



IBM Software and the Cloud

**“So what else would you consider when deploying
Cloud in your organisation?”**

Sam Garforth
IBM Software Architect
February 2011

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Cloud Reference Architecture



Cloud Service Providers

Cloud Service Consumers

Service Users



Consumer End User

Consumer Business Manager

Consumer Administrator

Standards Based Interfaces

Cloud Services

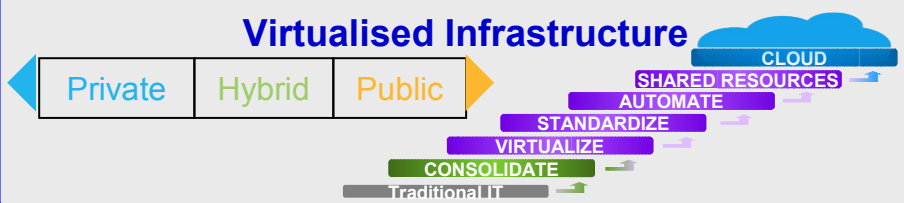
- Business Process as a Service (BPaaS)**
Aggregated Applications and Process
- Software as a Service (SaaS)**
Applications, Business Logic...
- Platform as a Service (PaaS)**
APIs, Pre-Built Containers...
- Infrastructure as a Service (IaaS)**
Hardware, VMs, Storage

Cloud Management Platform

- Business Support System**
Financial, Customer & Contract Management
- Operational Support System**
Workflow, Provisioning, Monitoring and Metering

Standards Based Interfaces

Virtualised Infrastructure



Private | Hybrid | Public

Traditional IT → CONSOLIDATE → VIRTUALIZE → STANDARDIZE → AUTOMATE → SHARED RESOURCES → CLOUD

Service Planning



Planner

Developer

Publisher

Cloud Service Creators

Security

People & Identity, Data & Information, Application & Process, Network, server & endpoint, Physical Infrastructure



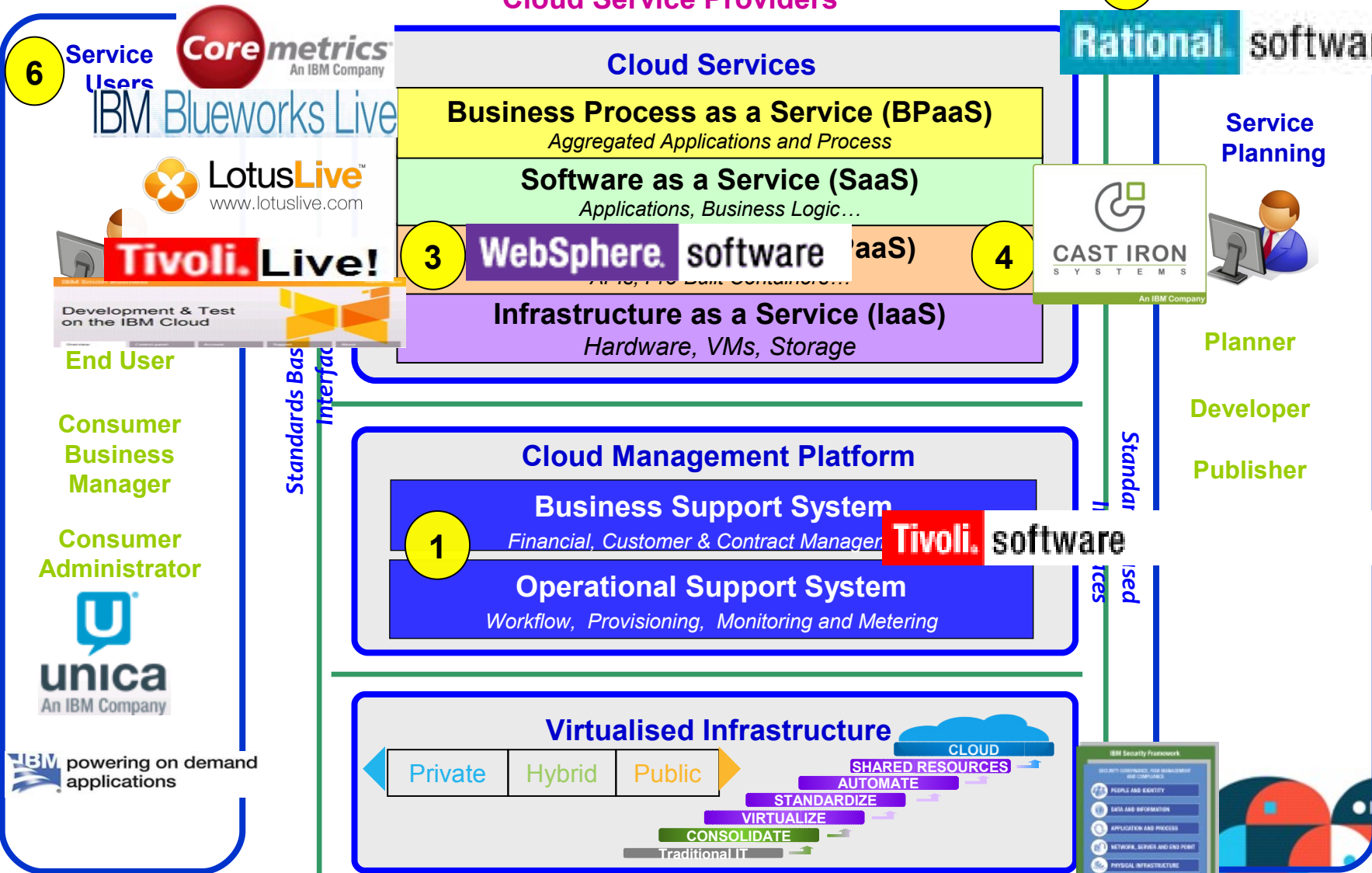
Cloud Reference Architecture



Cloud Service Providers

Cloud Service Consumers

Cloud Service Creators



Security (2)

People & Identity, Data & Information, Application & Process, Network, server & endpoint, Physical Infrastructure



Platform as a Service

WebSphere

WebSphere Application Server - Drives business agility and productivity through high performance and reliable application foundations

WebSphere Application Server Hypervisor Edition - offers all of the robust features of the WebSphere Application Server Family for virtual environments

WebSphere Cloudburst Appliance - dispenses WAS HV into a pool of hypervisors that run on a set of hardware (an IaaS)

Databases

DB2 - database software capable of handling the most demanding workloads

Informix – Simple hassle-free data management , low cost continuous availability – easy, scalable administration.

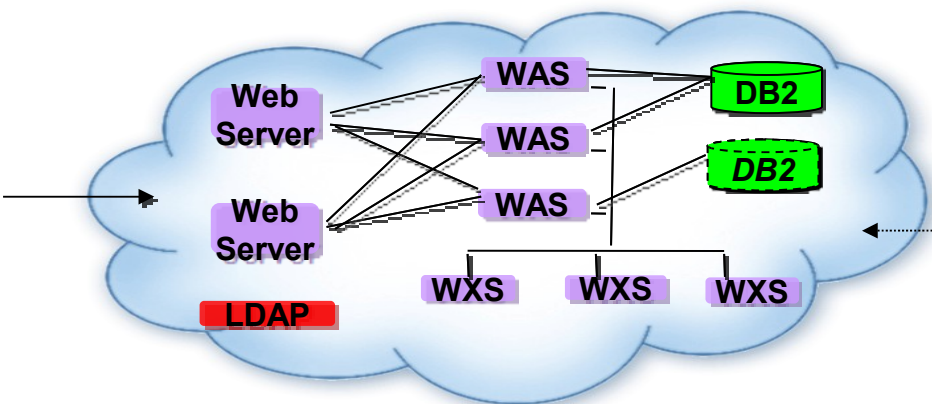
User Personalisation

WebSphere Portal - enterprise portal capabilities that enable you to quickly consolidate applications and content into role-based applications, complete with search, personalization, and security capabilities

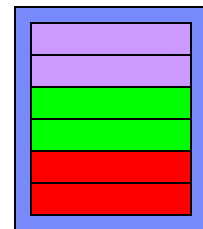
WebSphere sMash - Leverages less costly development skills by using Web 2.0 based dynamic scripting languages to quickly build simple situational apps



