CAMS et WebSphere

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Impact2014

Be First.

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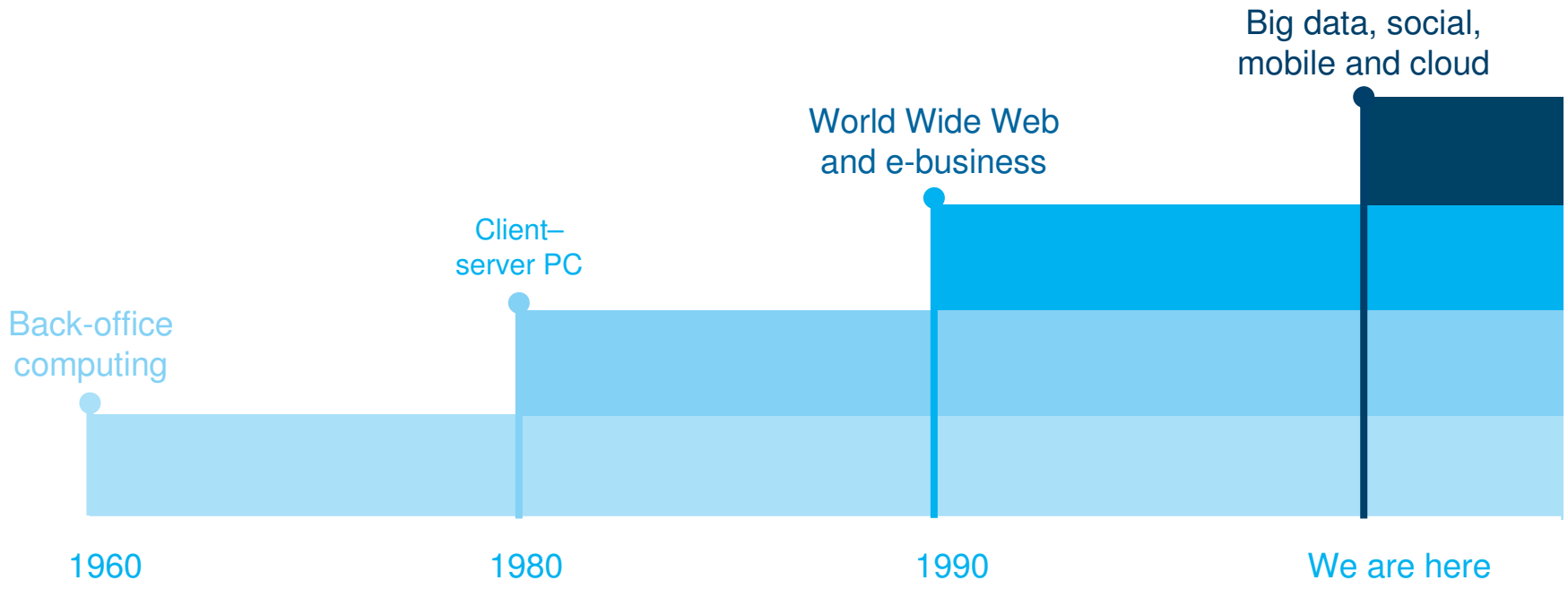
#ibmimpact

Advances in technology and computing are ushering in a new era



The world is changing and each of these technology shifts has potential to make a significant impact.

Big Data

90

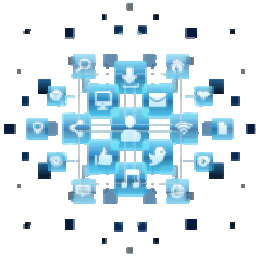
percent of the data created in the last two years alone.

Mobile

1

billion (plus) smart devices shipped in 2013 alone.

Social



81

percent of customers depend on social sites for purchasing advice.

Cloud

62

percent of total workloads will be in the cloud by 2016.

Internet of Things

75

billion devices connected to the internet by 2020.

Capitalizing on the major technology shifts is essential to accelerate IBM's AIM growth.

AIM

$18B

CAGR **2%**

Big Data

$175B

CAGR **7%**

Mobile

$71B

CAGR **21%**

Social

$81B

CAGR **8%**

Cloud

$199B

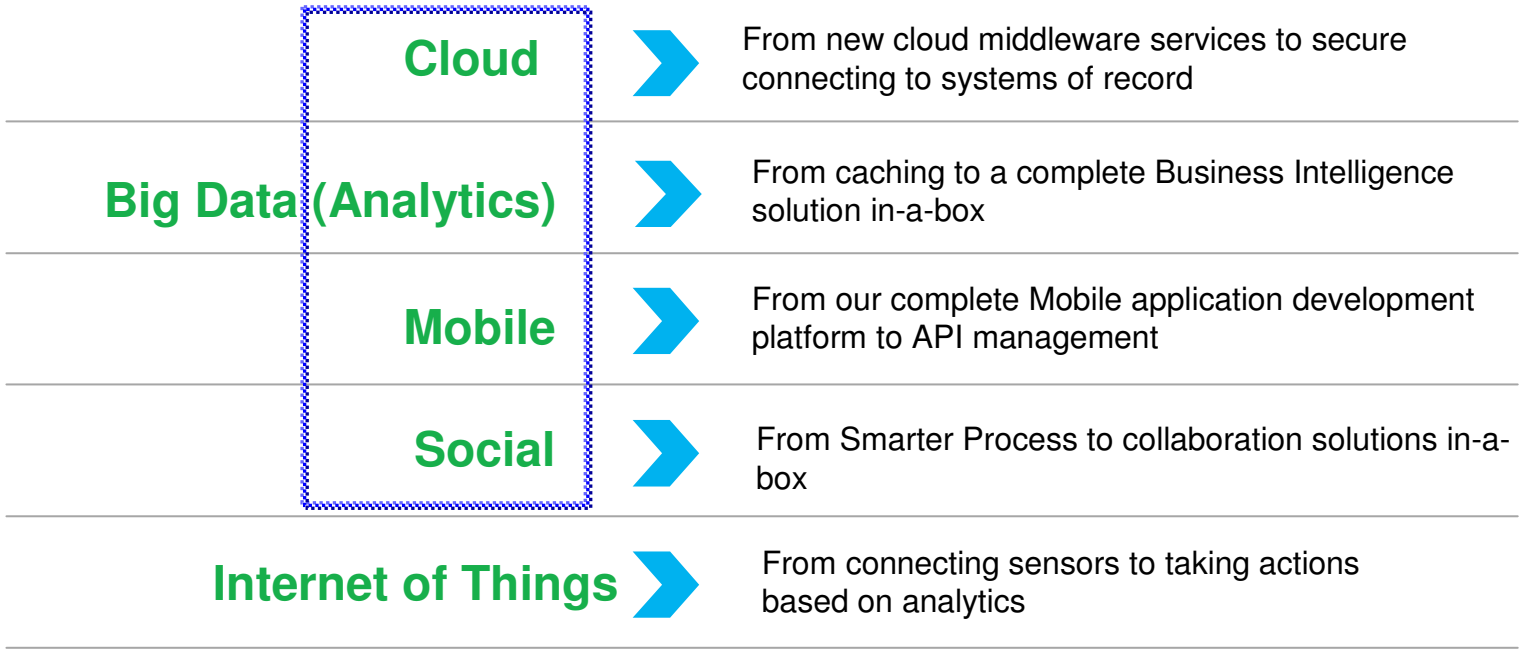
CAGR **27%**

Internet of Things

$6B

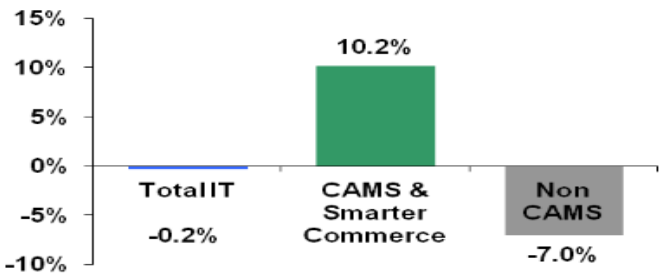
CAGR **9%**

AIM Capabilities play an increasingly significant role in each of these technology shifts.

