

Pulse2011

Rethink IT.
Reinvent Business.
Smart, Secure and Ready for Business



Cloud as a Business Transformation Model

Session 3, Track 1 – Wednesday July 27 at 13:30



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Session Abstract

- Business Innovation on the Edge: What leading edge companies can teach us about turning markets upside down.
- We will explore how companies are exploiting Cloud Computing to drive business innovation and growth.
- Examples will be given from real world implementations and we will explore how cloud computing is likely to turn many traditional businesses up-side-down as well as create new opportunities for those on the leading edge.



Content

Where is the Action?

Innovative Solutions for the Cloud

IBM SmartCloud

Rethink IT.
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Cloud computing is enabling the creation of new service models, improving operational efficiencies and providing differentiating customer experiences

“Clouds will transform the information technology (IT) industry... profoundly change the way people work and companies operate.”

The
Economist



Superior customer experiences

Improve quality of services and deliver new services that drive end user value

- Easier access
- Flexible pricing
- Self service for end users
- Enablement of end user ecosystems



Doing more with less

Reduce capital expenditures and operational expenses

- Higher utilization
- Economy of scale benefits
- Lower capital expense



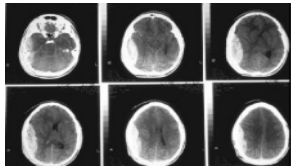
Dynamic business agility

Increase ability to quickly deliver new services to capitalize on opportunities while containing costs and managing risk

- Faster cycle times
- Lower operating expenses
- Optimized utilization
- Ease of integration



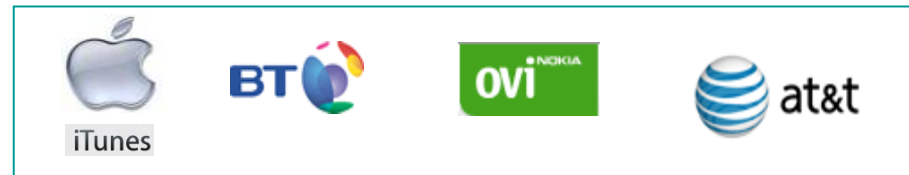
Cloud Computing is creating business agility to transform old business models across industries



Innovative web-based clinical solutions allow individuals & healthcare providers to store & share medical records



Mobile device manufacturers & service providers creating platforms so developers & partners can create apps at lower cost



Algorithmic trading & financial services run on distributed HPC platforms for performance & geographical presence



Highly efficient datacenters serving computing & storage on demand



Web-based services to distribute content, collaborate & transact online



Cloud and Innovation – Where is the Action?

Cost Drivers

- Lower IT Operating Costs
- Capex to Opex
- Standardization via Service Management

Innovation Drivers

- Social Networking
- Mobile/Pervasive Computing
- Low cost of doing the unthinkable...

Disruptive Business Models

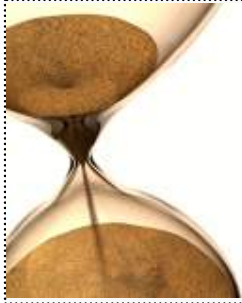
- Video / Music / Gaming
- Large Scale Compute / Analytics
- Location services and “Always On” apps



Let's Focus On Some Specific Examples ...



Cloud Cost Drivers...the typical story



Lower IT Operating and Capital Costs

Implement a Development & Test Cloud
Migrate dynamic workloads to a private Cloud
Increase utilization of HW via a Cloud
Reduce maintenance and operational costs.



Capex to Opex

Migrate workloads to a Public Cloud
Upgrade outsourced Data Centers to Cloud
Leverage emerging SaaS based applications
Leverage financial terms from your suppliers.



Standardization enabled by integrated service management

Create standard Images of your environment
Use Service Management
Implement Self Service Portals that work from
a standard Service Catalog
Implement application, data, and UI separation.



Cloud Innovation Drivers...this should be interesting



Social Networking

Create communities across institutional boundaries
Linking informal networks for greater productivity
Rethinking business processes
Instant messaging, SMS, etc.
Leverage network to complete your work!



Mobile / Pervasive Computing

Smart Phones with powerful apps
Internet of Things, pervasive instrumentation
Tablets are revolutionizing apps & delivery
Younger generation demanding mobile enterprise apps
Always connected to the internet
BoFA, Starbucks apps showing nearest Branch.

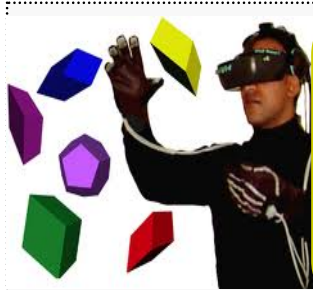


Low cost of doing the unthinkable

How to test for 10 million simultaneous end-users?
What if we run a cancer scan on your DNA?
CD's & DVD's are so yesterday – streaming is in!
Real time view of the City – traffic, energy, etc.
Real Time analytics a la IBM Watson!

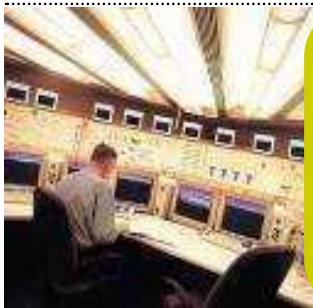


Disruptive Cloud Business Models...now we are talking!



Video / Music / Gaming

Borders and Blockbusters went bankrupt
Amazon and NetFlix took over leveraging Cloud
App Development is collaborative across the web
Skype, Pandora, Spotify redefining everything
World of Warcraft, Zynga has 10M+ online users.



Large Scale Compute / Analytics

Gene sequencing requires cloud for scale
Internet of Things will have 6B+ inputs
Data analytics continue to grow exponentially
Real time simulations (financial, manufacturing, etc.)
Video conferencing is exploding
Bank Cheque deposit via mobile image.

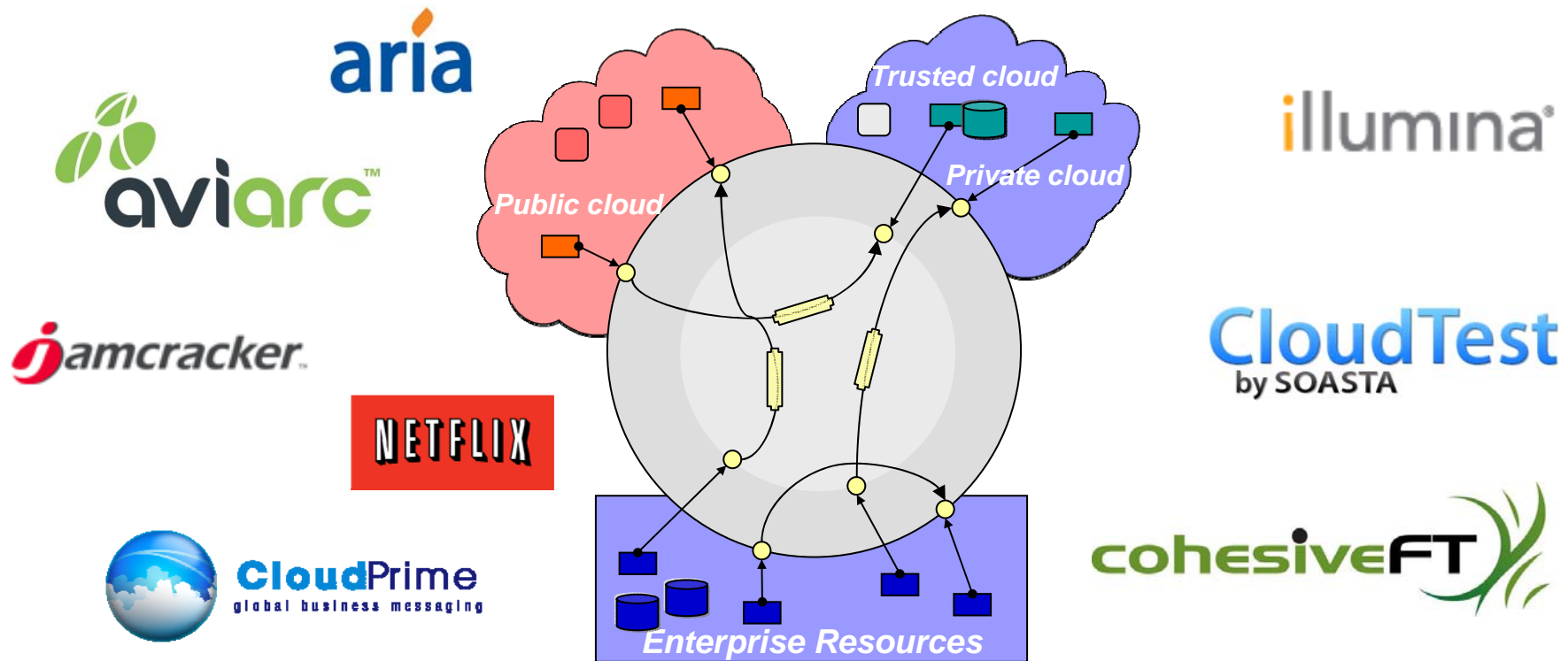


Location Services and "Always On" Apps

FourSquare is hugely popular in New York and SF
SmartPhone supplanting GPS navigation devices
Twitter + Skype + Google+ => Nowhere to hide!
Mimoa – architectural city guide
Panoramio – location based pictures
RedLaser – scan barcode for cheapest price.