Application & Characteristics
Functional & Non-Functional Requirements



Library of Services & Runtimes



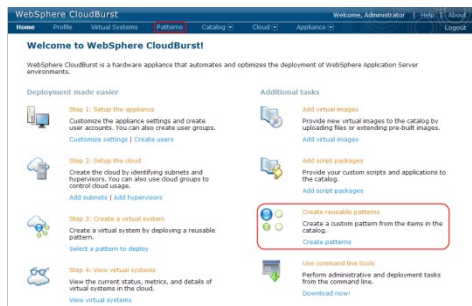


IBM WebSphere Cloudburst



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1) WebSphere CloudBurst Appliance (hardware)



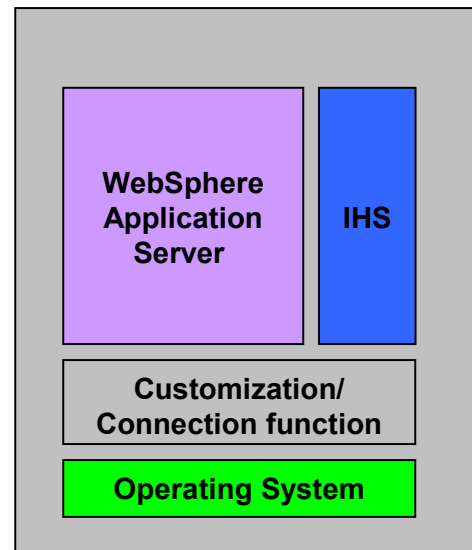
2) CloudBurst dispenses WebSphere Application Server Hypervisor Edition Servers into a set of other machines

1) User requests WebSphere Application Server Hypervisor Edition Environment to be dispensed



3) User can access WebSphere Application Server Hypervisor Edition Servers (Virtual Image)

2) WAS Hypervisor (Virtual Image-software)



The WebSphere CloudBurst appliance dispenses these virtual images into a private cloud





WebSphere Hypervisor Editions

Features

- Preinstalled, configured, and tuned installations
- Open Virtualization Format standard packaging
- Attended and unattended activation
- Available as a stand-alone image, or with WebSphere CloudBurst
 - [WebSphere Application Server](#)
 - [HTTP Server](#)
 - [WebSphere Process Server](#)
 - [WebSphere Business Monitor](#)
 - [WebSphere Portal Server](#)
 - [DB2](#)
 - [WebSphere Message Broker](#)
 - [Lotus Web Content Management](#)

Benefits

- Dramatically reduces time to install/config multiple images and keep them updated:
- Both the operating system and WebSphere component already installed in a virtual image
- WebSphere component profiles already created
- Auto configs/tunes operating system and component following best practices based on knowing the target environment.
- Ability to create multiple virtual machines from the same virtual image saves on disk space, time to transfer images to/from disk, and the number of times you need to apply fixes/modifications!

Why IBM

- Reduced human labor in obtaining a working WebSphere environment
- Reduced resource and schedule costs for provisioning development and test/QA environments
- Reduced space/power/cooling costs





Category of Cloud Integration Platform



Cloud Integration Platform Offered in Multiple Form Factors

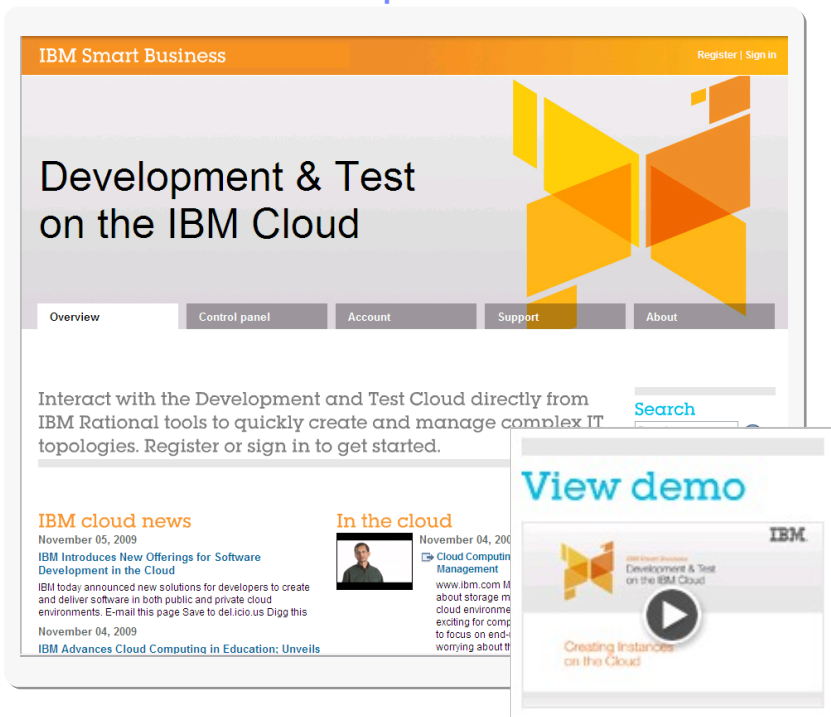
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IBM Smart Business Development & Test on the IBM Cloud

an enterprise-class cloud environment for development and test workloads



Our solution provides the following:

5

- Choice of seven virtual (Intel) server configurations
- Choice of pre-configured software images from which to build private image libraries
 - Linux® operating systems; Red Hat and Novell SUSE
 - IBM Lotus®, WebSphere®, DB2® and Informix® stacks
 - IBM Rational® Application Lifecycle Management
- Option to add persistent storage
- Network isolation option (Private Virtual LAN)
- Support options; Forums and 24*7 by phone
- Choice of two sites: RTP (US) & Ehningen (Germany)

Payment options:

- Pay-as-you-go option (per VM hour usage charge)
- Reserved capacity package options
- Network bandwidth charged for per GB transmitted. IP addresses per hour.

Software Licensing options:

- Bring Your Own IBM License
- Pay as You Go
- Bring your own software and license
- Pre-release software
- Development Use Only

Middleware and operating systems:









Dev and Test Offerings



5

	32-bit Configuration			64-bit Configuration			
VM Component	Bronze	Silver	Gold	Bronze	Silver	Gold	Platinum
Virtual CPU @ 1.25GHz	1	2	4	2	4	8	16
Virtual Memory (GB)	2	4	4	4	8	16	16
Instance Storage (GB)	175	350	350	850	1024	1024	2048

Customer Scenario	Software Charge	Infrastructure Charge
 <p>You “bring your own IBM license” You own an IBM software license and can use the pre-built IBM images in the portal catalogue</p>	Prepaid	Per virtual machine (VM) per hour (hr)
 <p>You “pay-as-you-go” You choose the desired software, accept the license terms online, and receive a monthly usage bill</p>	By usage	Per VM per hr
 <p>You “bring your own software and license” You bring your own software or software for which you hold valid licenses and install them on the servers you provision</p>	Prepaid as agreed with vendors	Per VM per hr
 <p>You are an eligible ISV/SI developer You can use selected IBM development software for development, test, proof of concept and sales demos on the IBM Cloud</p>	No charge or by usage	Per VM per hr





