Cloud and Retail Banking Transformation

Gaining Competitive Advantage in the Era of Smart

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Key Takeaways

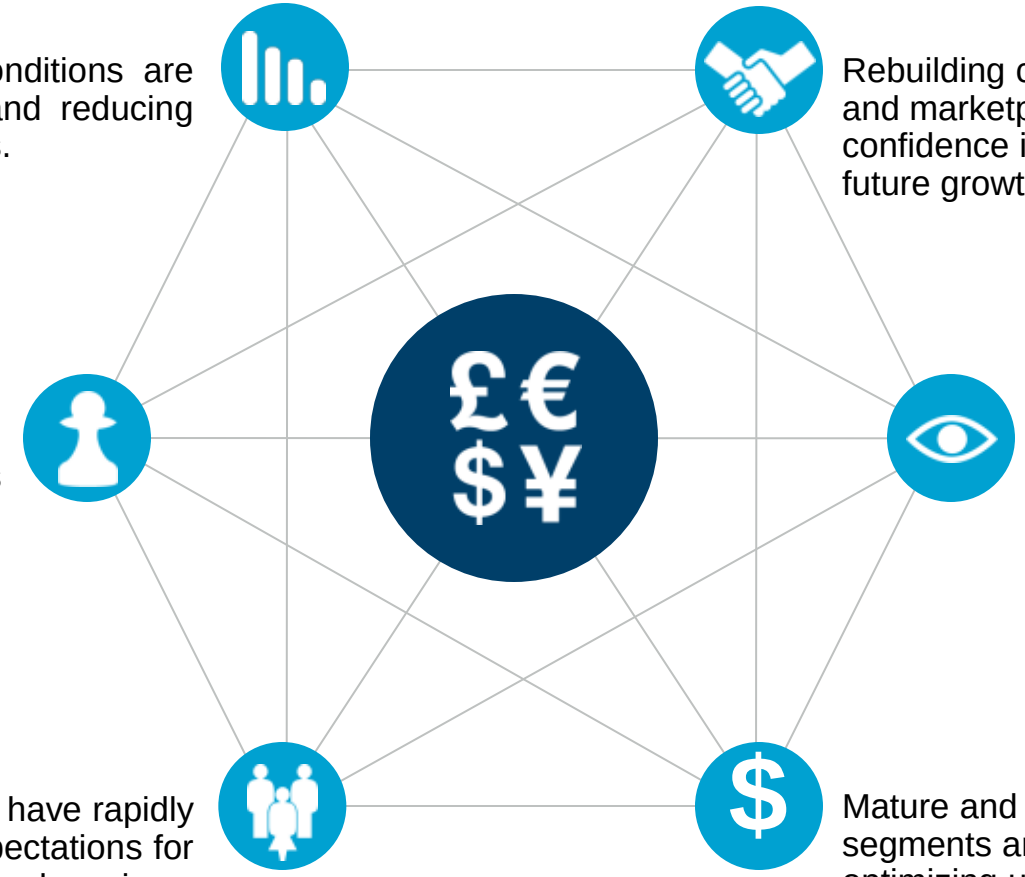
1. **Cloud and "big data" are producing game-changing results**
   - Data is the basis of competition in the "smarter" era
   - Decisions will be based not on "gut instinct" but on predictive analytics
     - Cloud proof points are spreading
     - Deployment models are secure, proven
2. **The social network is the new production line.**
   - Customers are driving new models
   - Value will be created for individuals not "market segments
   - Banks will react with innovation in business models, operations, and IT
3. **Cloud is driving business model transformation, not just cost savings**
   - "60% of CIOs plan to use Cloud—up from 33% two years ago" *IBM CIO Study*
   - Five CTO/CIO's discuss disruptive leapfrogging… http://www.youtube.com/watch?v=CD_elWBD1Zk
4. **Skilled competition is moving fast.**
   - Non-traditional competitors are rapidly enhancing their Cloud + Big Data capabilities.
   - Apple's Passbook already offers boarding passes, movie tickets, retail coupons, loyalty cards. . .what's next? Amex to respond with a virtual wallet.
   - Who will own the app?

