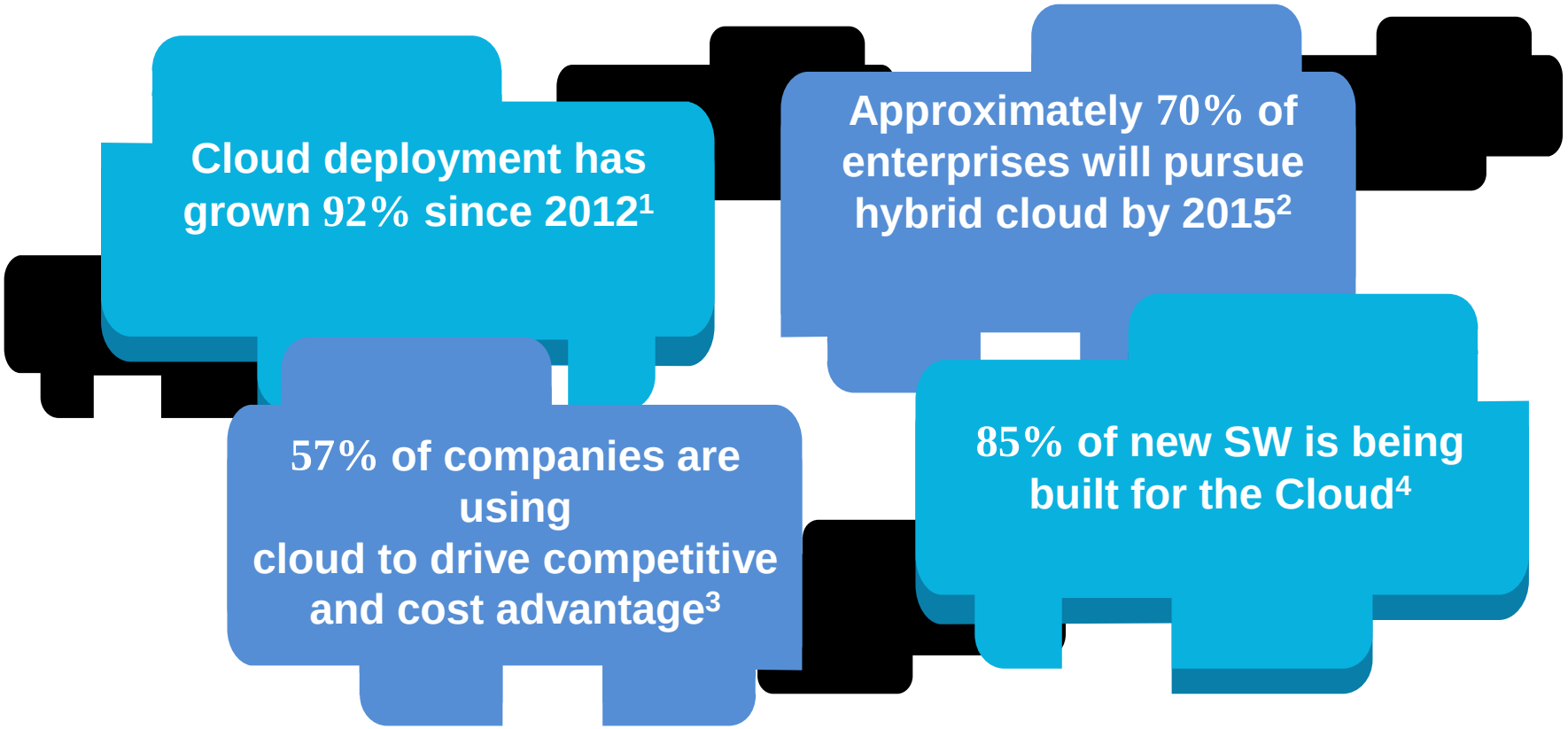
Infrastructure for Digital Business – Future Made

Rohit Badlaney
Director – z Systems Management and Optimization Software
IBM Systems and Middleware
ribadlan@us.ibm.com
@rbadlaney

The market is moving, forcing businesses and industries to transform

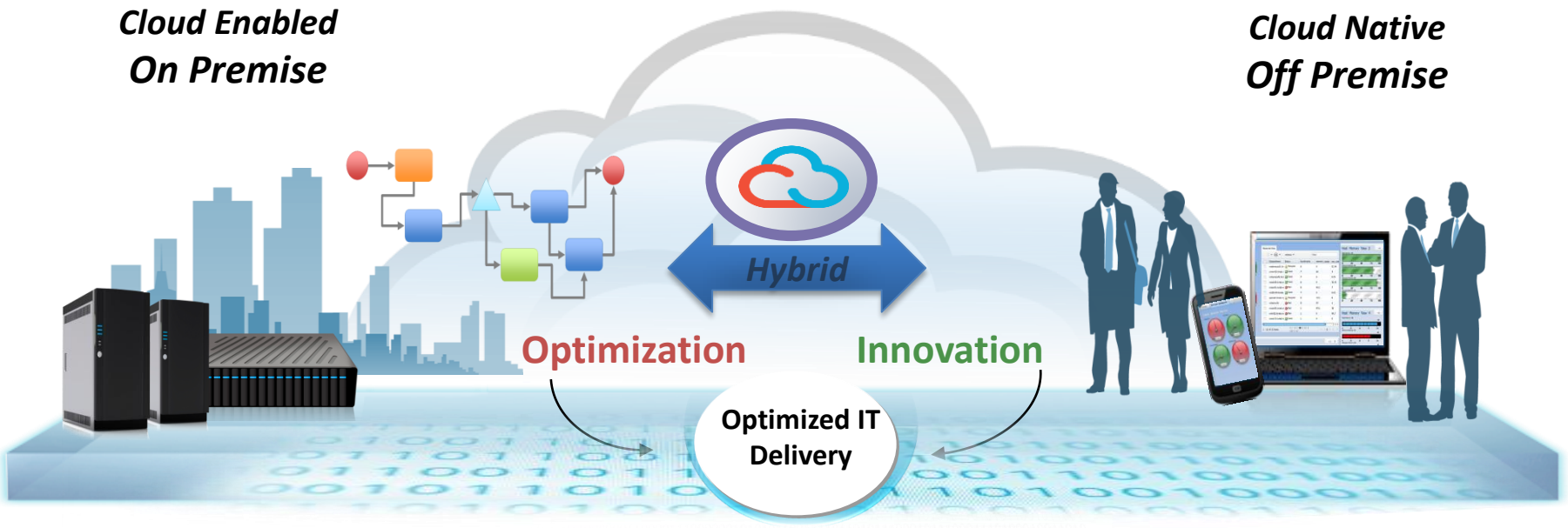
Explosion in transaction and data growth	Analytics is moving to real time	Hybrid cloud is the new standard
driven by mobility and the Internet of Things	*to capture new opportunities at the point of impact*	*for delivering service, agility, trust and efficiency*