IBM Software products on Development & Test

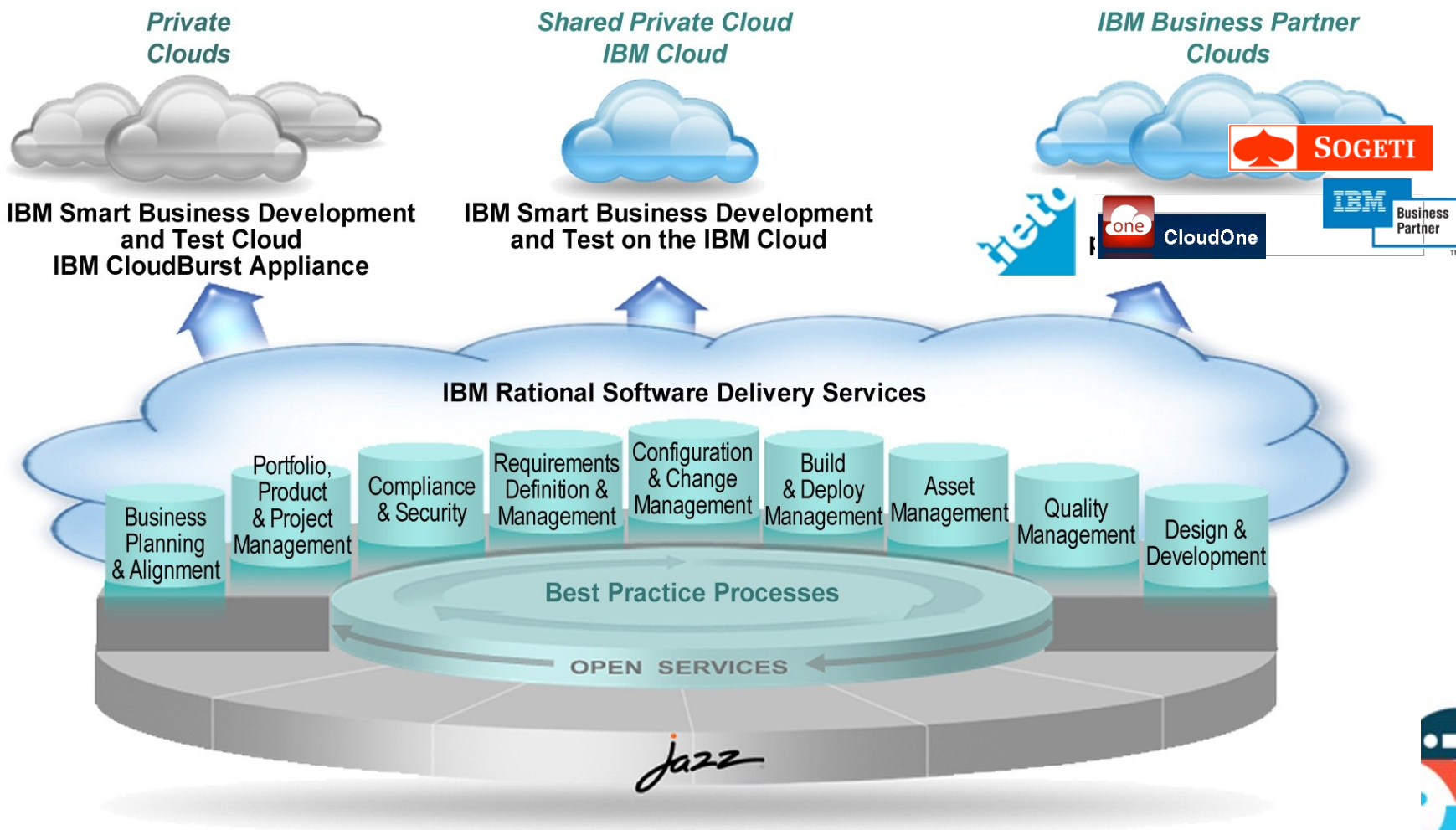
IBM product	BYOL	DUO	PAYG	Pre-release
Industry Application Platform AMI (WebSphere Application Server, DB2 Express-C, and WebSphere MQ)		✓		
DB2 Enterprise Developer Edition V9.7.1	✓			
DB2 Express-C 9.7			✓	
Informix Developer Edition V11.5			✓	
Lotus Domino Enterprise Server 8.5.2		✓		
IBM Lotus Forms Turbo 3.5.1	✓	✓	✓	
Lotus Web Content Management Standard Edition V6.1.5	✓		✓	
IBM Mashup Center V2.0	✓	✓	✓	
Rational Asset Manager V7.2.0.2	✓			
Rational Build Forge V7.1.1.3	✓			
Rational Quality Manager SE V2.0.1	✓	✓		
Rational Requirements Composer V2.0.0.1	✓			
Rational Team Concert Standard Edition V2.0.0.2	✓	✓		
Tivoli Monitoring V6.2.2.1				✓
WebSphere Application Server V7.0	✓	✓	✓	
WebSphere Portal Server and Lotus Web Content Management Standard Edition V6.1.5	✓	✓	✓	
WebSphere sMash V1.1.1	✓	✓	✓	





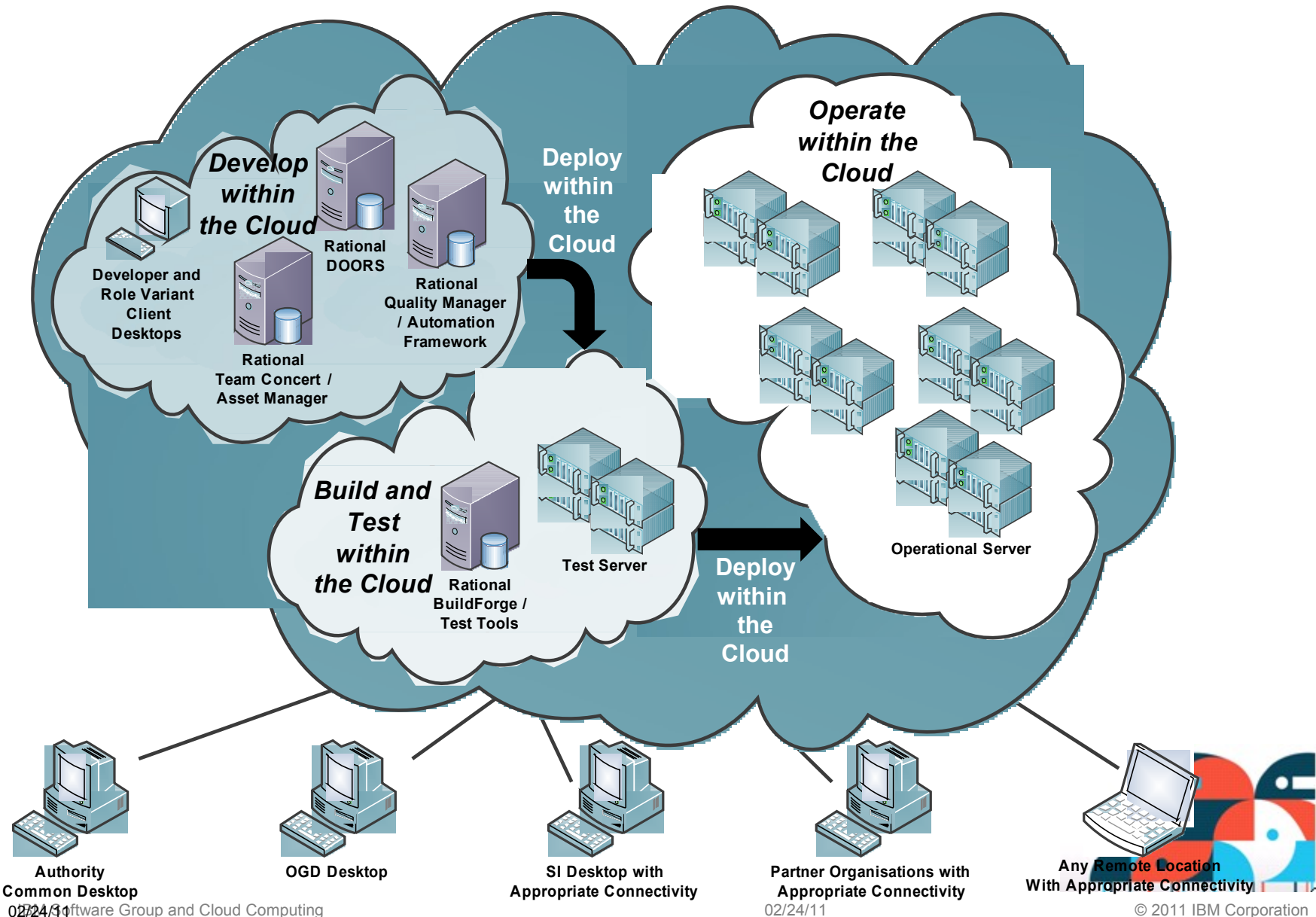
Rational

- On the Cloud
- For the Cloud





Develop, Build, Test, Deploy and Operate within the Cloud





ECM is Cloud Ready

IBM ECM Software is Cloud Ready

- Features required for cloud deployment are built into the product.
- The software supports and is used in three deployment models: on premise, appliance and cloud

IBM & Partners offering Cloud ECM

Software today

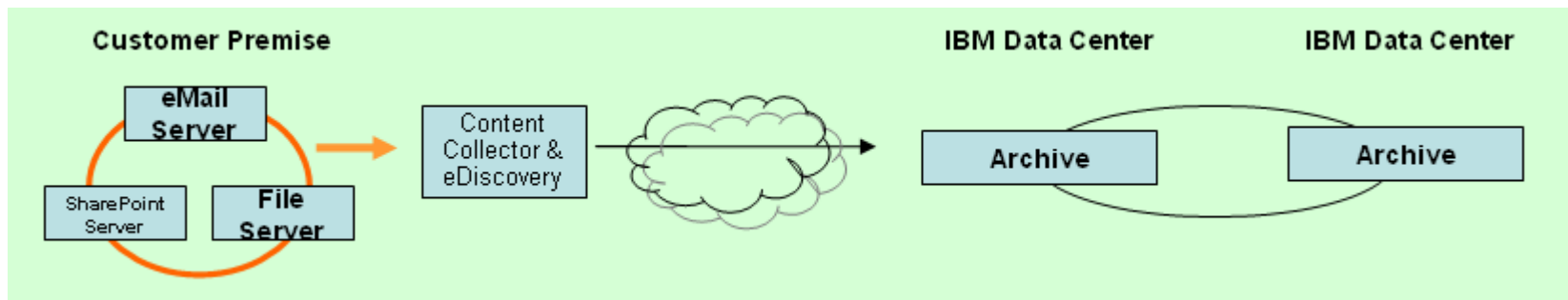
- IBM Global Technology Services (GTS)
Shared, managed and private cloud implementations are all available for deploying their IBM ECM solution.
- Viewpointe
Provides a hosted digital content archive solution based on IBM ECM technology and focused on the financial services industry. Today, this solution has 154.8 billion items and 19.6 petabytes stored and managed.
- Logica
Dynamically scalable solution that provides social networking solutions and IBM ECM-related software as a service (SaaS).
- RR Donnelley
Provides archival and document management solutions based on IBM ECM.