Product Life Cycle across Hybrid Clouds



Development & Test challenges and opportunities

Challenges

Opportunities

Quality

- Inadequate Testing
- Defect escapes
- Test data consistency



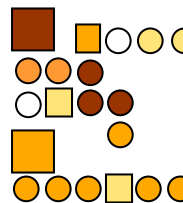
Cost

- Escalating labor costs
- High cost of defect fixes
- Poor asset utilization



Time To Market

- Long cycle times
- Availability of resources



- Reduce infrastructure required to test solutions
- Increase resource flexibility and availability
- Maximized asset utilization
- Rapid delivery of services
- Resource governance and control
- Drive testing earlier in the SDL, catch defects early in the cycle where they are cheaper to correct
- Allow testing when only portions of the final solution are available



Typical Testing Environments* and Economics

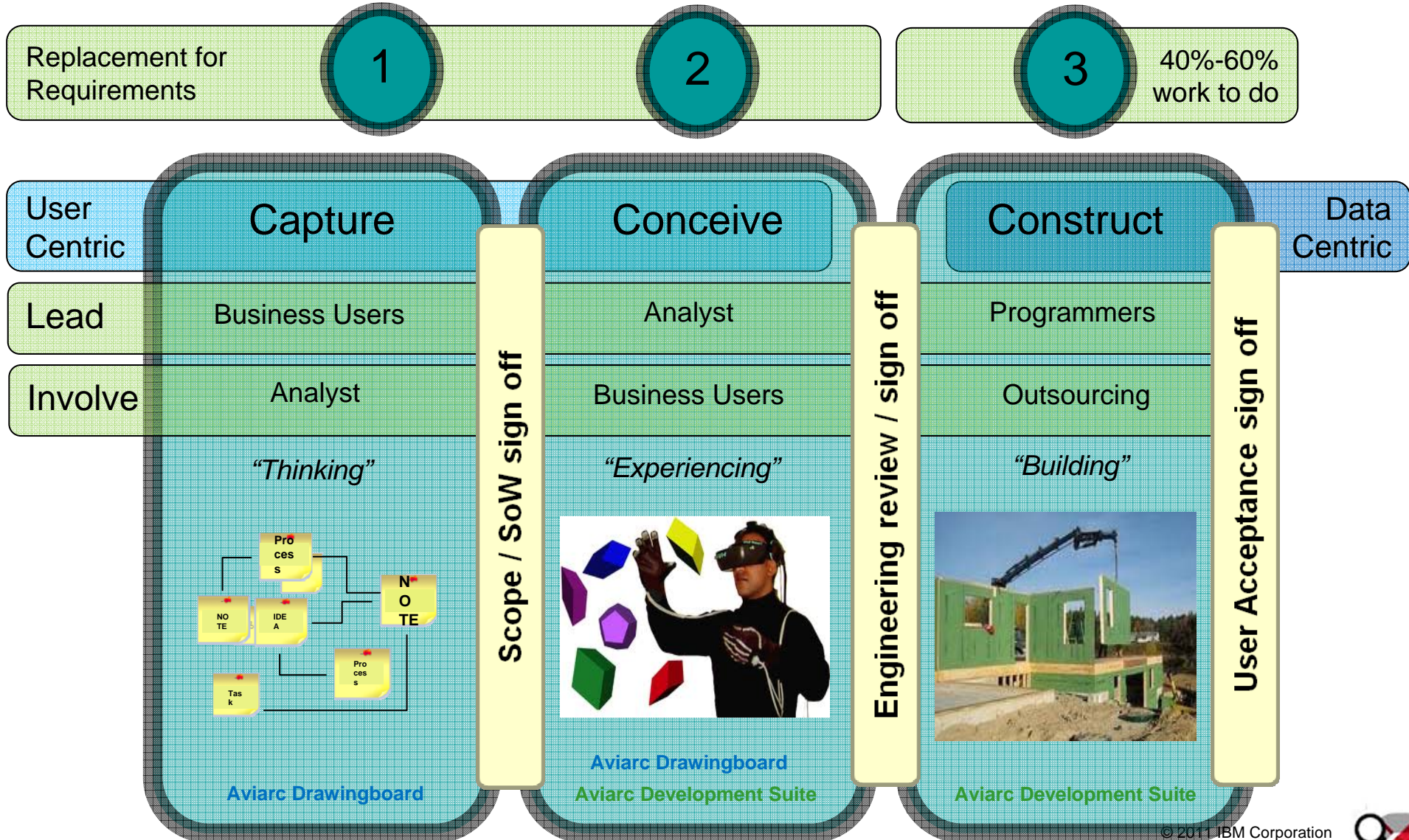
- 30% to 50% of all servers within a typical IT environment are dedicated to test
- Most test servers run at less than 10% utilization, if they are running at all!
- IT staff report a top challenge is finding available resources to perform tests in order to move new applications into production
- 30% of all defects are caused by wrongly configured test environments
- Testing backlog is often very long and single largest factor in the delay new application deployments
- Test environments are seen as expensive and providing little real business value



* "Industry Developments and Models – Global Testing Services: Coming of Age," IDC, 2008 and IBM Internal Reports



“Adaptive” cloud software creation with Aviarc



Aviarc and Rational offer three independently scalable layers of software development



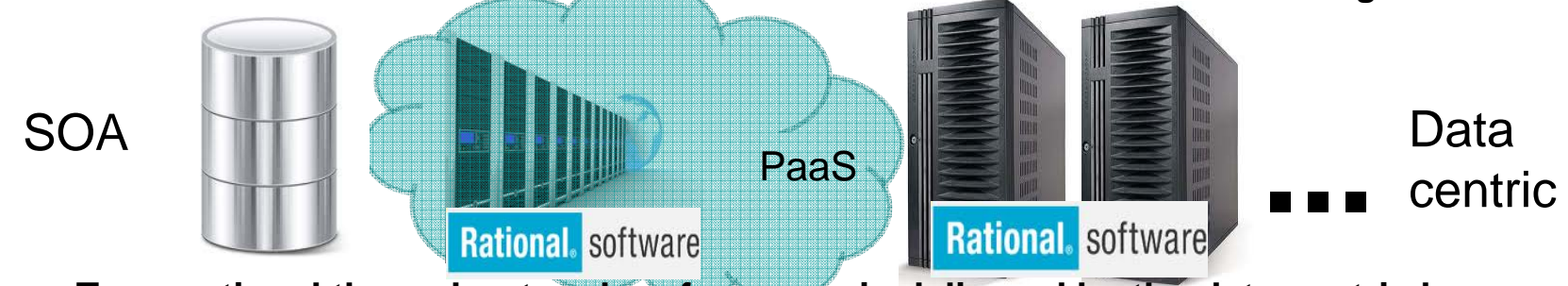
Loosely coupled **HTTP / HTTPS** Design out latency

Adaptive



Loosely coupled **SOA / ESB / ETL / JDBC / CASTIRON / Ad hoc** Design out latency