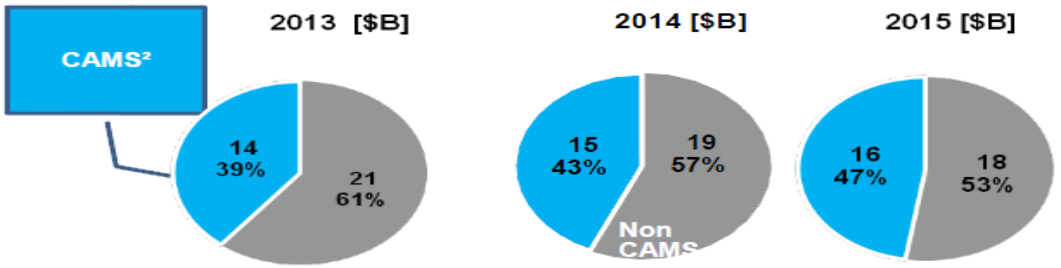


CAMS² will fuel the French IT market growth

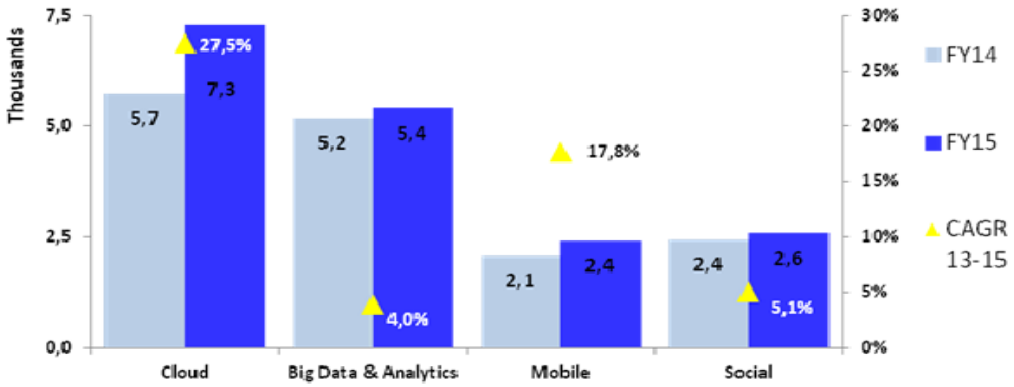
2014 Market Growth



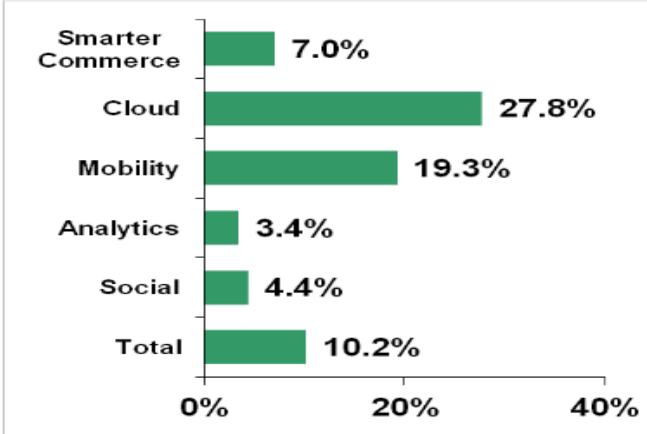
CAMS & Smarter Commerce Market Opportunity



CAMS opportunity 2014/2015



Category Segments 2014 Growth



Cloud

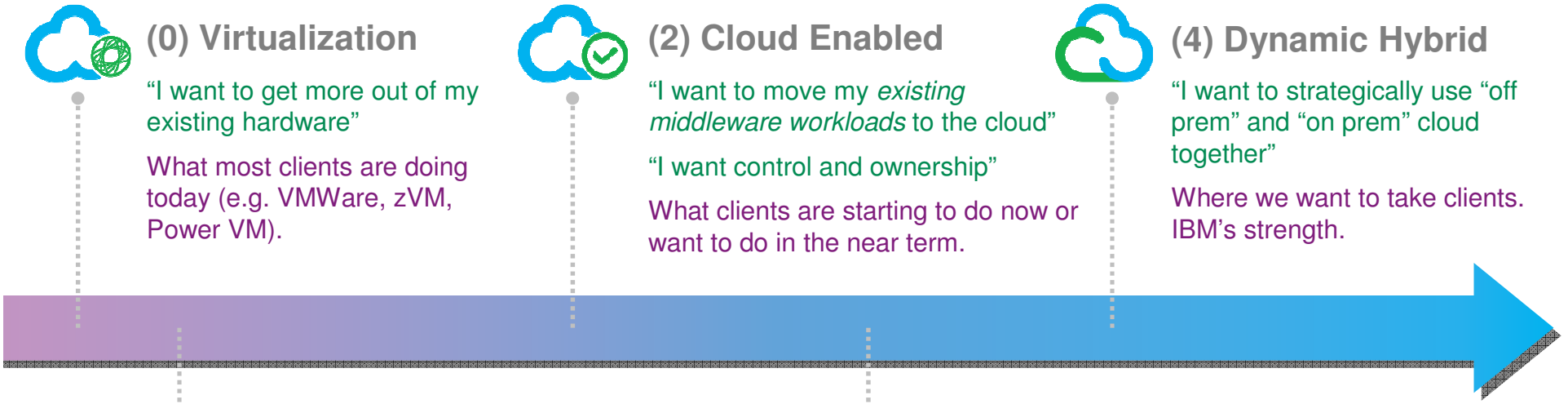
- **Cloud**
- Analytics (Big Data)
- Mobile
- Social

Cloud as a Growth Engine for Business

IBM is making major investments in cloud.

$2B	$1.2B	$7B+	$1B	100+
SoftLayer Acquisition	Data Center Expansion	Acquisition Investment	Cloud Software Development	SaaS Offerings

Cloud Maturity Model: Share the Vision. Sell for Today.



(0) Virtualization

"I want to get more out of my existing hardware"

What most clients are doing today (e.g. VMWare, zVM, Power VM).

(1) Business Services (SaaS)

"I want to use an app without having to own it"

"I want consumption based pricing"

What clients are starting to do now or want to do in the near term.

(2) Cloud Enabled

"I want to move my *existing middleware workloads* to the cloud"

"I want control and ownership"

What clients are starting to do now or want to do in the near term.

(3) Cloud Native

"I want to rapidly build new, engaging applications in a continuous delivery model"

"I want to consume, build, and expose APIs"

Where clients want to go. Many are exploring/experimenting.

(4) Dynamic Hybrid

"I want to strategically use "off prem" and "on prem" cloud together"

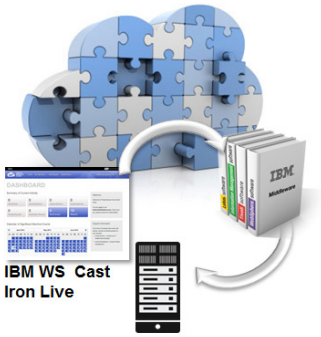
Where we want to take clients. IBM's strength.

WebSphere Business Services (SaaS) Today

IBM WebSphere Cast Iron Live V7

Enhanced

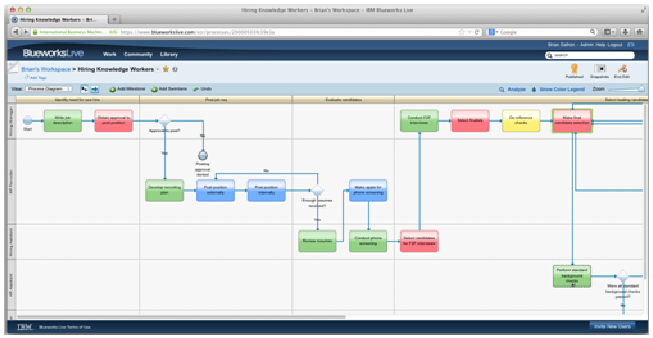
The fastest way to integrate Cloud and On-Premise applications



IBM Blueworks Live

Enhanced

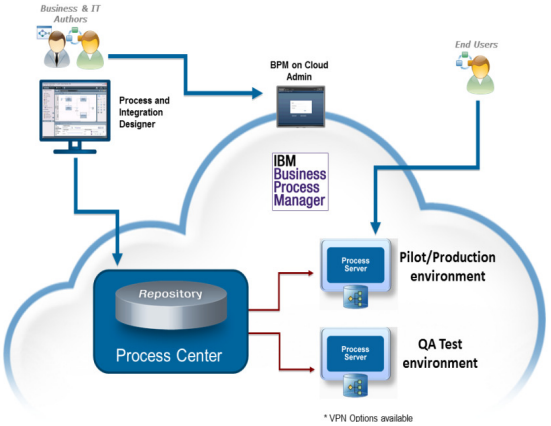
Collaborative process modeling in the cloud



IBM Business Process Manager on Cloud

Enhanced

Rapidly develop and deploy BPM applications

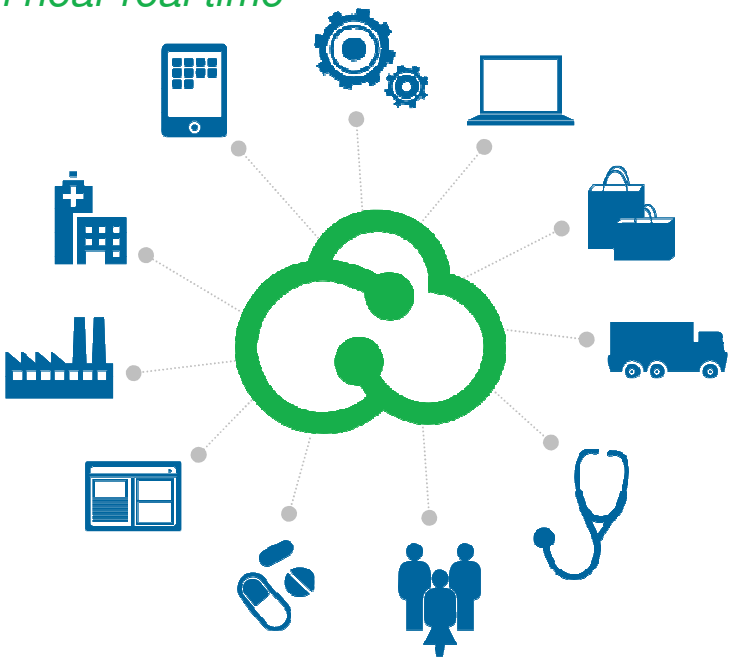


New! Additional Business Services (SaaS)