SaaS	<ul style="list-style-type: none"> • Online Healthcare Records • Online Tax Records • Check Imaging • Voice of the Customer • Public Opinion Monitoring • Brand Reputation
	<ul style="list-style-type: none"> • eDiscovery Review • Email and Content Archiving • Report Archiving • Content Decommissioning • Process Modeling • Technical Document Publishing
Paas	<ul style="list-style-type: none"> • Content Classification • Content Analytics • Records Management
	<ul style="list-style-type: none"> • Content Ingestion (paper and digital collection) • Basic Repository and Retrieval Services • Core Horizontal and Scaled ECM Services • Case Management / BPM Capabilities
IaaS	<ul style="list-style-type: none"> • High Availability / Disaster Recovery • Replication • Virtualized Servers • Enterprise-Class Storage • Network





IBM Hosted Archive



Description

- An information archive-as-a-service based on state of the art IBM software and systems managed by IBM Global Technology Services.

Key Points

- Archiving service with integrated content management provides Enterprise wide visibility of all content regardless of source.
- Available as on premise private cloud and managed implementations.
- More than 150 global resiliency centres in 55 countries.
- No commingling of data between clients.

Benefits

- Reduce upfront capital expense and ongoing operational costs.
- Lower storage costs and improve operational efficiency.
- Improve response time to legal and regulatory compliance inquiries.
- Unlock business value of archived content.

Why IBM?

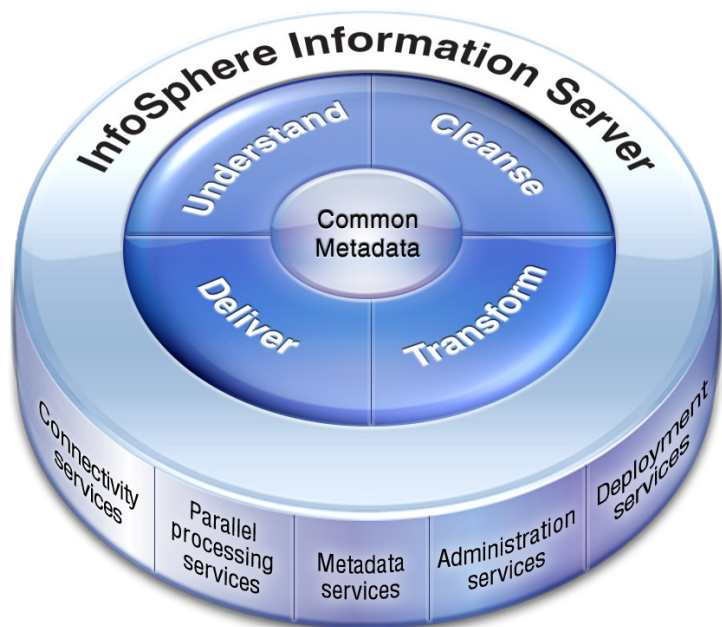
- Not just an email archive, it includes wide support for other content and applications.
- Unparalleled experience in hosted archiving.





InfoSphere Information Server

Cloud based data transformation scalability



Benefits:

- **Industrial strength data integration and cleansing**
- Minimal upfront hardware and software investment
- Hourly pricing model - pay only for what you use
- Linear scalability for exploding data volumes
- Supporting cloud, grid, SMP, MPP architectures
- Operational integration 24x7

Cost - Predictable charges without long term commitment

Security - Uses the underlying Amazon S3 storage structure to ensure data security and access control

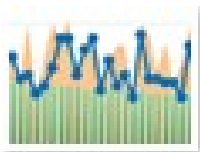
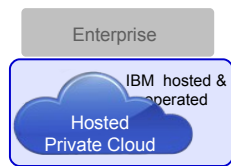
Flexibility - Additional capacity and environments are available on demand and near instantaneously

Speed / Lead time - Capacity and new environments can be licensed at a moment's notice for minimal duration



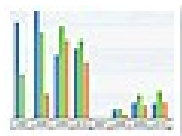


Cognos Business Intelligence on IBM Cloud



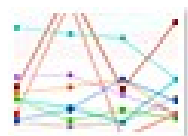
Query & Reporting

Use comprehensive query and reporting to make smarter decisions



Analysis

Drive better, smarter business decisions with wide-ranging analysis



Dashboarding

Monitor, measure and manage corporate performance at a glance



Scorecarding

Successfully link strategy to operations

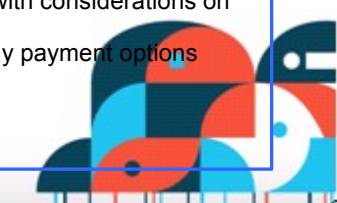


IBM Smart Business Development and Test Cloud V1.1

- Convert Compute Platform spend from CAPEX to OPEX
- On-demand provisioning of scalable, virtualized development and testing resources in an automated cloud platform
- A self-service portal designed for ease of use, with a catalog of standardised infrastructure services (e.g. storage, server size, O/S)
- Data centers in USA and Germany

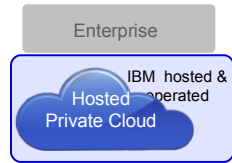
IBM Cognos BI Software

- Bring Your Own Licenses for Cloud Deployments
- Up and running only few clicks away
- Rapid provisioning an instance of an IBM supplied pre-configured and optimised Cognos BI image with all pre-requisite middleware in minutes
- DeveloperWorks articles and book on "IBM Cognos Analytics and Cloud Computing" with considerations on data architecture and security
- Available IGF financing for monthly payment options





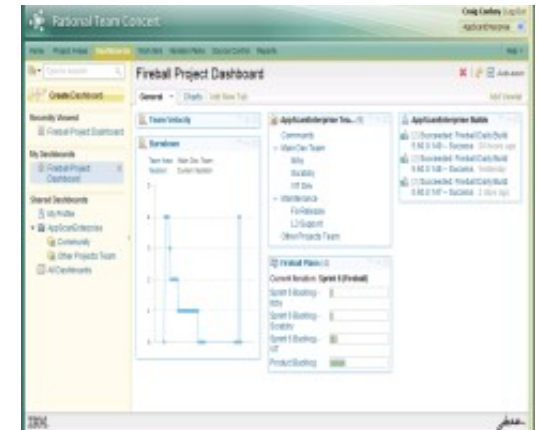
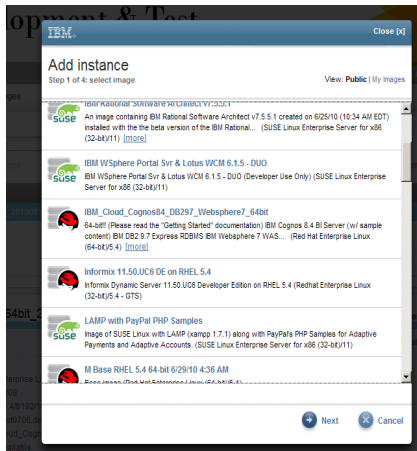
Provision Cognos BI with a few mouse clicks

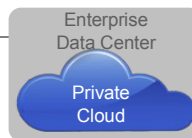


Step 1 Click and Choose the Service you need

Step 2 Choose the hardware and usage configuration

Step 3 Application provisioned and ready to run





Smart Analytics Cloud solution offering

Creates ...

That delivers ...