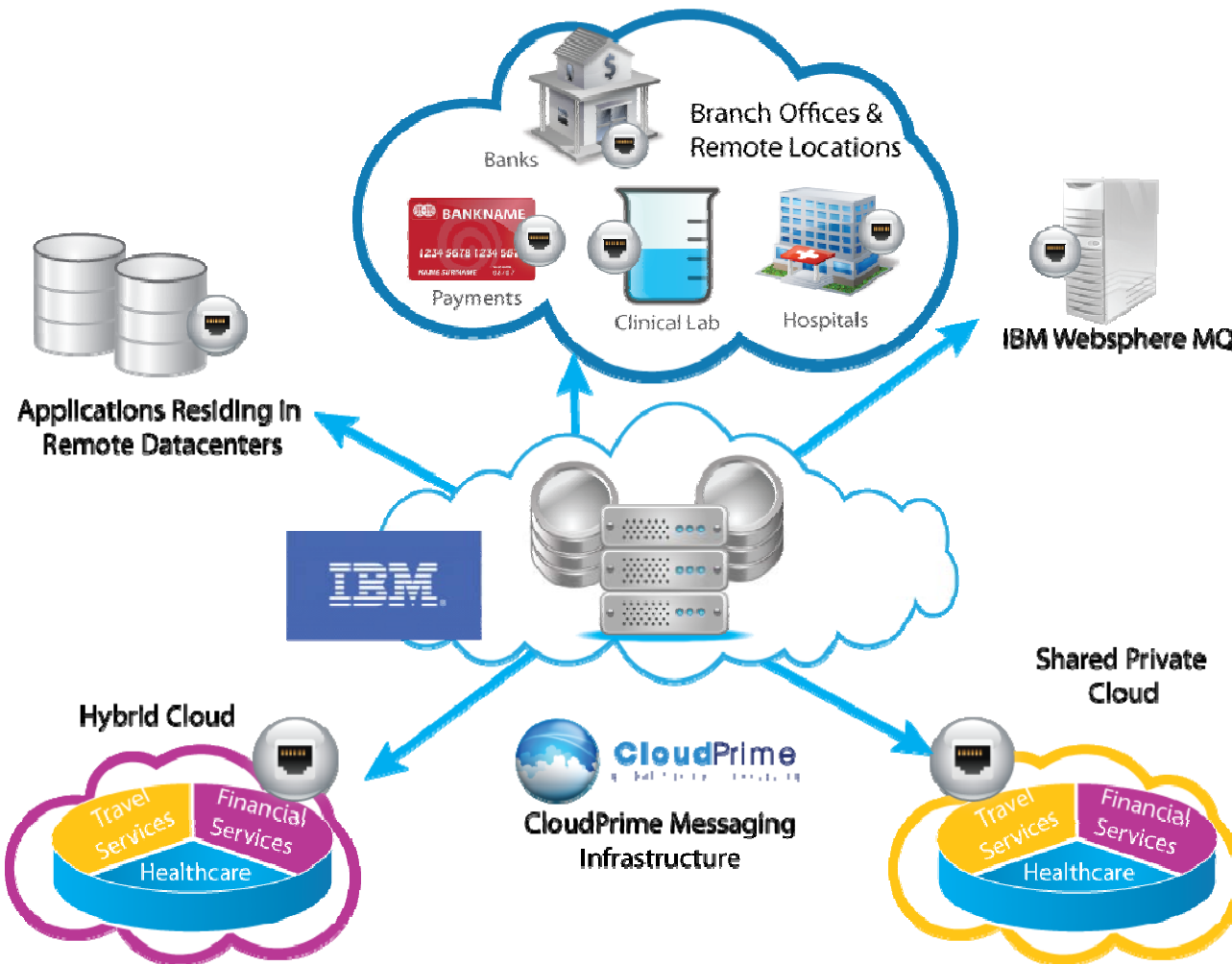
Enterprise



Transactional throughput and performance is delivered by the data centric layer

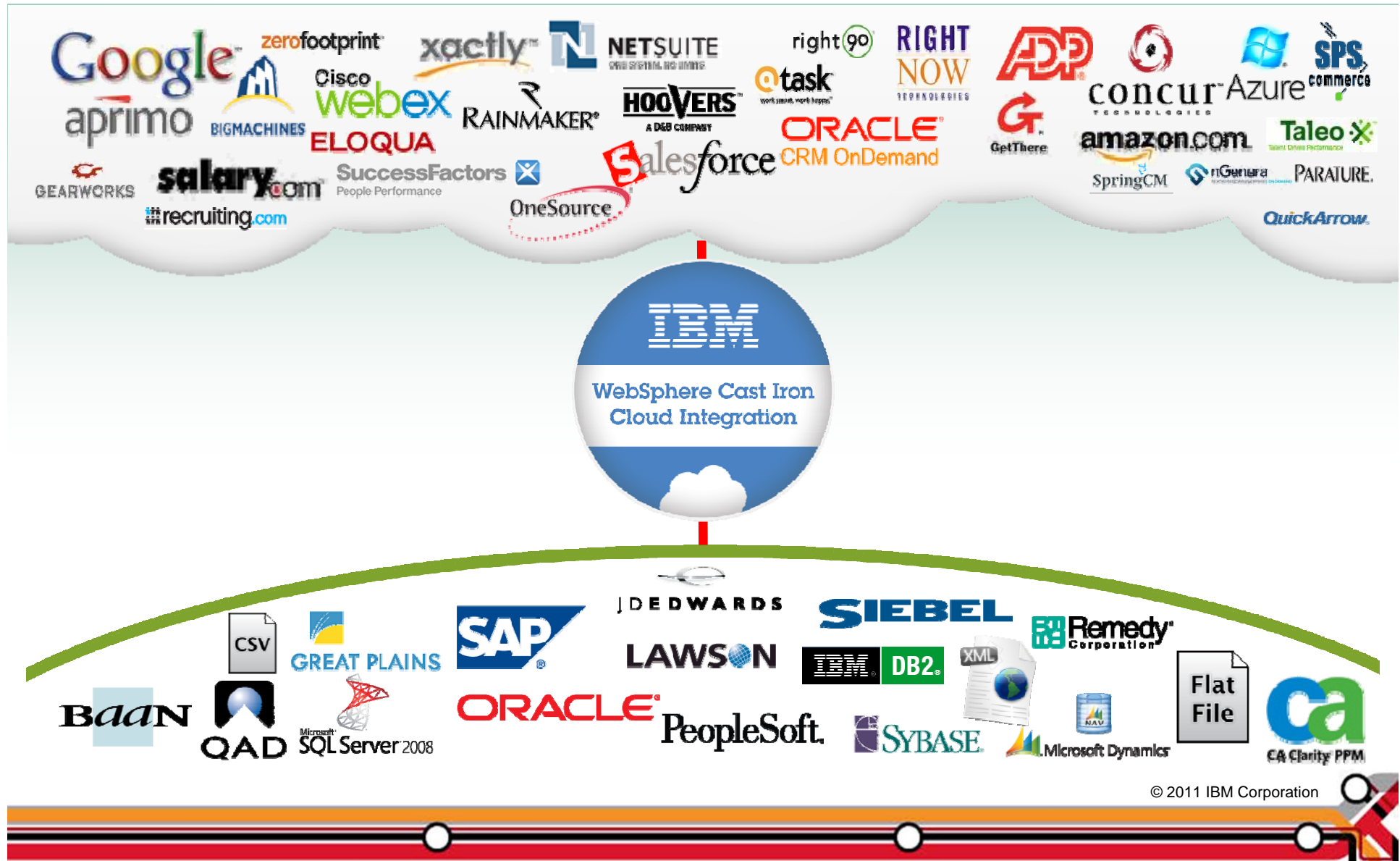


Hybrid Cloud Messaging using CloudPrime

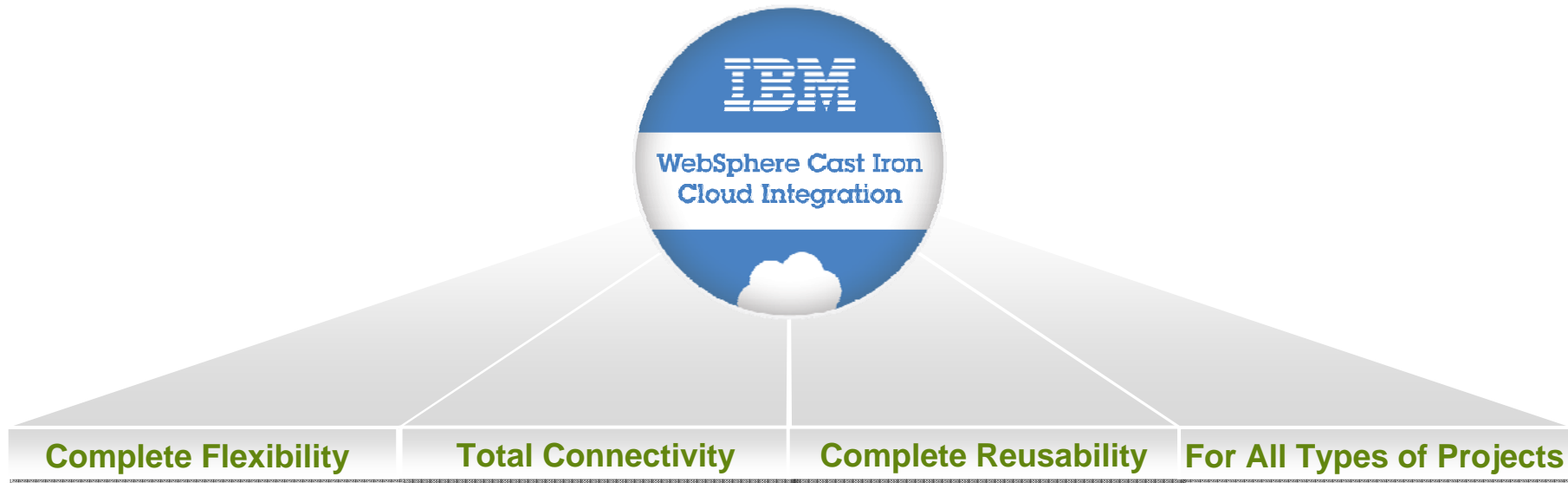


- CloudPrime integrates with WebSphere MQ
- Leverage existing WebSphere MQ infrastructure
- Connect to branch/remote locations in minutes
- Target verticals include financial services, healthcare and travel services