Cloud is the engine of service delivery for the digital era



Customers with a clearly defined Cloud strategy enjoy almost 2x the revenue growth and nearly 2.5x higher gross profit than peers[5]

A Hybrid Cloud enables a Digital Business

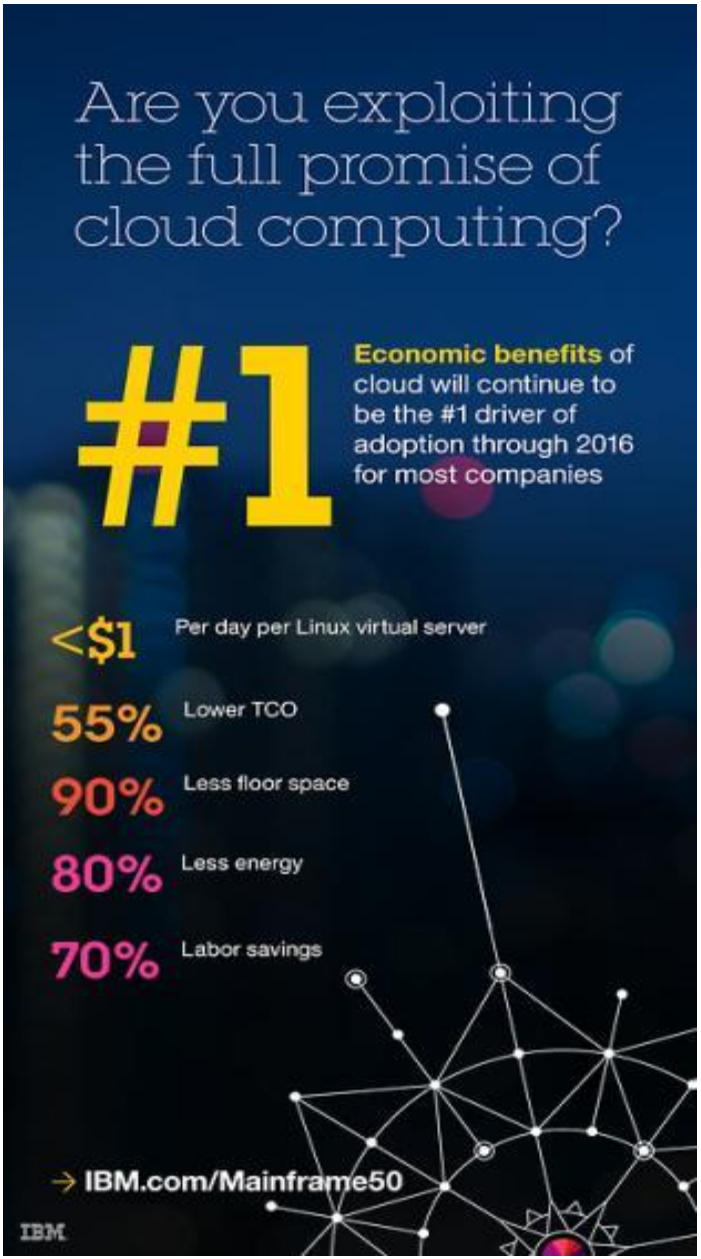


- Enable Developer and LOB productivity by creating a **self-service IT**
- Enable workload portability between clouds based on **Open Standard Solutions**.
- Securely connect cloud resources via the **API Economy**
- Business Agility and Resilience by leveraging **Visibility, Control and Security**

Sources: IBM Center for Applied Insights. * Gartner Research


Electrohome
Electrohome

z13 Cloud Economics- #1 in Efficiency and Trust



8,000
virtual servers in a single system, more than 50 per core

85 LPARs
increasing flexibility in workload deployment

KVM*
supports open virtualization with access to open source databases, tools & applications

zAnalytics Solutions & GDPS
for continuous business operations, now available for LINUX

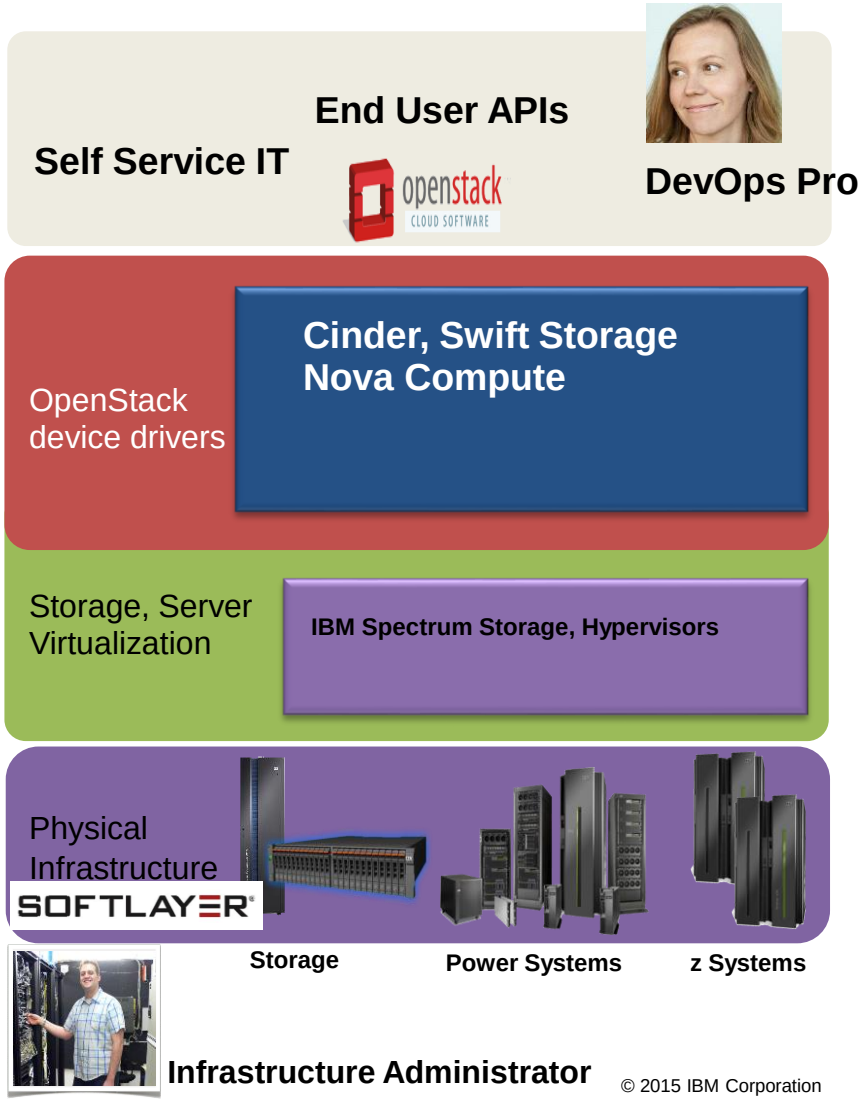
Crypto Express5S
accelerating speed of encryption up to 2x