Smart Analytics Cloud

A private cloud within the enterprise

A solution for delivering business intelligence to the entire organisation

The solution components ...

IBM software Cognos 8 BI
A broad range of BI capabilities

Web Mobile Search Office

Reporting Analysis

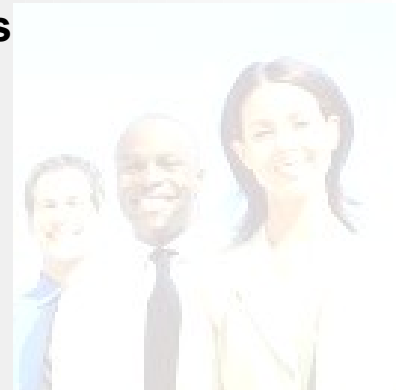
Open, enterprise-class BI

IBM hardware IBM System
Centralize, Virtualise & Simplify

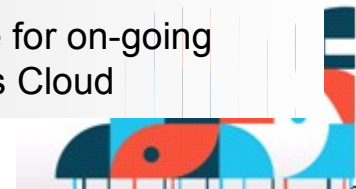
IBM Smart Analytics Cloud

IBM Redbooks

IBM Services



- **Phase 1:** Create awareness of, a strategy for and a governance foundation for BI across the organization
- **Phase 2:** Preparation for the Smart Analytics Cloud
- **Phase 3:** Install the base cloud, integrate into the corporate enterprise and test the cloud use cases
- **Phase 4:** Educate the enterprise for on-going success with the Smart Analytics Cloud





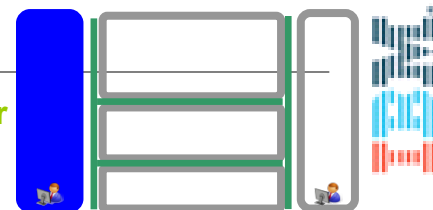
Cloud Service Users

6

Consumer End User

Consumer Business Manager

Consumer Administrator



Collaboration Services

LotusLive - a suite of hosted online technologies that combine social networking and online collaboration tools.

Analytics Services

IBM Smart Analytics System - The most complete analytics solution in the industry. Integrated, optimized, and ready-to-use. Delivers business insight where and when needed.

IBM Cognos 10 Business Intelligence - Complete range of BI capabilities – Reporting, Analysis, Dashboards, and Scorecards -- on a single service-oriented architecture

CoreMetrics Web Analytics - web analytics and integrated marketing optimization software

Process Services

IBM Blueworks - Enables anyone, anywhere to be a process expert

Unica - Integrated Marketing across multiple channels

Sterling Commerce - best of breed B2B integration, Managed File Transfer and cross-channel selling and fulfillment capabilities

Service Management Services

Tivoli Live - Monitoring Services - allow customers to manage the health and performance of their data center's resources – including operating systems, virtualized servers, middleware and applications.

Tivoli Live – Service Manager - Web-enabled service request, service catalog, asset management incident, problem, change and release capabilities

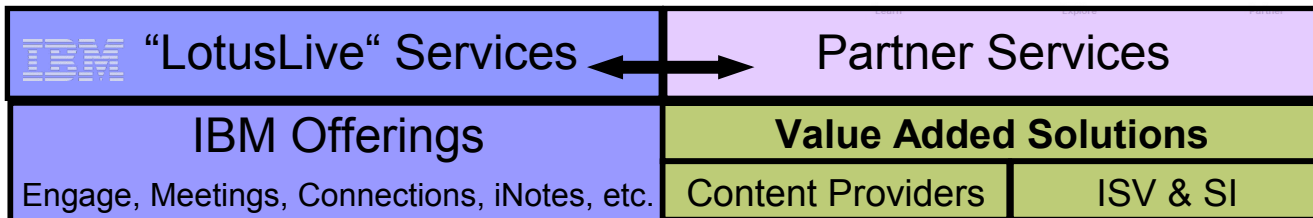
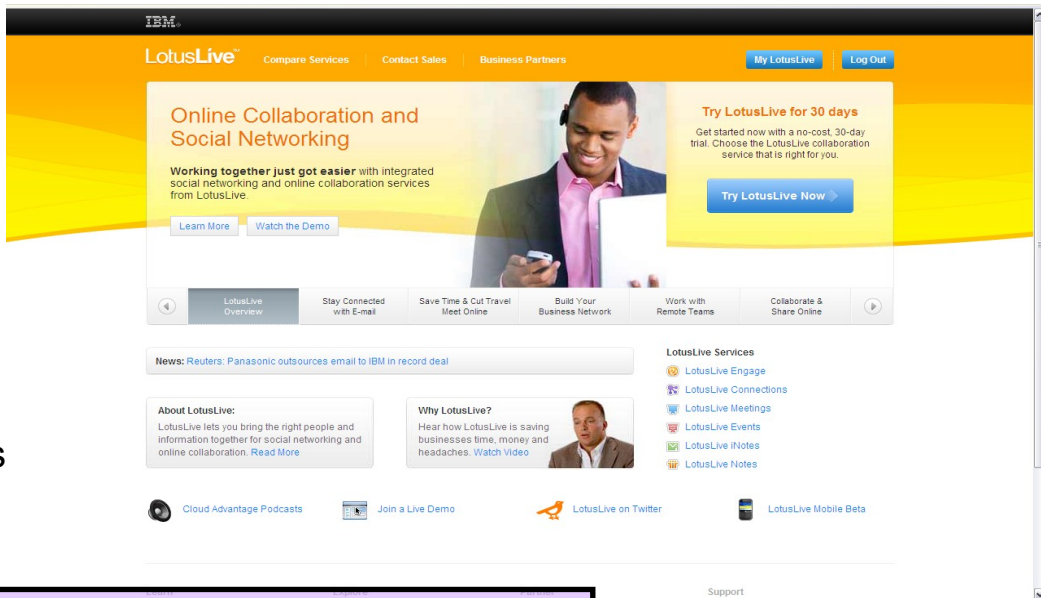




LotusLive.com is an Open System of Systems



6



- Provide essential, easy-to-use and acquire business services for workgroups
- Offer integrated collaborative & social networking services connected to relevant business services and applications
- Enable the ability to seamlessly work with people – outside or inside your company
- Create a business network of connected businesses
- LotusLive is a flexible SaaS platform for collaboration with partner extensions





Simple. Social. SaaS. New Offering for Improving Processes



IBM Blueworks Live

- **Better** than “process over email”
- **Enables anyone**, anywhere to be a process expert
- Takes you to **next level** of process improvement

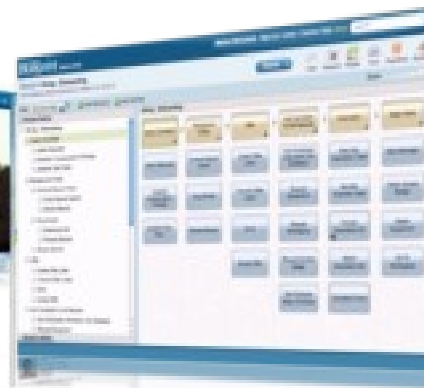
- **Discovery** and **documentation** of simple or even the most complex processes
- Enables a regular business person with little technical skill to **automate processes** currently **run over email with attachments**, for more control and improved productivity via a social, collaborative approach
- **Automation** of simple business processes in 90 seconds using checklist & approval templates
- Integrated **private community** and public BPM feed
- **Built-in dashboards** and **reporting** for improved **governance**



+ *New Automation Features*



BPM BlueWorks



BPM Blueprint





Enterprise Market Management



6



WebSphere Commerce

- Web Portal Development
- e-commerce
- Marketing
- Mobile Shopping

- Resource Mgmt
- Campaign Mgmt
- Marketing execution
- Performance
- Analysis



- Analytics
- Segmentation
- Reporting
- Search Optimization
- Mobile



- Cross Channel Order Management
- Configuration
- Pricing
- Multi-vendor catalog
- Quoting



- Distributed Order Sourcing
- Warehouse Management
- Transportation Management
- Supply Chain Visibility



