**BusinessConnect and SolutionsConnect**
It's time to make bold moves.

# Interactions to Transactions

IBM

# Business transactions have moved beyond the enterprise...
# The planet is wiring itself to a new nervous system

**1** billion *Smartphone users by 2016*

**534** billion

*Dollars in mobile transactions by 2015*

**69.1%**
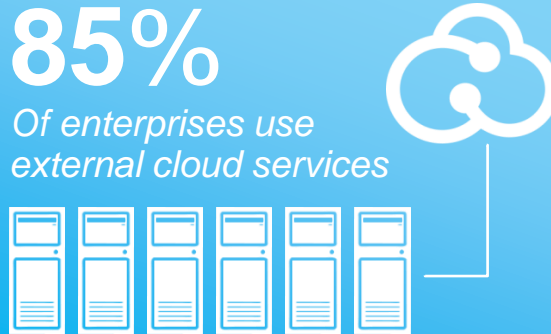
*Increase in mobile transaction volume since 2011*

**1** trillion

*Devices connected to the internet by 2013*

**85%**

*Of enterprises use external cloud services*

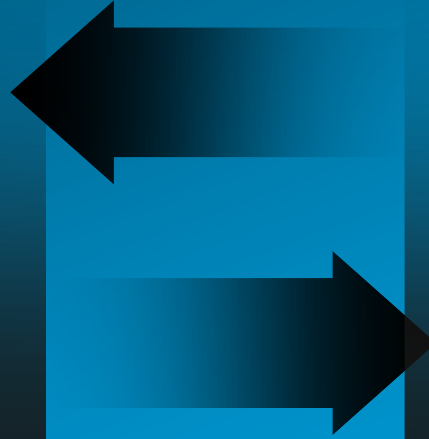**126** million

*Tablet users by 2016*

IBM

# Bridge tomorrow's innovations with the systems that power the businesses today
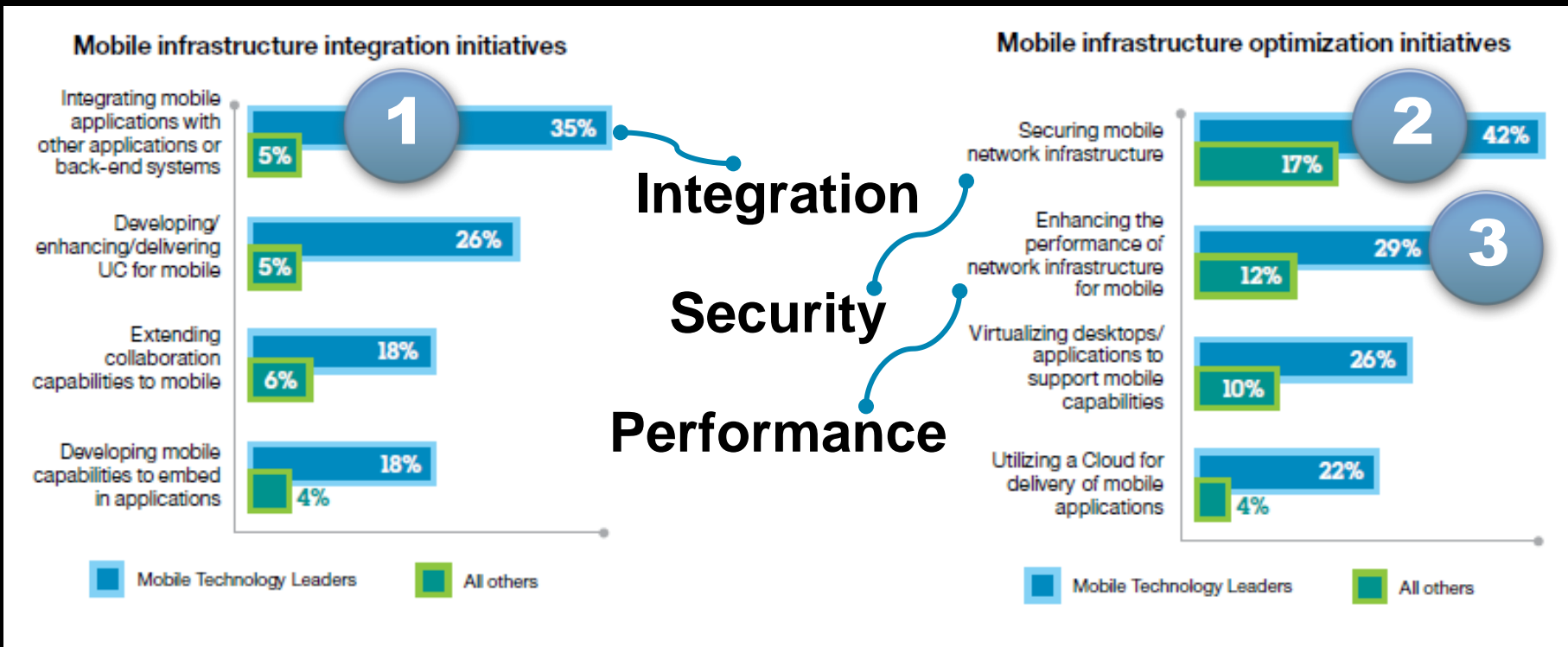
## Systems of Interaction

**Systems of Engagement**

**Systems of Record**

ERP

CRM

HR

## Business transactions have moved beyond the enterprise..

**IBM**

# Best Practices of Mobile Success
## What are the Mobile Technology Leaders Doing Well?

### Mobile infrastructure integration initiatives

Integrating mobile applications with other applications or back-end systems
- **1** — 35%
- 5%

Developing/ enhancing/delivering UC for mobile
- 26%
- 5%

Extending collaboration capabilities to mobile
- 18%
- 6%

Developing mobile capabilities to embed in applications
- 18%
- 4%

Legend: Mobile Technology Leaders / All others

### Mobile infrastructure optimization initiatives

Securing mobile network infrastructure
- **2** — 42%
- 17%

Enhancing the performance of network infrastructure for mobile
- **3** — 29%
- 12%

Virtualizing desktops/ applications to support mobile capabilities
- 26%
- 10%

Utilizing a Cloud for delivery of mobile applications
- 22%
- 4%

Legend: Mobile Technology Leaders / All others

**Integration**

**Security**

**Performance**

Source: IBM Global IT Study on Mobile Infrastructure 2013

# When Systems of Engagement are unplugged…
## Customer uses Mobile app to interact with eg Airline
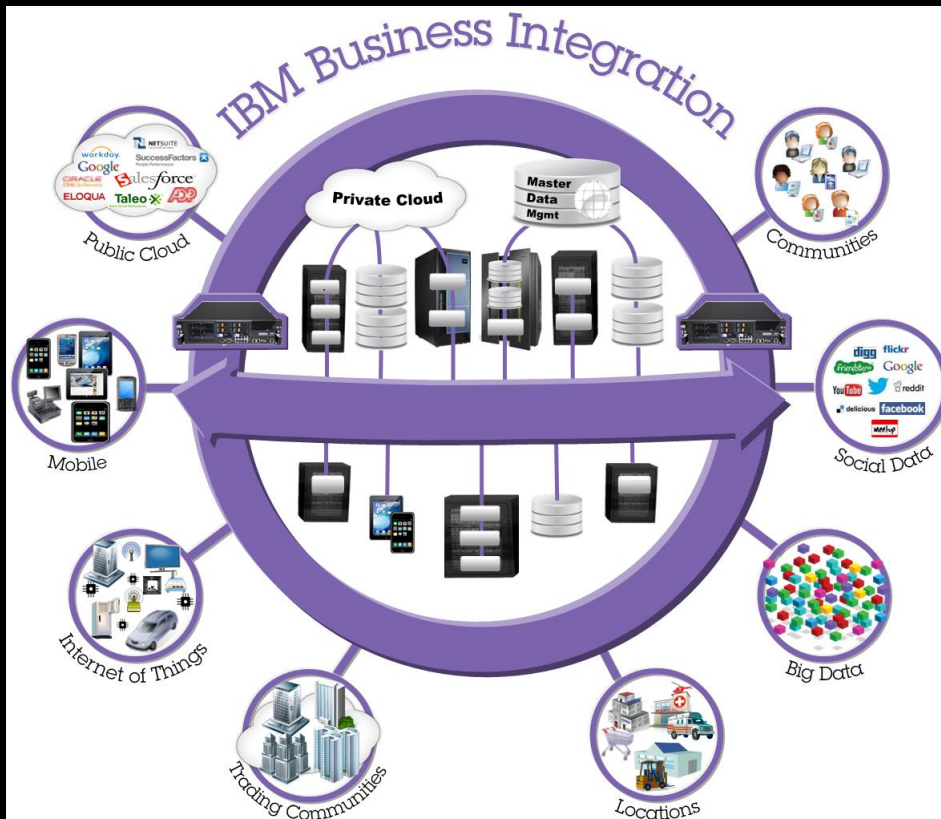
**Systems of Engagement**