Hybrid Cloud Connect Test Drive
to optimize integration with SoftLayer

Transforming the Economics and Agility for Enterprise IT

Cloud provides IT consumers with self-service IT

- Developers can create new business apps quickly as **internal IT becomes an MSP**
- **Open standards** ensure **workload portability** between clouds
- Workloads see direct benefit from **IBM Systems strengths**



openstack™

docker

IBM Cloud Manager with Open Stack

Heterogeneous and integrated management support

- z Systems managing Power and x86 servers
- Central management across multiple hypervisors & domains
- All IBM server architectures & major hypervisors supported

Accelerated time to market with pattern support

- Chef-based patterns based on OpenStack Heat pattern engine is now supported on z Systems
- Workload deployment based on patterns speeds delivery of new services

Hybrid Cloud support

- Hybrid Clouds on and off premise options via SoftLayer support

openstack™

CHEF™

IBM Cloud Orchestrator

- **An Open Scalable Cloud Management and Brokerage Platform that enables Hybrid Cloud.**
- **An easy to use Orchestrator for Cloud Service Automation**
- **A marketplace for automation packages sharing and reuse**
- **A rich set of ready to use automation packages**

IBM Custom Patterns for Linux on z Systems

- **Reduce deployment error/fix**
- **Reduce need for deep product skills**
- **Improve quality of delivery**
- **Reduces operating and capital expenses**

More

patterns being delivered in 2016

WAS ND
WAS Liberty
ODM Decision Server
ODM Decision Center
Integration Bus
DB2

Business Process Server
Business Process Center
Business Monitor
WebSphere Portal
WebSphere MQ
MobileFirst Platform
Cognos Business Intelligence

Up to **80%** reduction in time for multi-product deployments

vRealize Automation Suite

- **Leverage vRA Automation to Cloud Manage zSystems and Power Systems.**
- **Leverages ICM and PowerVC to orchestrate to IBM Systems (Openstack Based)**

zKVM

PowerVM

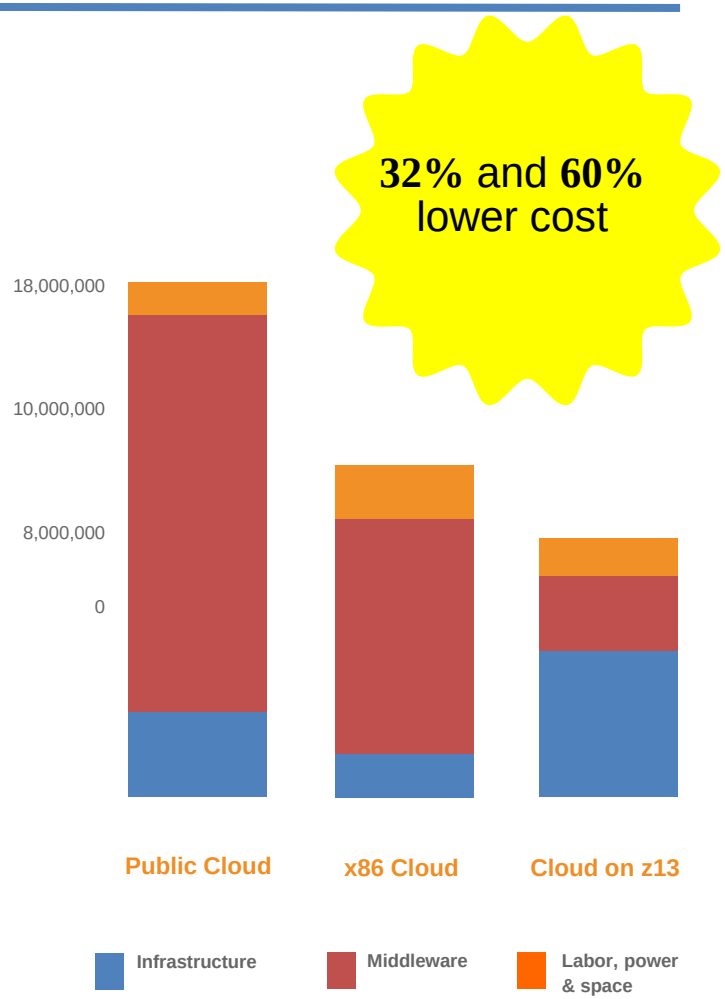
zVM

PowerKVM

z Systems delivers cloud economics without the risk

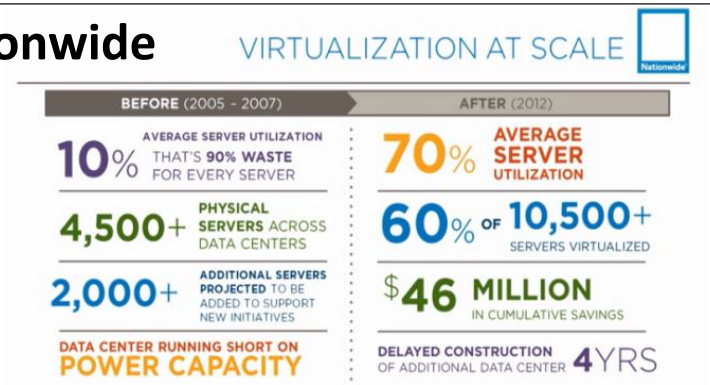
32 and 60

Superior cloud services at up to 32% lower cost than x86 and up to 60% less than public cloud alternatives



Private Cloud on z Systems - IT Economics client successes

Nationwide



Benefits Realized:

- With server utilization increased from 10% to 70%
- Developed more capabilities, grew the environment and achived a higher level of virtualization
- Cloud-based solution reduced power, cooling and floor space requirements by 80% and saved the company an estimated $46 million to date

"*By moving workload from thousands of distributed processors to a very small number of powerful mainframe processors, we have made enormous savings in software licensing costs ...*

More significantly, z/VM also gives us the ability to create new virtual servers within minutes, boosting the ability of the business to respond to new challenges and opportunities quickly and effectively.