Cast Iron Hybrid Cloud and On-premise Integration



Hybrid Cloud integration with flexibility



Cast Iron Cloud2™

Physical Appliances

Virtual Appliances



TIP Exchange

TIP Development Kit

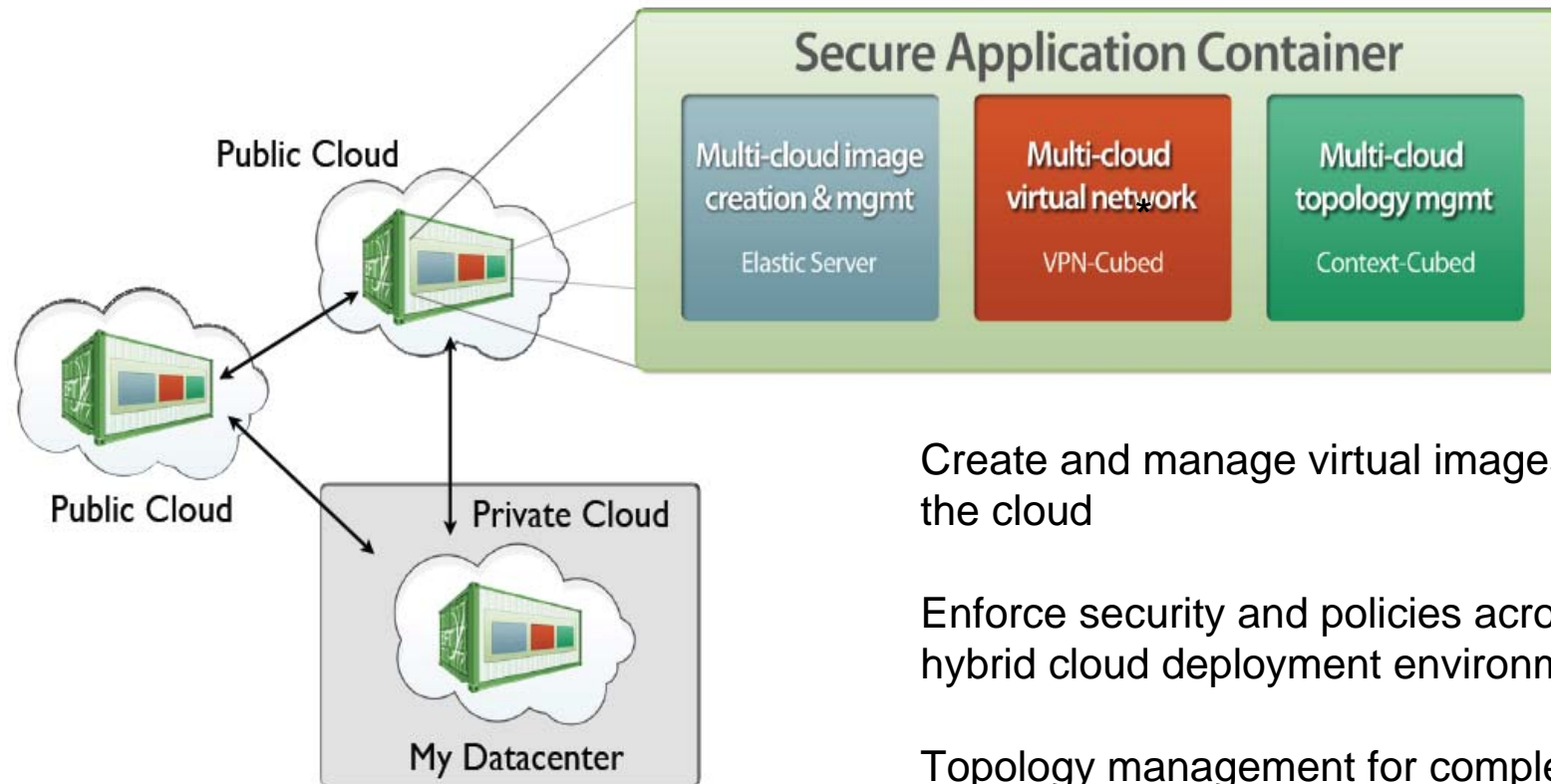
TIP Community

UI Mashups

Process Integration

Data Migration

CohesiveFT's Cloud Management Platform



Create and manage virtual images in the cloud

Enforce security and policies across the hybrid cloud deployment environment

Topology management for complex applications in the cloud



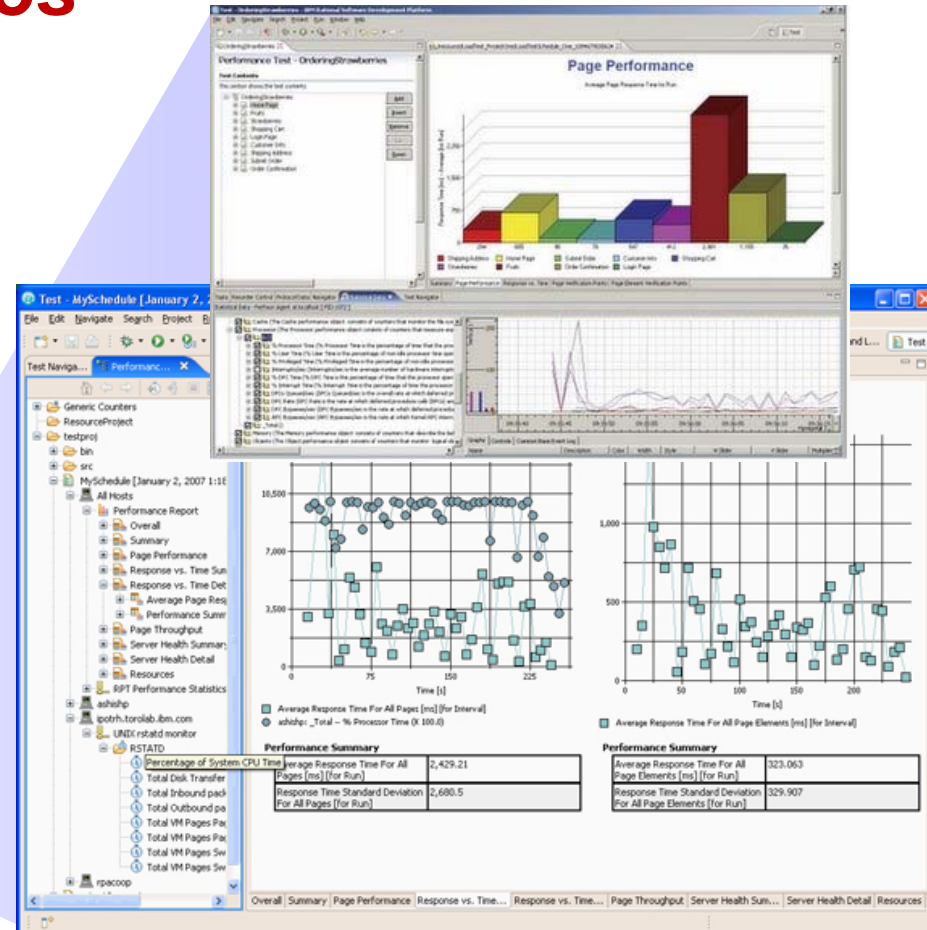
Performance Testing Web and Mobile Applications using real-world scenarios

Key Features and Benefits

- A flexible, innovative and utility-based testing offering that delivers on-demand performance testing, with predictable, repeatable, and rapid results.
- Minimizes infrastructure set-up time using Cloud
- Scalability of load-generation infrastructure
- Eliminates the need for a dedicated, under-utilized environment for performance testing
- Performance engineering skills, methods and tools

Offering

- Web and Mobile performance testing - **CloudTest powered by SOASTA**



How does the CloudTest technology work?