**Systems of Record**
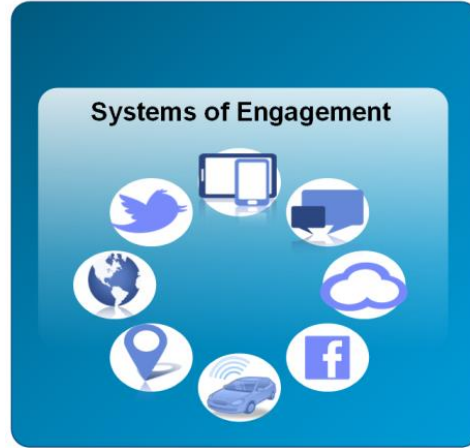
- ✓ **Can** show my ticket
- ✓ **Can** show my seat
- ✓ **Can** see upgrade option
- ✓ **Can** check flight status

- ✗ **Can't** change my ticket
- ✗ **Can't** move my seat
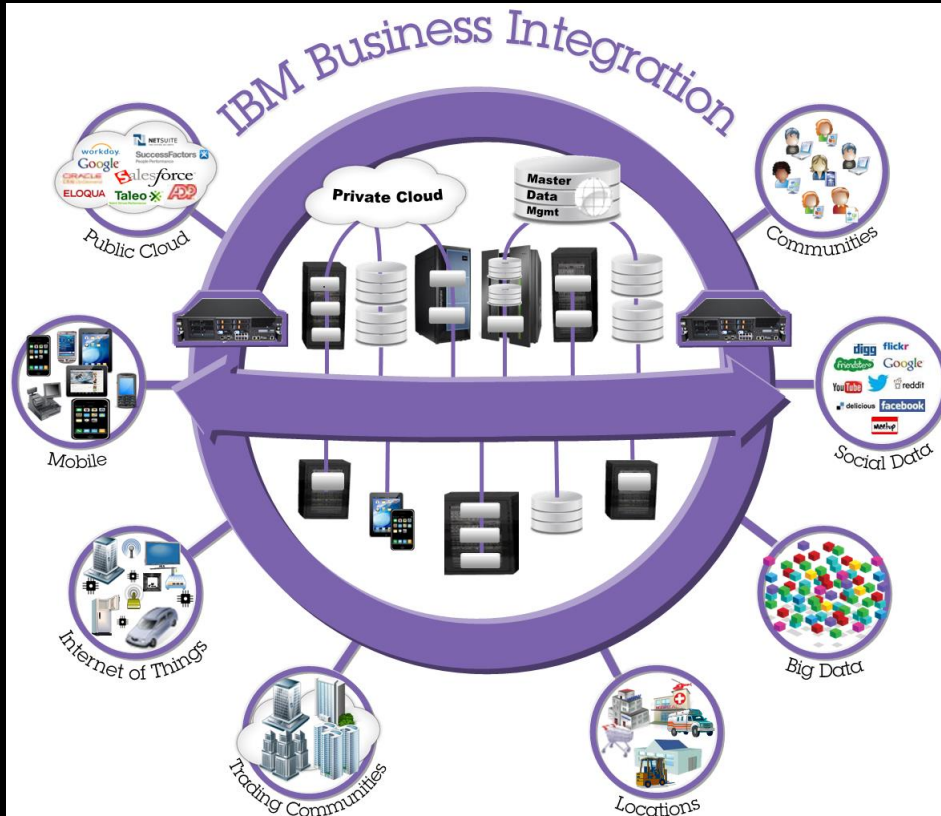- ✗ **Can't** buy upgrade
- ✗ **Can't** change flight

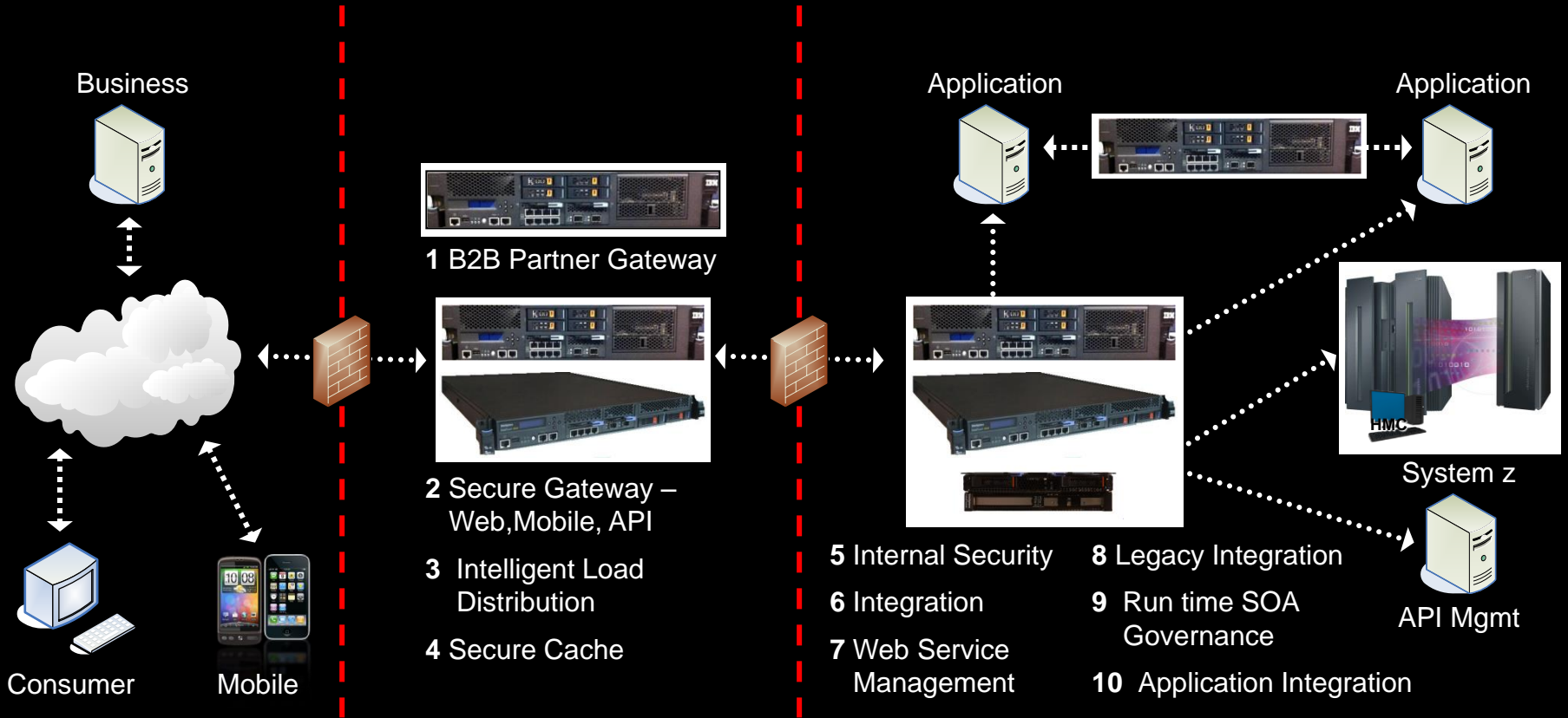# Today's challenges demand a complete integration solution