-- Brian Callaghan, VP of middleware-emerging technologies at Nationwide

Sicoob

Benefits Realized:

- Enormous growth within the same physical and environmental footprint
- Enabled growth of 600% in mobile, 200% in internet, and 60% in in-branch transactions
- Delivers new services faster
- Avoiding $1.5 million in electricity costs annually

"*We have reduced the complexity of our technology, with fewer servers, less administration, lower software maintenance costs, and a significant reduction in energy consumption.* --
Marcos Vinicius, Head of Technology Infra, Sicoob

"*... we are spending 400% less on power than if we had a distributed environment instead.*

-- Ricardo Antonio, CIO at Sicoob

IBM Softlayer Public Cloud

World Class Public Cloud Infrastructure

- **Global cloud footprint required for data residency, compliance and new markets**
- **Secure, high-speed network fundamental to hybrid workload performance**
- **Open standards bring agility to infrastructure-as-a-service**
- **Enterprise grade cloud choices needed match workload needs**

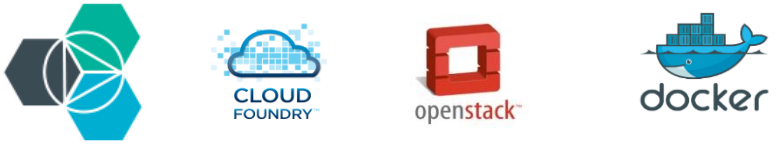
IBM Bluemix – Cloud Native Development Platform

Bluemix is an open-standard, cloud-based platform for building, managing, and running engaging microservices and omni-channel applications (web, mobile, new smart devices, and so on)

Instant Environments

APIs and Services

On-Premises Integration



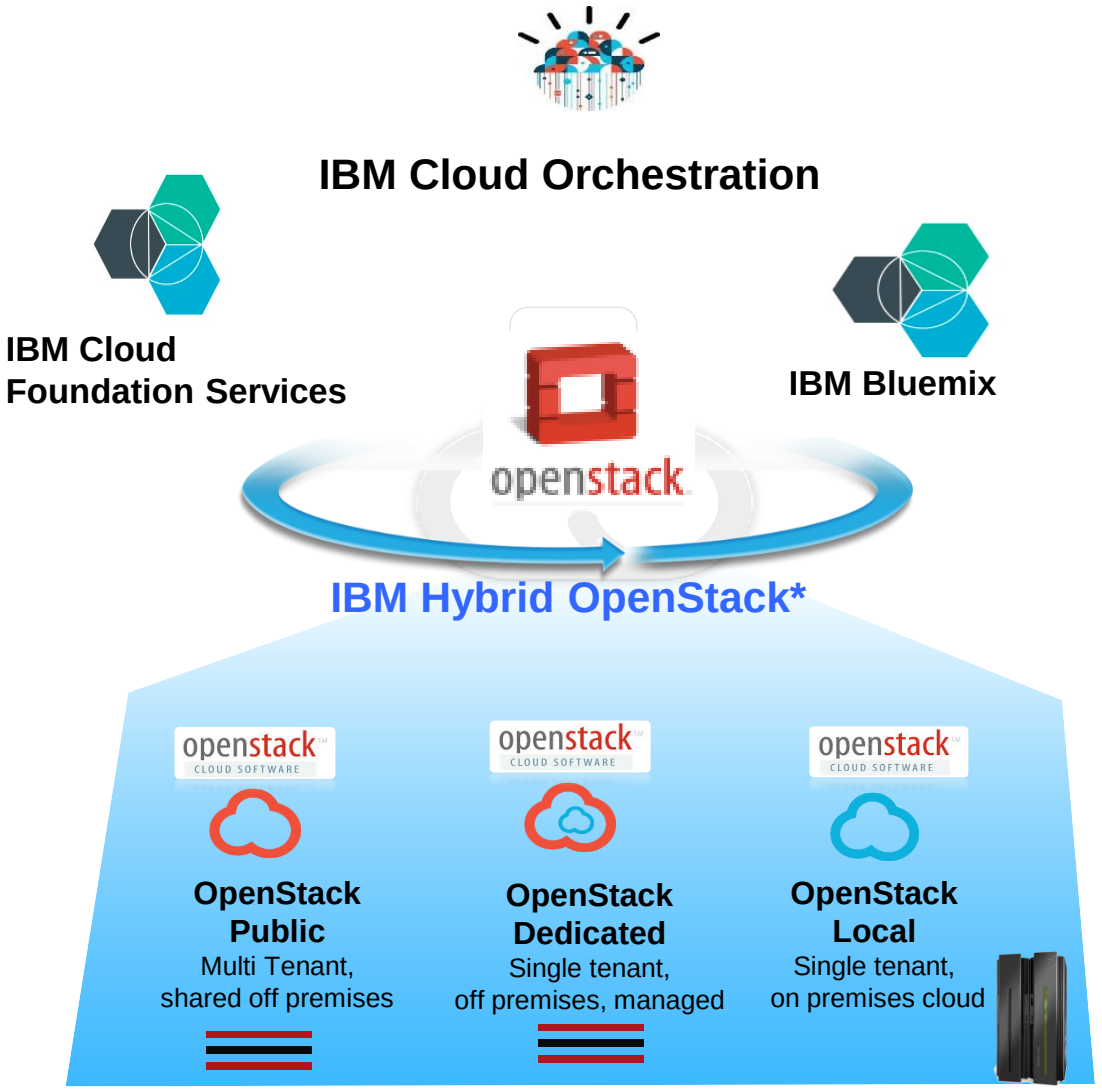
DevOps

Layered Security

Global and Private Deployments

IBM's Hybrid Open Stack Offerings – Open Technology driving choice and productivity

- **A hybrid cloud platform** using OpenStack that provides common APIs that maximizes **interoperability** and ensures automation **portability** across cloud environments
- Provide clients with **choice**, to meet their regulatory and compliance needs while preserving an **integrated** and **consistent** experience.
- Deliver a **unified user experience** throughout the Learn, Try, Buy, Use, and Support client experience lifecycle.