Cross-Cloud Provisioning Manager

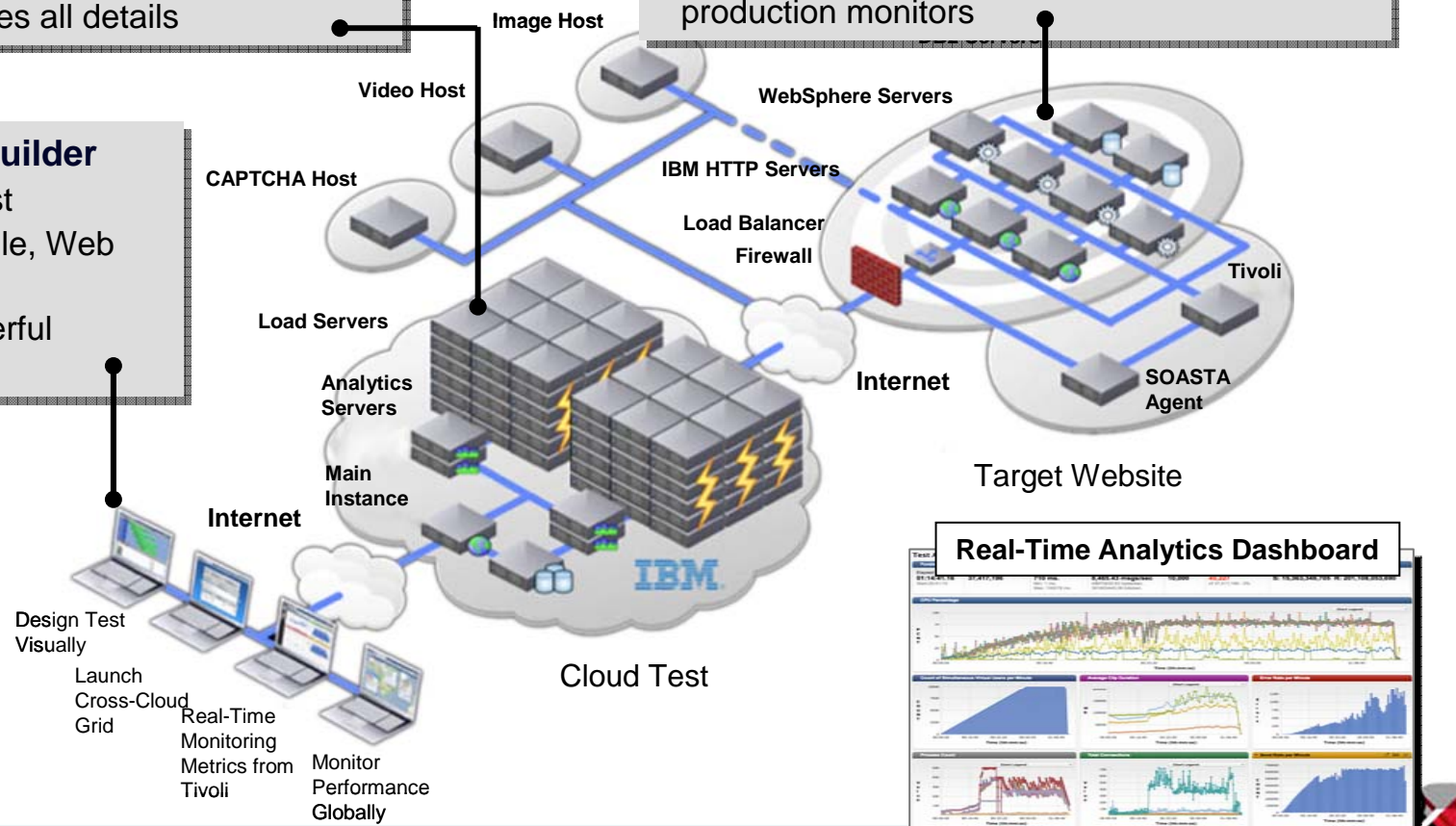
- 16+ Global load sources
- (IBM, Amazon AWS, Microsoft Azure)
- Thousands of load servers, deployed in minutes, drive millions of virtual users
- CloudTest manages all details

Real Time Performance Analysis

- Performance-focused Business Intelligence
- Aggregate end-to-end data and correlate for in-test issue resolution
- Analytic data from CloudTest's or existing production monitors

Innovative Test Builder

- Fastest time-to-test
- AJAX, Flash, Mobile, Web Services
- Intuitive UI + Powerful JavaScript editing



Infrastructure Company with no Infrastructure SOASTA – Award winning Cloud Co

- Startup company specializing in large scale performance testing
- Scale up, execute and tear down tests of > 1M users in less than 3 hours
- Completely asset free delivery: Utilizes a number of Cloud providers
- Does not own the infrastructure required to meet customer demand
- Exploitation of Cloud allows for competitive advantage
 - Rapid response to customer needs reduces lead time required for test execution
 - Lack of capital commitment allows for attractive pricing to end customers



THE WALL STREET JOURNAL

CRN TOP
100
2011
Cloud Computing Vendors

RED
HERRING

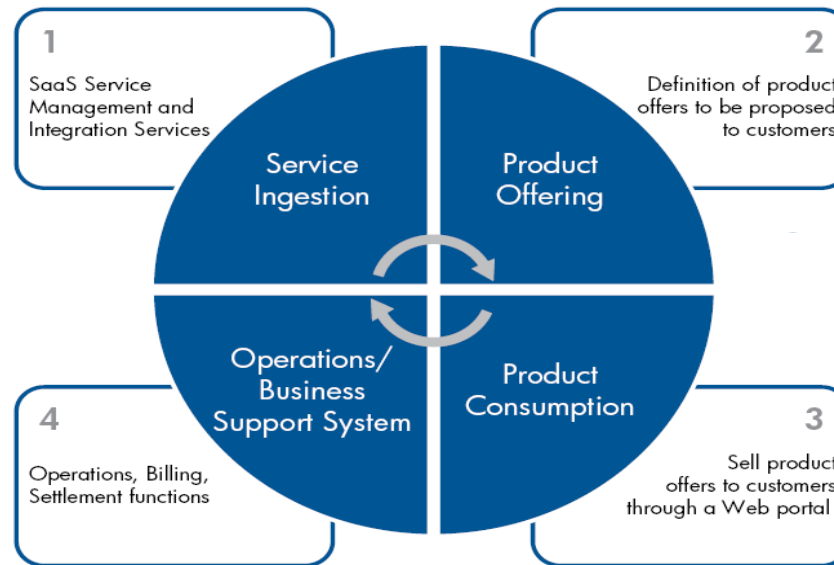
Successful SaaS deployment has its own Life Cycle

1. Service ingestion:

This phase involves the selection and integration of services into the SaaS enablement Platform and enables management of SaaS ISVs through service provisioning, billing, management, integration and identity management.

2. Product offering:

Using services registered within the SaaS Enablement Platform, solution offerings can be created, service plans and pricing models can be defined, and presentation/marketing to customers can be provided using a marketplace portal. End-to-end product testing occurs to make sure proper function from ordering, delivery, billing, and service management.