Internet of Things Cloud

BETA

Real Time data from a myriad of devices in near real time



IBM API Management Services

Create, secure, control, publish, analyze and manage your APIs in the Cloud

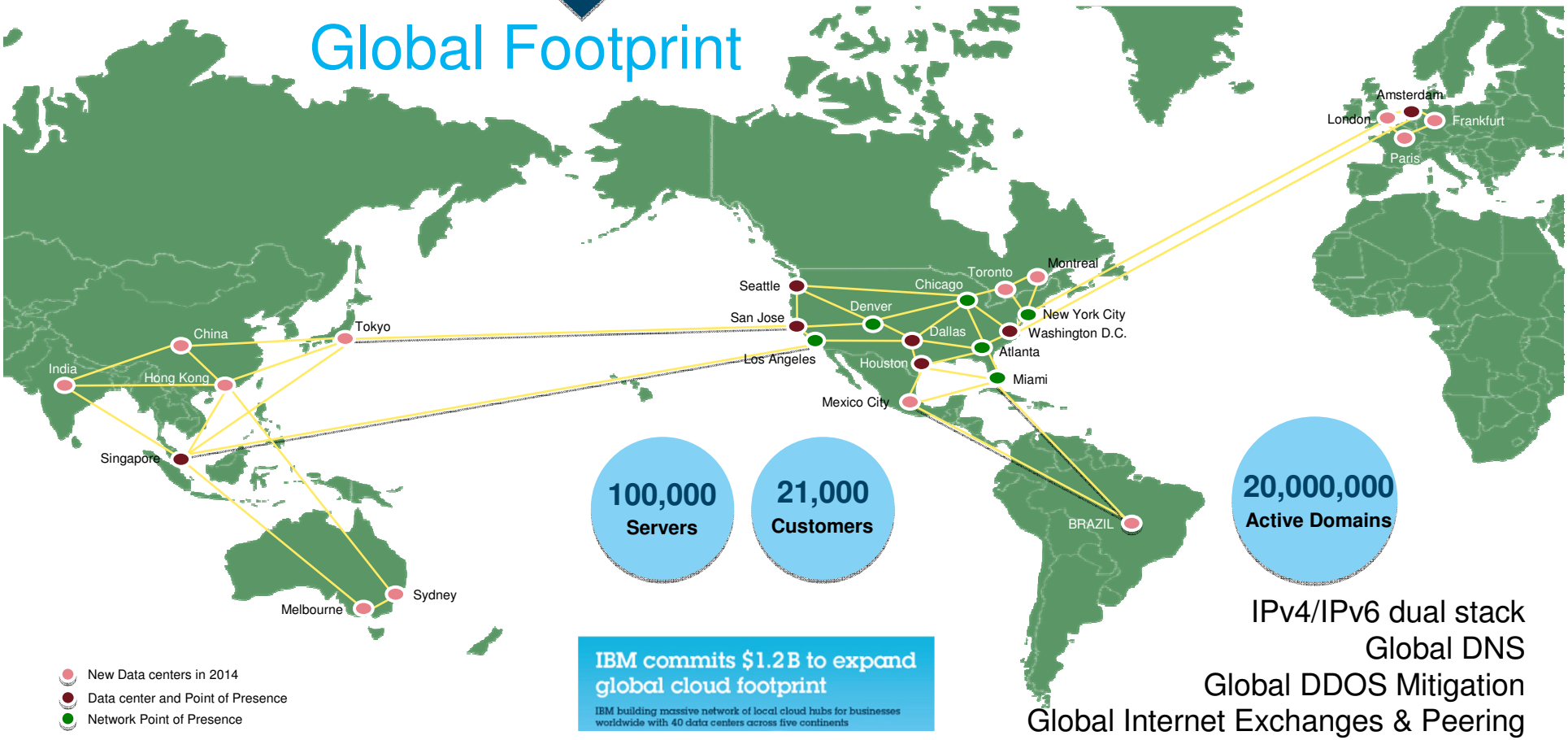
SoftLayer at a Glance

SOFTLAYER an IBM Company

Global Leader		**Unified architecture with common management and programming interfaces**
Customers	21,000 in 140 Countries	• Robust, unified command-and-control interface • Combine bare-metal servers, public cloud instances and private cloud deployments into distributed hybrid architectures and manage from either single control pane and API • All deployed on-demand and provisioned in real time • Ideally suited to big data deployments, high I/O and latency-sensitive apps and broad spectrum of applications
Devices	100,000	
Data Centers	13	
Network PoPs	19	

Business Services | **Cloud Enabled** | Cloud Native | Dynamic Hybrid

Global Footprint



100,000 Servers

21,000 Customers

20,000,000 Active Domains

IBM commits $1.2B to expand global cloud footprint

IBM building massive network of local cloud hubs for businesses worldwide with 40 data centers across five continents

IPv4/IPv6 dual stack
Global DNS
Global DDOS Mitigation
Global Internet Exchanges & Peering

SoftLayer: Bring Your Own Software and License (BYOSL)

- Announced Oct 29, 2013
- For SWG PPA PVU-based software
- License portability: on-prem, off-prem, hybrid
- Standard PPA acquisition, support, entitlements

SoftLayer Self Service Infrastructure as a Service Offerings Based on x86 Technology

	CloudLayer Computing			Dedicated Servers
	Public Cloud Instances	Private Cloud Instances	Bare Metal Cloud Instances	
Server Type	Virtual	Virtual	Physical	Physical
Physical Server Tenancy	Multi	Single	Single	Single
Processor Value Unit (PVU) Bring Your Own Software & License (BYOSL)	70 PVU per virtual core	100 PVU per virtual core	100 PVU per virtual core	Per Sub-capacity Licensing (e.g. 70 & 100 PVU per core)

Software Patterns with PureApplication Service on SoftLayer

PureApplication Service on SOFTLAYER an IBM Company

Accelerates and simplifies running enterprise applications on the cloud

- ►Seamless portability across off prem/on prem clouds
- ►Pre-defined patterns from IBM and third parties on IBM Marketplace
- ►Automated application deployment and management

Defined Patterns Services

Patterns include:

- Application topology
- Pre-integrated across components
- Pre-configured & tuned
- Pre-configured monitoring & security
- Pre-installed on an operating system
- Lifecycle Management

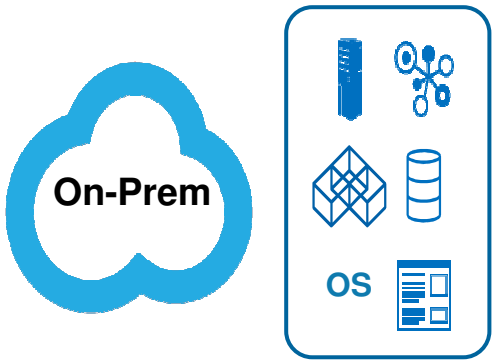
- Expertise
- Repeatability
- Simplicity
- Agility
- Governance
- Elasticity
- Efficiency

Manual: Build Your Own Cloud

From: MANUAL

Build Your Own

MANUAL
- Provisioning
- Monitoring
- Maintenance
- SW Scaling
- HW Scaling



MANUAL
- Provisioning
- Monitoring
- Maintenance
- SW Scaling

AUTOMATED
- HW Scaling

Client Motivations

- Control – fits with their existing organization & technology
- Use existing hardware
- Use existing tools and automation
- Fear of vendor lock-in
- DevOps, Self-service environments

Sell!

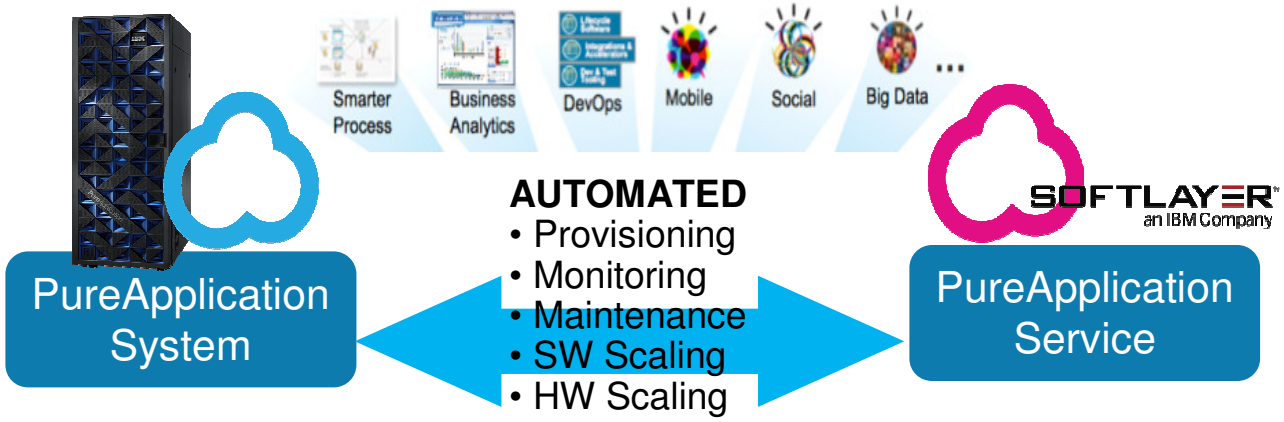
- Traditional Licensed Software and/or BYOSL to SoftLayer