# Today's challenges demand a complete integration solution

## IBM DataPower Appliance

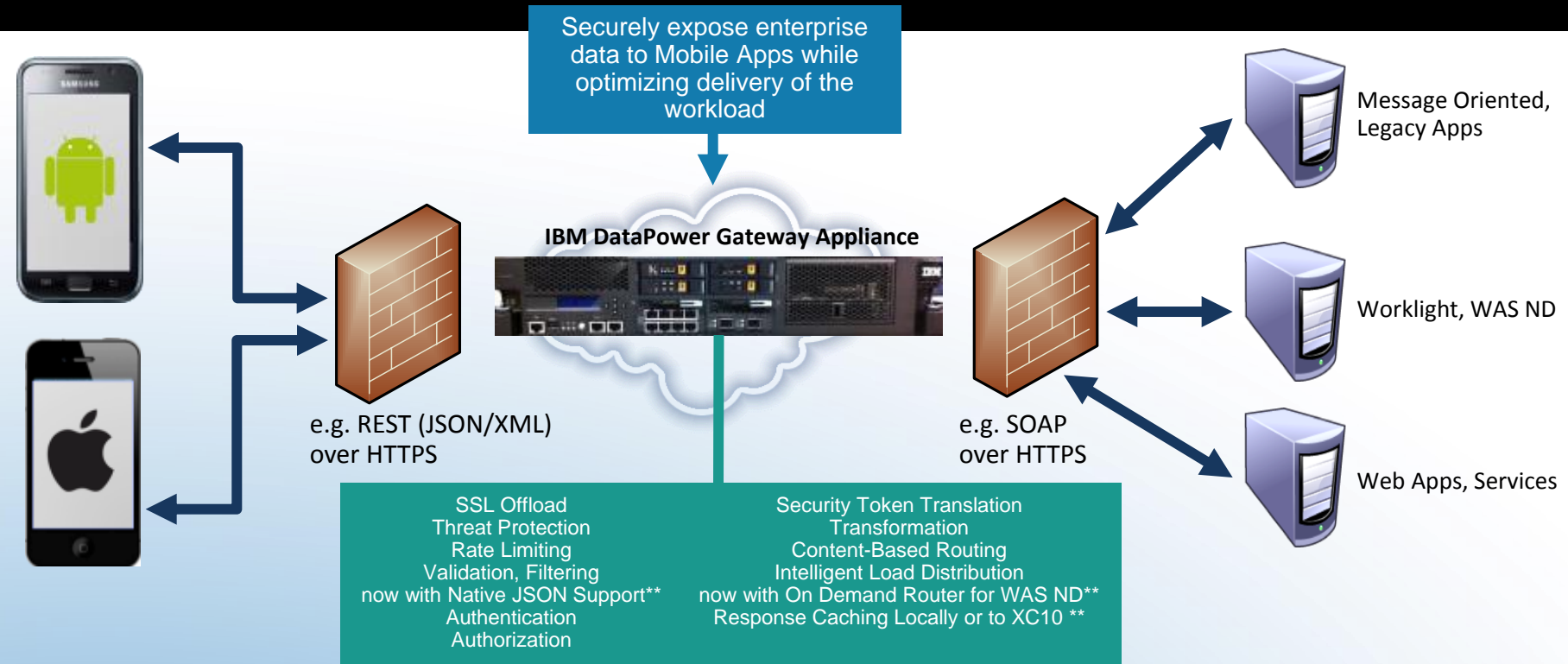Gateway for secure & controlled access to enterprise resources,

# WebSphere DataPower - Use Cases



Business

**1** B2B Partner Gateway

Application

Application

**2** Secure Gateway – Web,Mobile, API

**3** Intelligent Load Distribution

**4** Secure Cache

HMC

System z

API Mgmt

**5** Internal Security

**6** Integration

**7** Web Service Management

**8** Legacy Integration

**9** Run time SOA Governance

**10** Application Integration

Consumer

Mobile

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

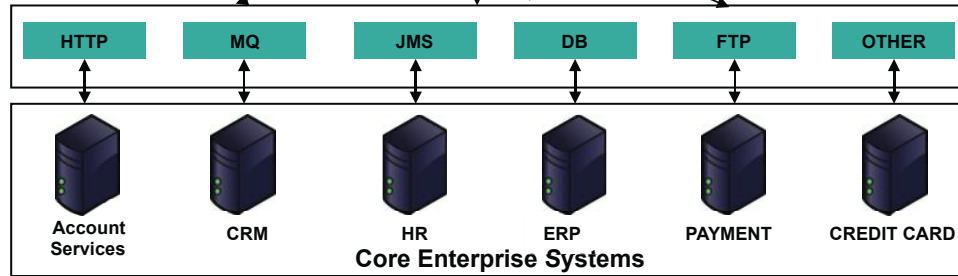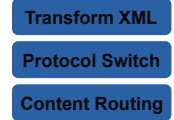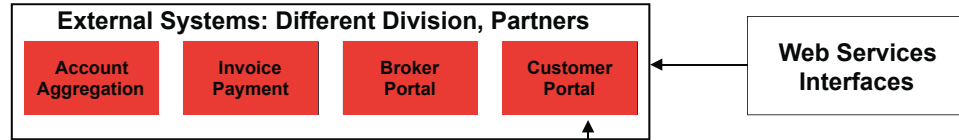Securely expose enterprise data to Mobile Apps while optimizing delivery of the workload

**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
Authorization

Security Token Translation
Transformation
Content-Based Routing
Intelligent Load Distribution
now with On Demand Router for WAS ND**
Response Caching Locally or to XC10 **

** Available in DataPower firmware version 6.0

# Financial Firm: Security & Integration Scenario

**External Systems: Different Division, Partners**

| Account Aggregation | Invoice Payment | Broker Portal | Customer Portal |

**Web Services Interfaces**

**HTTP**

**HTTP**

1. External Party makes Web Service request (Web Services= HTTP with XML Payload
2. Verify Signature
3. Decrypt and Validate
4. Access Identity Management System
5. Authenticate & Authorise
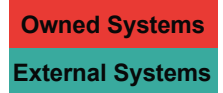6. Insert Security Token (eg SAML, Kerberos)
7. Send Request to Integration Layer

Identity Mgmt System Tivoli. LDAP etc…….

Verify Sign | Authenticate
Decrypt XML | Authorise
Validate | Audit

**17.** Send Response back
**16.** Encrypt & Sign
**15.** Filter Response

Transform XML
Protocol Switch
Content Routing

8. Transform XML
9. Switch Protocol (eg HTTP to MQ)
10. Route Based on Content

**MQ, JMS FTP, HTTP**

**14.** Send to Security Layer
**13.** Transform Response
**12.** Switch Protocol
**11.** Aggregate Response

| HTTP | MQ | JMS | DB | FTP | OTHER |

**Owned Systems**
**External Systems**

**Account Services** | **CRM** | **HR** | **ERP** | **PAYMENT** | **CREDIT CARD**

**Core Enterprise Systems**

## Request Message

## Response Message

IBM

# Sprint leverages IBM DataPower appliances to rapidly & securely grow revenue

## Challenge

- Missing out on new opportunities in mobile advertising
- Aggressive growth in mobile creating new opportunities
- Differentiation with Sprint profile information
- How to increase topline revenue
- Increase in competition from non-traditional companies
- no longer just the other carriers