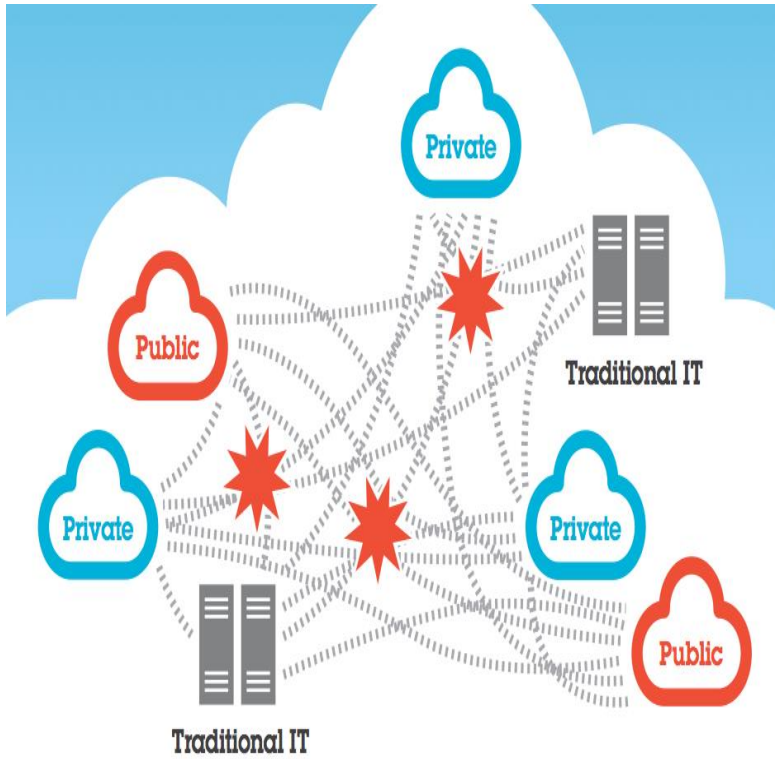
APIs are the language of Cloud: connection and consumption of IT, applications and data

1. REST APIs **connect:** IT, Applications and Data

2. Improves **Business Efficiency and Agility**

3. IBM **Middleware Cloud Integration Portfolio** enables a Hybrid Cloud and the API Economy

Leverage the API Economy



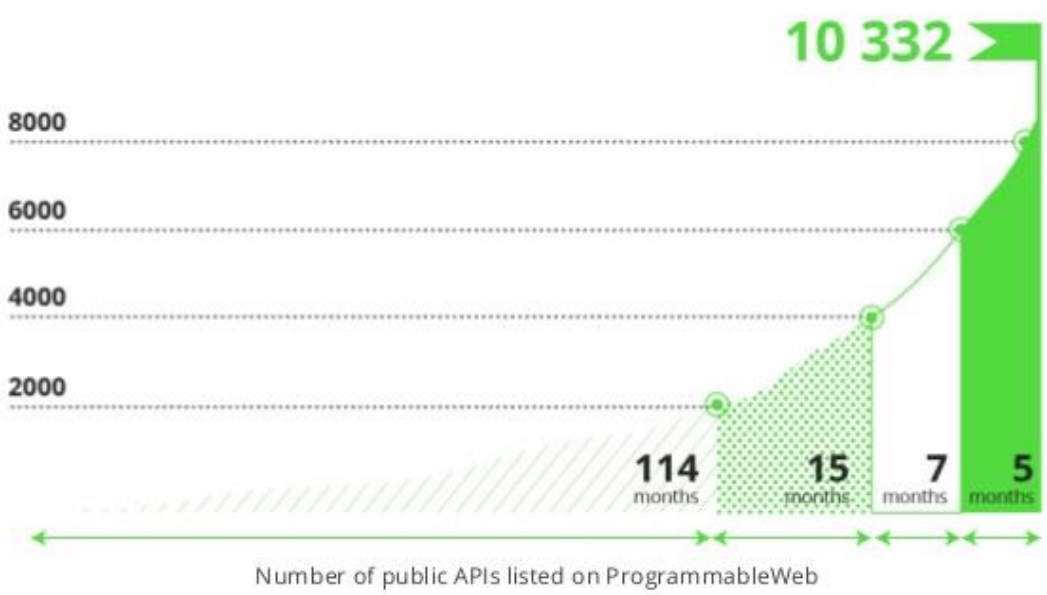
Connections are:
Encrypted, Auditable, Access Monitored

APIs are a path to new business opportunities

Business models are evolving

APIs represent a new, fast-growing channel opportunity

and growth is accelerating dramatically



By 2015, 75% of the Fortune 1000 will offer public Web APIs.

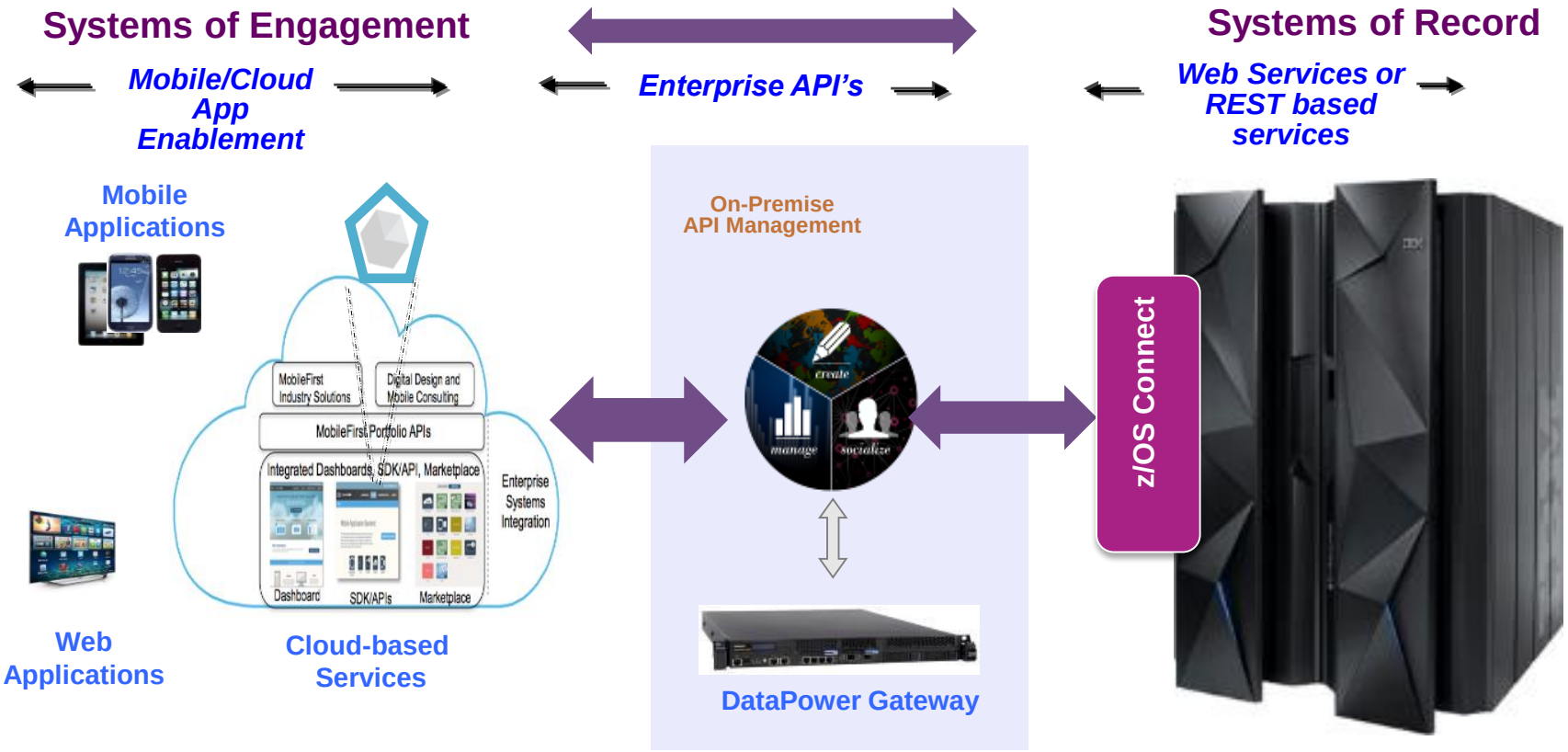
By 2016, 50% of B2B collaboration will take place through Web APIs.

