> **Stay ahead.**

Innovate2013
The IBM Technical Summit

開發者大會

行動、**Big Data** 處理零時差，應用案例搶先看

IBM Mobile and Big Data with Enterprise assets, e.g. IMS, evidenced with clients scenarios

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Mobile is a mandatory transformation in the evolution of computing

Mobile/Wireless/Cloud

Web/Desktop

Client/Server

ISPF

Mobile enables business:

- **Premium Customer Service – hotel bookings, flight check-in, etc**

- **Broaden Marketing Reach – Put your branded icon on your customers' smart device**

- **Increase Revenue**

- **Increase Operational Efficiency – extend your existing enterprise systems to the mobile platform**

Characteristics of Mobile Workloads
On any platform

- **Increased web traffic.** Mobile applications drive an increase in overall transaction rates. When a user can check their bank balance anytime, they tend to do it more often.

- **Increased off-peak web traffic.** Traditional workload peaks change or are smoothed out when more mobile devices are driving the traffic.

- **New mobile applications are often first deployed rapidly to cloud-based servers.** According to Intel -- A new cloud server is required for every 600 smart phones (or 120 tablets) sold. This leads to over a million new servers required in 2013.

- **Mobile applications could cause huge spikes in transactions.** Consider a time-sensitive offer sent to mobile users. Since they are more likely to see and respond to the offer quickly this could cause a huge and sharp spike in transaction invocations. This drives the move toward light-weight data transports like JSON.

- **Think Sensors and Actuators.** Mobile is more than smartphones. Think of any device relaying information to a server.

Uniqueness of Mobile…

Mobile devices are shared more often

- Personal phones and tablets shared with family
- Enterprise tablet shared with co-workers
- Social norms of mobile apps vs. file systems

Mobile devices have multiple personas

- Work tool
- Entertainment device
- Personal organization
- Security profile per persona?

Mobile devices are diverse

- OS immaturity for enterprise mgmt
- BYOD dictates multiple OSs
- Vendor / carrier control dictates multiple OS versions

Mobile devices are used in more locations

- A single location could offer public, private, and cell connections
- Anywhere, anytime
- Increasing reliance on enterprise WiFi

Mobile devices prioritize the user

- Conflicts with user experience not tolerated
- OS architecture puts the user in control
- Difficult to enforce policy, app lists

z-Unique Characteristics to support Mobile Applications

- Massive scalability in a single footprint, to handle the workload of millions of devices and sensors.

- Workload Management to provide a quick reaction to sharp spikes in demand

- Hardware encryption speeds SSL applications.

- Business Resiliency for critical mobile apps.

- Integration of co-located existing Applications, Services and Systems of Record

IBM MobileFirst Platform

Overview of the IBM MobileFirst application and data platform

Delivering for multiple mobile platforms
IBM Worklight

Fast and cost-effective development, integration and management of rich, cross-platform mobile applications

Client Challenge

Using standards-based technologies and tools and delivering an enterprise-grade services layer that meets the needs of mobile employees and customers

Key Capabilities

Mobile optimized middleware

- Open approach to 3rd-party integration
- Mix native and HTML
- Strong authentication framework
- Encrypted offline availability
- Enterprise back-end connectivity
- Unified push notifications
- Data collection for analytics
- Direct updates and remote disablement
- Packaged runtime skins
- zLinux support

IBM Worklight: An Overview

Studio

Leading tools for cross platform hybrid development that maximize code reuse and enable per-device optimization

Operational console

Operational management for deployments, concurrent versions, and infrastructure access. Operational analytics provide real-time insight into application usage
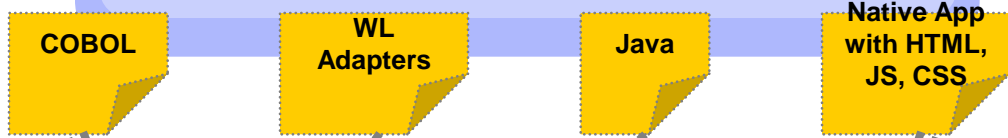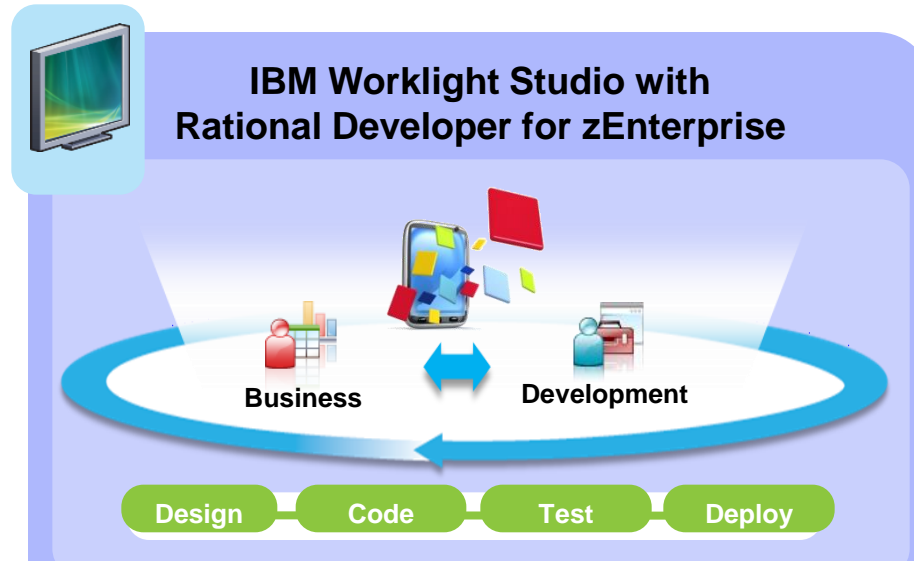
Application center