## Solution

- WebSphere DataPower Integration Appliance XI52 and XC10 Caching Appliance for mobile access control and security, wirespeed performance & consistent operational environment
- Deployed as a Mobile gateway, providing schema validation & trust formations
- Augmented existing infrastructure
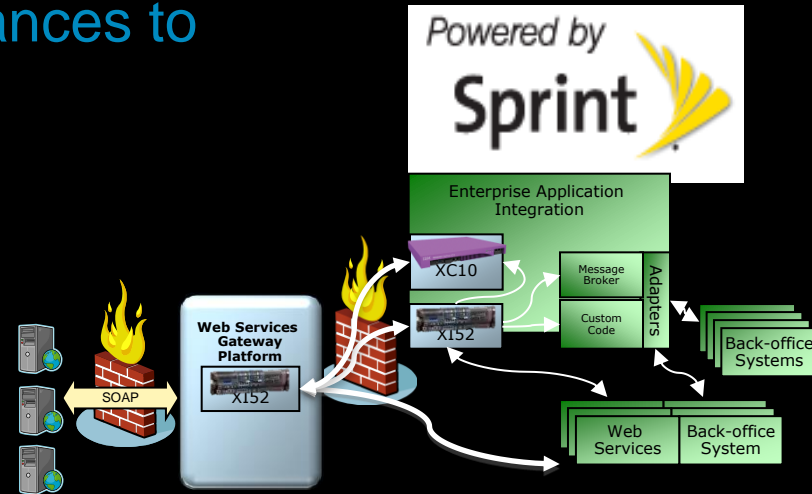
## Benefits

- Fast speed to market
- Low development cost
- Well established operational support (within Sprint)
- Deployed within secured Sprint network
- Secure connectivity to dependent systems
- Sprint controlled data security
- Scalable as volumes grow
- Ability to maintain a consistent interface to clients regardless of backend changes



Customer Testimonial: http://www.youtube.com/watch?v=0hpZcnrG26Q

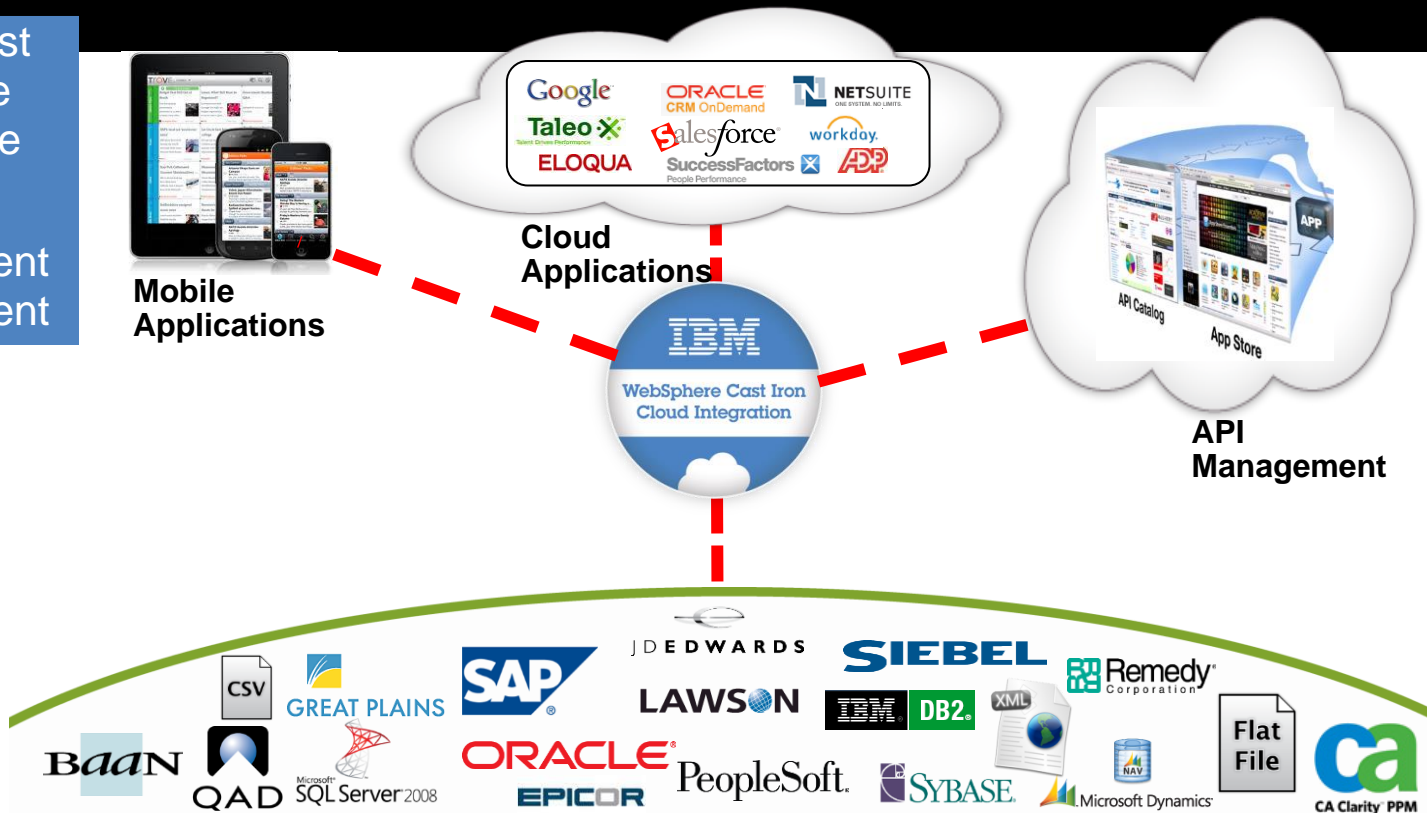# Today's challenges demand a complete integration solution

## IBM Cast Iron

Synching data with
SaaS apps to leverage
new cloud economy
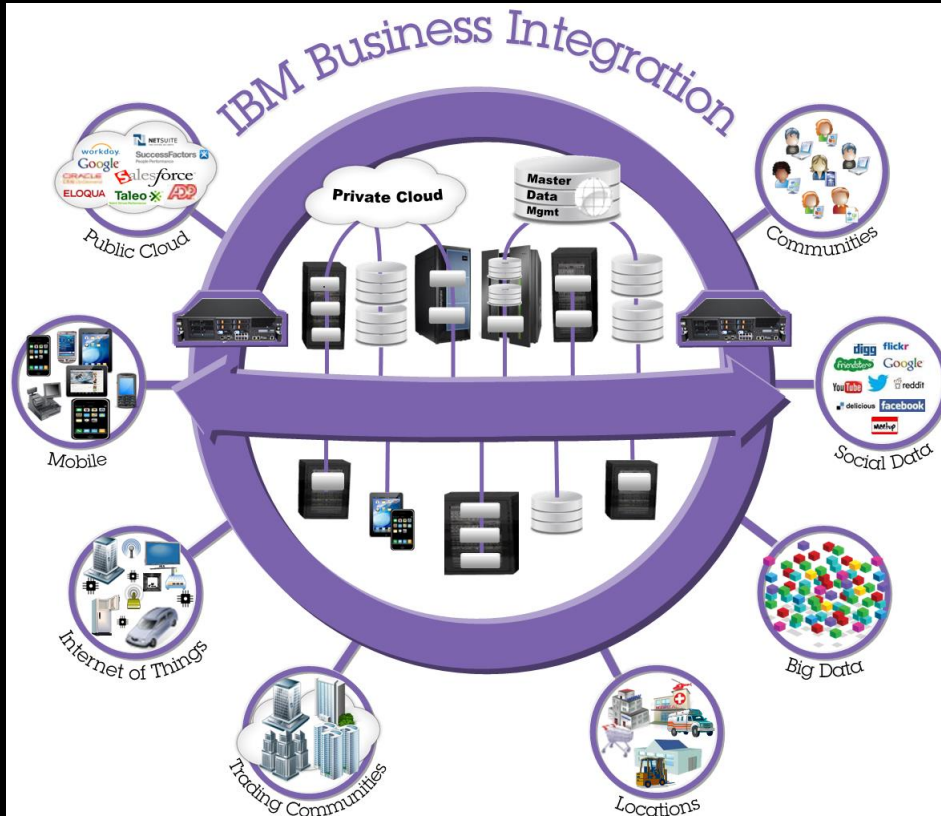
# Application Integration - Cast Iron

**Simply the Fastest Way to Integrate Cloud and Mobile Applications**

**Enabling component for API Management**



**Mobile Applications**

**Cloud Applications**

**API Management**

# Flexible: Completely Maps to Your Cloud Strategy



| Total Connectivity | Deployment Flexibility | Repeatable Success | For All Types of Projects |
|---|---|---|---|
| *ROI In Months* | *Reduce Risk & TCO* | *Save Up to 80% in Time & Costs* | *Increase IT Self-Sufficiency* |