Business Services	**Cloud Enabled**	Cloud Native	Dynamic Hybrid

Automated: Accelerate time to market, simplify IT and lower TCO

To: AUTOMATED

Time to Value, Simplicity & Lower TCO



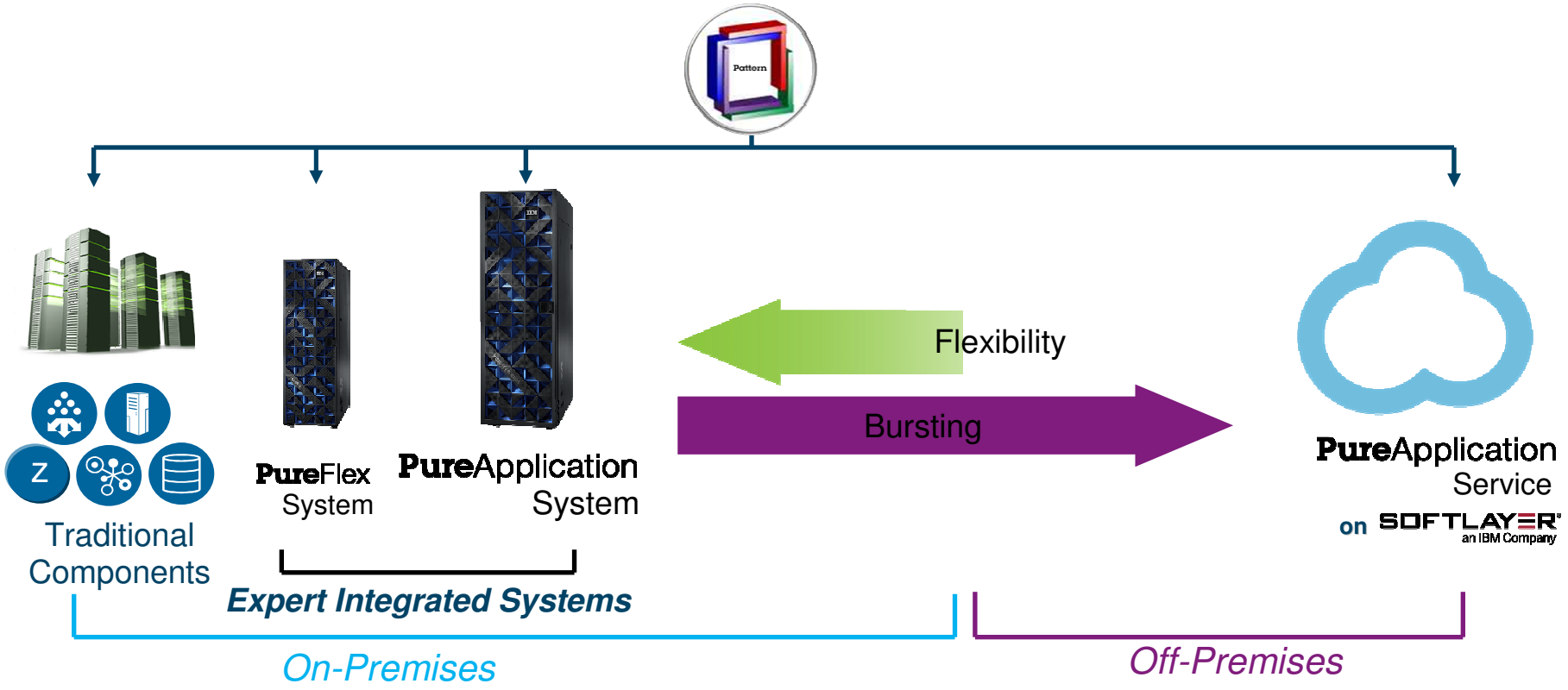
Client Motivations

- Looking to transform IT
- Interested in "platform as a service" for existing systems of record
- Use existing application scripts
- DevOps, Self-service environments

Sell!

- Entire portfolio: Patterns
- PureApplication System and/or Service

Patterns: Create Once – Deploy Anywhere



Building Cloud Native Applications

Composing of an application, not traditional *writing* of an application

ITERATE

TASK:
Create a secure application that analyses sentiment about certain topics in social media

1. Create app

2. Add database service

3. Extract social media data into database

4. Add social analytics service

5. Secure the service

6. Add Monitoring service instance

Codename: BlueMix

Delivering a Composable Services development environment

Run Your Apps

The developer can chose any language runtime or bring their own. Quickly build omni-channel applications.

DevOps

Development, monitoring, deployment and logging tools allow the developer to run the entire application. Tools for all skillsets from advanced to business developers.

APIs and Services

A catalog of open source, IBM and third party APIs services allow a developer to stitch together an application in minutes.

Cloud Integration

Build hybrid environments. Connect to on-premises systems of record plus other public and private clouds. Expose your own APIs to your developers.

Built on IBM SoftLayer

Runs automatically on top of IBM's leading infrastructure as a service. No need to worry about provisioning or managing infrastructure.

Business Services	Cloud Enabled	**Cloud Native**	Dynamic Hybrid

IBM Services Available in Q2 **Codename: BlueMix**

Web and Application

Reduce costs, deliver and scale engaging web applications and services

- **RapidApps**
- Rules
- Elastic MQ
- Session Cache
- Data Cache
- **Workflow**
- **Application Auto-Scaling**

Mobile

Rapidly build on-device mobile applications or host mobile web applications

- Mobile Application Security
- **Location**
- Push
- Mobile Data
- Mobile Quality Assurance

DevOps

Open, integrated rapid development that scales.

- **Monitoring and Analytics**
- **Continuous Integration**
- Git Hosting
- Web IDE
- **Delivery Pipeline**
- Agile Planning and Tracking

Integration

Securely connect cloud applications to on-premise data and infrastructure.

- **Cloud Integration**
- Cast Iron Live

Database

Choose your own database-as-a-service.

- SQL Database
- Cloudant JSON Database

Security

Build security into your application by design.

- SSO
- **Appscan Mobile Analyzer**

Big Data

Harness the power of Big Data.

- BLU Analytics Acceleration
- Map Reduce
- **Time Series Database**
- **Geospatial Analytics**

Watson

Analytics based on natural language questions.

- **Watson Analytics Services**

Internet of Things

Consume, analyze and act on streaming data from physical sensors.

- **Internet of Things**

New at Impact | **Available later in Q2**

“Off Prem” or “On Prem”? Dynamic is the Future.

On Prem Cloud & IT

Benefits:

- Fully customizable
- Robust management
- Secure by design

Off Prem Cloud

Benefits:

- Low entry cost
- Pay-per-use
- Highly elastic

Dynamic Cloud

Best of both worlds.
Better outcomes.

- Maximize return on existing IT investments
- Match workloads to best-fit infrastructure
- Hit the right balance of risk to speed
- Meet seasonal capacity without CapEx
- Add new capabilities quickly

Hybrid Cloud : SaaS and « On Premises »

Application running on-premise wants to connect to a SaaS application and perform an operation

- ✓ Connectivity - Learning curve, Technical limitations
- ✓ Security (In Transit/ At Rest)
- ✓ Performance (Latency/Bandwidth)
- ✓ Time To Market

IT has more control

- Decide on strategic cloud applications to connect to
- To plan for integration ahead

Application running on Cloud wants to access SOR/Application within enterprise

- ✓ Visibility
- ✓ Connectivity (Learning curve, Technical limitations)
- ✓ Security (In Transit/ At Rest/Firewall)
- ✓ Scalability (App instances on cloud)
- ✓ Time to Market

IT has less control

- Due to wider adoption of Saas & Paas by business
- Need rapid fix for lack of integration

Cloud Integration with Cast Iron

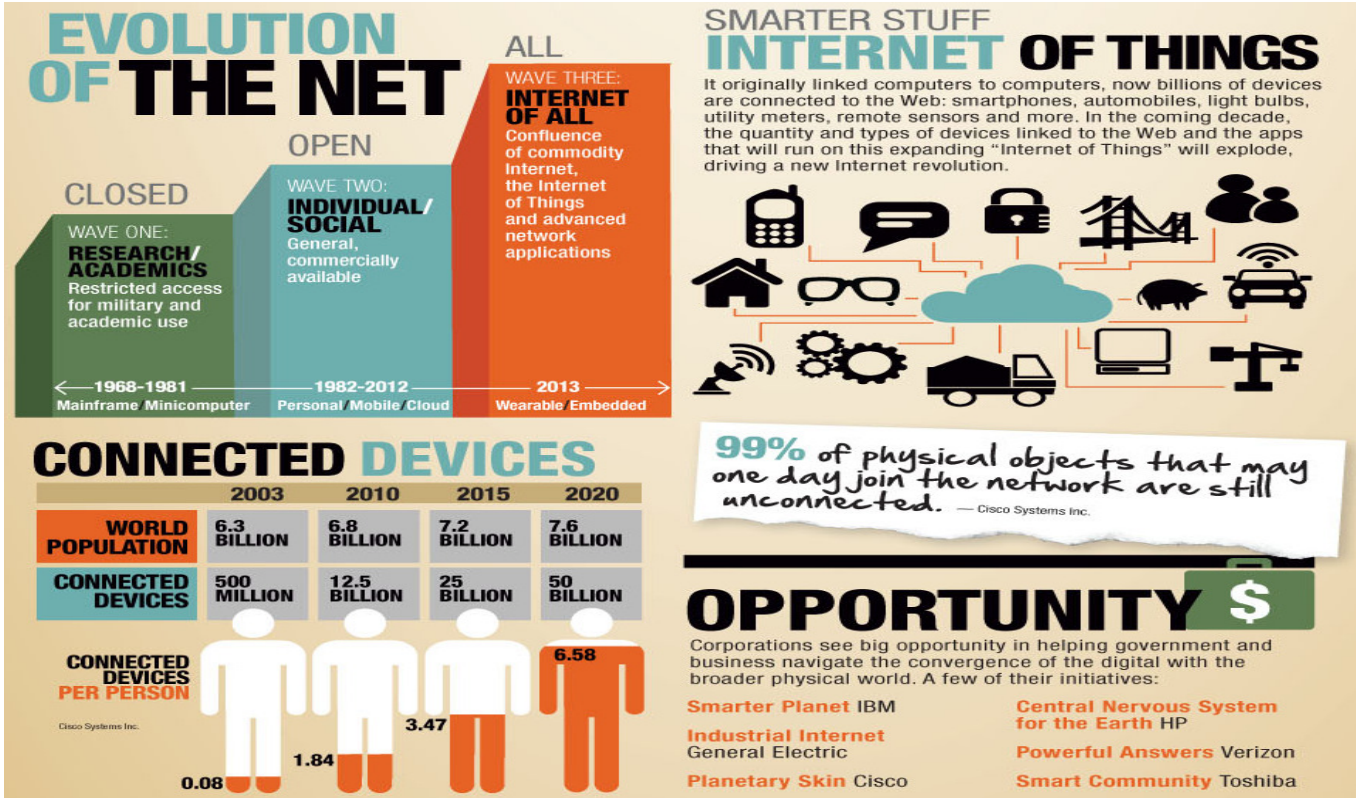
Rapidly connect SaaS / Cloud and on premise applications in just days.