A cross-platform private mobile application store focused on the needs of a development organization or a team

Application runtime

Cross platform services for the mobile channel (client & server componentry). Client APIs are introduced for both pure **native** as well as **hybrid** development

Integrated tools for all components of the mobile solution

IBM Worklight Studio with Rational Developer for zEnterprise

Business   ⟷   Development

Design — Code — Test — Deploy

COBOL

WL Adapters

Java

Native App with HTML, JS, CSS

- Built on Eclipse
- Common code base across all mobile platforms (with ability to override at platform level)
- Build, preview, and deploy within the IDE
- Mobile simulator (for unit test)
- End-to-end debug
- Integrate with third-party SDKs (e.g. Android Development Tools)

System z

IMS

WebSphere Application Server with IBM Worklight Server

Worklight
An IBM® company
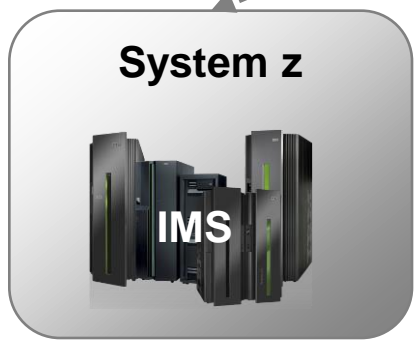
Mobile

Connect Mobile Apps with Enterprise Apps & Services
Security, Control, Integration & Optimization of mobile workload

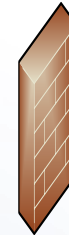**Securely** expose enterprise data to Mobile Apps while **optimizing** delivery of the workload
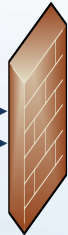
IBM DataPower Gateway Appliance