# Novartis Vaccine & Diagnostics
## Evolving CRM Landscape

## Challenge
- Consolidating multiple CRM platforms to a single Veeva org
- Increase efficiency and data quality through more robust integration to SAP and other core applications
- Enhance business users trust in data
- Increase flexibility and responsiveness of integration layer
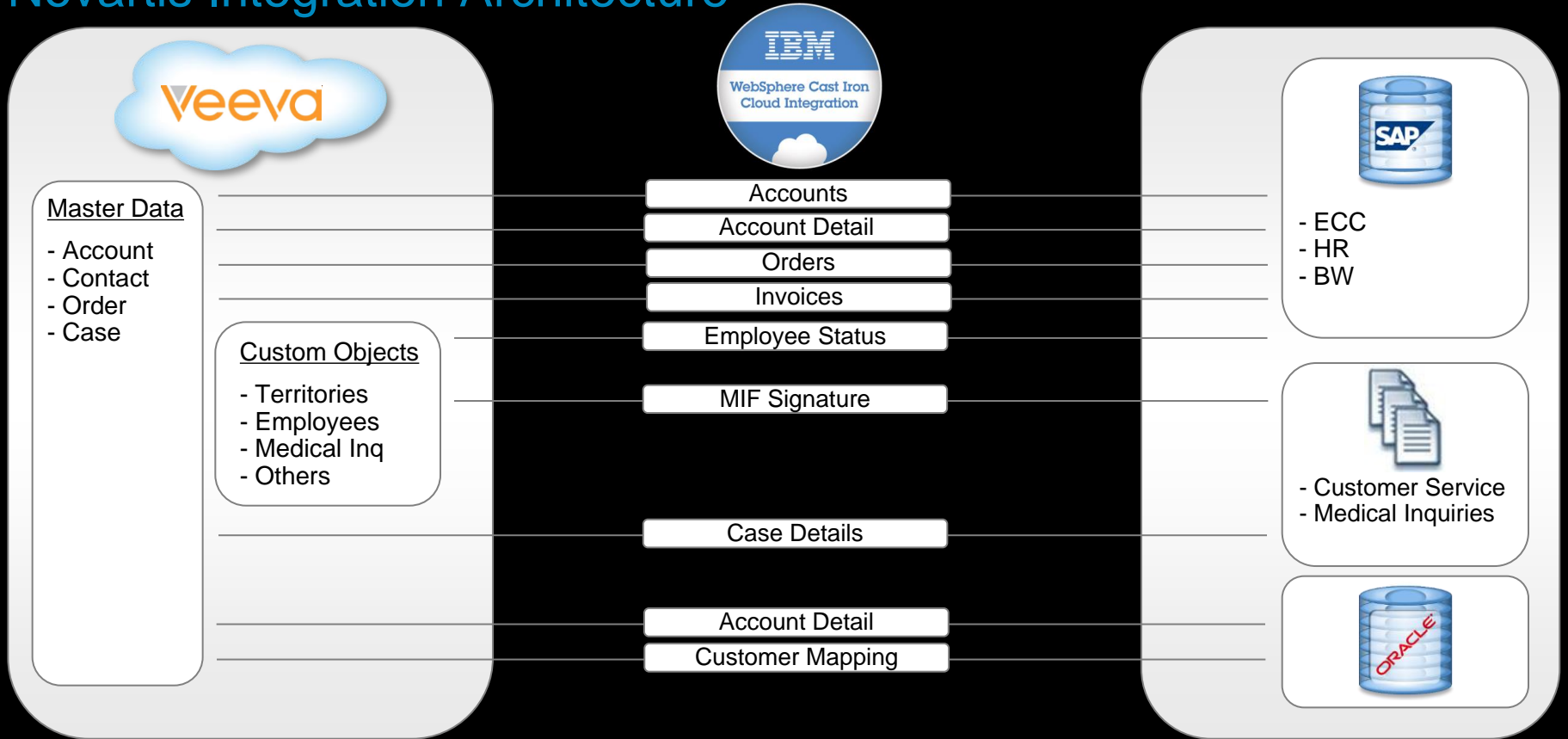
## Solution
- Internal standard = SAP PI
  - No native Sales Force Dot Com connectivity
  - Expensive skill set
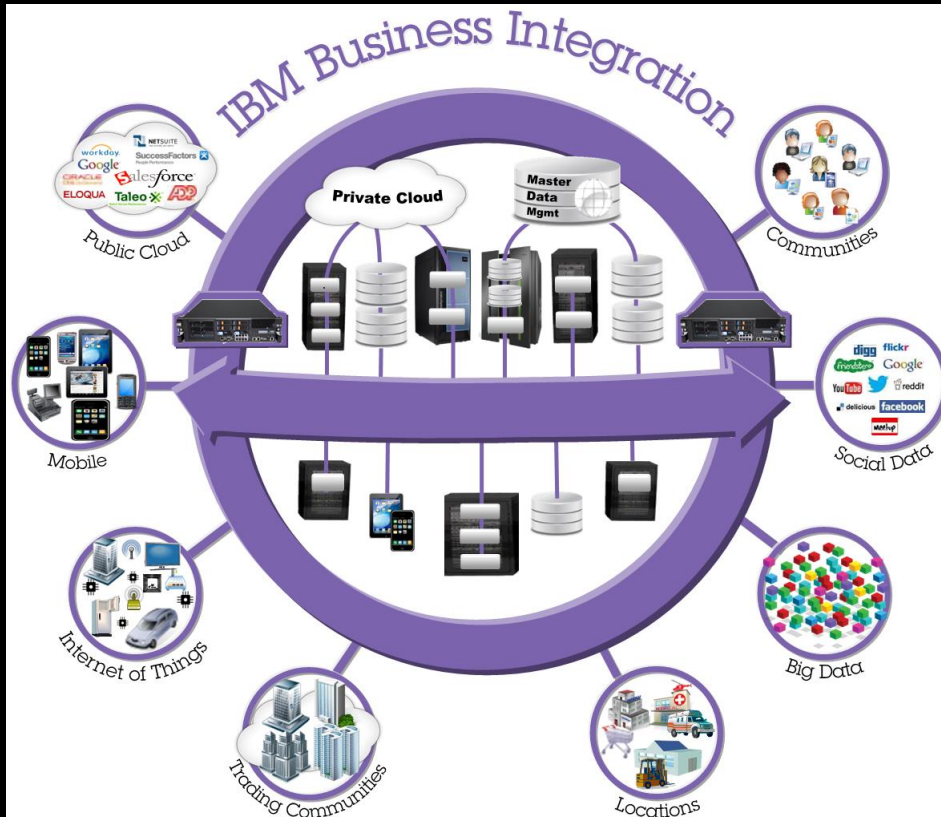  - Limited resources