- Optimization
- Rules
- Visualization

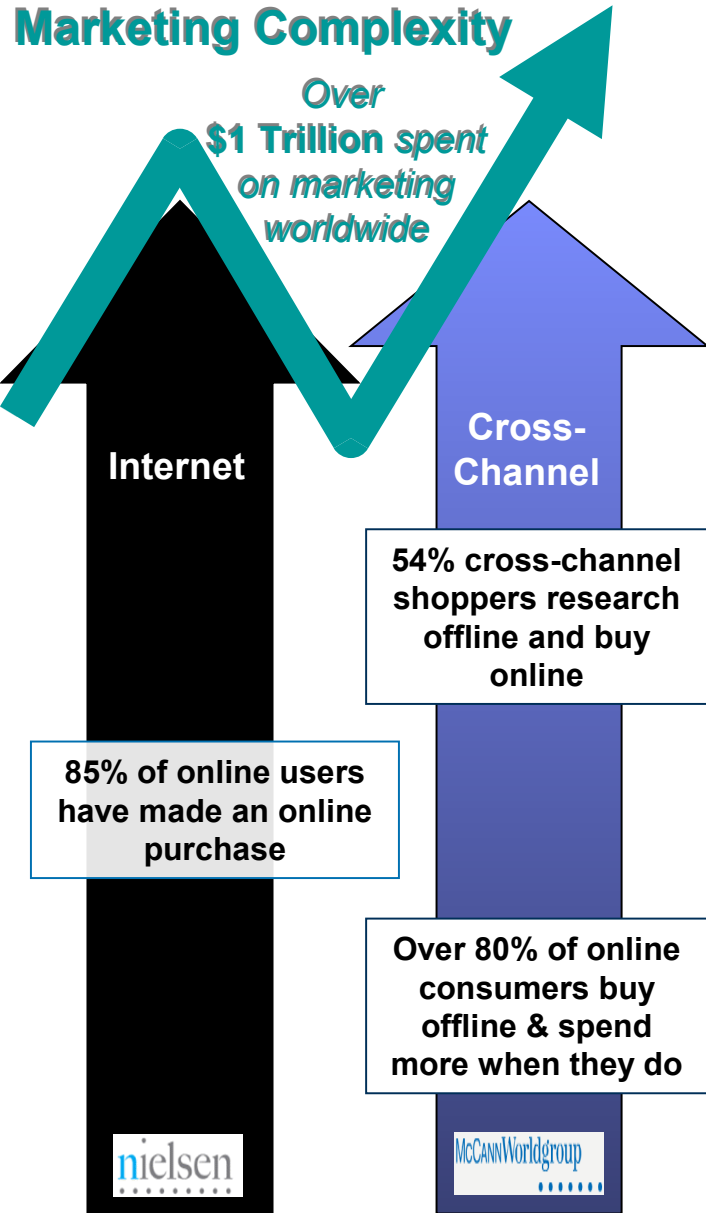


Supported by IBM Analytics and Application Infrastructure, Database & Integration Middleware





Lotus's Spent Interactive Marketing Complexity



Awareness	Decisioning	Execution
Leverage comprehensive data to identify opportunities and predict marketing outcomes.	Determine the best message to extend in outbound and inbound marketing channels.	Deliver highly relevant marketing messages and retain a corporate memory of interactions.
Customer Analytics Web Analytics Predictive Analytics Event Detection	Segmentation Offer Management Interaction History Real-Time Targeting Contact Optimization	eMail Inbound Integration Distributed Marketing Lead Management Search Optimization
Integrated Marketing Operations		
Plans & Budgets	People & Processes	Data & Assets
		Measurement & Performance





Coremetrics: What Does it Do / How Does it Work

With Coremetrics customers can:

Anticipate customer preferences and predispositions based on a historical view of browsing behavior across multiple channels.

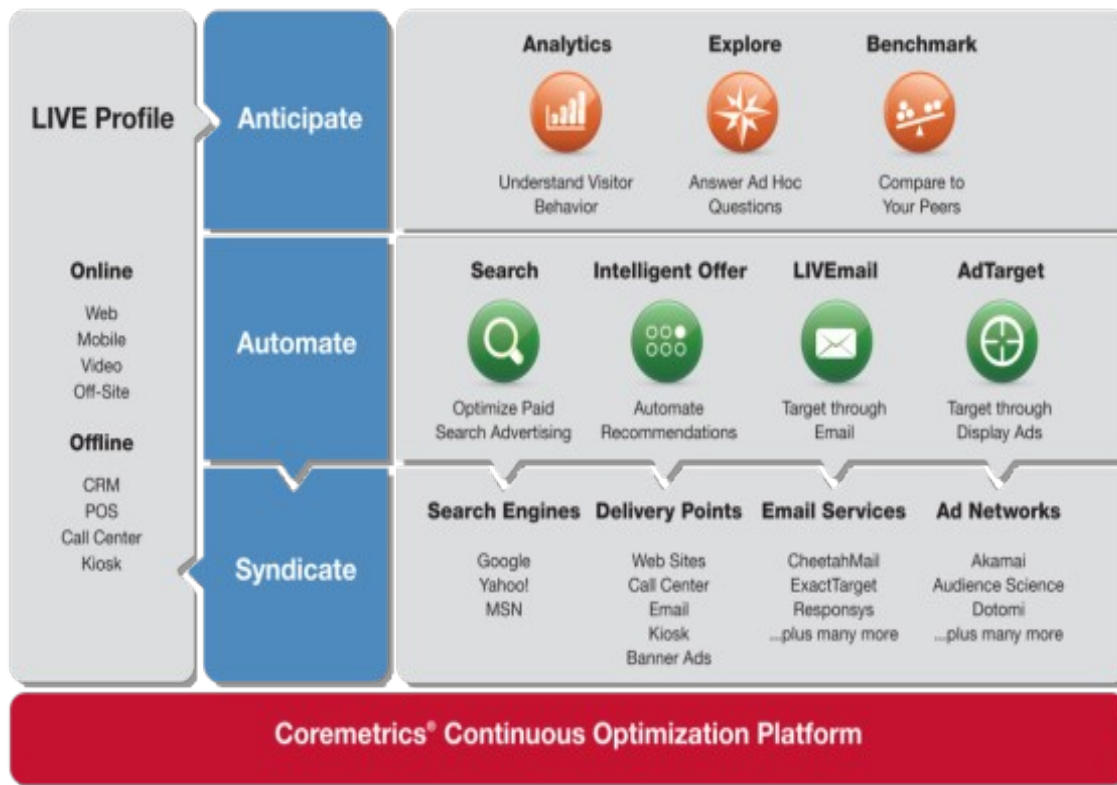
Automate the management of marketing campaigns, enabling immediate delivery of specifically-tailored content to individuals in response to past and current browsing behavior.

Syndicate personalized content to the right channel at the right time (web sites, emails, ad networks, and more).

(Repeat) the process. Every new bit of information collected makes the data more relevant, and the marketing programs get better and better.

The Continuous Optimization Platform

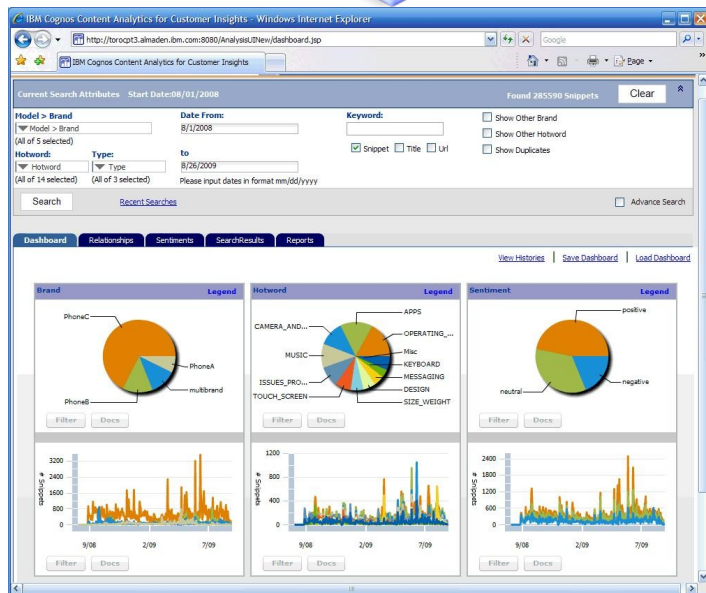
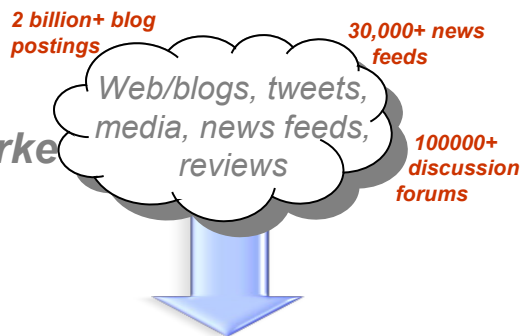
- Continuously updates visitors' lifetime browsing behavior (LIVE Profiles™).
- Optimizes based on many visits over time, not just a single visit.
- Incorporates data from online and offline behavior.
- Improves customer offers on a continuous basis.
- Makes optimized content selections in real time.
- Automatically drives customers through the conversion process.