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

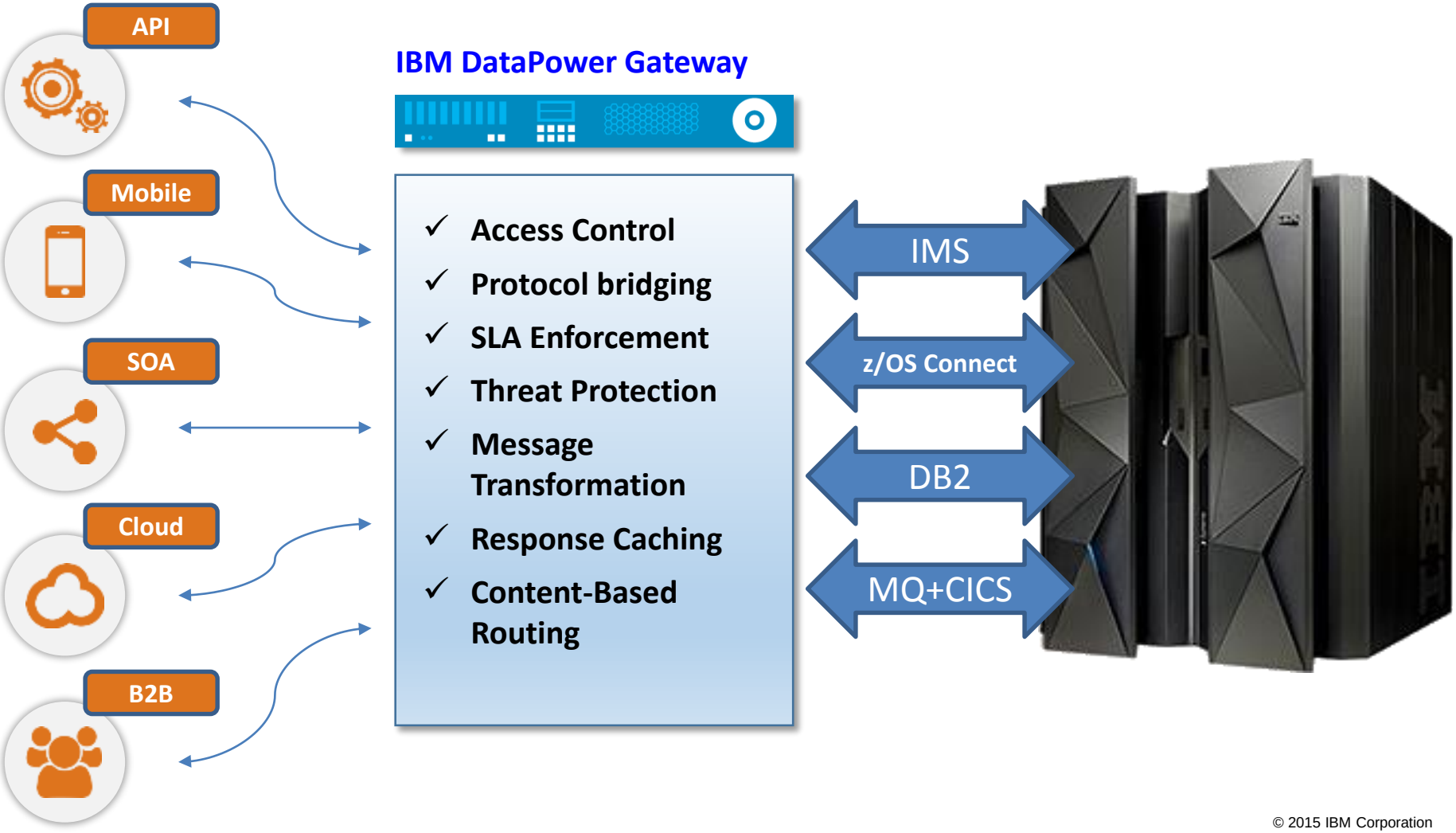
API Management on z Systems

Enterprise APIs are the building blocks for new application development improving delivery of existing services and/or reaching new customers through partners

- **Consumability via catalogs**: easy to browse and subscribe.
- **Control and Insight over accesses** to existing z assets and SOA based Enterprise Services, including new z/OS Connect based REST services for access to various sub-systems.