- **Rapidly integrate with hundreds of on premise applications**
  - Packaged applications like SAP, JDE, Siebel etc.
  - Home grown apps running on DB2, SQL Server ,etc.
  - Private cloud applications built using Web Services, etc.
- **Eliminate the "swivel chair" approach of accessing multiple applications**
  - Real-time visibility of data locked away in back office applications
- **Use a *Configuration, Not Coding* approach to cloud integration**
  - *Reusable templates called TIPS accelerate time to value*
- **Choose from flexible deployment options:**
  - Physical appliances running on Data Power platform
  - Virtual appliances
  - Integration as a service (Cast Iron Live)

Analytics (Big Data)

- Cloud
- **Analytics (Big Data)**
- Mobile
- Social

The Internet of Things is the next new frontier



Key Areas for IoT

		Focus	Key Industries	Examples
1	**Connected Vehicle**	Tracking and telemetry for vehicles	Automotive, Government, Transportation	Ford, Peugeot, Continental
2	**Industrial M2M**	Telemetry from manufacturing or operational equipment	Manufacturing, Energy & Utilities, Oil & Gas Rail	Conoco Philips, Eon
3	**Connected Products**	New applications around new devices using connected silicon	Consumer Electronics, Healthcare & Fitness, Telecommunications	Whirlpool, Electrolux, OnFarm, Nike

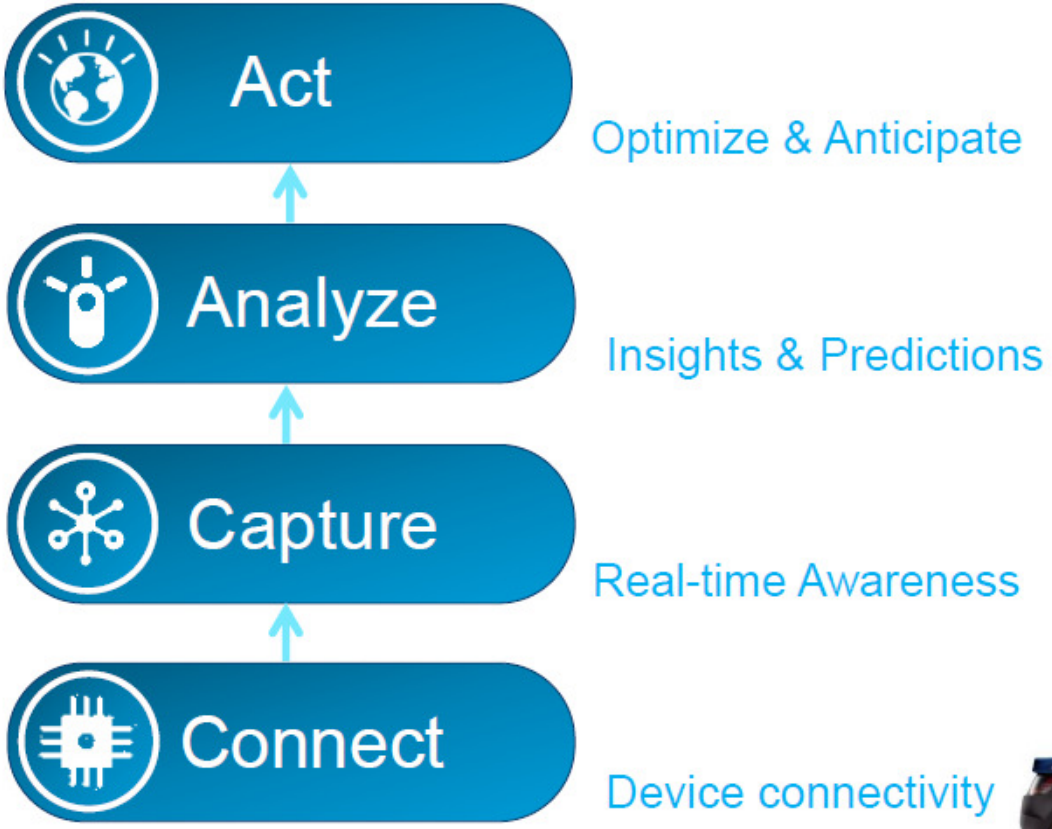
Connected Car

Projected Value from Top Ten Connected Applications in 2020

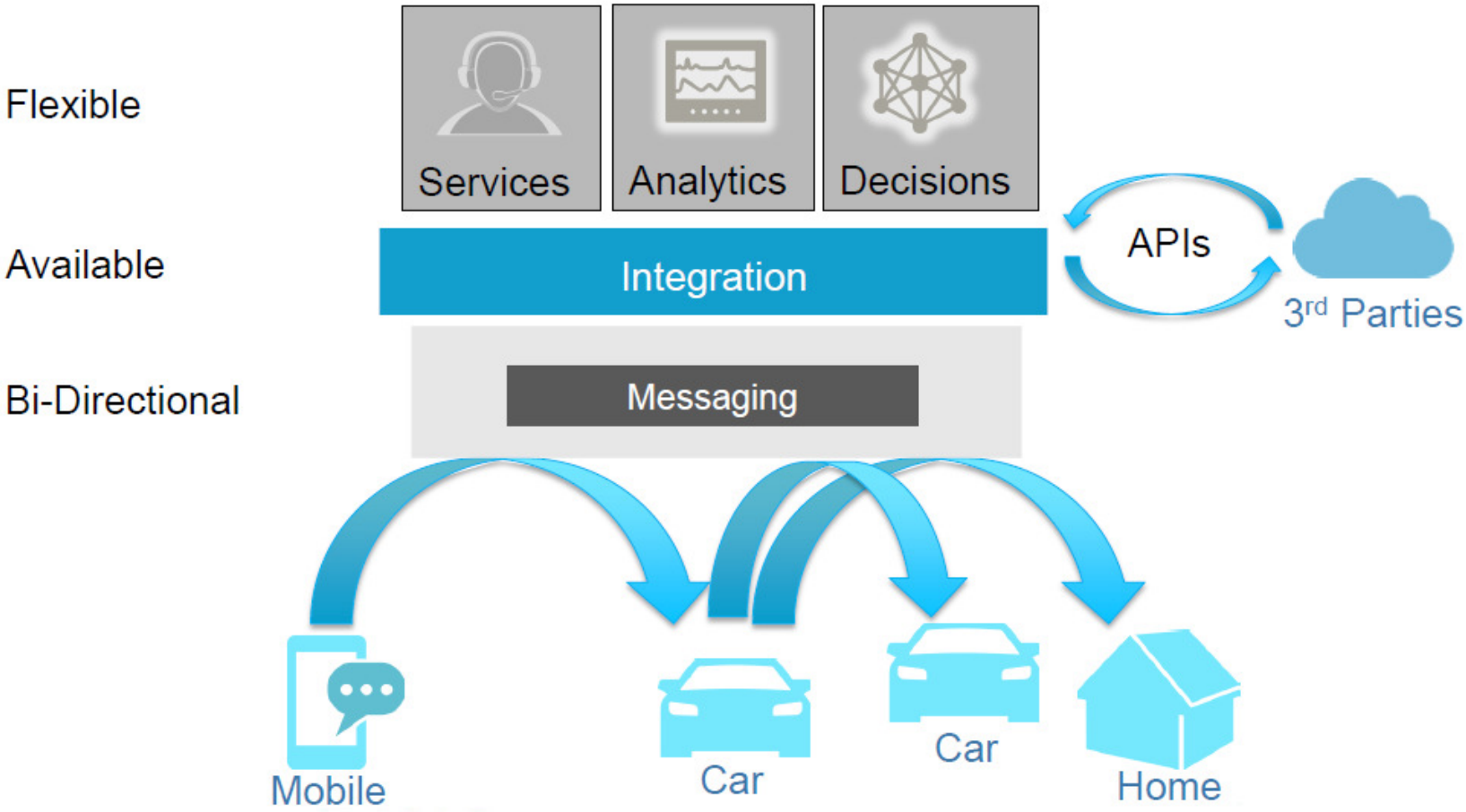
Source: GSMA Connected Living (2013)

Application	Value
Connected Car	$600 billion
Clinical Remote Monitoring	$350 billion
Assisting Living	$270 billion
Home and Building Security	$250 billion
Pay-As-You-Drive Car Insurance	$245 billion
Car Monitoring & Usage	$225 billion
Smart Meters	$105 billion
Traffic Management	$100 billion
Electric Vehicle Charging	$75 billion
Building Automation	$40 billion

The Connected Car: driving forward the IoT



Connect efficiently with Event Base Messaging



and Collaborate with Open Standards

HTTP revolutionized how we consume data… but was made for the Web
Proprietary protocols and SMS… expensive

MQTT Open Standard
IBM, Cisco, Blackberry, Vmware, M2MI
Plus: Intel, QNX, Freescale, Genivi/AGL/Tizen, Auto manufacturers, + more

MQTT addresses the additional challenges faced by Mobile, IoT, and Connected Cars