Cognos Consumer Insight Project

Unstructured customer/market comments



- Business problem
 - Explosion of consumer feedback on social media has created a powerful new consumer influence that is out of reach of traditional business analytics
 - Companies are actively looking for ways to proactively monitor and leverage social media content to establish a direct and timely connection with the voice of the customer
 - Brand managers, market analyst, competitive intelligence analysts... all want to correlate social media information with their internal business data for better business outcomes

- Consumer Insights solution:
 - Designed for hosted or on-premise deployments
 - Analyses large amounts of cloud content for discussions of brand, products and key topics and correlates with sentiment
 - Offers sophisticated Cognos reporting and alerting capabilities combined with unique search-based exploratory user interface
 - Allows integration of analysis and content with on-premise applications and broader analytics (e.g. SPSS models, analytic applications)

Innovative and effective user interface for a broad range of users – “traditional BI” blended with search-index data exploration



Analytics as a Service Incubation

Interlocking Cloud Incubation

Customers consumes services on monthly payment

- Customer pays one monthly charge for accessing a fully functional Analytics system
- Customer provides data for analysis. It may be uploaded to IBM cloud or residing on Customer's systems

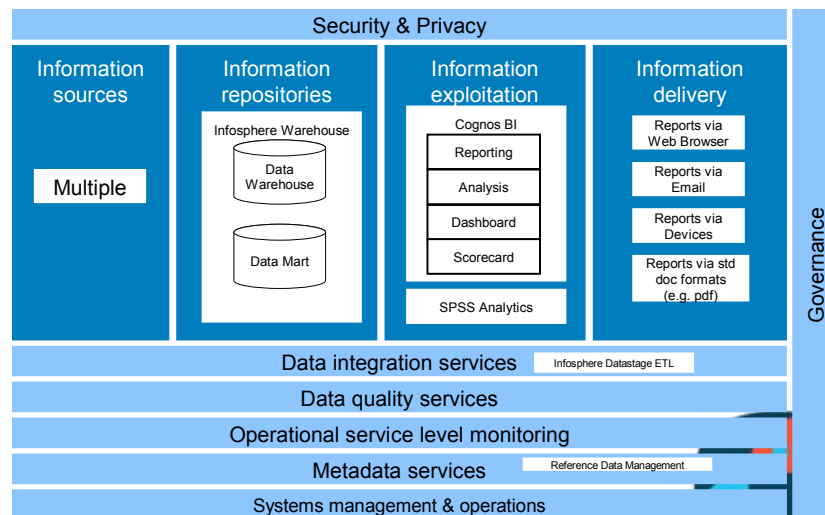


It is not

- Bring your own license BI image provisioned on IBM (aka. BI on IBM Cloud)
- System deployed on customer's assets (aka. private cloud or remote managed service)
- IBM supplying data (aka. Data as a Service)

IBM manages and delivers

- Out of the box Analytics software hosted on IBM cloud
- Services provided include service provisioning, production support with Service Level Agreements (SLA)
- Optional IBM consulting, Industry Models to support specific Industry Clouds





Sterling Commerce

B2B Integration & MFT Solution Capabilities

- **Collaboration Network** of over **300,000 pre-connected trading entities** supporting any data type, any data format
- Pre-defined **process automation** for critical business processes such as **e-Invoicing and Payments**
- **Community management** and self-service on-boarding
- **Secure, high volume file transfers** and compliance

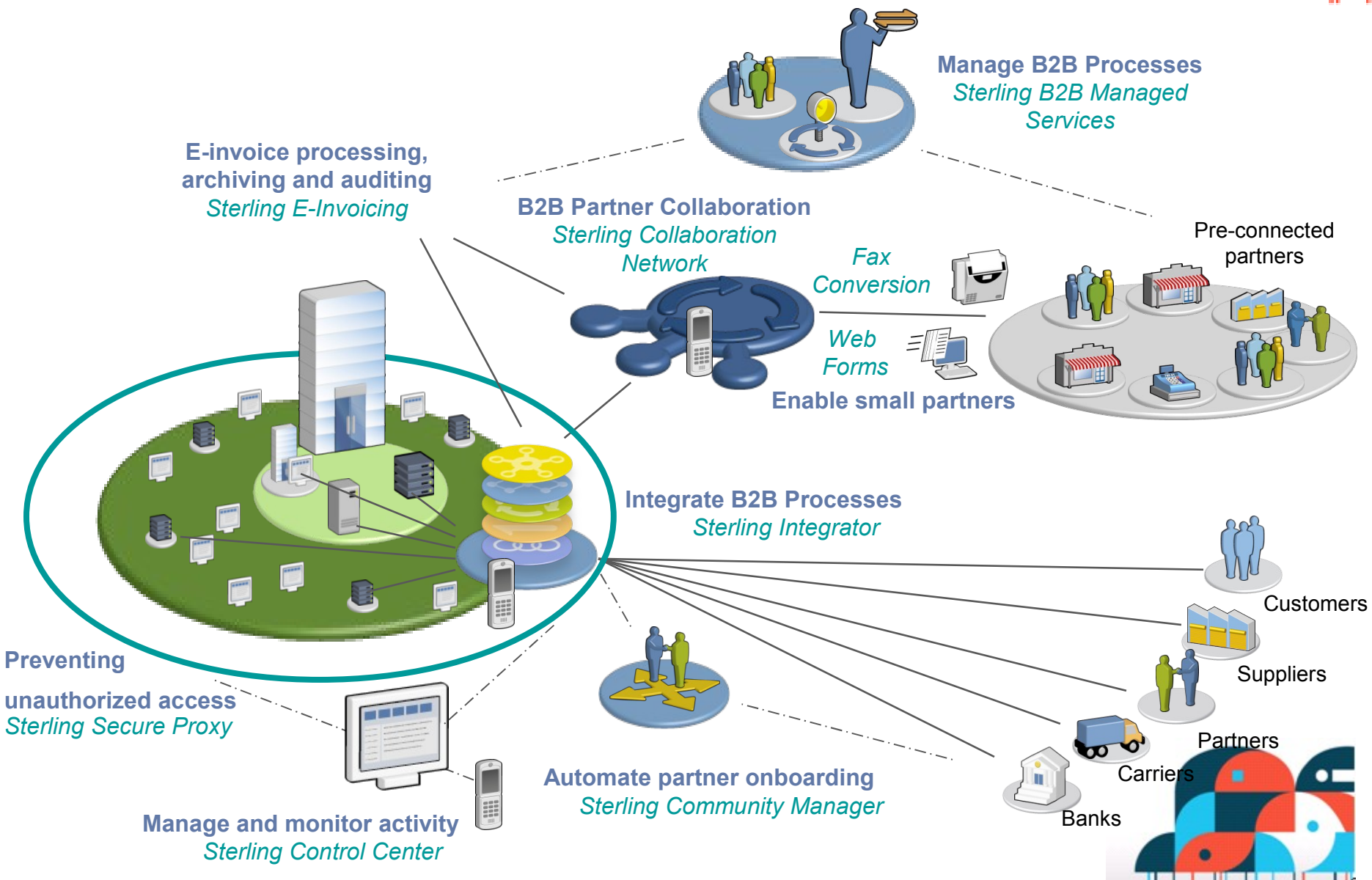


- Multiple deployment options to optimise TCO
- On-premise solutions for internal and mission-critical operations
- As-a-Service solutions for cost management, partner reach, peak load management, out-of-service failover
- Hybrid implementations to achieve combined goals and objectives