What's at risk for traditional Retail Banking players are interchange revenue, loans outstanding and fee revenue

Industry changes mean that Banking & Financial Market Executives need to find ways to differentiate and drive profitability

Turbulent global conditions are affecting revenue and reducing demand for services.

Rebuilding customer trust and marketplace confidence is critical to future growth.



Competition is intensifying with M&A, divestitures, and non-traditional entrants

Radically increased oversight is driving investment in risk management technology.

Clients have rapidly evolving expectations for offerings and services.

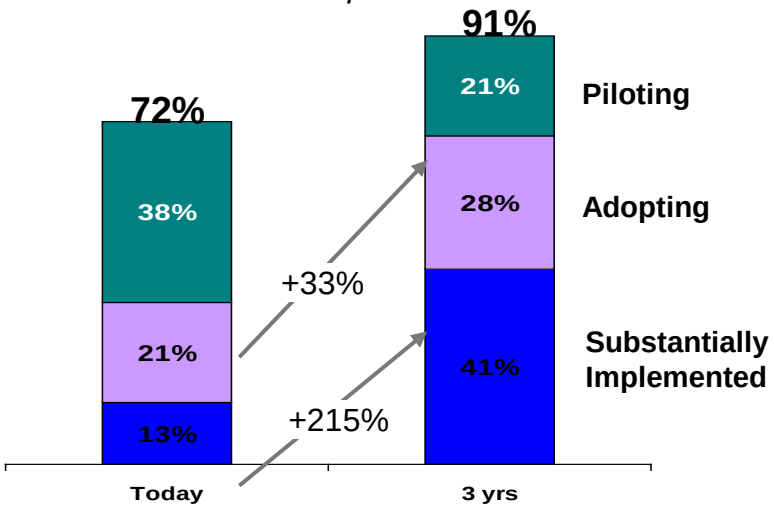
Mature and emerging market segments are focus on optimizing use of capital.

Cloud helps address The Bankers' Paradox: "How do we cut costs today, while still investing in future growth?"

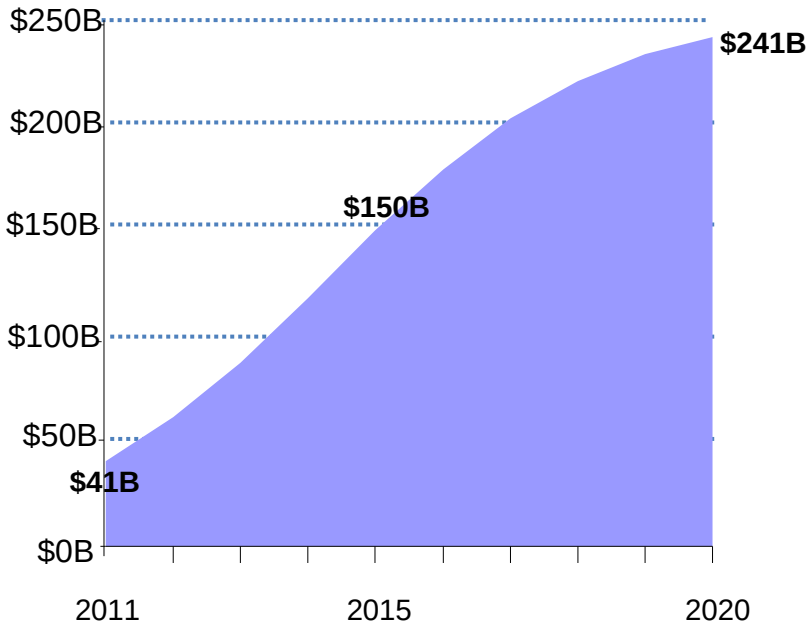
Cloud is widely recognized as an increasingly important technology.

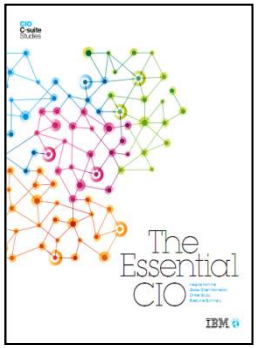
What is Your Organization's Level of Cloud Adoption?