e.g. REST (JSON/XML) over HTTPS

e.g. SOAP over HTTPS

Message Oriented, Legacy Apps

Worklight, WAS ND

Web Apps, Services

SSL Offload
Threat Protection
Rate Limiting
Validation, Filtering
now with Native JSON Support**
Authentication
z/OS identity propagation
Authorization
OAuth 2.0
Security Token Translation (e.g SAML)
Transformation
Content-Based Routing
Intelligent Load Distribution
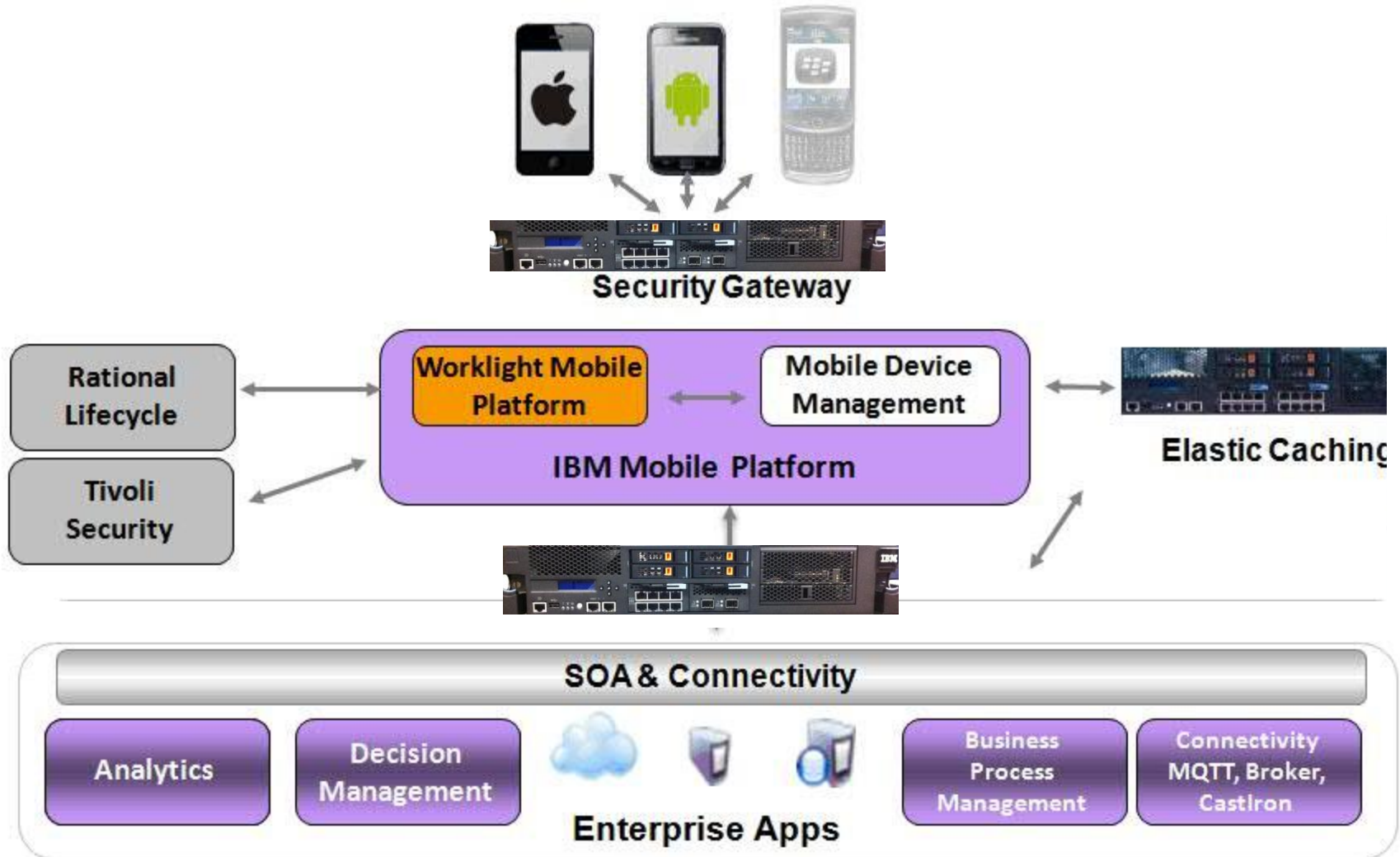Response Caching Locally or to XC10 **

Enhanced form-based authentication support for quick integration with Worklight applications running on mobile devices *
Ready-to-use configuration pattern as reverse proxy & security policy enforcement point in front of Worklight Server*

*** Available in DataPower firmware version 6.0*

Mobile Enablement for System Z with WebSphere DataPower

- DataPower as a Mobile Gateway
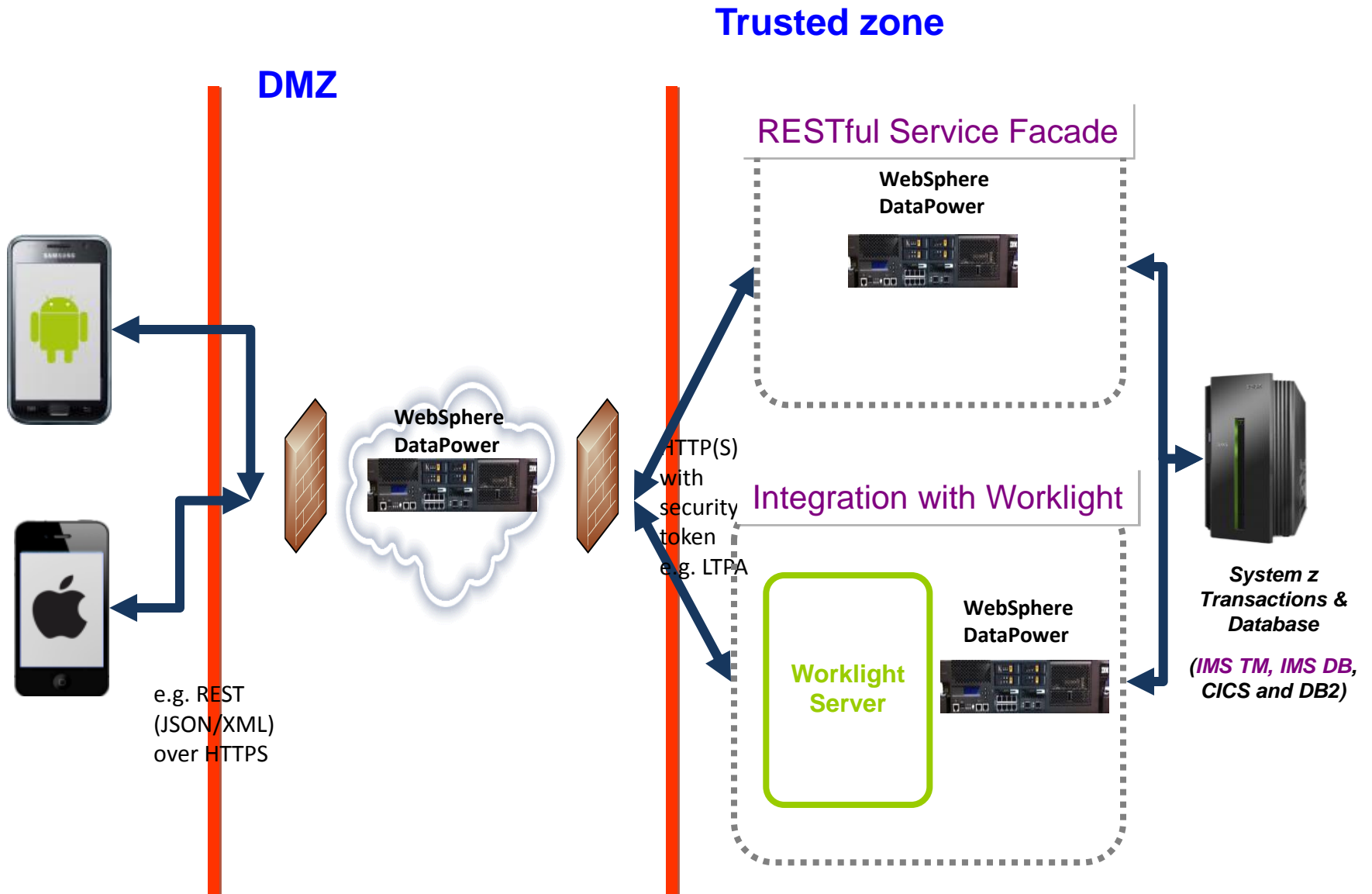 - *WebSphere DataPower is an appliance-based ubiquitous security and integration gateway. It provides*
    - *Security, control, integration and optimization needs for mobile workload*
  - *DataPower can play different roles in mobile enablement*
    - *RESTful service facade*
    - *DMZ proxy to secure your mobile network*
    - *Seamless enterprise integration for IBM Worklight*