4. OSS/BSS support systems:

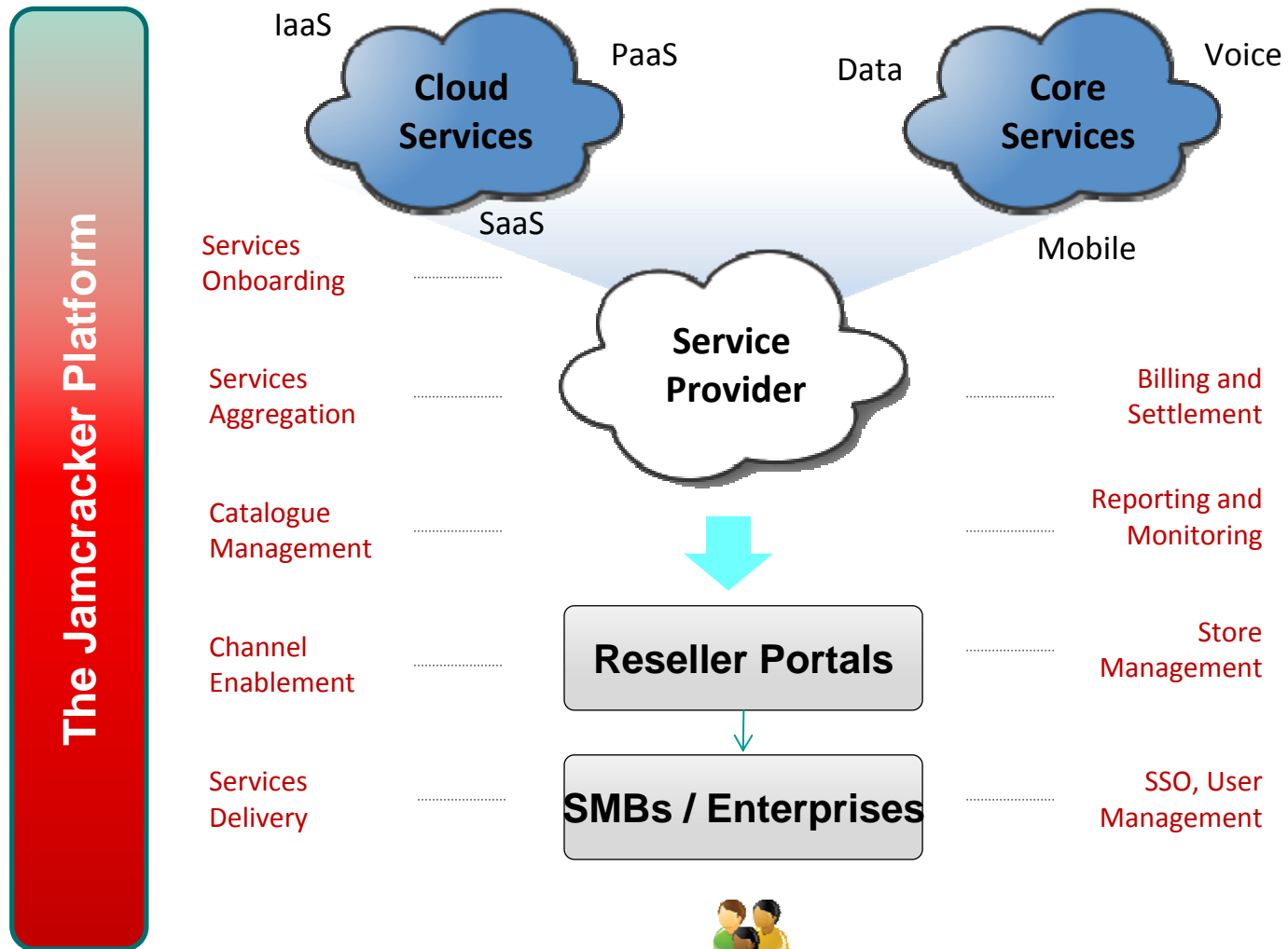
The SaaS Enablement Platform interfaces with all necessary OSS/BSS systems for SaaS service management; including fault and performance management, business reporting, and customer billing. Revenue management is performed between the cloud provider and SaaS ISV.

3. Product consumption:

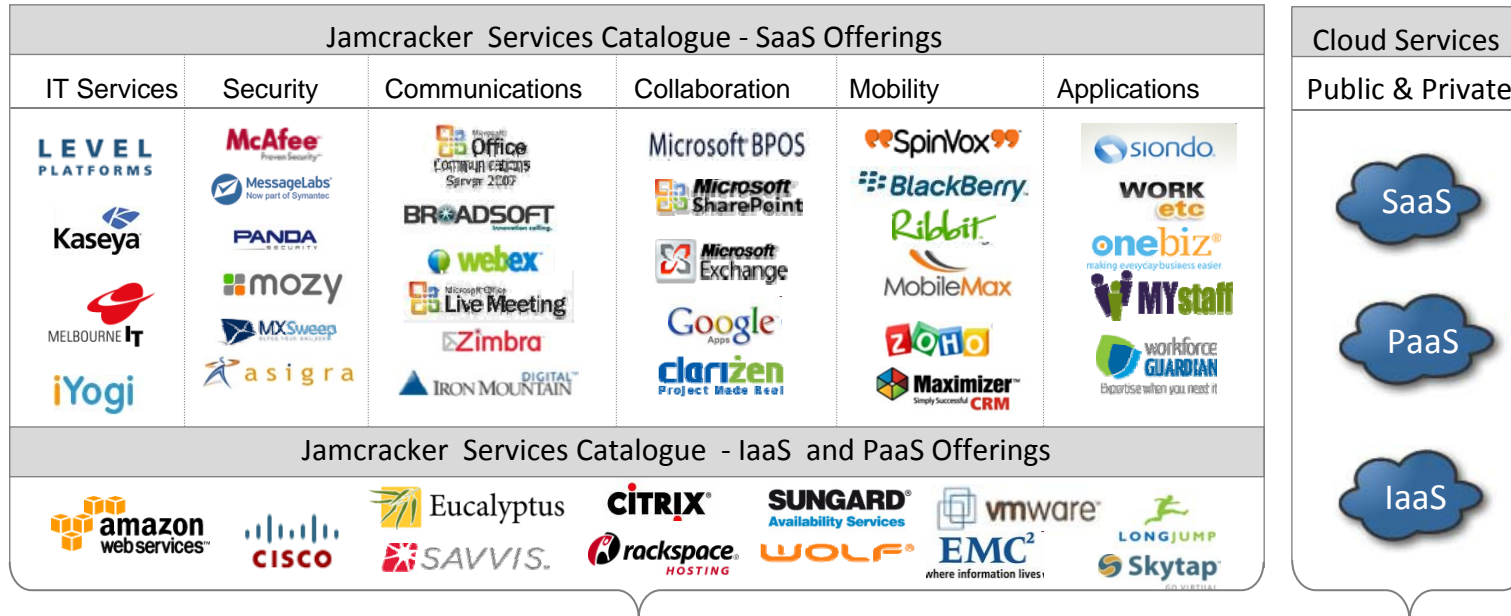
Customers can browse the SaaS marketplace portal to explore solution offerings. If solution offerings are of interest, customers can trial (if available) and subscribe to services. Customers can use the customer portal to manage their subscriptions, generate analytics reports, and access subscribed services.



Cloud Service Delivery Enablement w/ Jamcracker



Jamcracker's Service Catalog is comprehensive



- Large catalog of SaaS offerings for various domains, industries and functions
- Spans the entire Cloud Stack from IaaS, thru PaaS to pure SaaS
- No more managing licenses, agreements, payments, upgrades, etc.
- Focus on building an ecosystem of satisfied customers, partners and suppliers



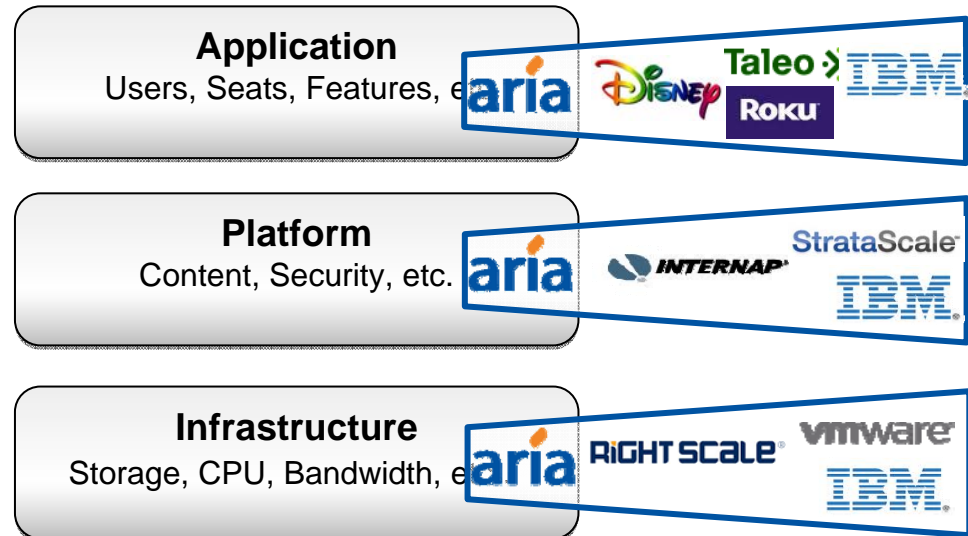
Billing and Support Systems for the Cloud



Across the Cloud Computing stack there is a need for full billing and account management functions with tight integration to the payment processor and service provider.

- User and account lifecycle management
- Reporting and analytical capabilities
- Payment gateway integration
- Billing and Invoicing
- Service catalog integration
- Service activation and promotions

Cloud Computing Stack





NetFlix model

Bring instant movies and TV shows to the world

History....