% of Respondents



The Global Cloud Computing Market is Forecast to Grow 22% per year through 2020





Banking CIO's top focus:

1. Insight & Intelligence
2. Client Intimacy
3. Virtualization
4. **Cloud Computing**

Nearly half (48%) of CIOs surveyed evaluate cloud options first, over traditional IT approaches, before making any new IT investments

Source: (1) 2011 joint IBV/EIU Cloud-enabled Business Model Survey of 572 business & IT leaders; Q4. Which of the following most accurately describes your organization's level of cloud technology adoption today and which do you expect will best describe it in three years?
Sizing the Cloud , Forrester Research, April 21, 2011; ; CIO.com, June 14, 2011, http://www.cio.com/article/684338/Survey_CIOs_Are_Putting_the_Cloud_First

Agenda

1. The Customer 2017 – changing needs, changing models
2. The Cloud Value Proposition – business and technology value
3. The Cloud Successes – models and case studies
4. The Cloud – what's important?

By 2017, customers will be more complex and more in control.

Changes to the customers will be significant…

Customers Change Segments

- Mobile adds billions of **newly banked**
- The "pre-inheritance" periods where aging parents need help **managing** finances
- Wealth Management as **$trillions transfer**
- New value **aggregators** steal customers


Technologies Change Interactions

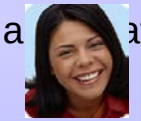
- **Learning** systems interact with humans
- **Analytics** create value for everyone
- Slick **integration** between platforms, channels, computers, phones,
- **Biometrics** for authentication


Control Changes Hands

- The front office is now largely **customer-owned-devices**
- The next **App Store** - who owns it?
- **Cloud** as a business model vs. just technology
- **Payments** multiply: "50 ways to give you money" if standards don't emerge


Culture Changes Value Propositions

- No **"normal"** household of customers
- **Location** services, meet-ups, value in the app
- **Security** issues migrate to each new service
- **Privacy** continues to decline
- **Soci** dia usage is no longer a ated

… therefore, the Bank of 2017 will have new imperatives.

Think like a Retailer

Build extended ecosystem to support customer's everyday buying and paying needs

Act like a Manufacturer

Bring products and services at lowest possible cost to customers leveraging scale and efficiency

Operate as One Bank

Provide single, consistent and delightful customer experience in every interaction

Build Trust thru Risk Management

Protect customer by improving financial and fiduciary risk to gain complete trust

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What is Cloud Computing?

Definition: Computing as a service over the Internet. Cloud is the delivery of elastic, on-demand computing resources—everything from applications to data centers—over the Internet on a pay-for-use basis.

Characteristics:

1. *On **demand** self-service*
2. *Ubiquitous network **access***
3. ***Faster gratification***
3. ***Location** independent*
4. *Rapid **elasticity** of resources*
5. ***Flexible** pricing, billing models*
6. *Infrastructure **not visible** to end user*
7. *Standard services at **lower costs***

Services could be:

Business	Example
- Customer Centric	MUFG
- Transformative	IBM
- Collaborative	ERSTE BANK
Technology	Example
- Speed	citi
- Agility	ING
- Security & Trust	UnionPay 银联 中国银联 China UnionPay

Banking & Financial Markets: Ten (10) Usage Scenarios for Cloud Workloads

Analytics

- Allows integration of customer data across banking silos to enable real-time insights and decision making. Solutions improve institutional view of customer, enable better CRM, mitigate fraud and operational risk, improve customer service and experience

Business Services

- Processing (e.g., application, servicing mgmt)
- Customer Interaction & Distribution (e.g., relationship mgmt, marketing info)
- Insight (e.g., segment analysis, customer behavior, customer portfolio analysis)

Collaboration

- Communications and collaboration tools provide solutions to enable employees to share information seamlessly internally and with partners and customers. Includes opportunity for better delivery channel collaboration (e.g. Cloud-enabled Mobile Banking).

Desktop and devices

- Range of solutions can reduce costs & complexity, enable better security of PC data, enable centralized management of critical enterprise data and enable building of new applications and services that leverage shared data. Example: ability to enhance security by limiting data access of sensitive data.