## Solution
- Reduced TCO by $300k
- ROI of 199%
- Payback of 4.8 months

# Novartis Integration Architecture

# Today's challenges demand a complete integration solution



**IBM Web API Management**

Manage your APIs to open up access encouraging innovation from App Developers

# Systems of Interaction open Systems of Record

- Provide secure linkages from systems of engagement

- Extend the lifespan and utility of system of record data

- Empower mobile and cloud application deployment
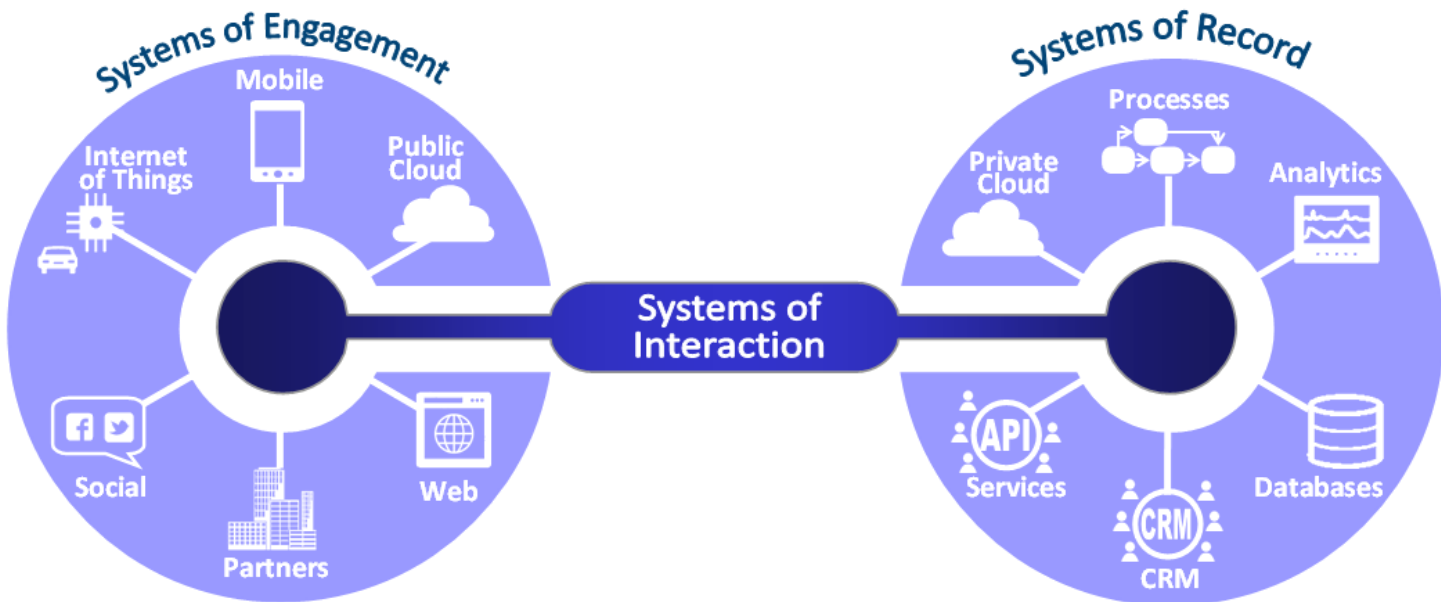
# The Impact on the Enterprise

## Business

- New routes to market
- Reduce cost of sale
- Drive brand awareness
- Customize products/offerings
- Increase innovation
- Drive alignment with suppliers
- New revenue sources
- Reduce operating expenses
- Customer Satisfaction

www.american.com

www.american.com
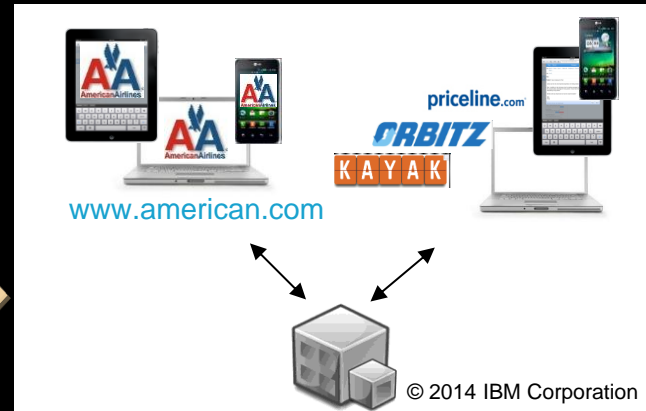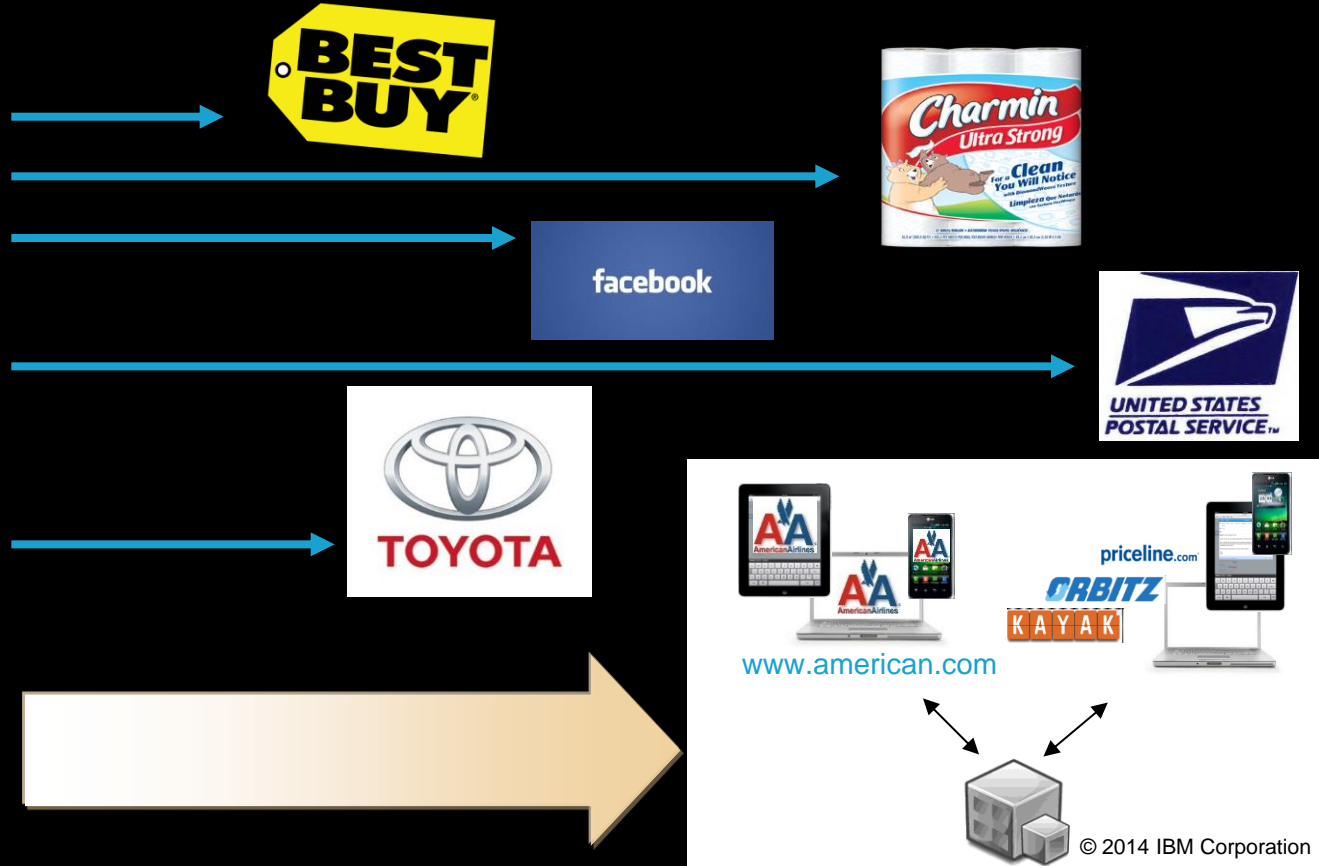
# Accommodating Explosion of Data with APIs

## What is an API?

- Exposes assets, data or services
- Simple for developers to access, use and understand
- Easily invoked via browser, mobile device, etc