DataPower and IBM Worklight

Mobile Enablement with DataPower for System Z

IBM

Trusted zone

DMZ

RESTful Service Facade

WebSphere DataPower

WebSphere DataPower

HTTP(S) with security token e.g. LTPA

Integration with Worklight

WebSphere DataPower

Worklight Server

e.g. REST (JSON/XML) over HTTPS

System z Transactions & Database

(IMS TM, IMS DB, CICS and DB2)

Customer Demo: DataPower as "RESTful Service Facade"
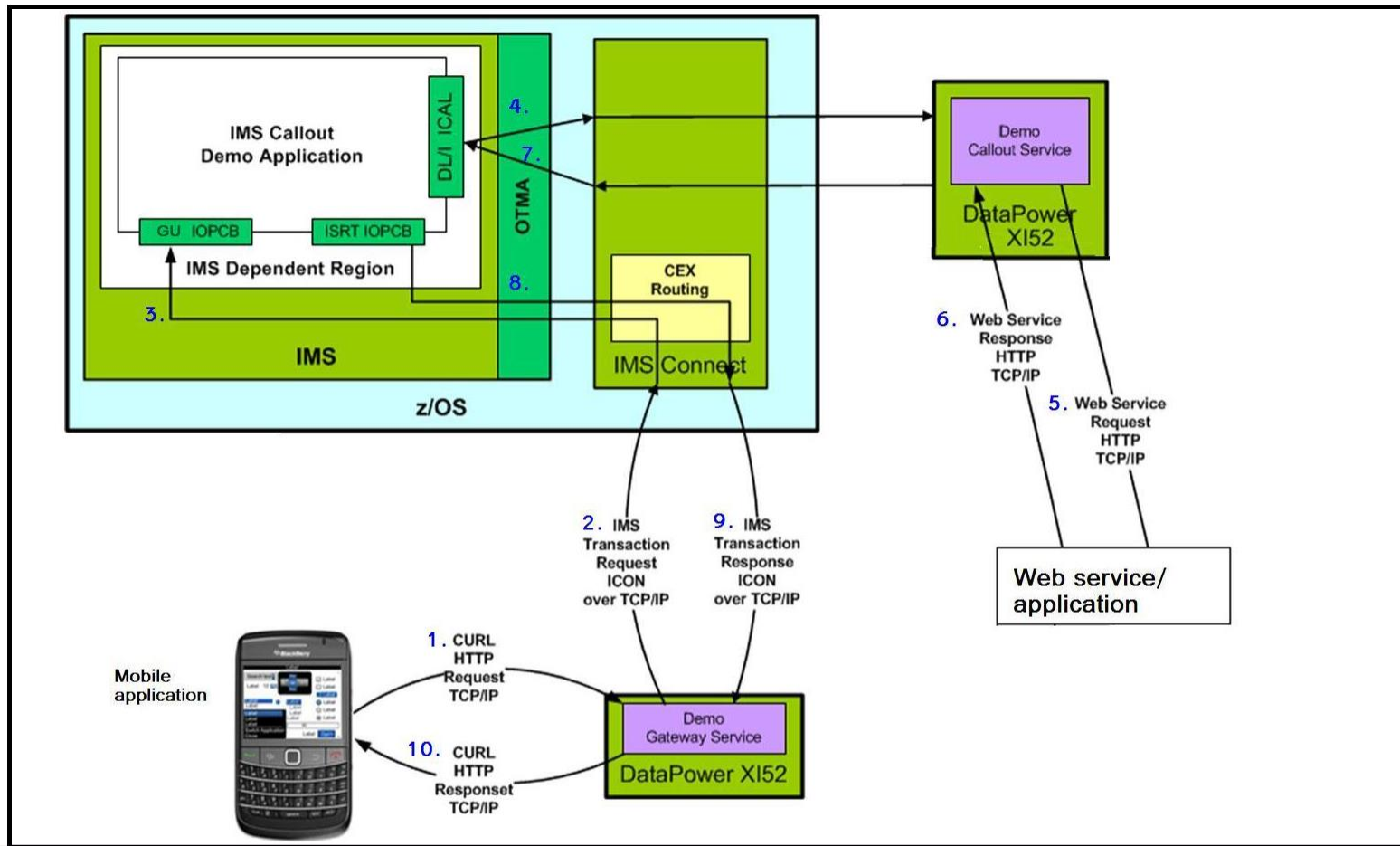
What is Big data?