Started as a DVD mail-order company with monthly service
 Quickly grew to 10M+ households, putting great pressure on Blockbuster
 Expanded to Video Game rentals via monthly subscription
 Introduced internet based video streaming
 When iPhone / iPad came out NetFlix

**No Infrastructure
 Everything Runs on a Public Cloud
 High Availability achieved via
 a Chaos Monkey**



... saved postage
 ...ent to make a

His...
 Blockbuster rental is basically dead in the
 Streaming... quality and improving
 100,000... in their catalog
 Apple, Google, Microsoft all trying to emulate NetFlix
 Cable TV... companies seeing subscribers defect similar to fixed phones
 NetFlix just went international by going into South America
 Europe support coming in 2012.....who's next?
 25 Million current subscribers -> about 20% market share in NA

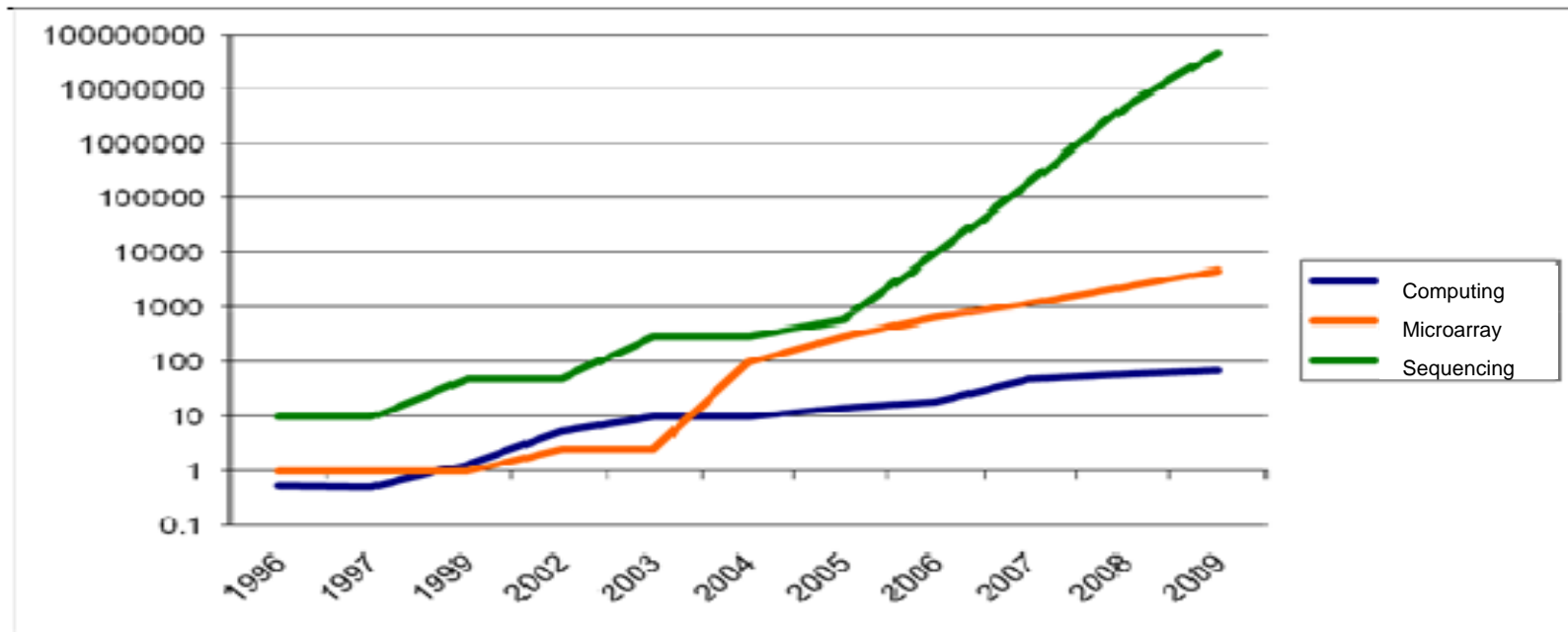


Illumina Model

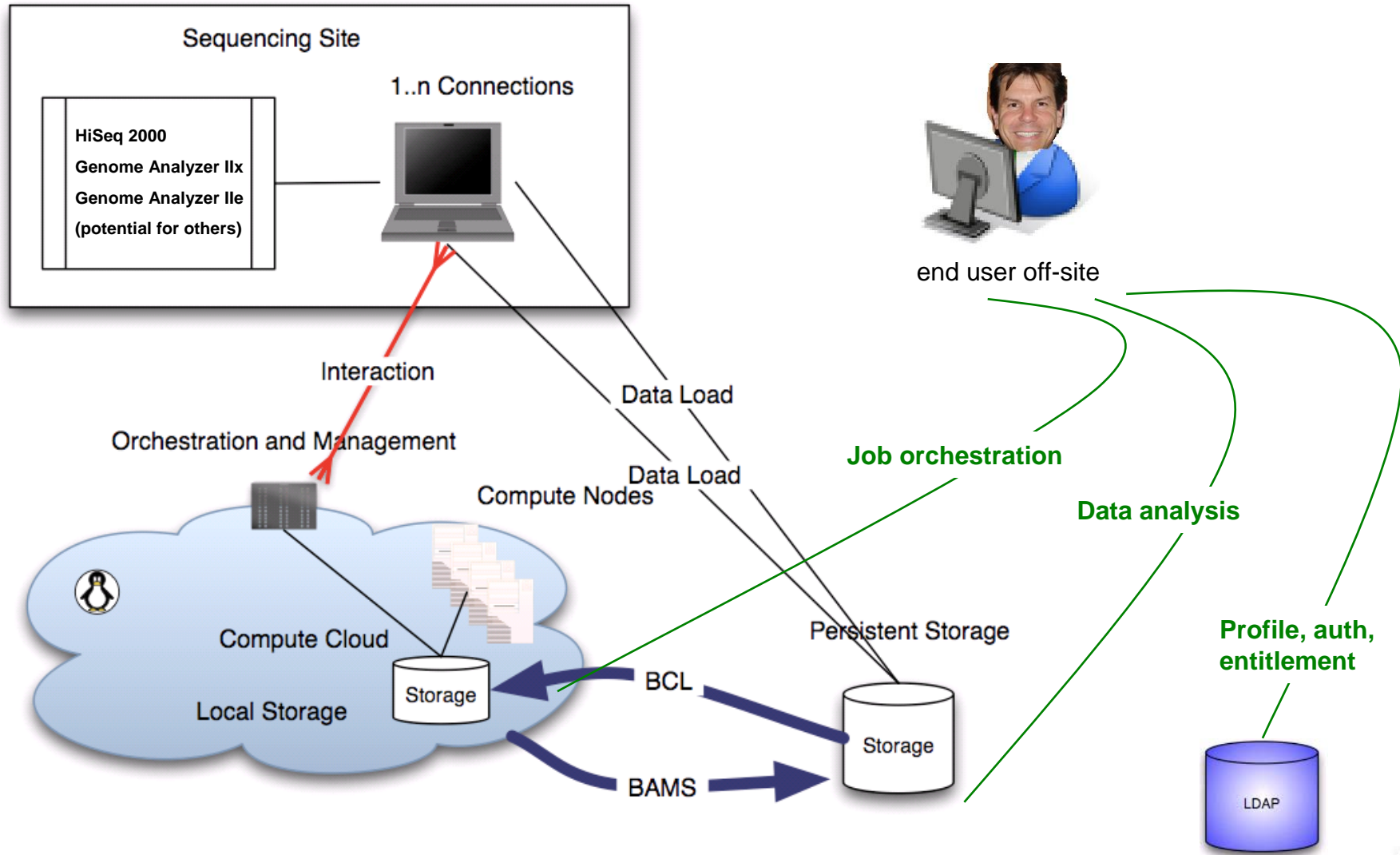
Making genomics available to the world

It took over 15 years and \$3B to decode the human genome.

Cost coming down at faster rate than Moore' Law.
The race is on for the \$1000 per genome decoder.
Each human genome produce 300TB of data.



Illumina Cloud Deployment



IBM is investing in cloud computing around the world



Allowing you the freedom to create and innovate everywhere!

80%

of Fortune 500 companies are using IBM cloud capabilities.

“IBM has one of the most comprehensive cloud portfolios.”