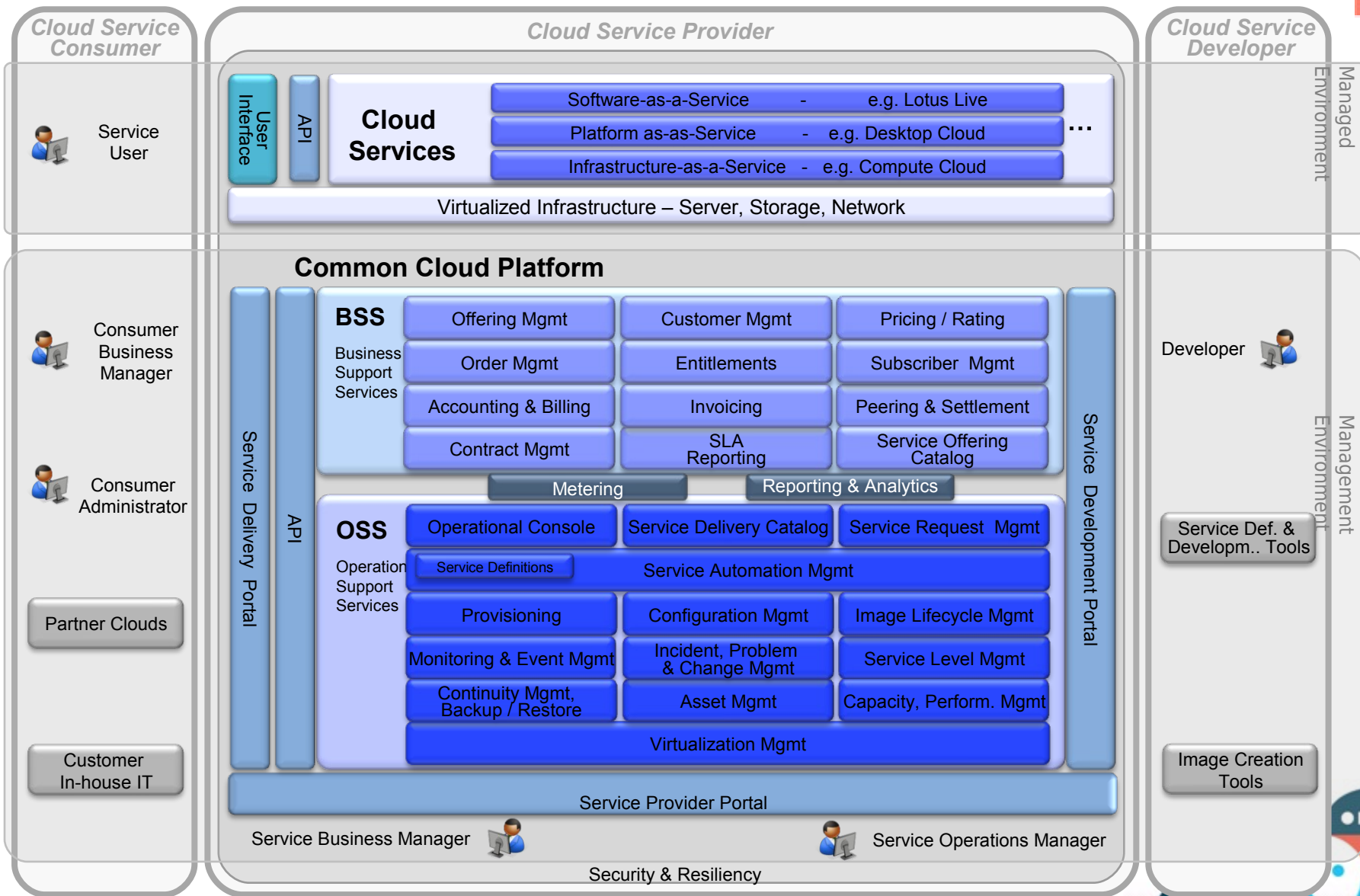


Sterling B2B Integration



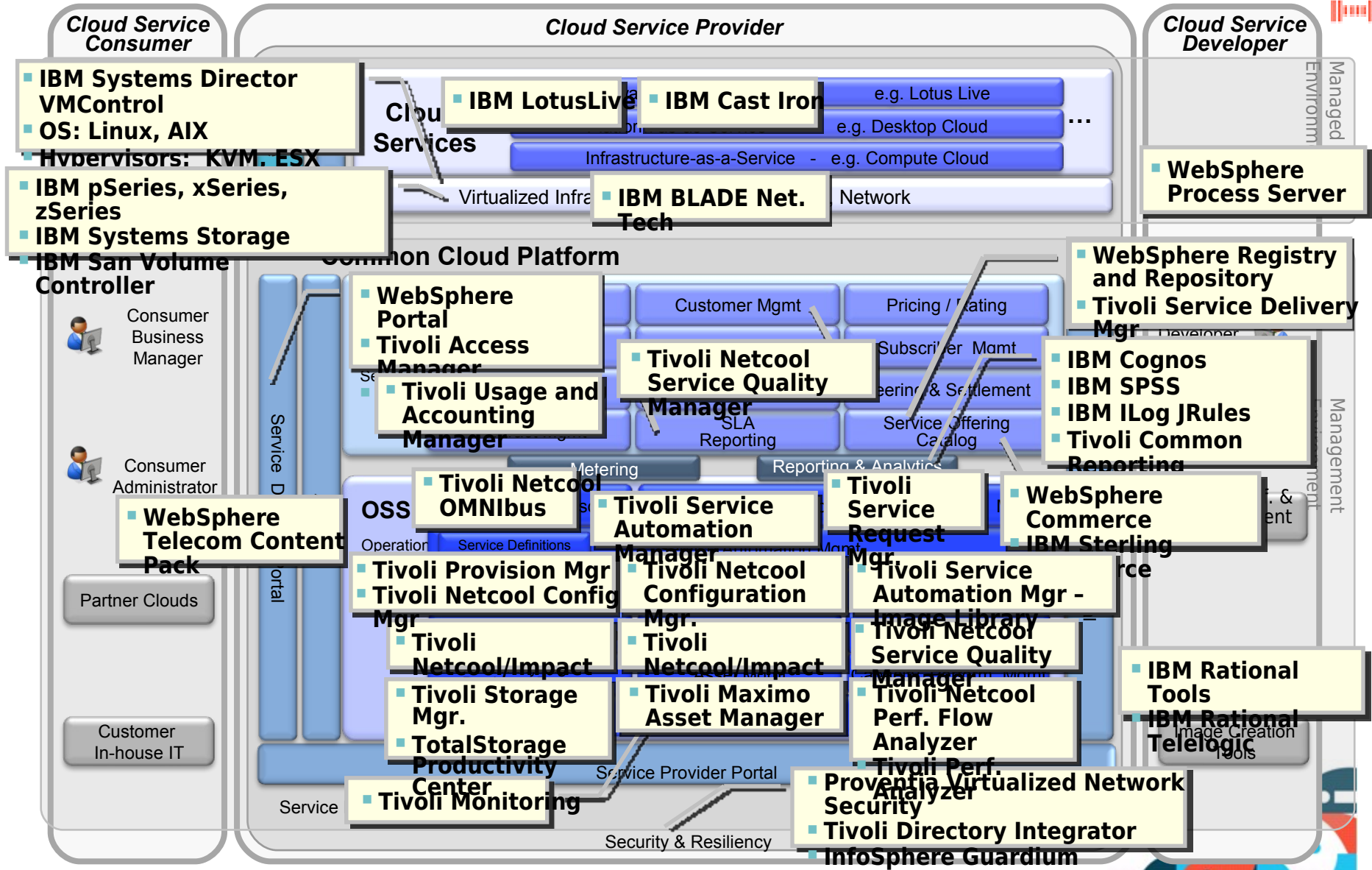


Comprehensive Reference Architecture



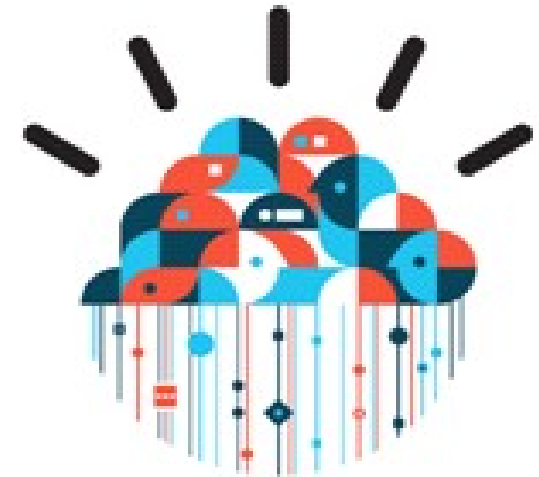


Products Populating Cloud Service Provider Platform





Thank you!



Saugatuck - First Cloud Leadership Study

- Traditional IT and business leadership strategies and tactics will be of limited effectiveness in a Cloud-based environment where anyone can do practically anything they want or need to

Bill McNee, Founder and CEO Saugatuck Technology



For more information, please visit: ibm.com/cloud

Or, contact me: sgarforth@uk.ibm.com