Development and test

- Banks can provision/configure environments for developing applications as needed. Leads to faster deployments, lower investment & risks, & greater operational efficiencies.

Source: IBM Market Insights Analysis

Industry Applications

- Industry-focused archival cloud provides an cost effective, scalable and secure infrastructure for data that institutions are mandated to retain. Possible usage scenarios include: Payments, Retail Banking, offloading growing unstructured data and alleviating branch infrastructure storage. Platform for analytics solutions

.

Infrastructure compute

- Flexibly deployed infrastructure to ensure greater IT efficiency. Enables opportunity to scale-up for compute needs such as data mining projects.

Infrastructure storage

- Scalable storage infrastructure to ensure high performance for real-time trading and analytics, enable policy-driven data archival to address compliance while supporting growing storage needs for managing large data sets from multiple sources.

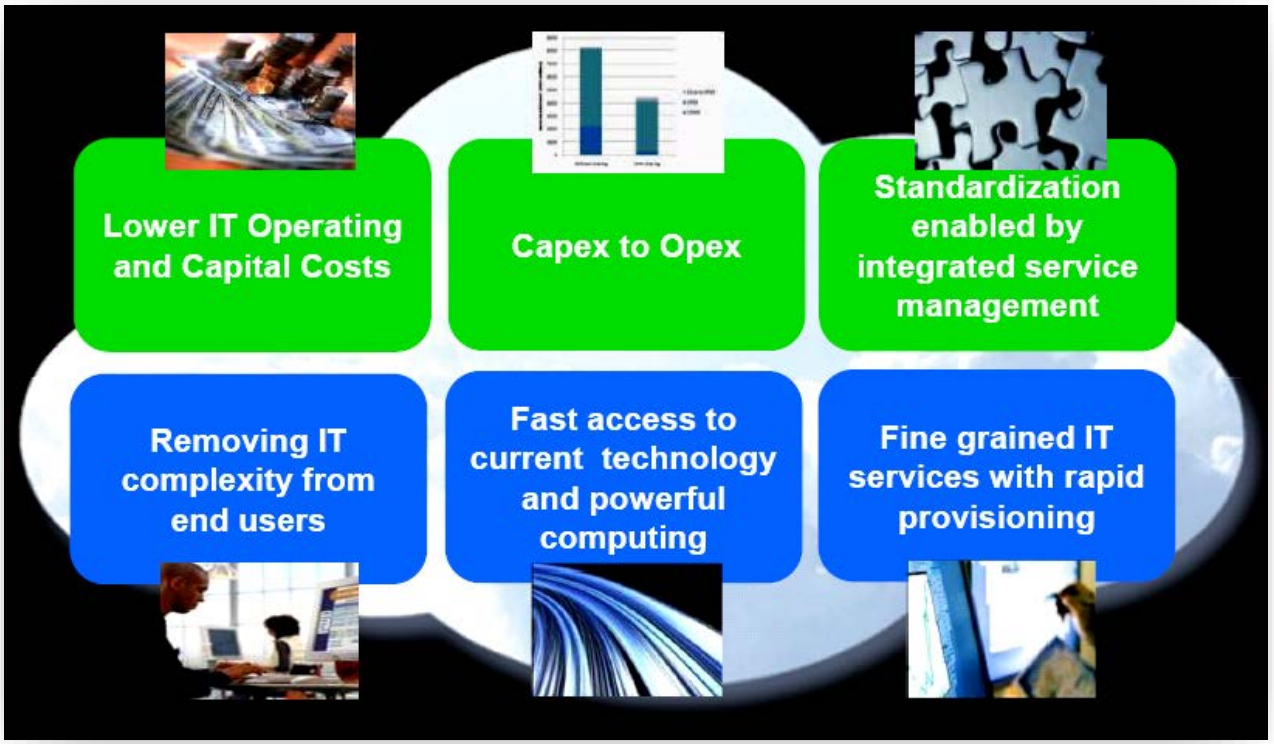
Managed backup

- Enables institutions with exponential data growth or regulatory requirements to better protect data at reduced costs. Helps banks quickly backup, restore and maintain access to critical data. Solutions are available for any environment with critical data including both DC and remote office environments.