4x less
data to receive a message than HTTP

6x less
data to send a message than HTTP

220€ year
per car using HTTPS

23€ year
per car using MQTT (TLS/SSL)

Capture

With Low Latency at Scale

Optimized for Wireless Clients

Creates Opportunities for new types of Applications

HTTP LARGE-Periodic-Messages-With-Collections-of- Information

MQTT Small messages streamed as events happen

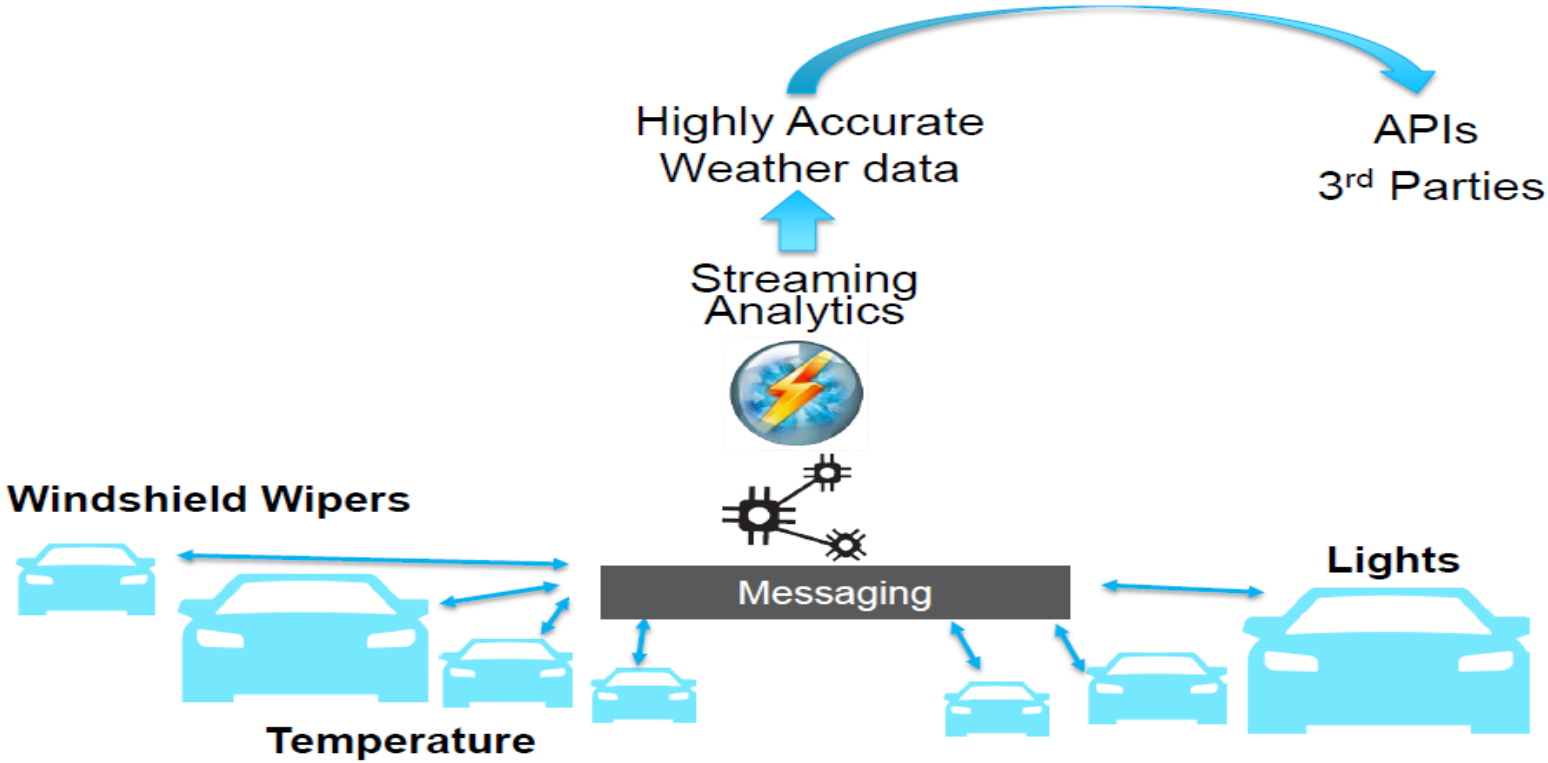
IBM MessageSight

1 million
Concurrent connections

13 million
non persistent messages/sec

400 k
persistent msg/sec

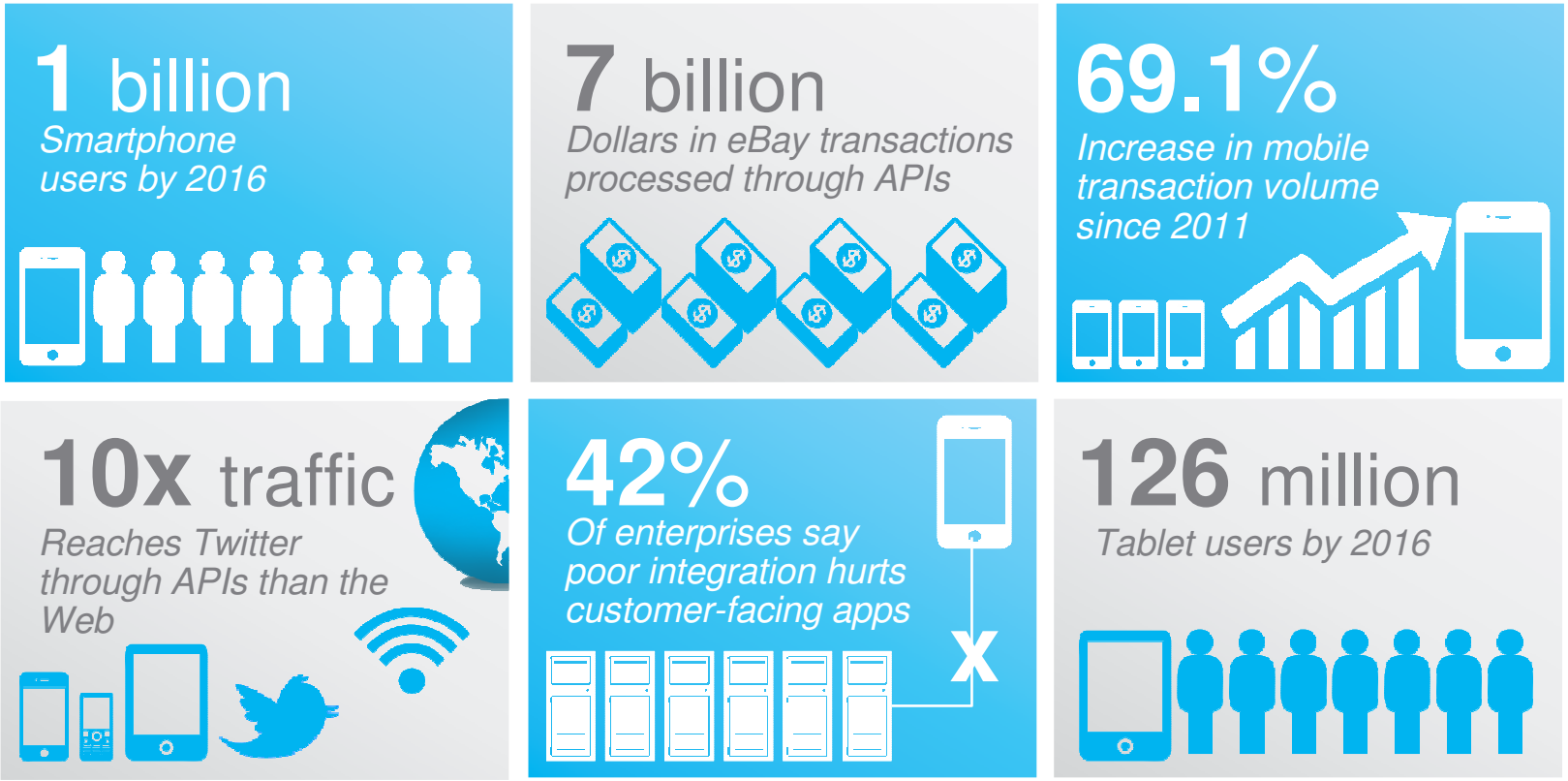
PSA PEUGEOT CITROËN and IBM to Launch
"Connected Services" for the Car of the Future



Mobile

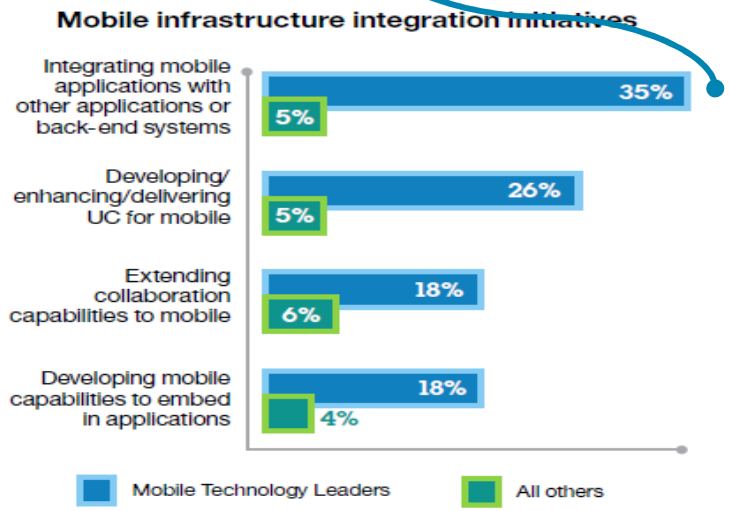
- Cloud
- Analytics (Big Data)
- **Mobile**
- Social