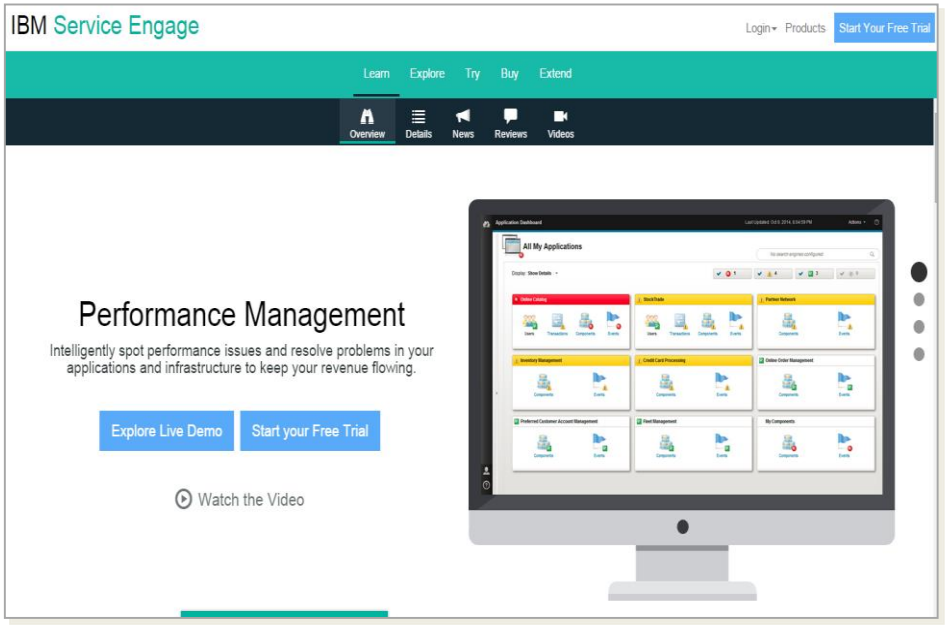


Securely enable multi-channel access to existing Enterprise CICS, IMS, and System of Record applications



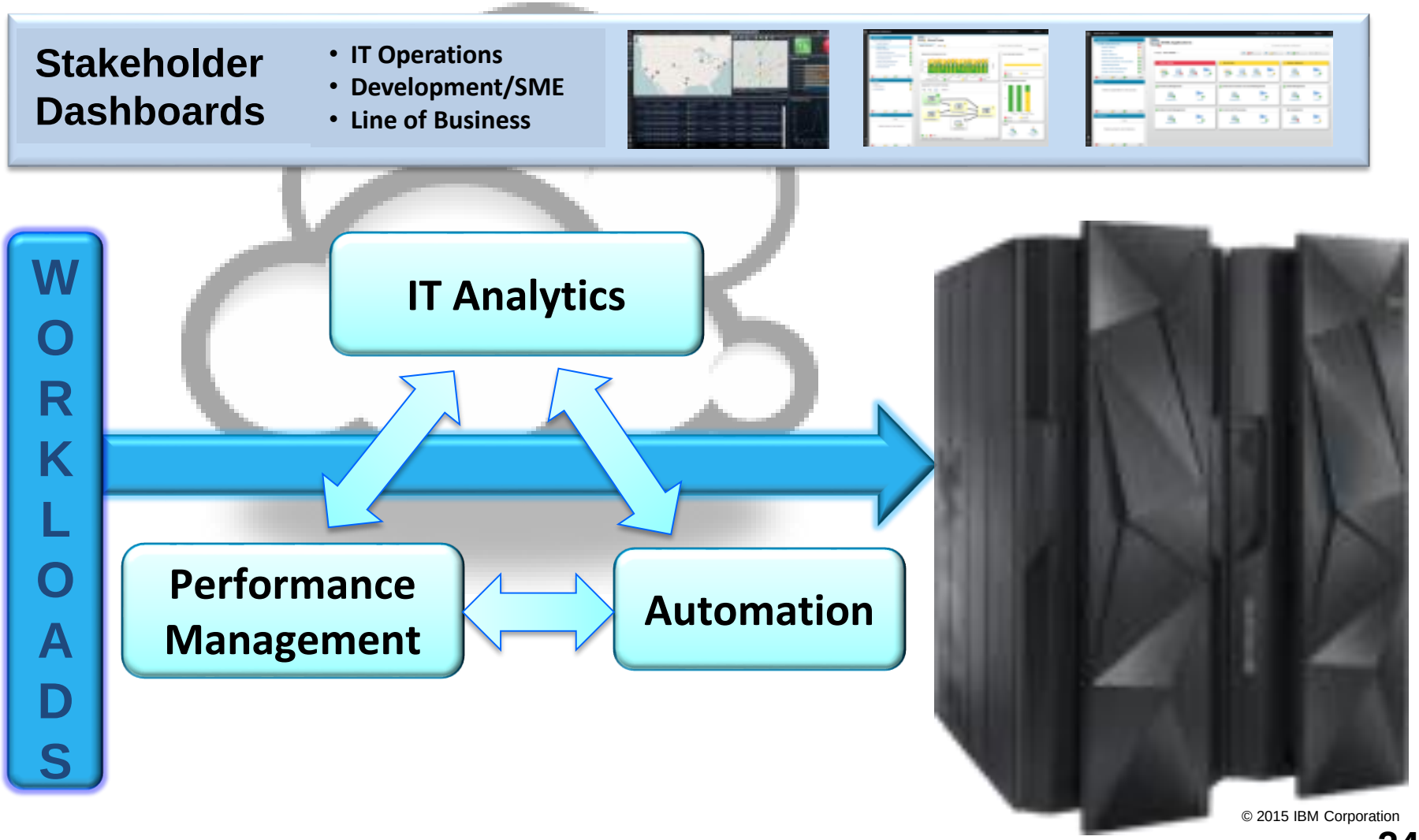
Visibility, Control and Security for Hybrid Cloud

- **Visibility** to see all data and apps across infrastructures
- **Control** and governance to manage and orchestrate workloads and access
- A multi-layered approach to ensure **Security** across every interaction point



Systems Management is key to driving improved Cloud outcomes

Visibility, Control, and Automation



IT Operational Analytics Solutions on z Systems

Planning and IT Optimization:
- Improve Performance across IT Infrastructure

Problem Management:
- Quickly analyze large volume of log data
- Diagnose Logs, metrics and alerts

Predict:
- Pro-Active Outage Avoidance
- Predict Problems before occurrence

New

Mobile & Cloud Workloads

Gain Service Insights

IT Operational Analytics solutions for z Systems

Planning & Optimization
- Decision Support for System z

Problem Management
- Log Analysis for z Systems
- Operations Insights

Predict
- zAware Anomaly Detection
- Capacity Management
- Predictive Insights

Operational Insights

New Way to provide visibility into your Mainframe

Cloud-hosted, self-service analytics help you gain insights from z Systems operational data that highlight areas of potential improvement.