Security

- Improve security of globally distributed banking operations. Ensures coordinated event/log management and intrusion detection across the evolving delivery chain. Helps to lower management burden for IT staff.

The CIO's view – simplify, lower costs, accelerate results



Hardware payback: 30%-70%

Provisioning payback: 48%-90%

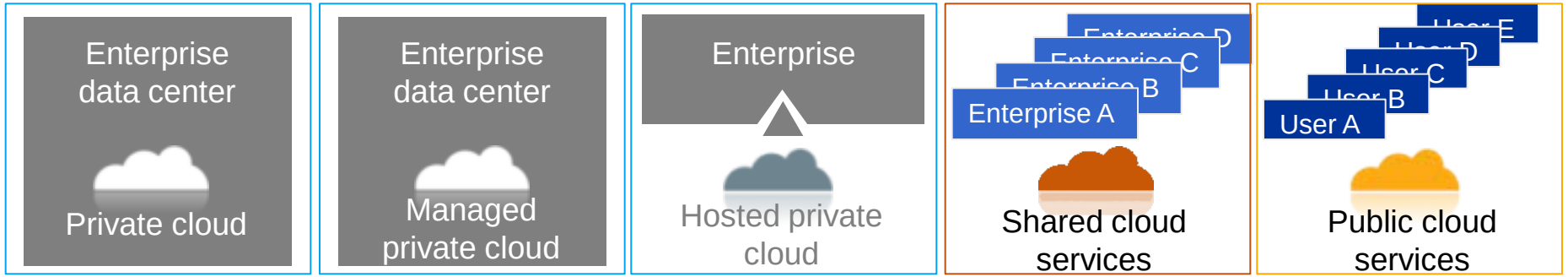
Productivity payback: up to 90%

System Administration payback: 36%-45%

Cloud-based business models can be exploited through multiple options

Private
Capabilities are provided "as a service," over an intranet, within the enterprise and behind the firewall

Public
Activities / functions are provided "as a service," over the Internet



Hybrid Internal and external service delivery methods are integrated

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Case Study: Six Places to get started. IBM's Internal Cloud Results.

200,000+ IBMers rely on IBM SmartCloud to drive business-model transformation

1. Analytics	2. Social	3. Develop/Test	4. Desktop	5. Storage	6. Product Support
					
Blue Insight	**LotusLive**	**Develop/ Test Cloud**	**Workplace Cloud**	**Storage Cloud**	**Production Cloud**
• **200,000 users,** 500 ported applications • Predictive modelling (SPSS) and data mgmt	• **85%** of web conference minutes • > 275M meeting minutes in just six months	• Server setup from 5 days to 1 hour • > 90% of new server reqs via this cloud • Expanded deployments & user base	• 2,000 users China Develop Lab • 200 user pilot SBDC on the IBM Cloud	• File storage cloud used by > 130K users & applications • Block storage cloud w/ automated tiering w/ 50% reduction $/GB	• Private instance up & running • First applications migrated and operating • Refining platform, expanding use
SaaS	SaaS	IaaS	IaaS	IaaS	IaaS

Case Study: Monet, a leading Pakistan mobile-commerce provider delivers growth via mobile banking on the Cloud

Pakistan: 180M population. 70% mobile phone penetration, but only a 22% bank ratio.

Monet: Offering customers a wide range of mobile financial services

Monet provides banks, mobile network operators and branchless banking agents in Pakistan with a technology platform that offers end-users a simple interface to access a wide range of financial services on their mobile phones.

Solution: Monet selects IBM Cloud & Visa Fundamo, a wholly owned subsidiary of Visa, Inc., a leading mobile financial services platform provider and an IBM partner.

Source: http://www-03.ibm.com/press/us/en/pressrelease/39290.wss

Case Study: Driving Efficiency for 20,000 developers. Global bank implements Cloud to gain competitive advantage, increase flexibility and streamline operations

. . .from 45 days to less than 20 minutes. . .