➢ **Google can give you nearly 2 Billion options**
➢ **Vendors have even more definitions**

What is Big Data

Web   Images   Maps   Shopping   News

About 1,940,000,000 results (0.18 seconds)
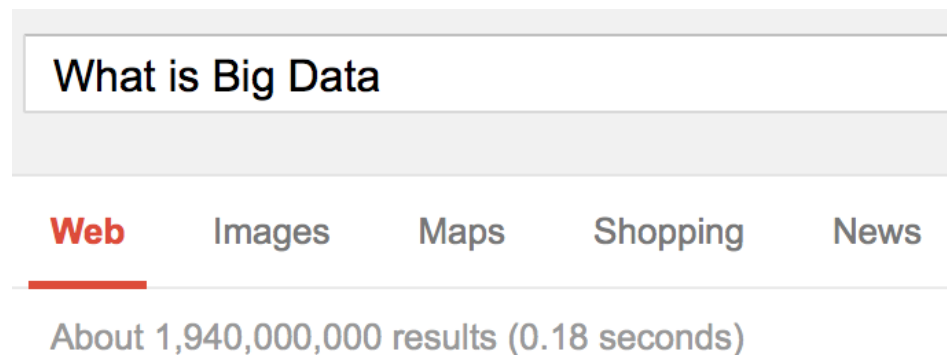
Here is how Gartner defines Big Data

➢ *Big data is high-volume, high-velocity and high-variety information assets that demand* **cost-effective, innovative information processing for enhanced insight and decision making**.

Gartner®

Demand for <u>differently</u> structured data to be seamlessly integrated, to augment analytics / decisions

- Analytics and decision engines reside where the DWH / transaction data is

- "Noise" surrounds the core business data

  - Social Media, emails, docs, telemetry, voice, video, content

- Expanding our insights – getting closer to the "truth"