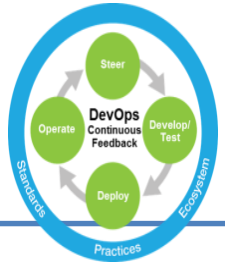
Key Features

Catalog of Insights with potential Savings
Next Steps with Embedded Expertise
Free Trial

Benefits

Identify opportunities for potential improvement
Data Based Decisions for Improvement Projects

IBM CICS Operational Insights
open beta - Launched Feb 2015

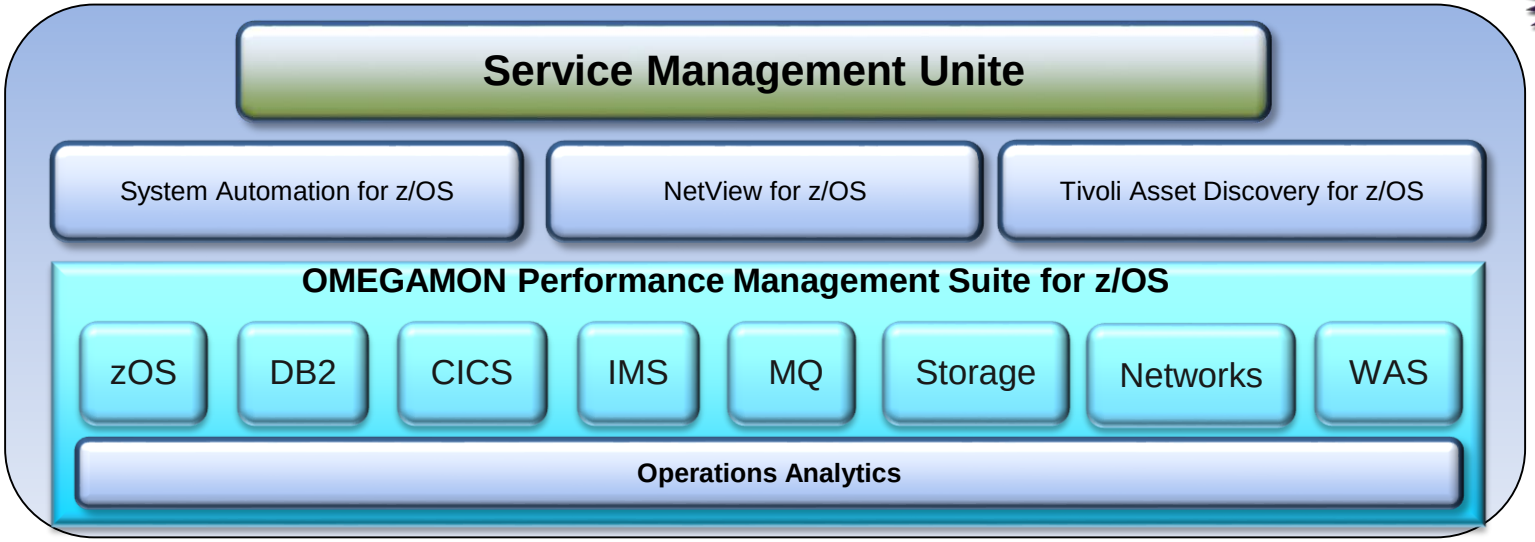


Insights
CICS Threadsafe
CICS Java Offload
Log Analytics
Other Ideas Coming….

Give it a try and join the conversation at
https://cicsoi.mybluemix.net

IBM Service Management Suite for z/OS

New



Comprehensive Service Management capabilities for IBM z Systems

- **ONE Solution**– Includes System and Resource level automation, monitoring, and asset discovery capabilities needed to manage z/OS and all subsystems
- **Service Management Unite**: Single point of control using modern dashboards to monitor, manage and run your applications
  - Isolate, analyze and diagnose problems twice as fast
  - Runs on mobile.

The priorities for cloud computing play to z Systems strengths

z Systems Cloud Solutions:

- **provide ultimate protection for security and the privacy of customer data**
- **preserve z Systems' unparalleled uptime capabilities**
- **align with the tools and techniques that dominate the industry**

Customers are already using the power of z Systems to deliver cloud services

Large Global Retailer	Large National Insurer	Large Multi-National Bank
REST-based service to cache data	Turning competitors into customers using revenue-generating IT services on z	Built a private on premise cloud
50M calls a day	Completely modernizing health care systems	Reduced deployment times to minutes
5X cheaper than CouchDB & Cassandra		

IBM z Systems provide the infrastructure to support all dimensions of cloud service delivery

Private Cloud

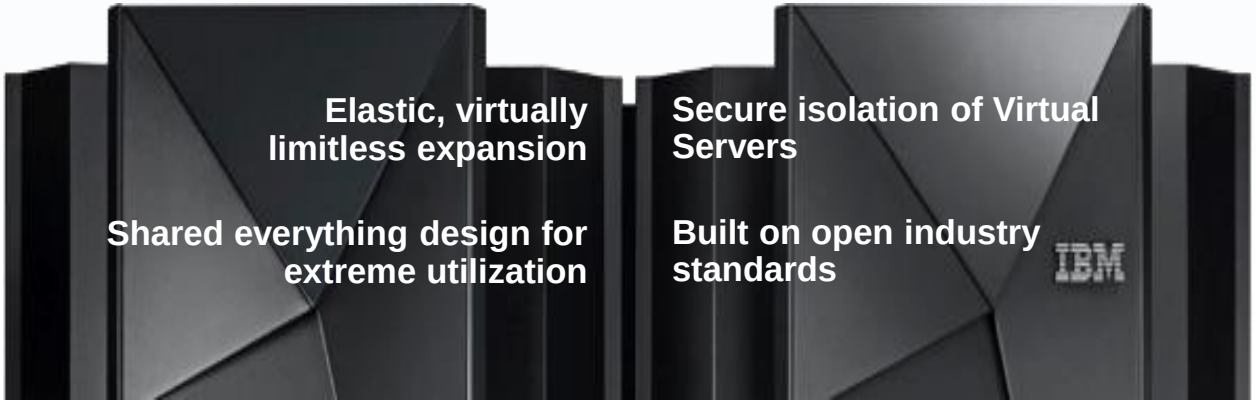
z/OS and Linux on System z as the foundation of the most secure, scalable private cloud infrastructure

Hybrid Cloud

Leveraging BlueMix and interoperability with SoftLayer, AWS and other public cloud offerings

Public Cloud

Enabling MSPs/CSPs to deliver differentiated mainframe-based service offerings



Thank You