Citigroup slashed server provisioning times for its 20,000 developers speeding development cycles and allowing the bank to put new features and enhancements in the hands of customers more rapidly.

citi

Business problem: Citigroup needed to dramatically reduce time to market, radically improve operational efficiencies and make the bank's 20,000 developers more productive

Solution: IBM built a private SmartCloud using IBM lifecycle services management software solutions. It simplified self-service requests plus automated provisioning and internal chargeback capabilities

"The doors have just been opened. Certainly people who are provisioning virtual machines or requesting virtual machines for development are moving to this as soon as they know it's available. It's just a North American initiative right now, but we've got people around the world knocking on the door."
– Citigroup vice president

Cloud's many starting points extend across financial services

Getting started with Cloud is easier than you might think

Bank of Tokyo-Mitsubishi UFJ

ERSTE BANK

ING

UnionPay 银联 中国银联 China UnionPay

- **Cloud Desktop**: ***Bank of Tokyo-Mitsubishi*** worried it would face *risks in security and business continuity* if the H1N1 virus were to spread to pandemic levels. The 34,000-employee bank is deploying an IBM private cloud to centralize management of desktops via an enterprise class data center rather than at the user stations, allowing for *greater remote flexibility without sacrificing control*.

- **Cloud Collaboration**: ***Erste Bank*** facilitated continuous, standardized operations and enabled employees across its distributed branches to quickly accessing trading and banking systems through a *security-rich Cloud* infrastructure.

- **Cloud Analytics**: ***ING's Polish subsidiary*** designed a new sales platform based on an application package which enables tellers to enter data into the system only once, instead of entering it up to 20 times for different applications, giving the bank a 360-degree view of customer data—which when combined with embedded artificial intelligence can help generate more sales.

- **Cloud Development and Test**: ***A leading retail bank in the UK*** simplified infrastructure management for its IT research efforts with a virtualized cloud architecture that can readily support multiple operating system instances, enabling research teams to quickly and easily create virtual testing environment without the delays common to typical configuration efforts.

- **Cloud Storage**: ***China UnionPay*** reduced system management costs, sped up deployment for resource requests, standardized software configuration for each deployment request and improved tracking of system resource usage by implementing a cloud computing solution to deliver powerful provisioning capabilities that simplify system management and maintenance.

IBM SmartCloud is Driving Results in Many Industries

How might you apply this expertise to your Bank?

PETCO – Where the pets go.

Reduced cost per order by 64%

signature MORTGAGE NETWORK

Increased loan volume by 34%

True Value – START RIGHT. START HERE.

Reduced lead-time by 57%

AngloAmerican

Drove $1 billion in sustainable savings

GIST

Reduced document error rates by 20 percent

AMU American Public University System APU

Predict student drop out with 80% accuracy

monet

Offering mobile banking to Pakistan's 180M consumers*

RODALE live your whole life

Grew Ecommerce revenues twentyfold

freshdirect

1 percent improvement to margin

RICOH

Reduced cycle time by 23% for new product introduction

THE CITY OF SOUTH BEND INDIANA 1865

Saved $120M upgrading the City's water infrastructure

SENECA

Visibility to 99.9% of truckload shipments

*Pakistan has 70% mobile phone penetration but only 22% banked ratio; Monet offers a large potential market for Mobile Financial Services (MFS)

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Cloud Security is Important : IBM's history with Cloud Computing in Defense

A Framework developed through real-world operational experience

Mission Value

- Defense Agency's Cloud, one of the first operationally deployed Cloud infrastructures with the US Intelligence community
- Provides self-service on-demand access to imagery exploitation assets

- NATO ACT announces their Mission Development Cloud, a platform for federating NATO strategic and tactical mission experiments

- Joint effort with the US Air Force creates an advanced cyber security and analytics system on a hardened Cloud Infrastructure capable of protecting national data