  - Lower risk and cost
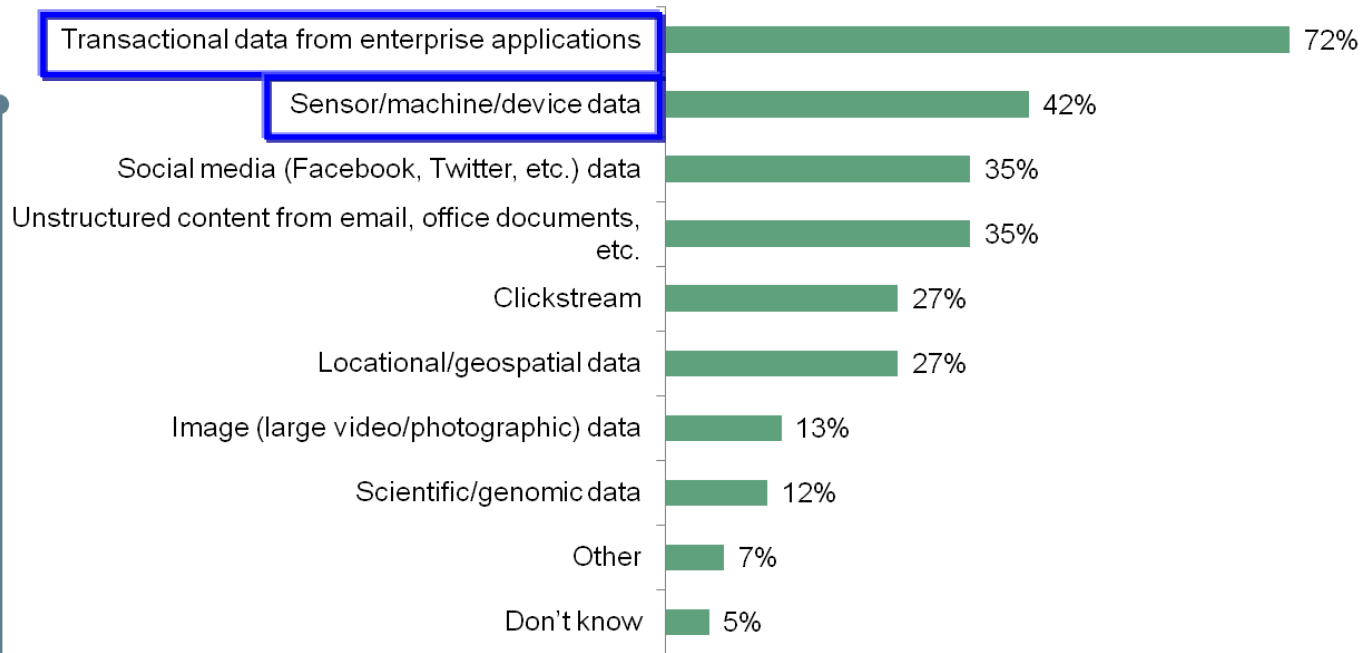
  - Increased profitability

"Circle of trust" widens

Data Warehouse
Integration
Business Analytics
DB2 for z/OS IMS
Information Governance

The Big Data starting point

Where are organizations getting the most return on Big Data projects?

"What types of data/records are you planning to analyze using big data technologies?"

Data type	Percentage
Transactional data from enterprise applications	72%
Sensor/machine/device data	42%
Social media (Facebook, Twitter, etc.) data	35%
Unstructured content from email, office documents, etc.	35%
Clickstream	27%
Locational/geospatial data	27%
Image (large video/photographic) data	13%
Scientific/genomic data	12%
Other	7%
Don't know	5%

Base: 60 IT professionals
(multiple responses accepted)

> (!) Most big data use cases hype its application for analysis of new, raw data from social media, sensors, and web traffic, but we found that firms are being very practical, with early adopters using it to operate on enterprise data they already have.

Source: 2012 IBM Global Big Data Online Survey

Big Data use cases

Big Data Exploration

Find, visualize, understand all big data to improve decision making

Enhanced 360º View of the Customer

Extend existing customer views (MDM, CRM, etc) by incorporating additional internal and external information sources

Security/Intelligence Extension

Lower risk, detect fraud and monitor cyber security in real-time

Operations Analysis

Analyze a variety of machine data for improved business results

Data Warehouse Augmentation

Integrate big data and data warehouse capabilities to increase operational efficiency

The role of zEnterprise in Big Data Analytics

- A large percent of the data that is accessed for analytics originates/resides on IBM zEnterprise

    - 2/3 of business transactions for U.S. retail banks

    - 80% of world's corporate data

- Businesses that run on zEnterprise
    - 66 of the top 66 worldwide banks
    - 24 of the top 25 U.S. retailers
    - 10 of the top 10 global life/health insurance providers

- 1,300+ ISVs run zEnterprise today, more than 275 of these selling over 800 applications on Linux

- The downtime of an application running on System z equates to approximately 5 minutes per year

DB2 Analytics Accelerator
Accelerating decisions to the speed of business

Blending System z and Netezza technologies to deliver unparalleled, mixed workload performance for complex analytic business needs.


**Get more insight from your data timely**

- Fast, predictable response times for "right-time" analysis

- Accelerate analytic query response times

- Improve price/performance for analytic workloads

- Minimize the need to create data marts for performance

- Highly secure environment for sensitive data analysis

- Transparent to the application

Enhancing IMS analytics on System z with Big Data

- Much of the world's operational data resides on z/OS

- Unstructured data sources are growing fast
  Observation points lead to new business opportunities

- There is a need to merge this data with trusted OLTP data from
  System z data sources
  Observation points gleaned from Hadoop with archived data & OLTP data

- IMS intends to provide the connectors and the DB capability to allow
  Score business events, track claims evolution, and more
  Big Insights to easily and efficiently access the IMS data source