Mobile has become a primary channel for business



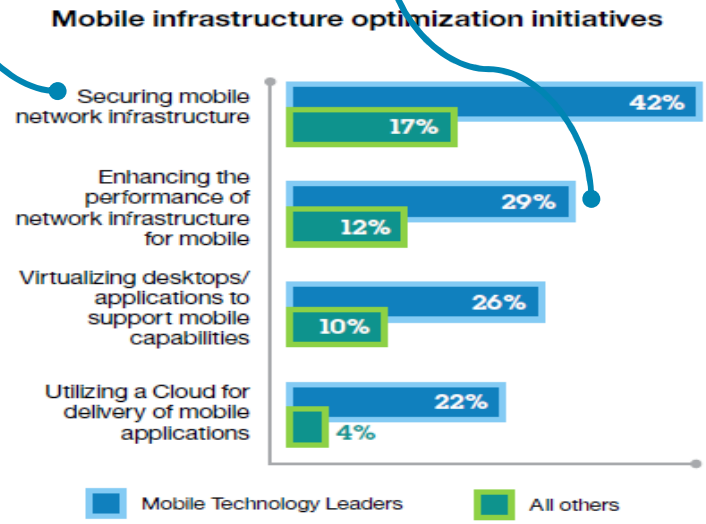
Three key practices of successful mobile enterprises

1 **Integration**



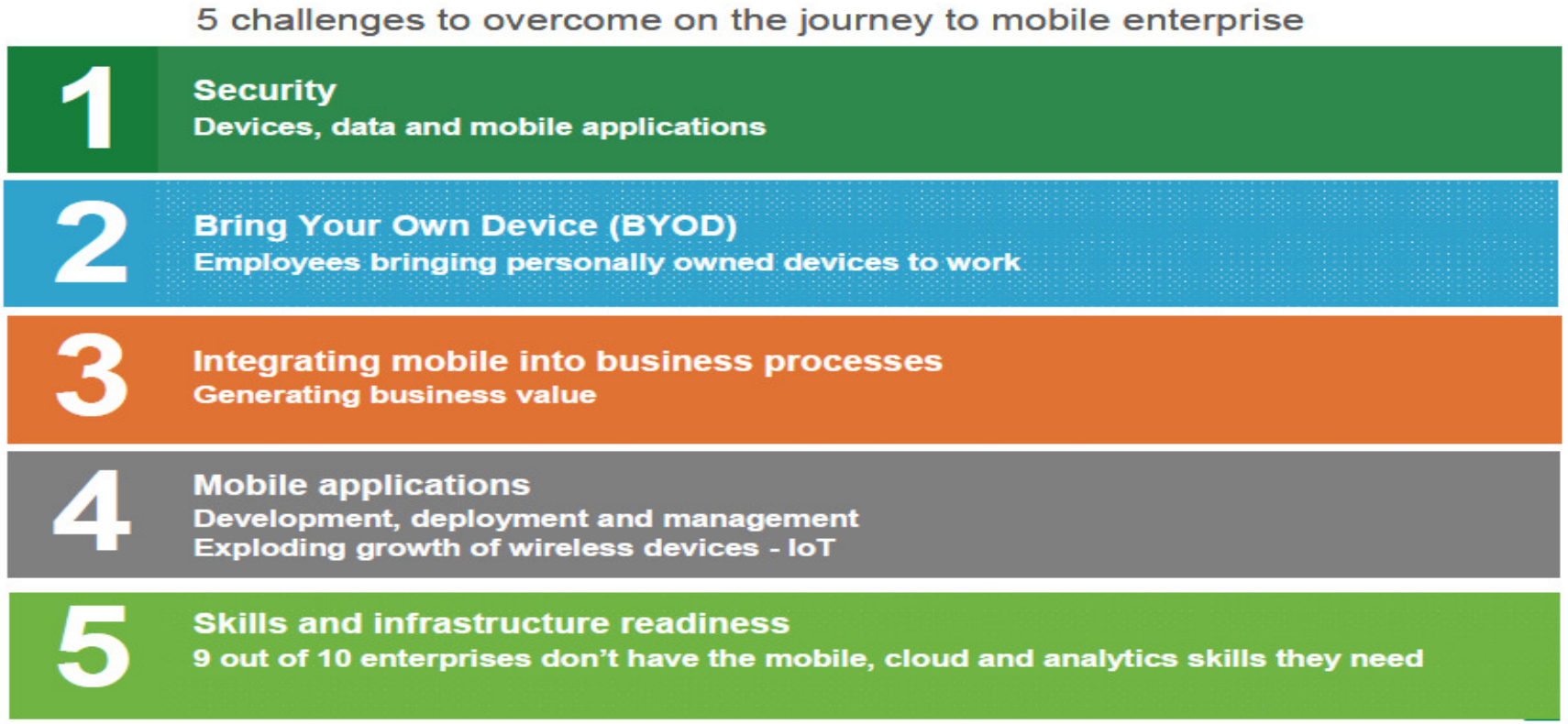
2 **Security**

3 **Scale**

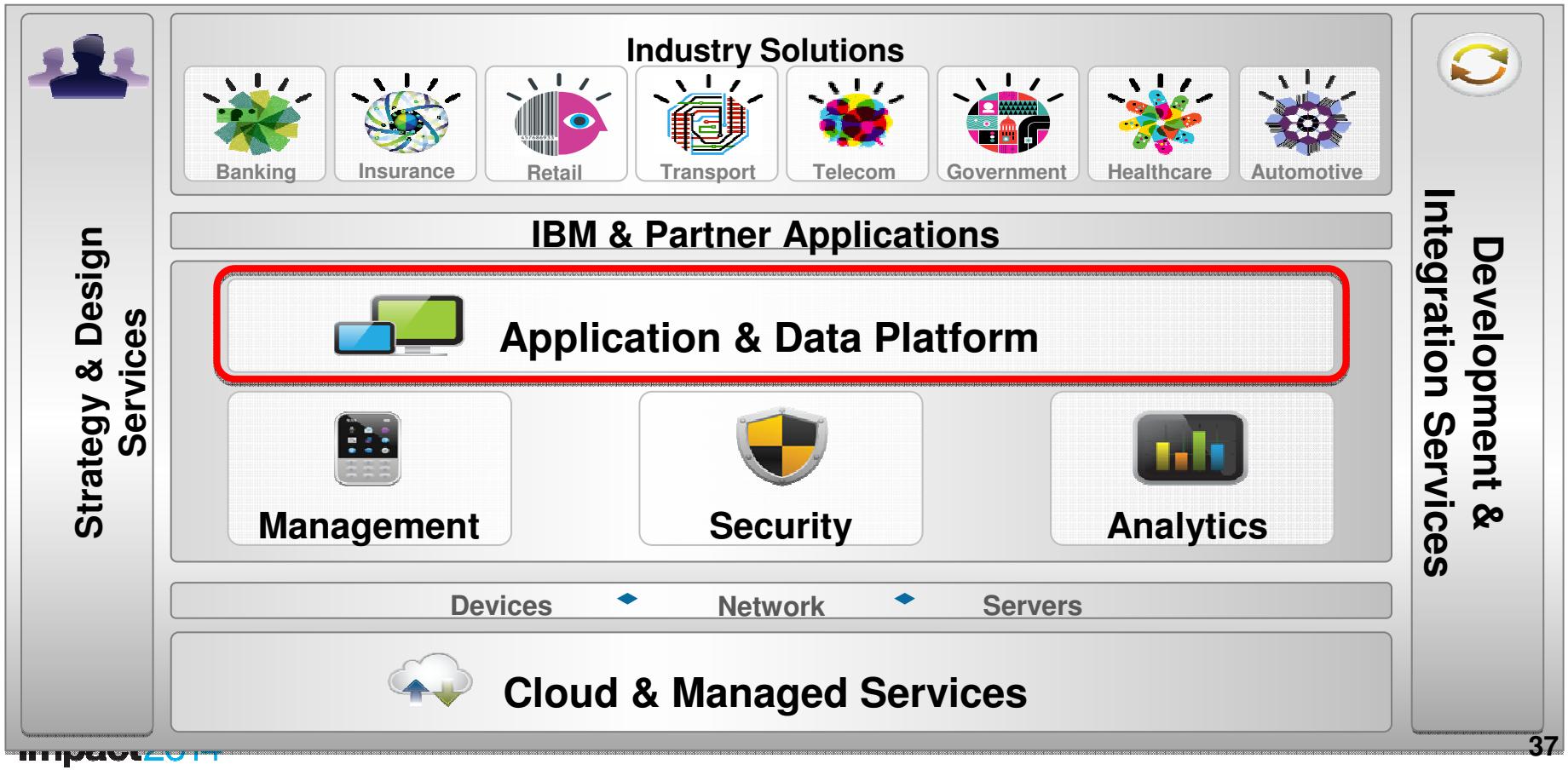


Source: IBM Global IT Study on Mobile Infrastructure 2013

Typical challenges to enable the mobile enterprise



IBM MobileFirst Offering Portfolio



IBM Worklight: Main Components

Development

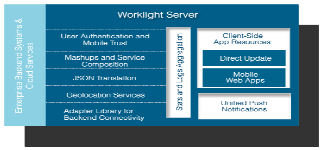
Worklight Studio

Leading tools for cross-platform hybrid development that maximize code reuse, speed up development, and promote team work

Run Time

Operational Console

UI for app deployment, management, and version enforcement, real-time operational analytics, push notifications



Worklight Server

Gateway for mobile user engagement, security, analytics, and application control

App Runtime

Client APIs available for **native**, **hybrid**, and **web** apps

Worklight App Center

A non-MDM, cross-platform, private mobile app store tailored to the needs of development team or as an enterprise store

The Business of APIs

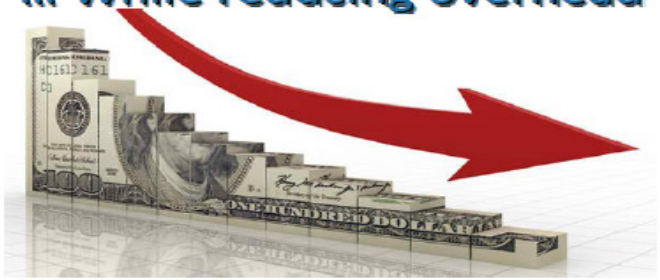
Grow revenues...