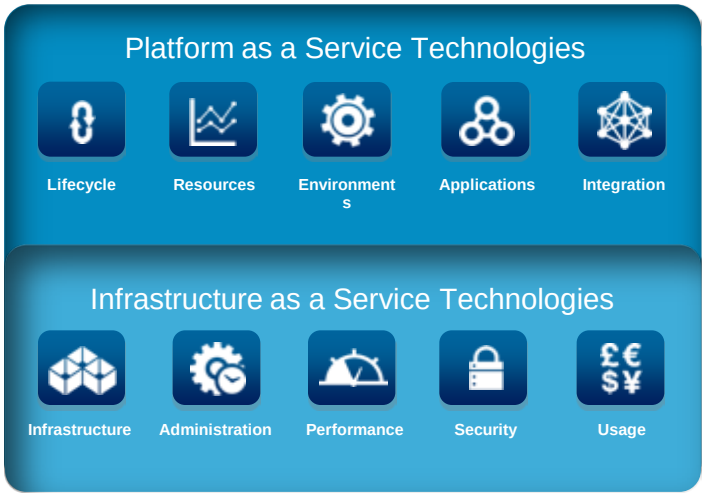
- Through the NCOIC*, IBM demonstrates a cloud-delivered Common Operational Picture integrating real-time track data across nine worldwide nodes.

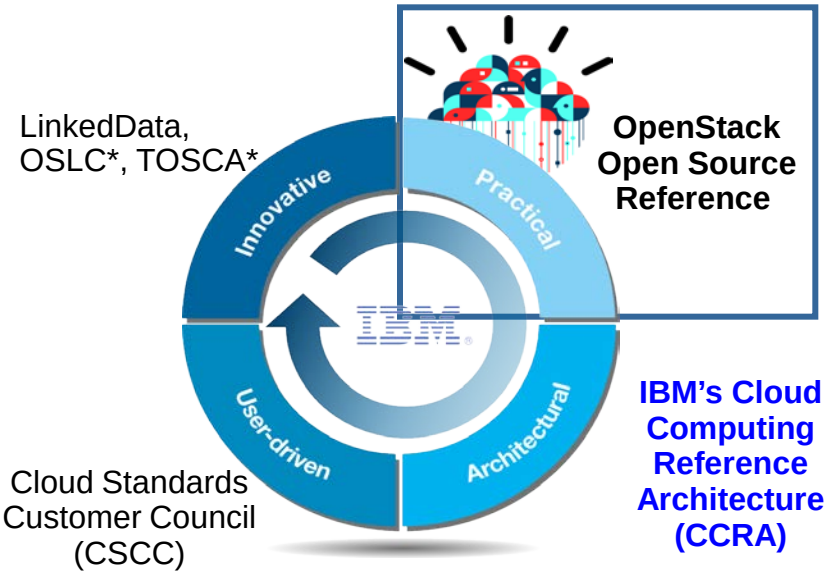
*NETWORK CENTRIC OPERATIONS INDUSTRY CONSORTIUM

2009 2010 2013+

Time & Innovation

IBM SmartCloud Foundation





IBM's Ecosystem approach to standards

Cloud Architecture is Important:

IBM joins the new OpenStack Foundation as Platinum Sponsor

Objectives

Contribute to open source projects and provide resources to help shape and promote the organization

Continues IBM strategy to **leverage standards** (LinkedData, CCRA, TOSCA, etc.) that accelerate clients' success with cloud

Work with 180 companies to focus the industry around an ubiquitous Infrastructure as a Service (IaaS) **open source cloud computing platform** for public and private clouds

Develop and sustain a **vibrant, innovative ecosystem** and become a platform of choice to build upon

* Open Services for Lifecycle Collaboration; Topology and Orchestration Specification for Cloud Applications

Cloud Workload is Important

Key Takeaway: Not all workloads may be suited for Cloud

Ready for cloud

New growth workloads made possible by cloud

Collaborative Care

Medical Imaging

Analytics

Infrastructure Storage

Information intensive

Banking & Fin'l Markets Industry Applications

Wealth Management

Isolated workloads

Collaboration

Risk Management

Sensitive Data

Highly customized

Mature workloads

Workplace, Mobile, Desktop & Devices

Not yet virtualized 3rd party SW

Pre-production systems

Business Processes

Disaster Recovery

Complex processes & transactions

Batch processing

Development & Test

Infrastructure Compute

Regulation sensitive

Evaluate: May . . .or may not. . . be ready for Cloud based on their attributes or maturity