- *Make the data available to people who can do something meaningful with it*
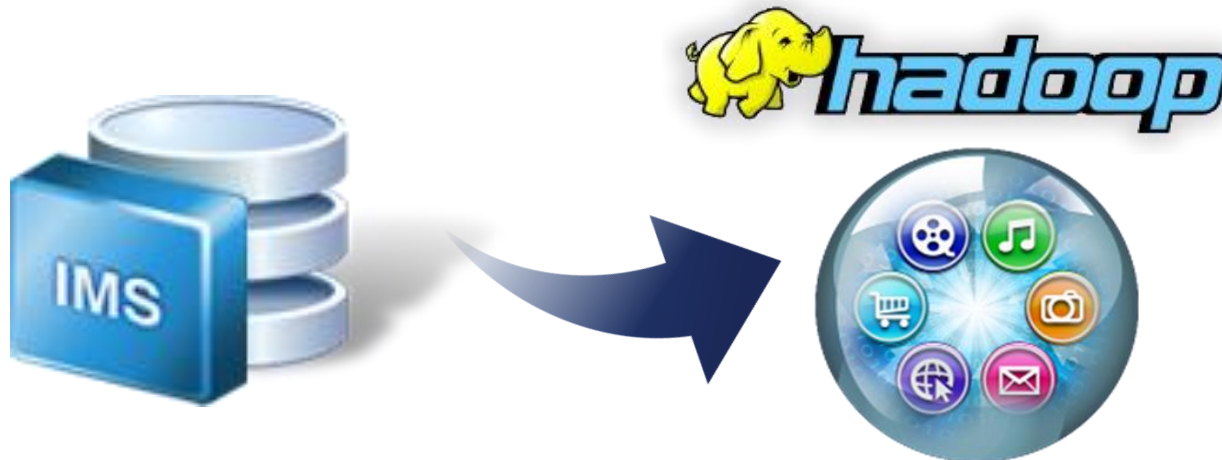
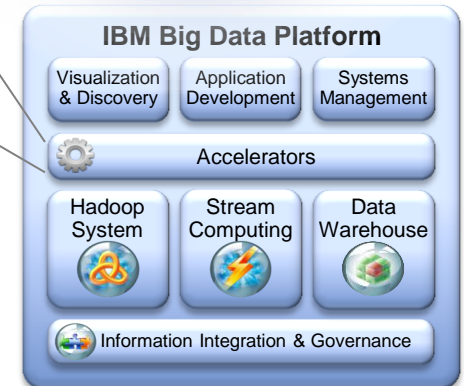# *Machine Data Accelerator (MDA) - Log Data Analysis*
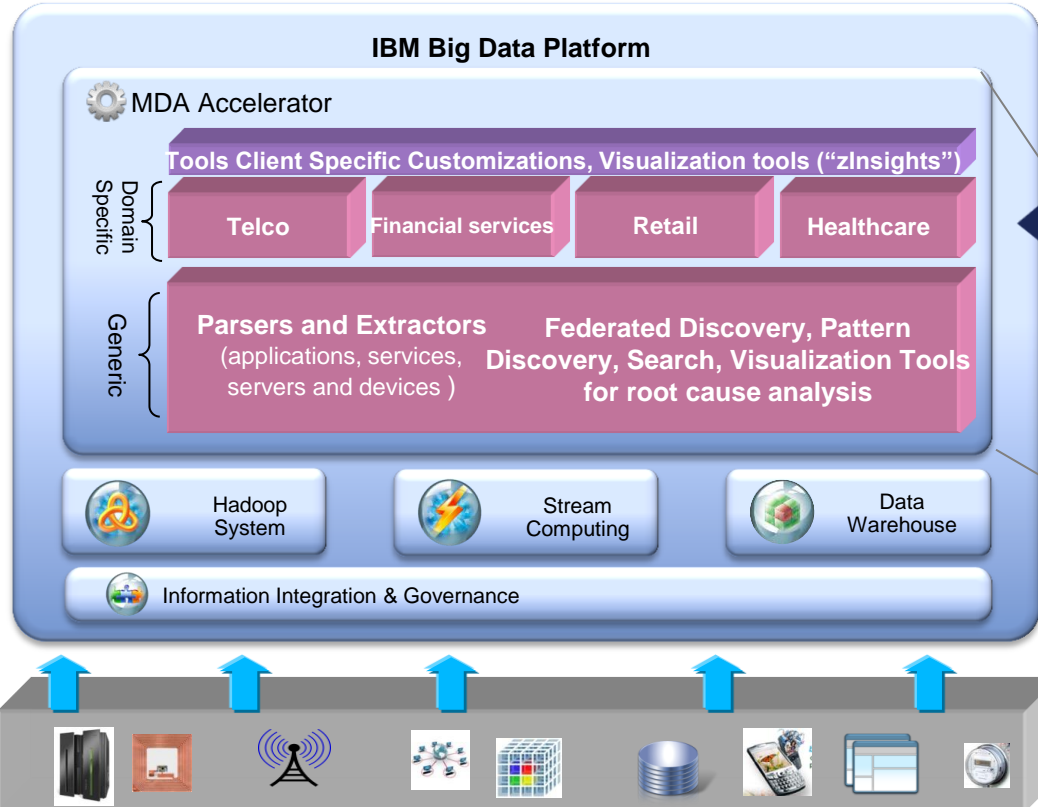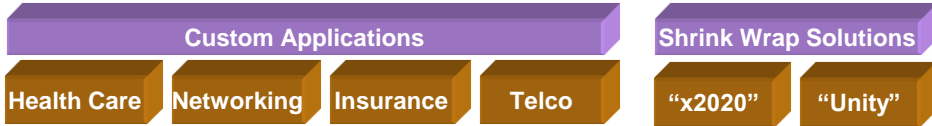
IT use cases:

- Server, performance, troubleshooting

Business use cases:

- Click stream and transaction analysis
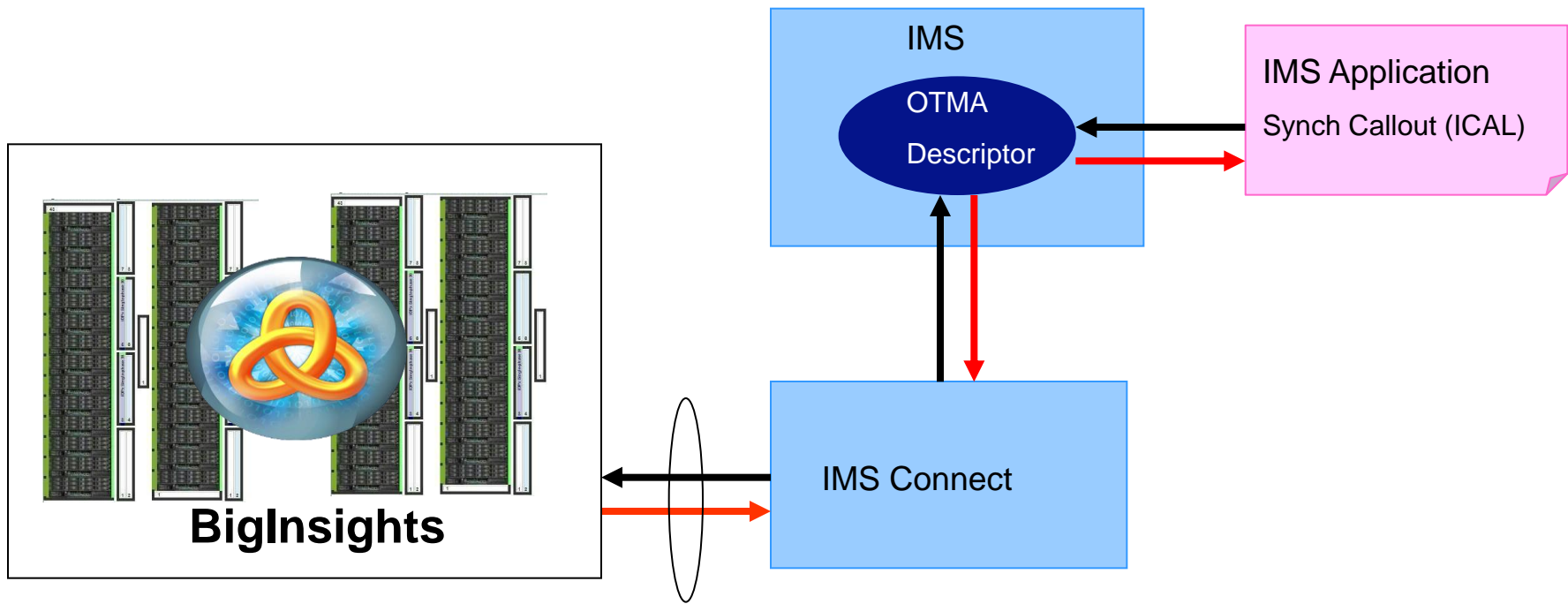- Optimize production, advance planning,

IMS intends to provide

Custom Applications

Shrink Wrap Solutions

Health Care	Networking	Insurance	Telco

"x2020"	"Unity"

IBM Big Data Platform

MDA Accelerator

Tools Client Specific Customizations, Visualization tools ("zInsights")

Domain Specific

Telco	Financial services	Retail	Healthcare

Generic

Parsers and Extractors
(applications, services, servers and devices)

Federated Discovery, Pattern Discovery, Search, Visualization Tools for root cause analysis

Hadoop System

Stream Computing

Data Warehouse

Information Integration & Governance

IBM Big Data Platform

Visualization & Discovery	Application Development	Systems Management

Accelerators

Hadoop System	Stream Computing	Data Warehouse

Information Integration & Governance

IMS Transaction and Big Data Business Scenario

- **IMS transaction goes outbound synchronously to Big Data (BigInsights) to grab data and then return back to IMS transaction**

BigInsights

IMS

OTMA Descriptor

IMS Application

Synch Callout (ICAL)

IMS Connect

Thank You