## What value does an API provide?

- Extends enterprises & opens channels
- Increases collaboration
- Extend resources/developer ecosystem



www.american.com

App Developer

priceline.com

ORBITZ

KAYAK

IOS Android Microsoft

IOS Android Microsoft

IOS Android Microsoft

App Developer

App Developer

App Developer

APIs

Flights
Prices
Seats
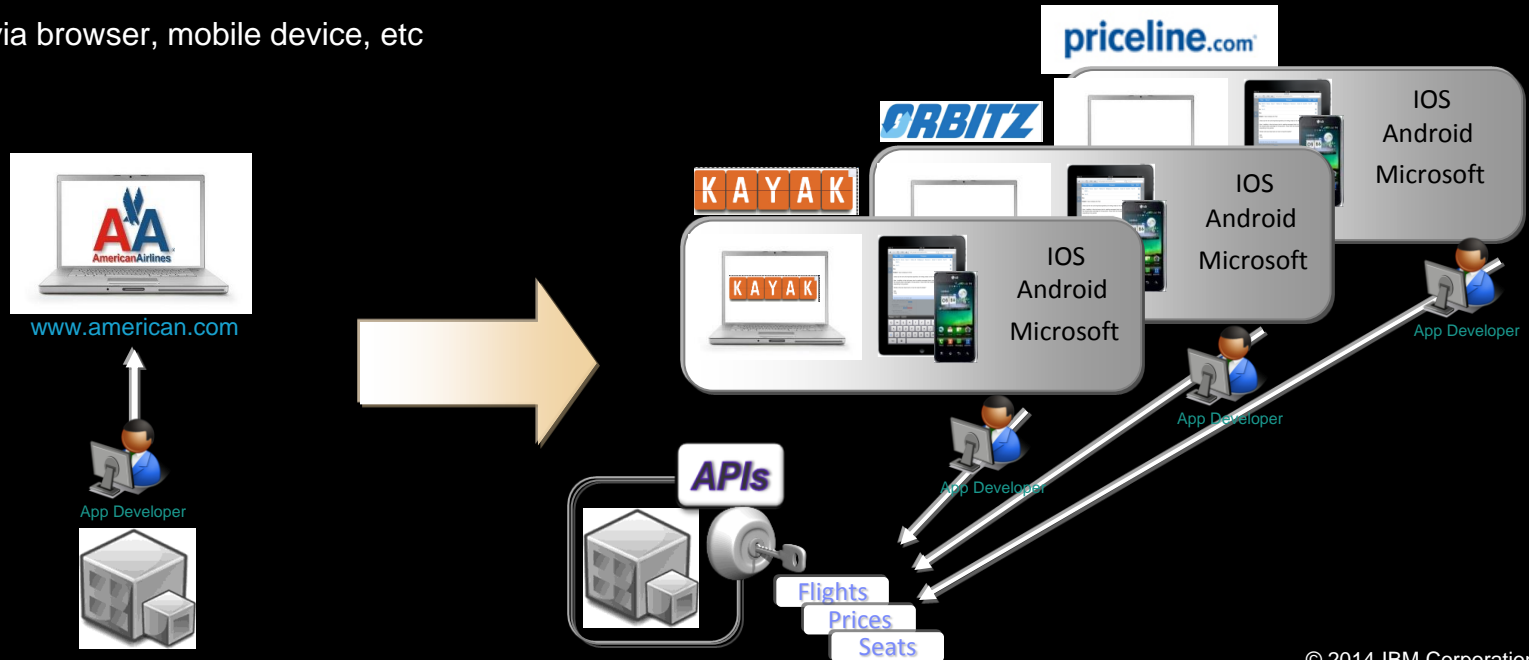
# Apps, APIs and API Mgmt…

Apps = Customer facing systems of engagement (Ex: mobile app, web app, etc)

APIs = Exposes assets that developers use to create Apps

API Management = Capabilities needed by enterprises to extend APIs to developers, partners and communities.

**Enterprise**

# Travel and Transportation:
# WestJet - Second Largest Airline in Canada

## Business Challenge
- External business partners are retrieving flight information by scraping the westjet.com website
- Allows unauthorized access to full flight information (No analytics)
- Delays in updating westjet.com – difficult for authorized partner to test changes
- REST Based API had just been built but security was not in place

## Value of API Management
- First project will connect westjet.com to the new APIs using APIM
  - Saved cost of building OAUTH based secure access
- Next Phase will expose to External Business Partners
  - Save the implementation cost of building a developer support infrastructure and access management
- Mobile Access is still being worked out (Worklight vs. APIM)n

# Today's challenges demand a complete integration solution
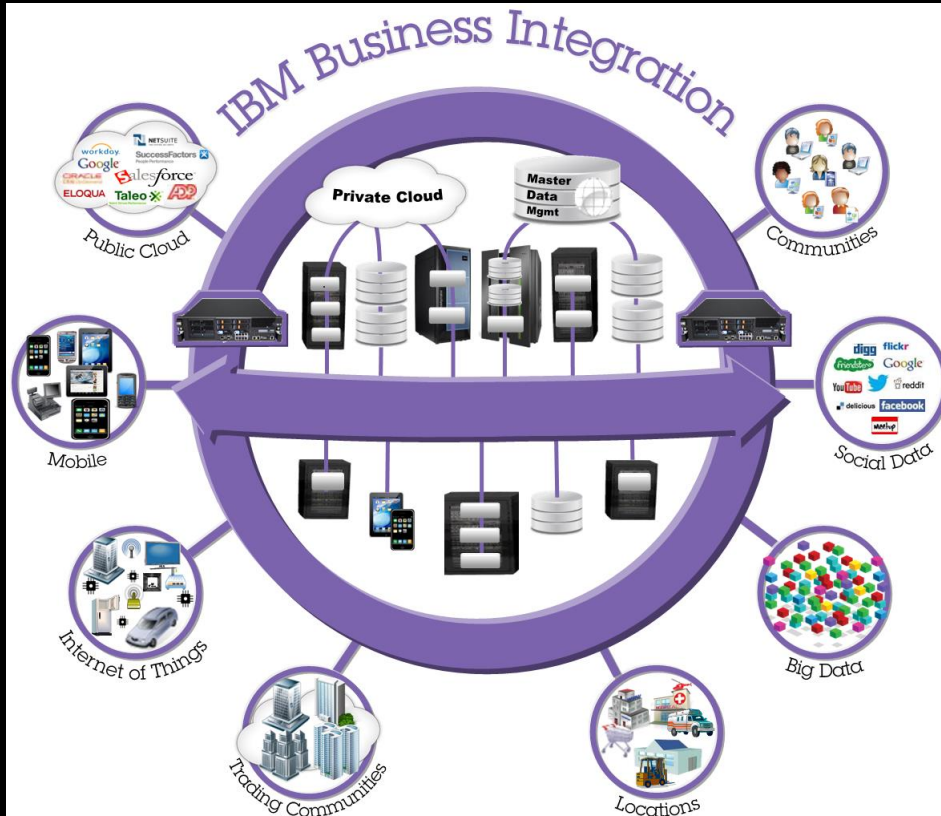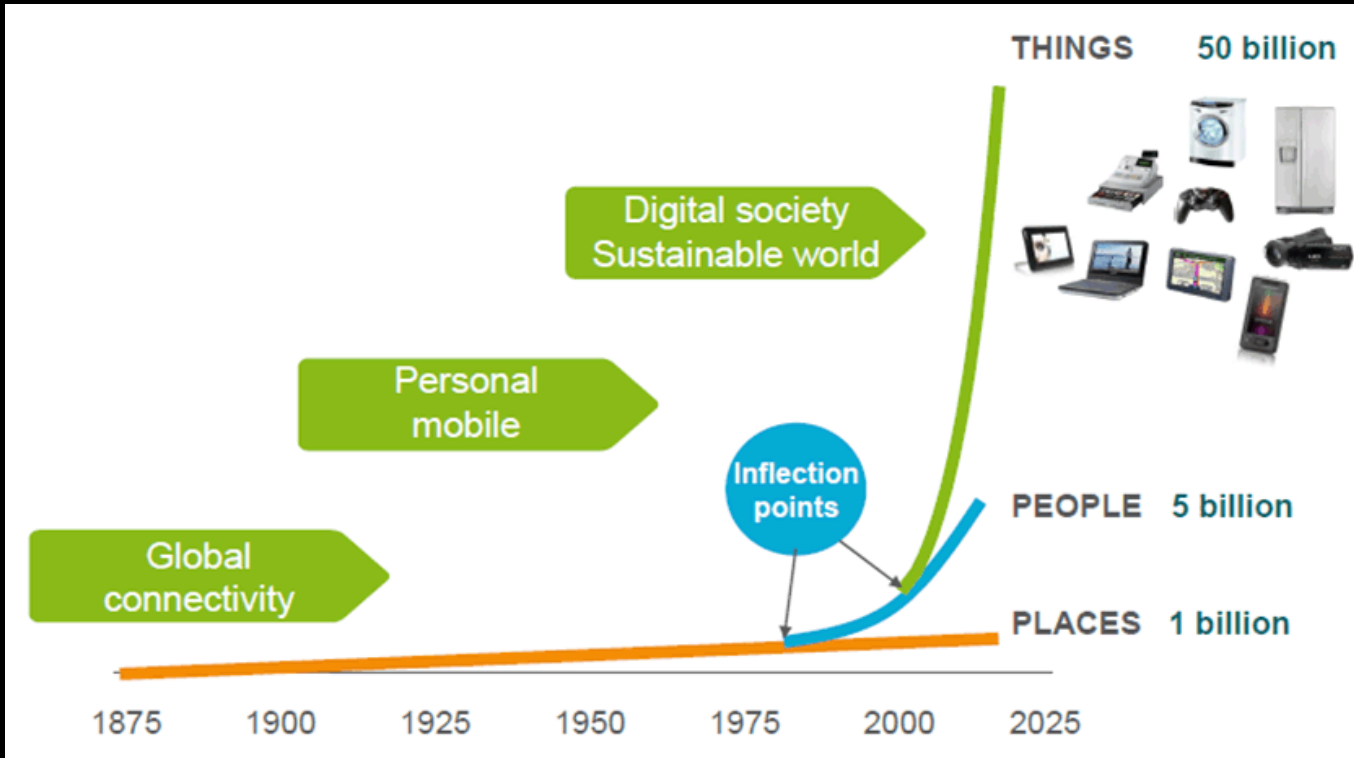
## Message Sight Appliance