"***$7bn worth of items*** on eBay through APIs"
Mark Carges (Ebay CTO)

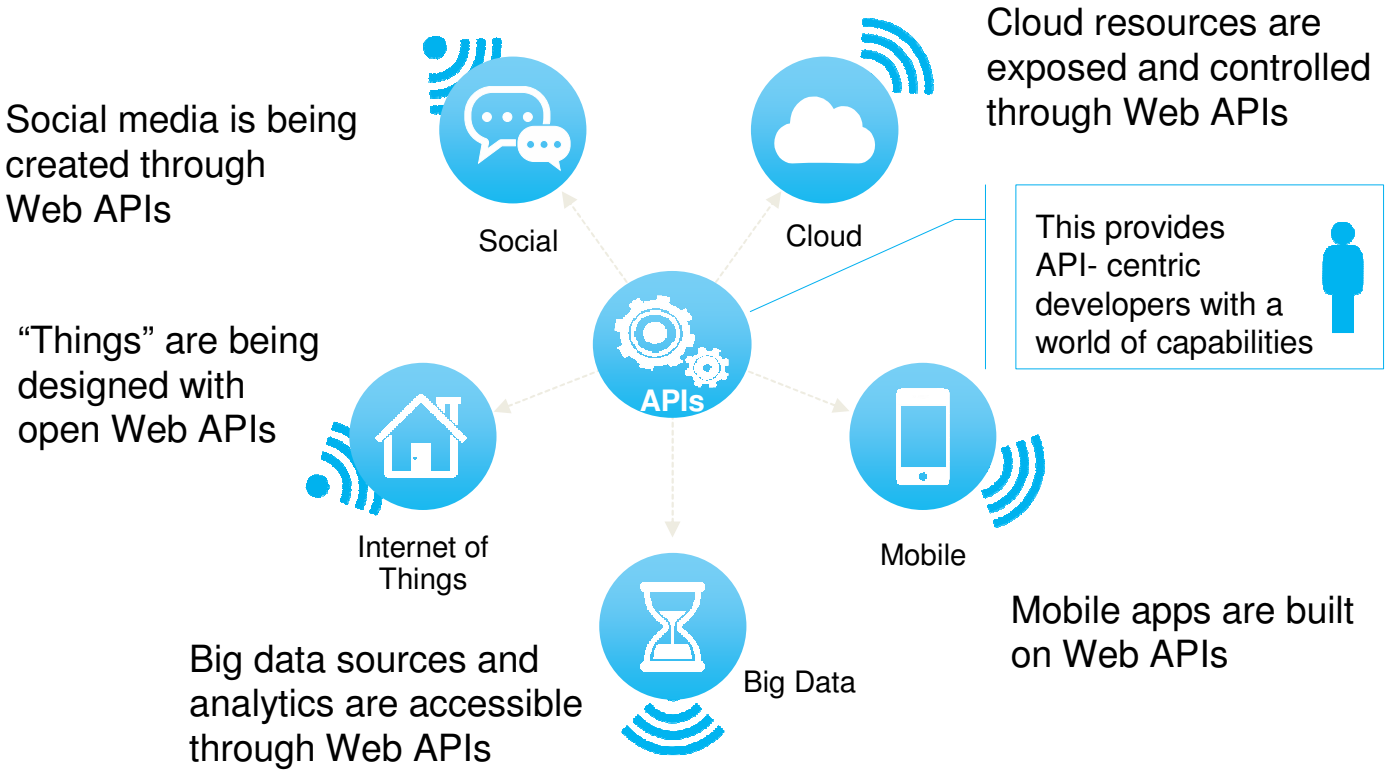
The API which has easily ***10 times more traffic*** then the website, has been really very important to us."
Biz Stone (Co-founder, Twitter)

"The adoption of Amazon's Web services is currently driving more network activity then everything Amazon does through their traditional web sites."
Jeff Bar (Amazon evangelist) / Dion Hinchcliffe (Journalist)

... While reducing overhead

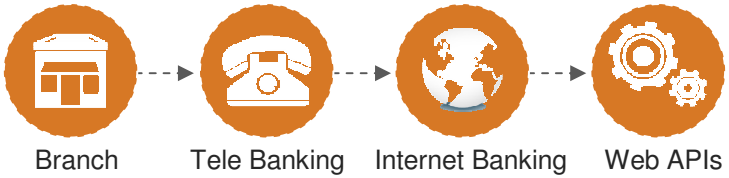


APIs are the lingua franca of systems of engagement



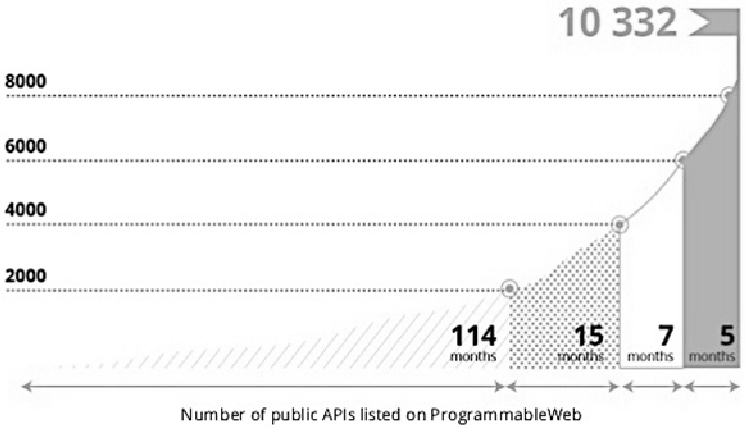
APIs are the foundation of a composable business

Business models are changing faster than ever before



APIs represent a new, fast-growing channel opportunity

and growth is accelerating dramatically



By 2014, **75%** of the Fortune 1000 will offer public Web APIs. Top drivers:

- *Mobility Programs*
- *Partner Connectivity*
- *Cloud Integration*
- *Enabling internal developers*

By 2016, **50%** of B2B collaboration will take place through Web APIs.

Sources: Gartner, Predicts 2012: Application Development, 4Q, 2011; Gartner, Govern Your Services and Manage Your APIs with Application Services Governance, 4Q 2012; Gartner, Open for Business: Learn to Profit by Open Data, 1Q 2012

A single, comprehensive solution to design, secure, control, publish, monitor & manage APIs

IBM API Management

Fully on-premise, multi-tenant solution,
for API providers

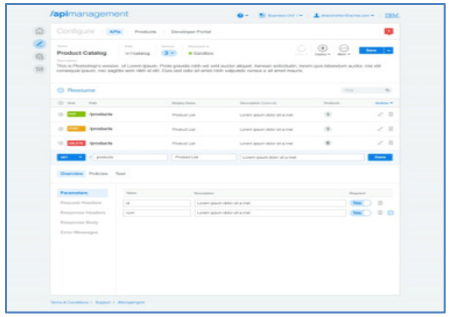
IBM DataPower

API Gateway for security, control, integration & optimized access to a full range of Mobile, Web, API, SOA, B2B & Cloud workloads

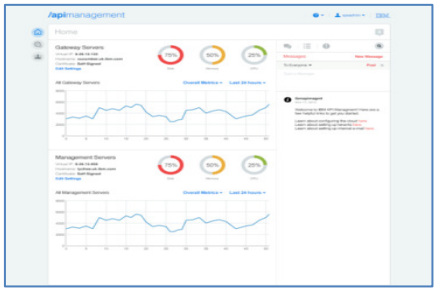
Over a decade of innovation, 10,000+ units sold, 2000+ customer installations worldwide

IBM API Management

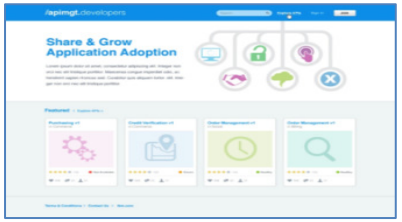
1 Create, assemble and version an API



4 Analyze & Monitor API usage



3 Manage and Share with developer communities



2 Secure, control & scale the API

Social

- Cloud
- Analytics (Big Data)
- Mobile
- **Social**

Facebook messenger uses the MQTT protocol

https://www.facebook.com/notes/facebook-engineering/building-facebook-messenger/10150259350998920

facebook Sign Up

Building Facebook Messenger

By Lucy Zha

One of the problems we experienced was long latency when sending a message. The method we were using to send was reliable but slow, and there were limitations on how much we could improve it. With just a few weeks until launch, we ended up building a new mechanism that maintains a persistent connection to our servers. To do this without killing battery life, we used a protocol called MQTT that we had experimented with in Beluga. MQTT is specifically designed for applications like sending telemetry data to and from space probes, so it is designed to use bandwidth and batteries sparingly. By maintaining an MQTT connection and routing messages through our chat pipeline, we were able to often achieve phone-to-phone delivery in the hundreds of milliseconds, rather than multiple seconds.

Conclusion

The Big (Archi)Picture