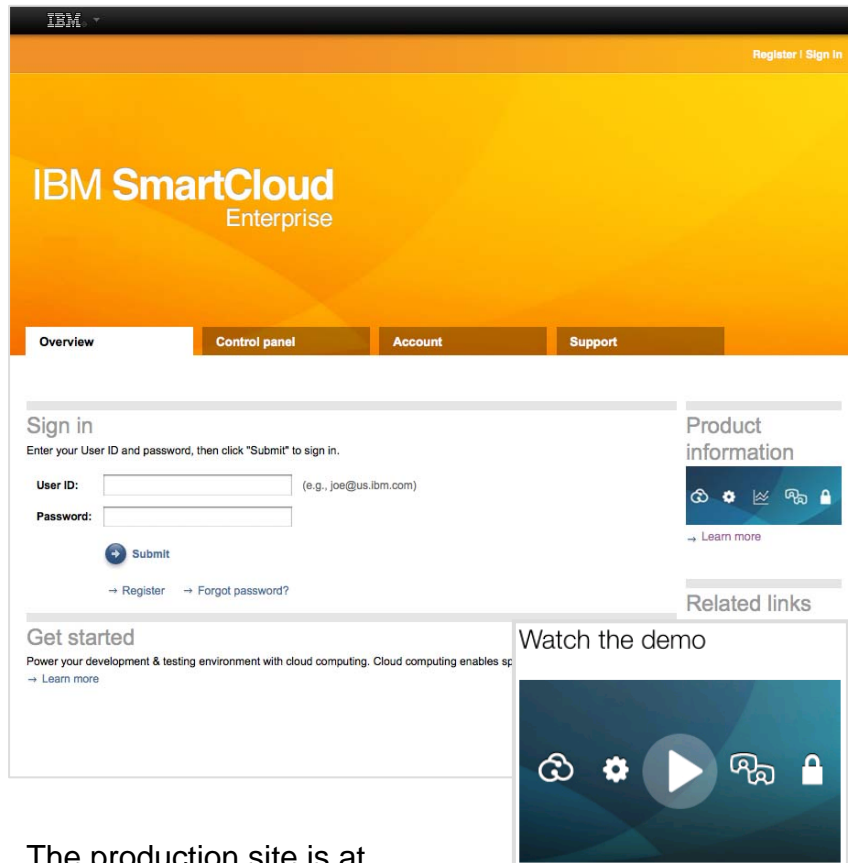
– **Jeff Vance**, Datamation



- IBM Cloud Labs
- IBM SmartCloud Centers



IBM SmartCloud Enterprise



The production site is at ibm.com/cloud/enterprise

More information on the offering at ibm.com/cloud/solutions/enterprise

The solution provides the following:

- Choice of nine virtual server configurations
- Choice of Microsoft® Windows® Server and Linux® operating systems
- Choice of preconfigured software from which to build private image libraries
- Option to add multiple blocks of persistent storage
- Network isolation options (such as VPN/VLAN)
- Premium support options as a supplement to forums
- Choice of six sites (US – two sites, Canada, Germany, Japan and Singapore)

Payment options:

- Pay-as-you-go
 - Per hour usage charges for virtual servers, software images, persistent storage and static Internet Protocol addresses
 - Per gigabyte charge for Internet data transfer
- Reserved capacity packages with preferred server pricing



Standard software images...

Middleware and operating systems:



IBM Lotus®
IBM WebSphere®
IBM DB2®, Informix® and Cognos®
IBM Tivoli®



32-bit and 64-bit Linux®

SUSE Linux Enterprise Server (SLES) 11

Red Hat Enterprise Linux (RHEL) 5.5

Microsoft® Windows® Server

Windows Server 2003 and 2008

Development and test tools:

IBM Rational® software

... requirements, collaboration, quality, build and assets

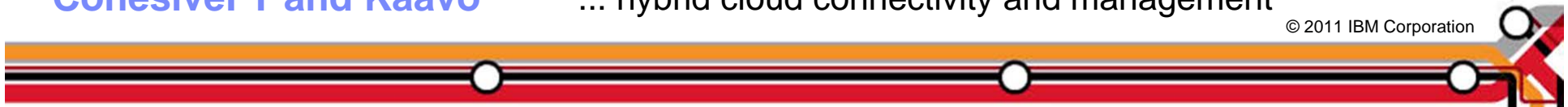
Aviarc and Servoy

... development tools

Add-on cloud management and integration tools:

CohesiveFT and Kaavo

... hybrid cloud connectivity and management



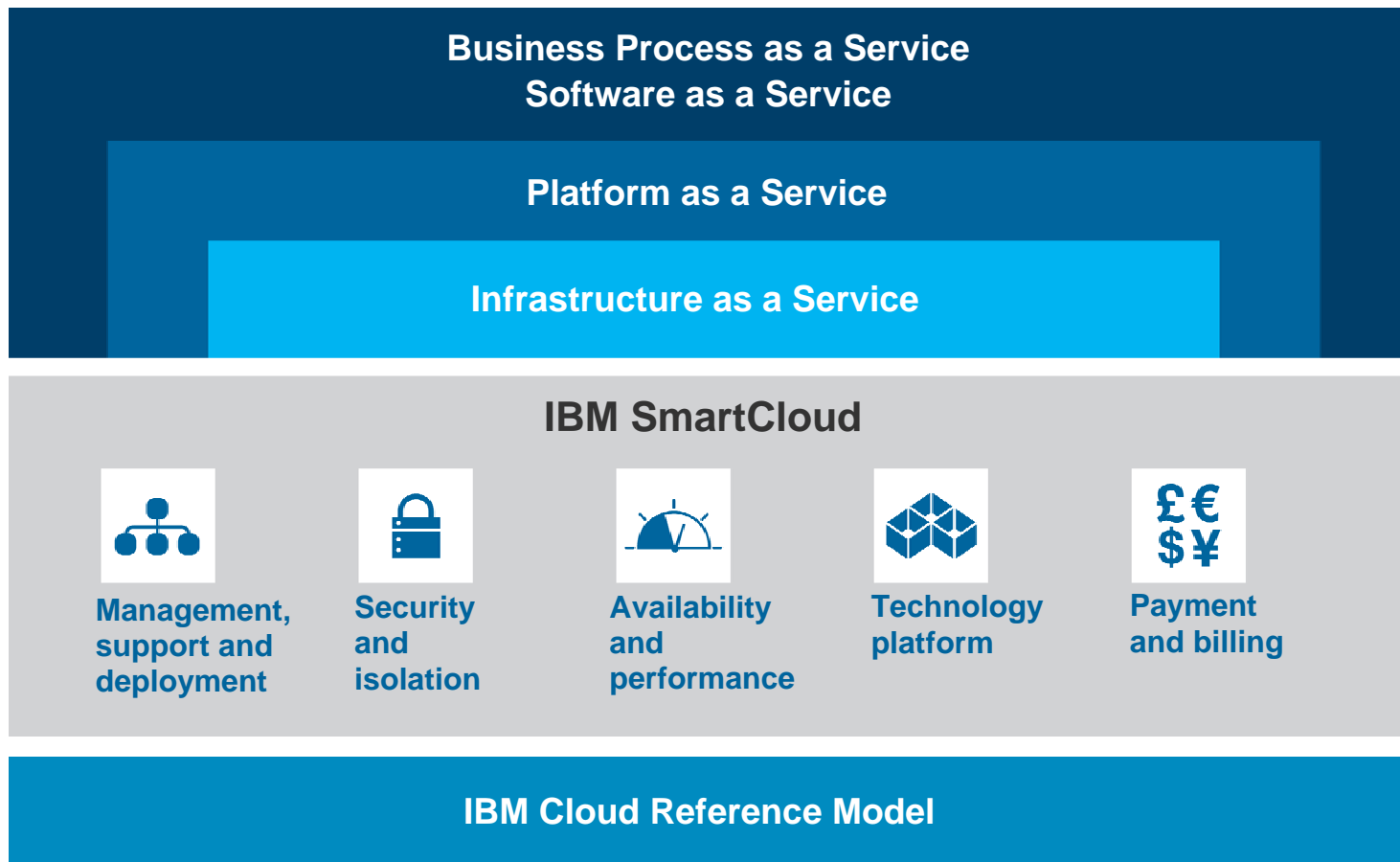
IBM's own used of Cloud Computing has transformed the IBM business on multiple levels.

- **109,000 IBM employees** use Blue Insight, the world's largest business analytics private cloud.
- **6,000 IBM marketers** across 6 continents utilize IBM cloud-based Marketing Operations daily.
- **6000 IBM users** of Blueworks Live to improve internal business processes
- **200 million minutes** of IBM web conferencing with LotusLive Meetings.
- **Avoided \$22M in expenses** by leveraging a development and test cloud.
- **1,200 users** in IBM China development labs, plus IBM Call Center teams in the United States and India, have migrated to a desktop cloud environment.



The IBM SmartCloud provides a robust platform, built on the IBM cloud reference model for your Cloud...

How are you going to Innovate on the Cloud?





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Twitter: walterfalk

ibm.com/smartcloud



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Open Standards plays an important role to level the playing field and deliver value

Cloud builds on and leverages the standards which preceded this market cycle

