace - Enables customers to upload a file of any size from anywhere in the world and access it anywhere. This provide customers with continuous access to data at multiple, redundant locations for optimal performance and business continuity.

Self-Healing Data Integrity – Advanced software that performs continuous data integrity checks on all stored files and automatically repairs files that are corrupt.

Self-Provisioning – Customers can provision their own storage from a dedicated, intuitive management portal.

Client Success

Beta experiences clients in Healthcare, Media & Entertainment, Banking & Insurance, Energy/Utilities

- Unique upload once, access anywhere Technology
- Enterprise Service Level Agreements – Up to four nines (99.99%) of data availability.

SmartCloud Intelligent Operations Center



IBM SmartCloud Solutions

Business Process as a Service
Software as a Service

Business Analytics and Optimization Social Business

Smarter Commerce **Smarter Cities**

Intelligently manages city operations at lower cost

- IBM Intelligent Water on the Cloud*
- IBM Intelligent Transportation on the Cloud*

Client Success

Large U.S. city supplies safe, quality drinking water to **122,000 customers**

- Access to live data from sensors in a matter of **weeks**
- Sensors pro-actively **monitor and alert** the city when water is at danger levels
- **Real-time data** feeds a dashboard \ to identify risk "hotspots"

Business Outcomes

- **Monitors and manages** city services providing operational insight into daily city operations through centralized intelligence.
- Enables better management of water, assets and customers using **insights from data**.
- Provides **visibility across citywide traffic** to help alleviate congestion, optimize road capacity, rapidly respond to incidents and enhance travel experiences
- All provided with **choice of deployment:** on-premise, private cloud and Cloud SaaS