Summary

1. The customer will drive new models with new needs
2. The value proposition for cloud is business and IT: efficiency, speed to market, collaboration
3. Cloud adoption is rapidly growing in banking
4. IBM SmartCloud tools, solutions & services can accelerate value

IBM's Worldwide Delivery Capabilities

IBM's service delivery platform offers global reach and an unmatched base of experience

- ~400 Delivery Data Centers
- 7.5M square feet of space
- 150 resiliency centers in 50 countries
- Largest global network of security operations centers

- 4,000 architects and 20,000 IT specialists worldwide with expertise across cloud, security, networking, storage and all technical domains
- Cloud delivery capabilities in every continent

- Over 90 Distinguished Engineers, 40 Master Inventors, 100 members of IBM's Academy of Technology, and 300 IBM Researchers
- Continued expansion and investment in growth markets

IBM Latin America region also supports a network of global and regional service delivery centers

40,000+ professionals attending different IBM brands and line of business
20,000+ professionals dedicated to infrastructure management services
6,000+ professionals dedicated to application development and maintenance services
2,500+ Business & IT consultants
500+ Business Partners

- IBM Service Delivery Center
- IBM SmartCloud Application Resiliency
- IBM Business Continuity Services
- IBM SmartCloud Enterprise Services
- IBM Global Delivery Center
- IBM Application Services

IBM SmartBusiness Desktop Cloud

IBM SmartCloud Managed Security

IBM SmartCloud Managed Backup

SoftLayer provides world-wide services with a standardized modular infrastructure; triple network architecture and powerful automation.

World-Wide Services

13 Data Centers

with 100,000 Servers and 22,000,000 Domains in the US, Amsterdam and Singapore

19 Network Points of Presence

in 5 countries to facilitate response times

21,000 Customers

1,200 Customers in Brasil

** Sold in US English, US $ Pricing*

Flexible, Automated Infrastructure

Data Center & Pods

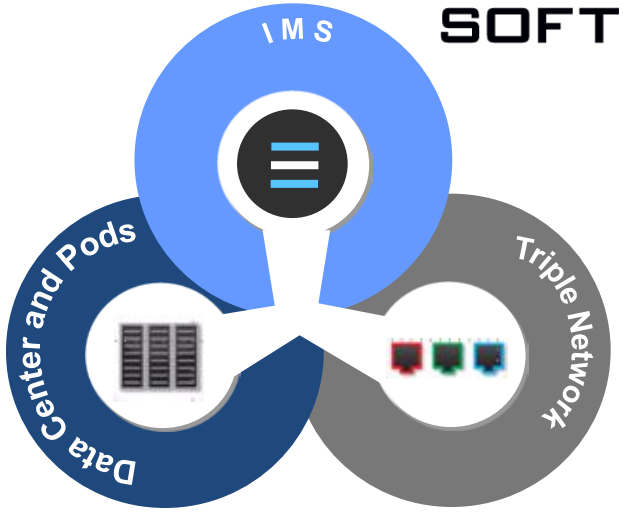
- Standardized, modular hardware configurations
- Globally consistent service portfolio

Triple Network

- Public network for cloud services
- VPN for secure management
- Private network for communications and shared services

IMS (Automation Software)

- Bare metal provisioning
- Integrated BSS/OSS
- Comprehensive network management



SOFTLAYER® an IBM Company

SoftLayer supports and extends IBM's cloud strategy.

Workload optimized, deployment choices, integrated services management

Bare-Metal Servers, Virtualized Public Cloud Instances, Private Cloud Deployments
Provides the **best fit optimized for a range of cloud workloads**

Integrated Platform Across Multiple Architectures
Highly flexible with **support for public, private and hybrid deployments**

Common Management System with APIs
Customer control and increased visibility with a **unified management system**

Common User Interface and **APIs**

Bare Metal Servers

Public Cloud Instances

Private Clouds

Proprietary Infrastructure Management System facilitates automation & orchestration

Private network allows seamless communication across distributed environments

x86 Pod Infrastructure | **x86 Pod Infrastructure** | **x86 Pod Infrastructure**

Thank you!

Stay Smart with IBM's SmartCloud

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