Large scale connectivity for mobile devices, machine to machine and telemetry scenario

**IBM**

# The Internet of Things instruments the world around us

**Smart Scales:**
Tracks weight in combination with fitness program

**Connected car:**
Tracks location, status of car parts

**Smart TV:**
On demand content
Order products from advert

**Alarm clock:**
Has remote programs, turn on coffee maker

**Smart Deliveries:**
Track parcel
Monitor and open garage door remotely on arrival

**Coffee maker:**
Custom settings for each person

vendingMachines
asset-management
BuildingAutomation
water
asset-managemen
Automation
manufacturing oil
smartGrid
SmarterCities
fleetManagement
parkingMeters
updateSigns
Sensors
remoteMonitoring
vitalsigns-monitoring
monitoring
energy
Utilities
healthCare
HomeCare
containerTracking
network
Logistics
alarms
Senso
CCTV
smartMetering
Security
Smart
homeHealth
Gas
retail
security
Transportation

**Building Security:**
Facial recognition, remote notification

**Smart Fridge:**
Uses RFID to reorder food, suggest recipes and track sell by dates

**Mobile:**
Mobile payments

**Heating and Air Conditioning:**
Maximum efficiency using weather predictions and remote control

# New Customer Interaction Points for the 21st Century
Devices & Mobiles will be the touch points that drive new revenue streams



THINGS    50 billion

Digital society
Sustainable world

Personal
mobile

Inflection
points

Global
connectivity

PEOPLE    5 billion

PLACES    1 billion

1875    1900    1925    1950    1975    2000    2025

Source: Ericsson AB, "Infrastructure Innovation - Can the Challenge be met?," Sept 2010

IBM

# Internet of Things Examples

| | Banking | Healthcare | Automotive | Retail | Transport | E&U |
|---|---|---|---|---|---|---|
| **Monetize** | Cash replacement solutions<br><br>Mobile Banking | Paid home care family services | Pay-per-drive car rental | Cash replacement<br><br>Sensor enabled Loyalty cards | Paid Alerts to travellers<br><br>Congestion charging | Pay-per-use energy |
| **Optimize** | Optimized Cash management | ER Bed Resource Mgmt | Component predictive replacement<br><br>Fleet mgmt | Delivery and stock replenishment optimization<br><br>Store layout optimization | Smart Cities Traffic mgmt<br><br>Airport Management | Delay non-essential supply during peak loads |
| **Extend** | Banking the un-banked<br><br>Biometrics<br><br>Smarter Subsidies | Life style monitoring | In-car Movies, Music, Games<br><br>Highly Automated Driving | Smart Vending Machines<br><br>Delivery Lockers | Mobility Services | Smart home services |
| **Control** | Remote ATM Management<br><br>Dynamic Authorization | Remote Hospital environment Mgmt | Remote Drive-train optimization | Store energy mgmt<br><br>Store parking mgmt<br><br>Dynamic price labels | Crowd mgmt<br><br>Timetable mgmt<br><br>Asset mgmt | Remotely control consumer devices |

# Retailers Advantage vs. eTailers

**Monetize** – Traditional Retailers business is challenged: How do they convert foot traffic to sales? eTailers are stealing their business, turning them into 'Showrooms

Retailers are looking at:

- Drive increased retailer revenue by proactively targeting mobile customers, genertaing dynamic personalized cross-sell and up-sell based on activities and location
- Capture and correlate customer buying activities in real time to track and measure effectiveness of offers and maximize opportunities for increased selling
- Interact more directly with the customer the instant they are spending for increased customer satisfaction to provide face to face chat with store assistant for questions about a product or linking to other customers in store looking at similar items

Walgreens & Saks teamed up with Foursquare to offer customers electronic coupons on their phones the moment they enter a store.

# Omnichannel WebSphere Solution Set
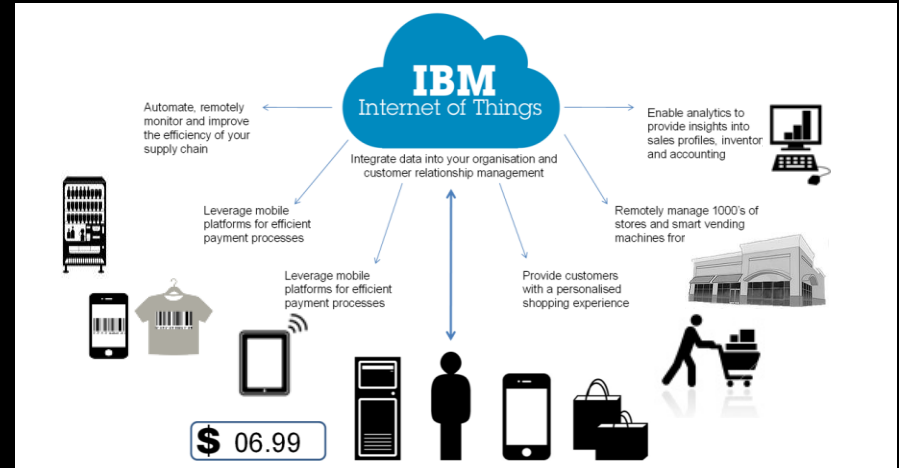


- Retail Headquarters with IBM MessageSight, IBM Integration Bus, ODM to process events and generate interactive shopping experience
- ODM for data filtering and action automation and Events with to capture real-time awareness
- Front end interactive mobile application developed with IBM Worklight enhances customers in store experience
- API Management, MessageSight, IOT Cloud for systems of interaction (IOT data interaction) and extend data services to customers (ex Foursquare integration)
- IIB Retail Pack and BPM for Channel Integration

# Appliances/Electrolux Story

**Extend** – Making it easier for their customers to operate in a Smart Home, Electrolux is embarking on a project to implement connected appliances. Strategically, Electrolux understands that extending services means survival in the future of white goods.

Imagine integrated recipes suggested through social integration, automated shopping lists from your refrigerator to your store

**Control** – One of the services offered to customers is the ability to control everything from their mobile devices – power management, service integration, integrated recipes

**Whirlpool** is working with GBS on a similar project.

## White Goods WebSphere Solution Set

- Mobile and MessageSight to extend human remote control and interaction with appliances, ODM for real-time event management

- IIB, DataPower for back-end systems (SAP) data collaboration and partner integration gateway

- API Management for systems of interaction (IOT data interaction) and Data extension and monetization with partners

Smart Energy Meter

IBM Internet of Things

Off On